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BOSHLANG'ICH TAYYORGARLIK BOSQICHIDA SHUG'ULLANUVCHI 13-14 YOSHLI YUNON-RIM KURASHCHILARNING TEZKORLIK SIFATINI AYLANMA USLUB YORDAMIDA RIVOJLANTIRISH

Annotatsiya: Ko'plab sport turlarida sportchilarning yuqori tezligi ularning yaxshi natijalarga erishishlarini belgilaydi. Yunon-rum kurashi kabi sport turi uchun tezlikni rivojlantirish alohida ahamiyatga egadir. Aylanma mashqlar yordamida boshlang'ich tayyorgarlik bosqichdagi shug'ullanuvchi 13-14 yoshli yunon-rim kurashchilarda tezlik sifatini rivojlantirish uchun vositalar tanlash va mashqlar to'plamidan foydalanish orqali yuqori natijalarga erishish. Dastlabki tayyorgarlik bosqichida biz tezlikni rivojlantirish uchun mashqlarni tanladik va ulardan tezlikni rivojlantirish uchun aylanish mashqlari to'plamini ishlab chiqdik. Pedagogik tadqiqotlar davomida biz quyidagi natijalarga erishdik, ularda tezlikni rivojlantirish bo'yicha aniq mashqlar to'plami jismoniy va texnik tayyorgarlikning o'sishiga yordam berdi.

Kalit so'zlari: yunon-rim kurashchilari, tezlik, reaksiya tezligi, himoyadagi harakat tezligi, nazorat guruhi (n), tajriba guruhi (n), cho'zilish mashqlari, stansiya, pedagogik tadqiqot, aylanma uslub.

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THE METHOD OF DEVELOPING THE SPEED QUALITY OF 13-14-YEAR-OLD GRECO-ROMAN WRESTLERS AT THE PRIMARY TRAINING STAGE USING THE ROTATION STYLE

Abstract: *In many sports, the high speed of athletes determines their good results. For a sport like Greco-Roman wrestling, the development of speed is of particular importance. Achieving high results by choosing tools and using a set of exercises to develop the quality of speed in 13-14-year-old Greco-Roman wrestlers at the initial training stage using rotational exercises. The most important part of the process of developing the speed quality of 13-14-year-old Greco-Roman wrestlers in the initial training stage. In the initial training phase, we selected exercises to develop speed and developed a set of rotational exercises from them to develop speed. During the pedagogical research, we achieved the following results, in which specific sets of exercises for the development of speed skills contributed to the growth of physical and technical training.*

Key words: *Greco-Roman wrestlers, speed, rate of reaction, speed of movement in defense, control group (n), experimental group (n), stretching exercises, station, pedagogical research, rotary style.*

Mavzuning dolzarbligi. Ko‘plab sport turlarida sportchilarning yuqori tezligi ularning yaxshi natijalarga erishishlarini belgilaydi. Yunon-rim kurashi kabi sport turi uchun tezlikni rivojlantirish alohida ahamiyatga egadir. Aynan yakakurash sport turlarida tezlik sifatining namoyon bo‘lishi uning xilma-xil turlari (reaktsiya tezligi, hujum va himoyadagi harakat tezligi, sportchining harakatlarni muvofiqlashtirish tezligi) mavjud.

Boshlang‘ich taiyorgarlik bosqich gurihida shug‘ullanuvchi 13-14 yoshli yunon-rim kurashchilarning mashg‘ulot jarayonlarini o‘rganadigan bo‘lsak, boshlang‘ich taiyorgarlik bosqichi gurihidagi kurashchilarda maxsus tezlik sifat bu reaktsiya tezligi, murakkab va turli harakatlar tezligidir. Bu sifatlarni o‘z vaqtida rivojlantirish orqali kelajakda yosh sportchilar yuqori natijalar ko‘rsatadi.

Imiy-metodik adabiyotlarda yunon-rim kurashchilarda kuch, chidamlilik, chaqqonlik va boshqa jismoniy sifatlarni rivojlantirish masalalari ancha keng yoritilgan bo‘lsa-da, ayni paytda tezlik kabi muhim jismoniy sifat bo‘yicha ishlar kam.

Ilmiy ishning maqsadi: Aylanma mashqlar yordamida boshlang‘ich taiyorgarlik bosqichdagi shug‘ullanuvchi 13-14 yoshli yunon-rim kurashchilarda tezlik sifatini rivojlantirish uchun vositalar tanlash va mashqlar to‘plamidan foydalanish orqali yuqori natijalarga erishish.

Tadqiqot Toshkent viloyati Yuqori Chirchiq tumanidagi Sport maktabda shug‘ullanuvchi 13-14 yoshli yunon-rim kurashchilarida o‘tkazildi. Boshlang‘ich taiyorgarlik bosqichdagi shug‘ullanuvchi 13-14 yoshli yunon-rim kurashchilarining tezlik sifatini rivojlantirish uchun ishlab chiqilgan aylanma mashqlar komplekslarini kurashchilarning umumiy jismoniy va texnik-taktik tayyorgarligi darajasiga ta‘sirini tekshirish uchun pedagogik tajriba o‘tkazildi. Unda boshlang‘ich taiyorgarlik bosqichdagi shug‘ullanuvchi 13-14 yoshli 20 nafar yunon-rim kurashchilari ishtirok etdi, ularning bir yillik mashg‘ulot sikli boshida ikki guruhga bo‘lingan holda: nazorat guruhi (n=10) va tajriba guruhi (n=10) ga ajratildi. Nazorat guruhi sportchilari yunon-rim kurashi bo‘limiga qarashli sport maktabining

namunaviy dasturi bo'yicha mashg'ulotlar o'tkazdi, biz tamondan ishlab chiqilgan tezlik sifatini rivojlantiruvchi mashqlar majmualari tajriba guruhidagi sportchilarining mashg'ulot jarayoniga kiritildi.

Tadqiqot natijalari. Boshlang'ich tayyorgarlik bosqichidagi 13-14 yoshli yunon-rim kurashchilarining tezlik sifatini rivojlantirish jarayoni eng muhim qismidir. Adabiy ma'lumotlarni tahlil qilish shuni ta'kidladiki, kurashchilarda uzoq muddatli mashg'ulot tsiklining turli bosqichlarida tezlikni rivojlantirish vositalari va usullarini yanada oqilonalashtirish kurash nazariyasi va metodologiyasida mutaxassislar tomonidan katta e'tiborga ega bo'lgan dolzarb masalalar ekanligi o'rganildi. Va shunga qaramay, bugungi kunga qadar uzoq muddatli mashg'ulot tsiklining turli davrlarida yunon-rim kurashchilarda tezlikni rivojlantirish vositalari va usullari hali etarlicha ishlab chiqilmagan. "Tezlik" tushunchasi inson motor apparatining markaziy va periferik asab tuzilmalarining namoyon bo'lish birligini anglatadi, bu esa tanani va uning alohida qismlarini minimal qisqa vaqt ichida harakatlantirishga imkon beradi. Tezlikni rivojlantirishning asosiy usuli - aylanma uslubdagi mashqlardir.

Tezlik turli xil motor vazifalari orqali rivojlanadi, ularning muvaffaqiyati vosita harakatini bajarish uchun zarur bo'lgan minimal vaqt bilan belgilanadi. Tezlikni tavsiflovchi ko'plab qobiliyatlar boshqa jismoniy sifatning tarkibiy qismlari hisoblanadi. Tezlik jismoniy sifatining o'ziga xos xususiyati - uni ifodalovchi jismoniy qobiliyatlar o'rtasidagi bog'liqlikning yo'qligi.

Tezlik qobiliyati deganda odamning ma'lum bir sharoitda motor harakatlarini minimal vaqt ichida bajarishga imkon beradigan qobiliyatlari tushuniladi: oddiy va murakkab vosita reaksiyasining tezligi, bitta harakat tezligi, harakat tezligi, murakkab (ko'p bug'unli) harakat, harakatlarning chastotasi.

Boshlang'ich tayyorgarlik bosqichida tezlikni rivojlantirish uchun biz mashqlarni tanlab oldik va ulardan tezlikni rivojlantirish uchun aylanma mashqlar to'plamini ishlab chiqdik. Boshlang'ich tayyorgarlik bosqichida shug'ullanuvchi 13-14 yoshli yosh kurashchilarning jismoniy tayyorgarligini optimallashtirish uchun biz tezlikni rivojlantirishga qaratilgan maxsus mashqlar majmuasini ishlab chiqdik. Ushbu mashqlar to'plami o'quv-trenirovka jarayoniga kiritilgan va haftada ikki marta amalga oshirilgan. Mashqlar to'plamiga turli xil yugurish vazifalari, to'p bilan mashqlar, maxsus tayyorgarlik mashqlari, akrobatik mashqlar, rezina tasma bilan mashqlar, teginish o'yinlari va ochilish o'yinlari kiradi. Boshlang'ich tayyorgarlik bosqichida shug'ullanuvchi 13-14 yoshli yunon-rim kurashchilar uchun tezlik sifatini rivojlantirish mashqlar majmuasining diagrammasi jadvalda keltirilgan.

1-jadval

Tezlikni rivojlantirish uchun aylanma mashsg'ulotlar majmuasining sxemasi			
Tarkib	Meyori	Intensivlik	Tashkiliy-uslubiy ko'rsatmalar
Tayyorgarlik stansiyasi	5 min	20-50%	Bir vaqtning o'zida barcha ishtirokchilar uchun
1. Harakat usuli, tezligi va yo'nalishi o'zgargan holda o'zgaruvchan tezlikda yugurish	3-5 min	maks dan	Tezlashuv va yo'nalish tovush signali bilan o'zgaradi
2. Cho'zilish mashqlari			Juft bo'lib sherik yordamida bajarish
1 stansiya	3 min	70-80%	Bir-biriga qaragan holda ikki qator bo'lib saflanish
To'p bilan mashq qilish	6-14 marta		
D.h. devorga qaragan holda devordan 2-3 m masofada turib, orqada turgan sherik tomonidan uzatish amalga oshiriladi va devordan sakrab tushgan to'pni ushlanadi;			
2 stansiya	3 min	90-100%	Oldinda raqobat shaklida
Akrobatik mashqlar	4×10-20 marta		
D.h. – Maxsua mashq ko'prikda turish, ko'prikda ag'darish, maxsus mashqlar			
3 stansiya	4 min	80-90%	O'yin davomiyligi 10 soniya bilan cheklangan
Raqibga teginish o'yinlari (oyoq bosish)			

4 stantsiya	2 min	90-100%	Musobaqa shaklida ko'proq takrorlash
1.Maxsus tayyorgarlik mashqlari	4×10 sek		
Ikki oyoqni bir joydan deysinish bilan stul ustidan sakrash			
2. Rezina tasma orqaliy belidan oshirib tashlash usulini takrorlash			
	2 min		
	10-12×4-6		
5 stantsiya	3 min	80-90%	Barcha ishtirokchilar uchun
20-30 m ga har xil boshlang'ich pozitsiyalardan tezlikka yugurish	4-8 marta		
6 stantsiya	3 min	90-100%	Barcha ishtirokchilar uchun
20-30 m ga balandlikka tezlikka yugurish	4-8 marta		

Mashqlar majmuasi sportchilar tomonidan haftada ikki marta butun bir yillik mashg'ulot tsikli davomida amalga oshirildi. Tezlik-kuch qobiliyatlarini rivojlantirish vositalari jismoniy mashqlar bo'lib, ularda etakchi mushaklar bir vaqtning o'zida yuqori kuch va qisqarish tezligini namoyon qiladi. Mushak qisqarishining yuqori kuchiga ega mashqlarning maksimal davomiyligi 5-10 soniyadan 1-2 daqiqagacha - mushaklarning qisqarish kuchiga teskari mutanosib ravishda amalga oshadi.

Pedagogik tadqiqot davomida biz quyidagi natijalarga erishdik, bunda tezlik sig'fatini rivojlantirish mashqlarining aniq to'plamlari jismoniy va texnik tayyorgarlikning o'sishiga yordam berdi. Tadqiqot gurihidagi sportchilar yunon-rim kurashi texnik usullarni amalga oshirishda, nazorat gurihiga nisbatan usullarni tez va aniq bajarishi isbotlandi.

Xulosa. Boshlang'ich tayyorgarlik guruhidagi yunon-rim kurashchilarining umumiy tezlik sifatining darajasi o'rganildi tajriba boshida yosh kurashchilarning jismoniy tayyorgarligining qoniqarli darajada ekanligi isbotlandidi, bu esa kurashchilarning tezlik sifatlarin yanada rivojlantirish zarurligini ko'rsatadi. Shu munosabat bilan yangi ilmiy yondashuvlarni izlash va yosh yunon-rim kurashchilarning tezlik sifatini aylanma uslub yordamida rivojlantirishni

mashg'ulotlarga joriy etish tafsifiya etildi, bu tezlik sifatining rivojlanish darajasini oshiradi va sport musobaqalarida yanada muvaffaqiyatli ishtirok etishga olib keladi.

Aylanma uslubdagi mashg'ulotlar boshlang'ich tayyorgarlik guruhidagi yunon-rim kurashchilarining jismoniy sifatlarini oshirishning asosiy usuli hisoblanadi.

Boshlang'ich tayyorgarlik bosqichida shug'ullanuvchi 13-14 yoshli kurashchilarning mashg'ulot jarayoniga tezlik sifatini rivojlantirishga qaratilgan mashqlari majmuasining sportchilarda tezlikni rivojlantirish darajasining yuqori darajada sezilarli o'sishiga yordam berdi. Bunda kurashchilar usullarni bajarishda minimal vaqt sarivlaganligi isbotlandi.

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STAGED AND INDIVIDUAL APPROACHES IN PHYSICAL EDUCATION OF STUDENTS IN GENERAL SCHOOLS

Abstract: *This work studies the role and importance of differentiated and individual approaches in the physical education of secondary school students. The study emphasizes the need to plan and adapt classes depending on the level of physical fitness, age characteristics, abilities and health of each student. Through a differentiated approach, students are divided into groups and given loads appropriate to their capabilities. An individual approach focuses on developing physical qualities and sports skills in them, paying special attention to each student. This work highlights the importance of using scientifically based programs in organizing physical education classes, taking into account the personal characteristics of students, increasing motivation and conducting classes in an interesting way. At the same time, the issues of increasing students' satisfaction with physical education classes, increasing their interest in a healthy lifestyle and turning physical activity into a way of life through an individual approach are analyzed.*

Keywords: *Physical education, Differentiated approach, Individual approach, Physical activity, Health-improving exercises, Methodical approach, Motor skills, Differential approach.*

Introduction

Today, a healthy lifestyle is an important task, raising the younger generation as physically and spiritually mature individuals. The program was created to ensure high-quality health, mental and physical development through the effective organization of physical education of secondary school students. Therefore, differentiated and individual elements in physical education lessons are becoming an integral part of the modern educational process. Differentiated and individualized allows you to organize classes that are appropriate for the physical condition, training and health of students. These production tools allow you to develop individual programs for each student, which will allow you to adapt physical loads to your needs. Such a systematic approach not only serves to improve health and physical fitness, but also helps to change the motivation of students. The need for effective organization of classes in this area is increasing, depending on the food, age, physical equipment and treatment of students. This is a fundamental step in the process of physical education.

Literature analysis and method

Particular attention is paid to increasing the effectiveness of the process of differentiation and individualization of physical education, their widespread application in practice in the school education system. Analyzing the results of experimental studies conducted on the contingent of secondary school students depending on their level of physical fitness, we concluded that it is necessary to optimize the physical activity of girls with different levels of motor skills. Scientific and methodological publications expressed an opinion on the process of differentiated physical education, in which the content of the teaching technology is differentiated teaching of movements, –a set of pedagogical methods for the development of physical qualities, the formation of knowledge and skills–, technologies for managing the educational process, ensuring the achievement of physical perfection, attempts were made to develop the technology of differentiated physical education of schoolchildren only at the level of fragmentary research–, but in practice, solving this problem did not find wide scientific support.

A differentiated approach and methodological solutions in the formation of knowledge in the field of physical culture must inevitably include a criterion for differentiating the educational process in determining the level of theoretical preparation of schoolchildren, which is the basis for dividing students into different groups. Solving the problems of implementing the content of the physical training program at different levels has determined the gradual, consistent expansion of the possibilities of a differentiated approach in the physical education of school contingents of different ages, the main factor in which is the level of physical training in certain sections of the school curriculum. The problems of changing the direction of physical education of a contingent of schoolchildren with average or low physical training have been put forward in the context of the problem of the relationship between the level of physical fitness of schoolgirls aged 15-16 and their physical characteristics, which will lead to the improvement of physical education in the school system.

Analytical study of literary sources on this issue showed that a group of authors propose to determine the level of physical fitness of students as a criterion for identifying groups of students when implementing a differentiated approach. Thus, in the course of many years of experimental research with students, a contingent of young students of different ages and genders was divided into “strong”, “average” and “weak” groups and, accordingly, a methodology for training in performing various physical exercises provided for in the state school curriculum for physical culture.

Studying the construction of a competitive mesocycle in young gymnasts at the stage of sports improvement, G.M. Khasanova and N.Kh. Yakubova, according to the results of correlation analysis, determined the relationship between the most important indicators of the volume of training loads. gymnasts at the competitive stage of training. A.K. Eshtaev, studying the structure and distribution of training aids of young gymnasts at the initial stage of training, noted that the author's program developed by him, taking into account the age-related characteristics of

physical development and the tasks of initial training, had a positive effect on the dynamics of health and morpho-functional development of young gymnasts.

A similar idea was expressed by Sh.T. Sariboev, studying the problem of improving the coordination abilities of schoolchildren aged 10-14 with different levels of physical development. Similar studies were conducted by M.R. Yuldoshev, who studied the issues of improving the methodology for developing the coordination abilities of young football players, determining the effectiveness of the effect of acrobatics as a result of using control exercises developed by the author. exercises on the coordination abilities of young football players

The degree of assessment of the results of the study on the division into groups according to the level of physical fitness was given in the experimental work of S.R. Uraimov, who noted that the assessment degrees were developed by him only for a certain contingent. lyceum students and may vary depending on factors. Having brought up the expediency of dividing young students at the beginning of the school year according to their level of physical fitness in order to determine their physical training characteristics, A.T. Khasanov noted that the composition of the studied groups may change when passing sections of the curriculum and changing their level of mobility.

P. Khojaev, in his research on the contingent of schoolchildren, expressed the opinion on the need to differentiate the content of physical education in school educational institutions, taking into account the age and gender characteristics of students. A.N. Borsova investigated the differentiated physical education of schoolgirls based on the consideration of integral indicators of physical condition. It was found that physical condition indicators are interconnected at senior school age. Integral indicators of physical condition are correlated with the health coefficient and affect the distribution of schoolchildren by health groups. L.N. Shakhridinova, studying the optimization of training loads of health-improving classes with women of secondary school age, taking into account their functional state, confirmed the effectiveness of the developed methodology of health-improving classes using various stretching exercises, identified young athletes who made a significant contribution to the study of the structure of their training, where the researchers recommend the rules developed for differentiating the training process taking into account their level of physical fitness and physical development. Specific aspects of planning pre-competition training sessions U. The method of differentiation of pre-competition training, studied by Sh. Valikhonov, made it possible to determine the composition of training aids, their volume and intensity during the competitive mesocycle. I.A. Qosbakhtiev, A. Tolibjonov, stratifying the system of training of young football players, recommend taking into account the specific territorial characteristics of living, their physical fitness. The results of experimental studies conducted by O.A. Geldiev in Turkmenistan under hyperthermia conditions made it possible to develop a territorial management model of the process of training young football players, which consists in approximately differentiating the composition of training sessions and their systematicity. correction depending on the dynamics of indicators related to the advance or lag of

individual parameters of their physical and technical training. A.A. According to Guzhalovsky, the age-sex significance of the studied contingent is one of the factors determining the presence of sensitive periods in the development of physical qualities, determining the differentiation of teaching aids and methods. As Professor A.A. Guzhalovsky noted, at secondary school age, motor qualities develop simultaneously and unevenly, where the basis for determining the sensitivity of physical qualities is determined by an increase in the average group indicators of physical fitness determined by tests. The presence of sensitive periods allows for the greatest achievements or positive shifts at a certain age stage.

In team sports, V.G. Kim proposes a method of speed-strength training of young basketball players based on the specific characteristics of the motor activity of various game roles. The characteristics of the movement activity of defenders, centers and forwards were studied, the standards of physical fitness of young basketball players were developed, and means and methods were proposed to achieve the specified parameters of their mobility, taking into account regional factors.

The results of the studies conducted by A.G. Sodikov and X.Yu. Matnazarov on the contingent of young swimmers revealed their morphological features that allow for qualitative selection and orientation in choosing their swimming style and distance length, and determined the characteristics of the fatigue processes and recovery of young swimmers of various specialties, which made it possible to develop differentiated programs of the training process on this basis. The results of the studies, the use of which in the training process contributed to the optimization of the process of special physical fitness of young swimmers and an increase in their sports results. Sprinters with an explosive type of neuropsychic reactivity, according to O.V. Goncharova, in the pre-competition period, it is recommended to maintain contrast in training, perform mainly explosive strength exercises using a strong motor mode against a background of high motivation. Sprinters with the same type of neuropsychic reactivity against a background of decreased motivation should gradually increase the load and maintain the same, low sensory motor mode, performing exercises of medium and submaximal intensity aimed at developing strength endurance - the ability to maintain speed over a distance.

Studies by G.S. Tumanyan, F.A. Kerimov showed that the level of development of basic coordination abilities in young wrestlers of different body types is not the same: for example, freestyle wrestlers with a muscular body type showed high results. at the level of development of differentiation abilities; wrestlers with an asthenic somatotype showed high results. These data made it possible to develop a program for improving the coordination abilities of young wrestlers at the initial stage of training, taking into account the type of physique. –Experimental testing showed that such a method allows for more effective development of the coordination abilities of young wrestlers.

The differentiation of the factor in fighters specializing in boxing - allowed R.D. Khalmuhamedov to determine the types of integral individuality of fighters according to the ratio of neurodynamic, psychodynamic and somatic characteristics.

The author identified specific quantitative values of the "personal constitutions" of the five integral individualities of young boxers, which allowed to significantly increase the effectiveness of the training process. Innovative techniques for differential control of the physical fitness of swimmers, G.M. Krasnova In swimmers of different ages and genders, it is necessary to control indicators that determine the specific indicators of athletes. The use of the method of differential control of physical fitness developed by the author made it possible to create individual training programs for swimmers. Analysis of the above showed that an important factor determining the specific features of differentiation and individualization of the educational and training process is the need to achieve results, and in the field of physical education, where there is a great need for practical experience, there should be a demand for differentiation and individualization in physical education.

Conclusion

The use of differentiated and individual approaches in the physical education of students in secondary schools is becoming an integral part of the modern educational process. These approaches make it possible to organize classes in accordance with the physical capabilities, level of preparation and needs of each student. This allows students to form a healthy lifestyle, develop physically and fully demonstrate their potential. Differentiated and individual approaches make the physical education process more effective, interest students in sports, they set clear goals for themselves and learn to assess their capabilities and achievements. Through these methods, health education classes develop students physically, mentally and socially, form a strong will, a sense of responsibility, and teamwork skills in them. Also, differentiated and individual approaches in physical education make a significant contribution to the overall health process. With the help of these approaches, each student, taking into account his physical capabilities, can strengthen his health, develop motor activity and achieve success in various sports. At the same time, with the help of these methods, students learn to follow a healthy lifestyle and personal hygiene rules. In conclusion, the organization of physical education in secondary schools based on differentiated and individual approaches greatly contributes to the formation of students as healthy, active and well-rounded individuals. These approaches will bring physical education to a new level in the education system and effectively implement the task of raising a healthy nation.

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KITOB TUMANIDA ZIYORAT TURIZMI VA UNING USTUVOR YO‘NALISHLARI

Annotatsiya: ushbu maqolada ziyorat turizmi mohiyati, turlari va Qashqadaryo viloyati, Kitob tumanida ziyorat turizmining asosiy yo‘nalishlari, hududda sayyohlar oqimini kengaytirish va sohadagi kamchiliklarni bartaraf etish bo‘yicha ilmiy tavsiyalar borasida so‘z boradi.

Kalit so‘zlar: ziyoratgoh, ziyorat turizmi, tarix, turist, maqbara.

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PILGRIMAGE TOURISM IN THE KITAB DISTRICT AND ITS PRIORITY DIRECTIONS

Annotation: this in the article pilgrimage tourism essence, types and Kashkadarya province, Kitab in the district pilgrimage tourism main directions, in the area tourists flow expansion and in the field shortcomings eliminate to grow according to scientific recommendations regarding word goes.

Key words; pilgrimage, pilgrimage tourism, history, tourist, mausoleum.

Kirish Ziyorat turizmi - hozirgi kunda keng tarqalgan turizm sohasi hisoblanadi. Ziyorat turizmi mohiyatan ziyoratgohlarni ziyorat qilish jarayonidir. “Ziyorat” (arabcha *زيارة* ziyara) so‘zidan olingan bo‘lib “tomosha qilish”, “ko‘rishga borish (kelish)” ma’nolarni bildiradi. Musulmonlarda “ziyosat” – bu payg‘ambarlar qabri, diniy muqaddas joylarni ziyorat qilishdir.

Odatda, ziyoratlar diniy maqsadlar uchun kunlar, haftalar yoki hatto oylar davomida olib boriladigan uzoq safarlarni tashkil qiladi. Ular butun bir sayohatni o‘z ichiga olib, e’tiqodli odamlar o‘z dinlari bilan munosabatlarini mustahkamlash

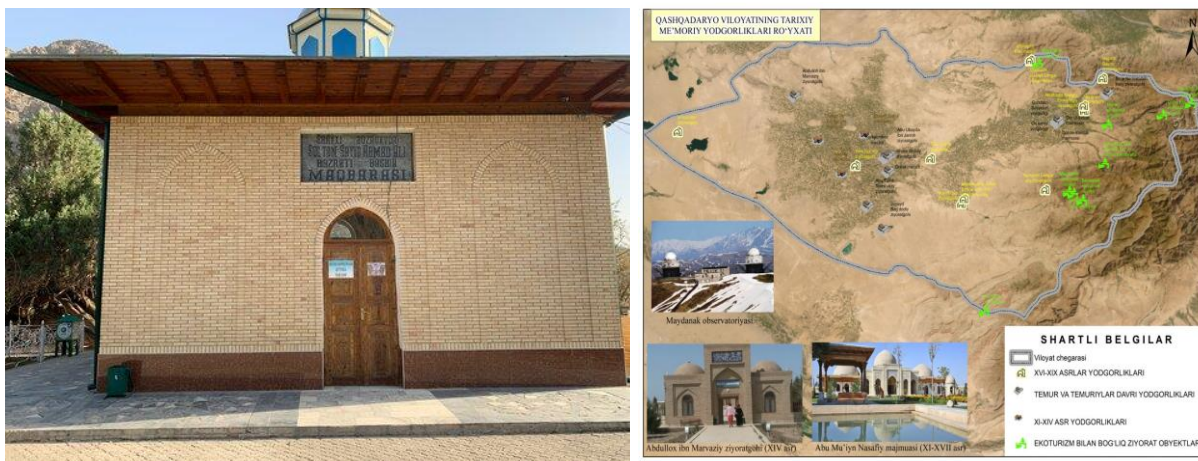
uchun boradigan maskanlardir. Ziyorat turizmi tashrif buyurish mumkin bo'lgan shahar yoki ma'lum hududdagi masjidlar va cherkovlarga yoki boshqa diniy diqqatga sazovor joylarga tashrif buyurishni o'z ichiga olishi mumkin Ziyorat turizmi turistlarni diniy munosabat va urf-odatlariga erishish uchun to'liq yoki kuchli turtki beradigan turizm turidir.

Asosiy qism O'zbekistonda turizmning salohiyatli va istiqbolli turlaridan biri ziyorat turizmi hisoblanadi. Uning o'ziga xos xususiyati komil insonni ham jismoniy, ham ma'naviy jihatdan shakllantirishga ijobiy ta'sir ko'rsatishi bilan bog'liq. Bugungi kunda jahondagi turistik obyektlarning 90 foizidan ortig'i bevosita yoki bilvosita din bilan aloqador. O'zbekiston Respublikasi Prezidenti Shavkat Mirziyoyev 2021-yildagi Oliy Majlisga Murojaatnomasida "Turizmni rivojlantirish bo'yicha 2021-yilda ham izchil islohotlarni davom ettiramiz. Ayniqsa, ziyorat turizmi va ichki turizmni rivojlantirishga alohida e'tibor beriladi", deb ta'kidladilar. Ushbu strategik vazifani muvaffaqiyatli bajarish uchun xorijda sinalgan ziyorat turizmini rivojlantirish hamda Kitob tumanida ziyorat turizmi salohiyatini oshirishni takomillashtirish bo'yicha bir qator ustuvor yo'nalishlari belgilab qo'yilgan.

Kitob tumanining boy tarixi, madaniy sivilizatsiyaning chuqur ildizlari tuman hududida bir qancha arxeologik yodgorliklar, muqaddas qadamjolar va tarixiy-me'moriy obidalar mavjud ekanligidan darak beradi. Bugungi kunda Kitob tumanida 2 ta rasmiy turistik firma faoliyat ko'rsatmoqda. Mahalliy va xorijiy sayyohlarga qulaylik yaratish maqsadida tumandagi diniy turistik obyektlar yo'nalishi kartasi ishlab chiqilgan va shunga bog'liq tarzda transport logistik tizimi yo'lga qo'yilgan.

Bugungi kunda rasman "Madaniy meros obyektlari" ro'yxatiga kiritilgan 9 ta tarixiy-madaniy va arxeologik turizm obyektlari mavjud (1-jadval).

Hazrati Bashir maqbarasi – Kitob tumanining shimoli-sharqida Bashir MFYda joylashgan. (39°.27' sh.k., 67°.10' shq.u.) Ziyoratgoh tarixiy shaxs bilan bog'liq bo'lib, 1379-yilda Hazrati Said Ahmad nomi bilan ataladi. U tug'ilgan vaqtda uning befarzand otasi 90 yoshda, onasi esa 80 yoshdan oshgan edi. Onasi Yoshi keksaligi tufayli u ona sutisiz ulg'ayadi. Lekin ziyoratgohdagi buloq o'rnida sut qaynab chiqqani haqida rivoyatlar bor Asl ma'nosi shunda bo'lib, ya'ni tojikcha "beshir-sutsiz" degan ma'noni anglatadi. Bu nom xalq orasida Bashir nomi bilan tarqalib ketadi. Hazrati Bashir ota-onasi qo'lida taxminan 4-5 yoshlariga qadar yashagan va keyinchalik o'zi mustaqil ravishda G'ori Hakim degan joyga 18-20 yoshlariga qadar umrguzaronlik qilgan (1-rasm).



1-rasm. Hazrati Bashir ziyoratgohi va Qashqadaryo viloyati turistik kartasi.

Bu yerda u o'zi ziravorlar ekib, mehnati evaziga kun kechiradi. Hazrati Bashir 96 yoshlarida olamdan o'tadi. Uning qabri archa ko'kargan tepalikda, o'zi uy qilib yopgan holatda turibdi. Qabrning ustiga ustalar tomonidan chiroyli sandiqqa o'xshagan yog'och yodgorlik o'rnatilgan

Hazrati Sulton ziyoratgohi – tumanning chekka sharqiy qismidagi Shut qishlog'idan yuqorida joylashgan ($39^{\circ}.08'$ sh.k., $67^{\circ}.37'$ shq.u.). Hazrati Sulton tog'ining siri hanuzgacha insoniyatni lol qoldirib kelmoqda. Bu cho'qqi dengiz sathidan 4163 m balandlikda bo'lib, buyuk tariqatchi ulamo Ahmad Yassaviy sharafiga shunday nomlangan. Bu joy Kitob shahridan 82 km sharqda, tumanning Tojikiston Respublikasi bilan chegaradosh, Zarafshon va Hisor tog' tizmalarining ayrilish joyida joylashgan G'avo cho'qqisiga tutash. Hazrati Sulton tog'ini mahalliy aholi "Ko'hi tavba", "Avg'oyi qiyomat" deb ham yuritiladi. Shuningdek, tog' cho'qqisi haqida xalq orasida bir qator rivoyatlar mavjud bo'lib, cho'qqi ilohiy kuchga egaligi sababli ham u yerga chiqish va tasvirga olish juda qiyinligiga ishoniladi.

Xo'ja Ilmkon maqbarasi – Ziyoratgoh tuman sharqida, Xo'jailmkoni qishlog'ida joylashgan. Bu ziyoratgoh ulug' donishmand, tasavvuf ilmining targ'ibotchisi, Mavlono Abdulboqi Xojagi Imkonagi (1510-1600) nomlari bilan bog'liqdir. Bu kishi Xojagon Naqshbandiya yo'nalishidagi tasavvufning fiqh hadisshunoslik ilmining buyuk allomasi bo'lgan. XVII asrga mansub usti gumbaz shaklida yopilgan xonaqo oldidagi sag'anada Xazrati Xojagi Imkonagi hamda o'g'illari Mavlono Xojagi Abul Qosim dafn etilgan.

Xulosa. Diniy ziyoratgohlar kam mablag' hisobiga katta daromad manbaiga aylanishi shubhasiz. Mamlakatimizning barcha viloyatlaridan o'nlab, yuzlab diniy qadamjolar mavjud. Islom dunyosida katta xizmat qilagn, avliyo darajasiga ko'tarilgan siymolarimiz abadiy qo'nim topgan maskanlarini faqatgina mahalliy darajada, ya'ni tuman yoki viloyat miqiyosidagi bilamiz, xolos. Binobarin, bunday muqaddas ziyoratgohlarni respublika va xalqaro darajadagi diniy ziyoratgoh obyektlariga aylantirish mumkin. Shu bilan birga, respublika hududidagi yirik ziyorat obyektlariga olib boruvchi yo'nalishli avtotransport qatnovi tizimini yo'lga

qo'yish, hududdagi aholini boshqa hududga tashkillashtirilgan sayohat qilishlari uchun transport qatnovlarini yo'lga qo'yilishi ta'minlanadi.

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NUMERICAL SOLUTION OF THE HEAT DISTRIBUTION EQUATION USING THE GRID METHOD

Abstract. *In this article presents an algorithm for the numerical solution heat equations using the mesh method on a rectangular area and a program in the Delphi-7 language is created based on this algorithm.*

Key words: *Algorithm, grid method, scheme, program, Delphi-7, sistem.*

At the beginning of the 21st century, with the rapid development of science and technology, information and communication technologies, and globalization, there is a need to improve the content of mathematics and the methodological system, forms, methods and tools of teaching, to develop the pedagogical potential of students of higher educational institutions in our country's continuous education system based on the integration of programming programs with information technologies.

Nowadays, a mathematics teacher must guide his students towards modern thinking, reading, learning, and activities that create their own voluntary activities in the current conditions, not based on previously assigned activities.

Therefore, in our opinion, a modern teacher should not only study his/her own subject, but also learn to effectively use programming programs based on pedagogical and information technologies in the educational process. At the same time, our main task is to prepare future mathematics teachers who are able to innovate (innovate) the educational process, have the ability to be researchers, creative seekers, and quickly adapt to the demands of the time. [40].

Nowadays, a sufficiently large number of hours are allocated for independent study in the curriculum for students to fully master the subjects. Students need to work more on themselves in order to further consolidate the theoretical and practical knowledge they have acquired in the classroom.

We will give an example of students working independently.

1. The problem is posed $Q = (0, T) \times \Omega$ in the field

$$\frac{\partial u}{\partial t} = A^2 \left(\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} \right) + f(x, y, t), \quad z = (x, y) \in \Omega \quad (1) \quad \text{heat equation}$$

$u(z, 0) = \varphi(z), \quad z \in \bar{\Omega}, \quad (2) \quad u(z, t) = \psi(z, t), \quad z \in \partial\Omega, 0 \leq t \leq T \quad (3)$ satisfying the initial and boundary conditions $u(x, y, t)$ find a solution. Here $\Omega = \{z = (x, y) : a < x < b, c < y < d\}, \quad \partial\Omega - \Omega$ the boundary of the field.

$A = \text{const} > 0$, $\overline{\Omega} = \Omega \cup \partial\Omega$, $f(z,t), \varphi(z), \psi(z,t)$ - given continuous functions. (1)-(3) that the issue has been raised correctly. [2].

2. Solution algorithm. Data to be entered into the program:

1. Immutable: A, T, a, b, c, d ;
2. Functions: $f(x, y, t), \varphi(x, y), \psi(x, y, t)$;
3. t, x, y number of divisions according to N_t, N_x, N_y .

$f(x, y, t), \varphi(x, y), \psi(x, y, t)$ functions are elementary functions, real numbers, arithmetic operations in the program: + add, - subtraction, / - divided by, * - multiply is entered using. $\pi \approx 3.14$ The number is entered with the symbol pi. The table below shows the elementary functions and how to include them in the program (see Table 1).

Table 1.

Table of elementary functions to be included in the program

No.	Elementary functions	Introducing elementary functions into the program	No.	Elementary functions	Introducing elementary functions into the program
1	$y= x $	mod (x)	17	$y= \ln x$	ln (x)
2	$y=[x]$	butun (x)	18	$y= \lg x$	lg (x)
3	$y=\{x\}$	kasr (x)	19	$y= \log x$	log (x)
4	$y=x^n, n \in \mathbb{N}$	dar (x:n)	20	$y= \text{sh } x$	sh (x)
5	$y=\sqrt[n]{x}, n \in \mathbb{N}$	ildiz (x:n)	21	$y= \text{th } x$	th (x)
6	$y= \sin x$	sin (x)	22	$y= \text{sch } x$	sch (x)
7	$y= \cos x$	cos (x)	23	$y= \text{ch } x$	ch (x)
8	$y= \text{tg } x$	tg (x)	24	$y= \text{cth } x$	cth (x)
9	$y= \text{ctg } x$	ctg (x)	25	$y= \text{csch } x$	csch (x)

10	$y = \sec x$	$\sec(x)$	26	$y = \operatorname{arsh} x$	$\operatorname{arsh}(x)$
11	$y = \operatorname{cosec} x$	$\operatorname{cosec}(x)$	27	$y = \operatorname{arch} x$	$\operatorname{arch}(x)$
12	$y = \arcsin x$	$\arcsin(x)$	28	$y = \operatorname{arth} x$	$\operatorname{arth}(x)$
13	$y = \arccos x$	$\arccos(x)$	29	$y = \operatorname{arth} x$	$\operatorname{arth}(x)$
14	$y = \operatorname{arctg} x$	$\operatorname{arctg}(x)$	30	$y = \operatorname{arcsec} x$	$\operatorname{arcsec}(x)$
15	$y = \operatorname{arcctg} x$	$\operatorname{arcctg}(x)$	31	$y = \operatorname{arccsc} x$	$\operatorname{arccsc}(x)$
16	$y = a^x$	$\operatorname{kurs}(a;x)$	32	$y = e^x$	$e(x)$

For example $f(x, y, t) = \sqrt[3]{x^2 + y^2} + e^{5t^3}$. The function is introduced into the program as follows: `root (dar(X:2)+dar(Y:2):3)+e (5*dar(T:3))`.

(1)-(3) We will solve the problem using the grid method. $[0; T]$ cut $t_n = n\tau; n = \overline{0, N_t}; \tau = \frac{T}{N_t}$ with dots N_t . We divide it into equal parts. Similarly, $[a; b]$ cut $x_i = a + ih_x; i = \overline{0, N_x}; h_x = \frac{b-a}{N_x}$ with dots N_x . We divide it into equal parts. $[c; d]$ cut $y_j = c + jh_y; j = \overline{0, N_y}; h_y = \frac{d-c}{N_y}$ with dots N_y . We divide it into equal parts. $z_{ij}^n = (x_i, y_j, t_n)$ - it is called a net knot. z_{ij}^n in a knot $u(x, y, t)$ approximate value of the solution u_{ij}^n . We denote it by the symbol, that is, $u(x_i, y_j, t_n) \approx u_{ij}^n$. We approximate the particular derivatives as follows::

$$\begin{aligned}
 \frac{\partial u}{\partial t}(x_i, y_j, t_{n+1}) &= \frac{u_{ij}^{n+1} - u_{ij}^n}{\tau} + O(\tau); \\
 \frac{\partial^2 u}{\partial x^2}(x_i, y_j, t_{n+1}) &= \frac{u_{i-1j}^{n+1} - 2u_{ij}^{n+1} + u_{i+1j}^{n+1}}{h_x^2} + O(h_x^2); \\
 \frac{\partial^2 u}{\partial y^2}(x_i, y_j, t_{n+1}) &= \frac{u_{ij-1}^{n+1} - 2u_{ij}^{n+1} + u_{ij+1}^{n+1}}{h_y^2} + O(h_y^2).
 \end{aligned} \tag{4}$$

(4) Using the equalities, we form the following implicit scheme for equation (1):

$$\frac{u_{ij}^{n+1} - u_{ij}^n}{\tau} = A^2 \left(\frac{u_{i-1j}^{n+1} - 2u_{ij}^{n+1} + u_{i+1j}^{n+1}}{h_x^2} + \frac{u_{ij-1}^{n+1} - 2u_{ij}^{n+1} + u_{ij+1}^{n+1}}{h_y^2} \right) + f(x_i, y_j, t_{n+1}), \quad (5)$$

$$n = \overline{0, N_t - 1}, \quad i = \overline{1, N_x - 1}, \quad j = \overline{1, N_y - 1}.$$

(5) approximation order of the scheme $O(\tau + h_x^2 + h_y^2)$. (5) We write the differential equations in the following form::

$$\begin{aligned} & -\frac{A^2\tau}{h_x^2}u_{i-1j}^{n+1} - \frac{A^2\tau}{h_y^2}u_{ij-1}^{n+1} + \left[1 + 2A^2\tau \left(\frac{1}{h_x^2} + \frac{1}{h_y^2} \right) \right] u_{ij}^{n+1} - \\ & -\frac{A^2\tau}{h_x^2}u_{i+1j}^{n+1} - \frac{A^2\tau}{h_y^2}u_{ij+1}^{n+1} = \tau f(x_i, y_j, t_{n+1}) + u_{ij}^n, \end{aligned} \quad (6)$$

$$n = \overline{0, N_t - 1}, \quad i = \overline{1, N_x - 1}, \quad j = \overline{1, N_y - 1}.$$

We approximate the initial and boundary conditions as follows:

$$\begin{aligned} u_{ij}^0 &= \varphi(x_i, y_j), \quad z_{ij} = (x_i, y_j) \in \overline{\Omega_h}, \\ u_{ij}^{n+1} &= \varphi(x_i, y_j, t_{n+1}), \quad z_{ij} = (x_i, y_j) \in \partial\Omega_h, \\ 0 &< t_{n+1} < \tau N_t, \quad n = \overline{0, N_t - 1}. \end{aligned} \quad (7)$$

Here $\Omega_h = \{z_{ij} = (x_i, y_j) : a < x_i < b, c < y_j < d\}$.

(6)-(7) the problem is stable (see [2], p. 181, Theorem 2). relatively formed (6) The system of linear equations (7) is a closed system together with the system of linear equations (6). The condition of diagonal dominance is fulfilled in the system of linear equations (6)[5]. Therefore, we solve the system of linear equations (6) by the Seidel method[5]. Based on this algorithm, a program was created in the Delphi-7 programming environment to numerically solve problems (1)-(3) in a rectangular area and plot the solution graph. The performance of the created program was verified in computational experiments.

3. Numerical calculations. Problem. $Q = \{0 < x < 5, 0 < y < 5, 0 < t < 5\}$ in the field

$$\frac{\partial u}{\partial t} = \frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} - 3 \quad (8)$$

The heat equation

$$u(x, y, 0) = x^2 + y^2 \quad (9)$$

the initial condition and

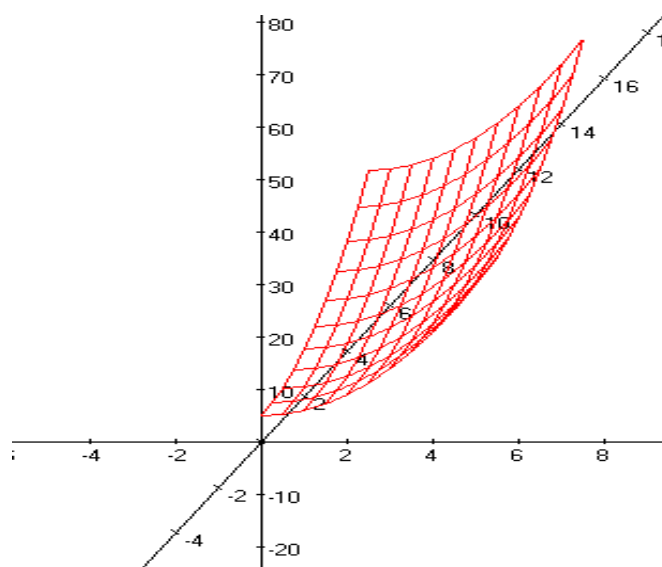
$$\begin{aligned} u(0, y, t) &= y^2 + t, \quad 0 \leq y \leq 5, \quad 0 \leq t \leq 5; \\ u(5, y, t) &= y^2 + t + 25, \quad 0 \leq y \leq 5, \quad 0 \leq t \leq 5; \\ u(x, 0, t) &= x^2 + t, \quad 0 \leq x \leq 5, \quad 0 \leq t \leq 5; \\ u(x, 5, t) &= x^2 + t + 25, \quad 0 \leq x \leq 5, \quad 0 \leq t \leq 5. \end{aligned} \quad (10)$$

satisfying boundary conditions $u(x, y, t)$ find a solution. (8)-(10) clear solution to the problem $u(x, y, t) = x^2 + y^2 + t$.

Solution. Below $T = 5$ да, $N_x = 10, N_y = 10, N_t = 20$ when (8)-(10) an approximate solution to the problem is presented at the nodes.

u[0,0]=5,00	u[1,0]=5,25	u[2,0]=6,00	u[3,0]=7,25	u[4,0]=9,00
u[5,0]=11,25	u[6,0]=14,00	u[7,0]=17,25	u[8,0]=21,00	u[9,0]=25,25
u[10,0]=30,00	u[0,1]=5,25	u[1,1]=5,50	u[2,1]=6,25	u[3,1]=7,50
u[4,1]=9,25	u[5,1]=11,50	u[6,1]=14,25	u[7,1]=17,50	u[8,1]=21,25
u[9,1]=25,50	u[10,1]=30,25	u[0,2]=6,00	u[1,2]=6,25	u[2,2]=7,00
u[3,2]=8,25	u[4,2]=10,00	u[5,2]=12,25	u[6,2]=15,00	u[7,2]=18,25
u[8,2]=22,00	u[9,2]=26,25	u[10,2]=31,00	u[0,3]=7,25	u[1,3]=7,50
u[2,3]=8,25	u[3,3]=9,50	u[4,3]=11,25	u[5,3]=13,50	u[6,3]=16,25
u[7,3]=19,50	u[8,3]=23,25	u[9,3]=27,50	u[10,3]=32,25	u[0,4]=9,00
u[1,4]=9,25	u[2,4]=10,00	u[3,4]=11,25	u[4,4]=13,00	u[5,4]=15,25
u[6,4]=18,00	u[7,4]=21,25	u[8,4]=25,00	u[9,4]=29,25	u[10,4]=34,00
u[0,5]=11,25	u[1,5]=11,50	u[2,5]=12,25	u[3,5]=13,50	u[4,5]=15,25
u[5,5]=17,50	u[6,5]=20,25	u[7,5]=23,50	u[8,5]=27,25	u[9,5]=31,50
u[10,5]=36,25	u[0,6]=14,00	u[1,6]=14,25	u[2,6]=15,00	u[3,6]=16,25
u[4,6]=18,00	u[5,6]=20,25	u[6,6]=23,00	u[7,6]=26,25	u[8,6]=30,00
u[9,6]=34,25	u[10,6]=39,00	u[0,7]=17,25	u[1,7]=17,50	u[2,7]=18,25

$u[3,7]=19,50$	$u[4,7]=21,25$	$u[5,7]=23,50$	$u[6,7]=26,25$	$u[7,7]=29,50$
$u[8,7]=33,25$	$u[9,7]=37,50$	$u[10,7]=42,25$	$u[0,8]=21,00$	$u[1,8]=21,25$
$u[2,8]=22,00$	$u[3,8]=23,25$	$u[4,8]=25,00$	$u[5,8]=27,25$	$u[6,8]=30,00$
$u[7,8]=33,25$	$u[8,8]=37,00$	$u[9,8]=41,25$	$u[10,8]=46,00$	$u[0,9]=25,25$
$u[1,9]=25,50$	$u[2,9]=26,25$	$u[3,9]=27,50$	$u[4,9]=29,25$	$u[5,9]=31,50$
$u[6,9]=34,25$	$u[7,9]=37,50$	$u[8,9]=41,25$	$u[9,9]=45,50$	$u[10,9]=50,25$
$u[0,10]=30,00$	$u[1,10]=30,25$	$u[2,10]=31,00$	$u[3,10]=32,25$	$u[4,10]=34,00$
$u[5,10]=36,25$	$u[6,10]=39,00$	$u[7,10]=42,25$	$u[8,10]=46,00$	$u[9,10]=50,25$
$u[10,10]=55,00$				



$u(x, y, t)$ solution graph.

In conclusion, for mathematics students in higher education institutions, the teacher's creative approach to demonstrating the interdisciplinary integration of "Differential Equations" and "Programming" will increase students' interest in the subject.

Examples for independent solution.

1) $Q = \{0 < x < 5, 0 < y < 5, 0 < t < 2\}$ in the field

$$\frac{\partial u}{\partial t} = 2 \left(\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} \right) - 8 + xy$$

heat equation

$$u(x, y, 0) = x^2 + y^2$$

the initial condition and

$$u(0, y, t) = y^2, \quad 0 \leq y \leq 5, \quad 0 \leq t \leq 2;$$

$$u(5, y, t) = 5yt + y^2 + 25, \quad 0 \leq y \leq 5, \quad 0 \leq t \leq 2;$$

$$u(x, 0, t) = x^2, \quad 0 \leq x \leq 5, \quad 0 \leq t \leq 2;$$

$$u(x, 5, t) = x^2 + 5xt + 25, \quad 0 \leq x \leq 5, \quad 0 \leq t \leq 2.$$

satisfying boundary conditions $u(x, y, t)$ find a solution.

2) $Q = \{0 < x < 2, \quad 0 < y < 5, \quad 0 < t < 2\}$ in the field

$$\frac{\partial u}{\partial t} = \frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} + x^2 y - 2yt$$

heat equation

$$u(x, y, 0) = 0$$

the initial condition and

$$u(0, y, t) = 0, \quad 0 \leq y \leq 5, \quad 0 \leq t \leq 2;$$

$$u(2, y, t) = 4yt, \quad 0 \leq y \leq 5, \quad 0 \leq t \leq 2;$$

$$u(x, 0, t) = 0, \quad 0 \leq x \leq 2, \quad 0 \leq t \leq 2;$$

$$u(x, 5, t) = 5x^2 t, \quad 0 \leq x \leq 2, \quad 0 \leq t \leq 2.$$

satisfying boundary conditions $u(x, y, t)$ find a solution.

3) $Q = \{0 < x < \pi/2, \quad 0 < y < \pi, \quad 0 < t < 5\}$ in the field

$$\frac{\partial u}{\partial t} = 3 \left(\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} \right) + (1 - 6t) \sin x \cos y$$

heat equation

$$u(x, y, 0) = 0$$

the initial condition and

$$\begin{aligned}u(0, y, t) &= 0, \quad 0 \leq y \leq \pi, \quad 0 \leq t \leq 5; \\u(\pi/2, y, t) &= t \cos y, \quad 0 \leq y \leq \pi, \quad 0 \leq t \leq 5; \\u(x, 0, t) &= t \sin x, \quad 0 \leq x \leq \pi/2, \quad 0 \leq t \leq 5; \\u(x, \pi, t) &= -t \sin x, \quad 0 \leq x \leq \pi/2, \quad 0 \leq t \leq 5.\end{aligned}$$

satisfying boundary conditions $u(x, y, t)$ find a solution.

4) $Q = \{0 < x < 5, 0 < y < 5, 0 < t < 3\}$ in the field

$$\frac{\partial u}{\partial t} = \frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} + \frac{(x^2 + y^2)t}{\sqrt{(1+t^2)^3}} + \frac{4}{\sqrt{1+t^2}}$$

heat equation

$$u(x, y, 0) = -(x^2 + y^2)$$

the initial condition and

$$\begin{aligned}u(0, y, t) &= -\frac{y^2}{\sqrt{1+t^2}}, \quad 0 \leq y \leq 5, \quad 0 \leq t \leq 3; \\u(5, y, t) &= -\frac{y^2 + 25}{\sqrt{1+t^2}}, \quad 0 \leq y \leq 5, \quad 0 \leq t \leq 3; \\u(x, 0, t) &= -\frac{x^2}{\sqrt{1+t^2}}, \quad 0 \leq x \leq 5, \quad 0 \leq t \leq 3; \\u(x, 5, t) &= -\frac{x^2 + 25}{\sqrt{1+t^2}}, \quad 0 \leq x \leq 5, \quad 0 \leq t \leq 3.\end{aligned}$$

satisfying boundary conditions $u(x, y, t)$ find a solution.

5) $Q = \{0 < x < 2, 0 < y < 2, 0 < t < 4\}$ in the field

$$\frac{\partial u}{\partial t} = 4 \left(\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} \right) + \frac{x^2 + y^2}{2\sqrt{t+1}} - 16\sqrt{t+1}$$

heat equation

$$u(x, y, 0) = x^2 + y^2$$

the initial condition and

$$u(0, y, t) = y^2 \sqrt{t+1}, \quad 0 \leq y \leq 2, \quad 0 \leq t \leq 4;$$

$$u(2, y, t) = (4 + y^2) \sqrt{t+1}, \quad 0 \leq y \leq 2, \quad 0 \leq t \leq 4;$$

$$u(x, 0, t) = x^2 \sqrt{t+1}, \quad 0 \leq x \leq 2, \quad 0 \leq t \leq 4;$$

$$u(x, 2, t) = (4 + x^2) \sqrt{t+1}, \quad 0 \leq x \leq 2, \quad 0 \leq t \leq 4.$$

satisfying boundary conditions $u(x, y, t)$ find a solution.

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INNOVATIVE METHODS IN GEOGRAPHY EDUCATION: STRATEGIES FOR DEVELOPING PROJECT-BASED COMPETENCY AMONG FUTURE TEACHERS

Abstract. *This article examines the role and effectiveness of innovative pedagogical methods in developing project-based competencies among future geography teachers. The integration of STEAM education, project-based learning, gamification, problem-based learning, and digital technologies into geography teaching enhances teachers' ability to plan lessons, organize interactive learning, and foster students' critical thinking skills. Research findings indicate that the comprehensive implementation of innovative methods significantly improves the pedagogical preparedness of future teachers. Based on international experience and experimental research, specific recommendations are provided to improve the quality of education.*

Keywords: *project-based competency, innovative pedagogy, STEAM education, gamification, problem-based learning, digital technologies, geography education, pedagogical innovations.*

Introduction. In the educational process, a teacher's ability to meticulously plan lessons and projects - referred to as project design competence—holds significant importance. Today, traditional memorization-based teaching methods are increasingly seen as insufficient to meet modern educational demands [1]. To equip students with 21st-century skills such as critical thinking, creativity, collaboration, and digital literacy, teachers must continuously improve their own competencies and adopt innovative approaches in their teaching.

In particular, the development strategies of Uzbekistan's education system emphasize the implementation of modern pedagogical technologies as a priority (for example, the Development Strategy for 2022–2026) [2]. In this context, the aim of this research is to explore and substantiate effective methods for developing project design competence among future geography teachers.

This research topic is highly relevant, as improving the quality of geography education and fostering students as researchers and creative thinkers directly depend on a teacher's ability to design and implement well-structured lessons. The role of geography as a subject in modern education is steadily growing. Specifically, developing students' economic-geographical competence, linking geographical knowledge with practical applications, and integrating it into real-life contexts are of critical importance.

In contemporary education, teachers' project design competence - which includes thorough lesson planning, the application of innovative teaching methods, and fostering students' independent learning - is a key factor in ensuring effective instruction. The theoretical foundation of this study focuses on defining the principles, tools, and methodologies for developing project design competence in future geography teachers.

Research findings suggest that the effectiveness of geography education can be significantly enhanced through innovative pedagogical approaches, interactive methods, and project-based learning. Therefore, theoretical justification is needed for the role of project-based methods, STEAM education, gamification, problem-based learning, and digital pedagogy in geography instruction.

Main Part. The development of project design competence is closely linked to the integrated application of various competencies. In particular, methodological competence plays a crucial role, as it involves a teacher's ability to apply theoretical knowledge in practice, utilize modern teaching technologies, and plan lessons while considering the individual needs of students.

This competence is essential for enhancing the effectiveness of innovative pedagogical methods in developing project design competence among future geography teachers. By mastering methodological competence, teachers can ensure that geography lessons are not only well-structured but also engaging, practical, and aligned with contemporary educational requirements [3]. Specifically, integrating critical thinking technology into the learning process helps students develop creativity and independent thinking skills when designing lessons. This, in turn, plays a crucial role in their future pedagogical practice.

Economic-geographical competence encompasses students' understanding of regional economics, ecology, and the efficient use of natural resources. This competence is directly linked to a teacher's ability to design effective geography lessons. Developing economic-geographical competence requires the integration of natural sciences, which plays a significant role in reinforcing students' knowledge.

In particular, by aligning subjects such as biology, chemistry, and geography, educators can provide students with a comprehensive understanding of regional economies, environmental sustainability, and urbanization processes. This interdisciplinary approach enhances students' analytical skills and fosters a deeper connection between theoretical knowledge and real-world applications [4].

In biology lessons, students can develop an understanding of the regional distribution of natural resources and their economic significance. For instance, project-based learning approaches can be applied to topics such as *"The Interaction Between Nature and Society," "The Economic Importance of Forests,"* and *"The Impact of Climate Change on Agriculture."* Studying these subjects through project-based learning enhances students' analytical thinking skills and deepens their comprehension of environmental and economic interconnections.

In chemistry lessons, topics such as environmental issues, pollution, and the regional distribution of industrial production can be analyzed. By linking subjects like *acid rain and its impact on the environment* with geography, students can

strengthen their economic-geographical competence, fostering a multidisciplinary understanding of global ecological and industrial processes.

In geography lessons, key topics include sustainable resource management, transport geography, urban planning, and global economic relations. As highlighted by Khayaleeva (2023), conducting practical sessions on regional development processes and the formation of economic zones, along with the use of interactive teaching methods, significantly expands students' economic-geographical thinking [5].

In contemporary education, various innovative methods and technologies play a crucial role in shaping teacher competencies. One such approach is STEAM education (Science, Technology, Engineering, Art, and Mathematics), which emphasizes interdisciplinary integration.

STEAM is a modern educational technology that merges multiple disciplines into a unified, integrated curriculum rather than teaching them separately. This approach serves as a powerful tool for developing critical thinking, research skills, and teamwork abilities among students.

In geography education, STEAM methodology aligns scientific knowledge with technology and art, encouraging students to develop creative problem-solving skills for real-world challenges. Through engagement with STEAM projects, future teachers enhance their lesson planning competencies, learning how to integrate different subjects and organize hands-on learning activities that foster interdisciplinary connections.

The project-based learning (PBL) method is one of the most advanced teaching approaches, particularly valuable in the training of future geography teachers. Research indicates that well-structured lesson planning is a key factor in achieving expected learning outcomes.

Through project-based learning, students integrate knowledge from various subjects into a cohesive understanding, developing essential skills such as problem identification and resolution, independent decision-making, and teamwork. Consequently, as future geography teachers master the project methodology, they also cultivate competencies in lesson planning, step-by-step organization of learning activities, and fostering students' independent work.

The process of designing and implementing project-based programs nurtures students' sense of responsibility, initiative, and creative thinking.

Additionally, gamification and problem-based learning (PBL) technologies have proven to be highly effective in education. Gamification involves the application of game elements in the learning process to enhance student motivation and engagement, making lessons more interactive and enjoyable [6]. In geography lessons, the incorporation of game elements - such as quizzes, role-playing, and interactive applications - makes it easier to capture students' interest and maintain their attention. Gamification, when integrated with digital technologies, enhances the effectiveness of lessons by making learning more engaging and interactive.

For instance, using online maps or geographic quizzes (quests) allows students to independently explore geographical data, reinforcing their self-directed

learning skills. By engaging with these interactive tools, students actively participate in the learning process rather than passively receiving information.

On the other hand, problem-based learning (PBL) directs students toward solving real-world scientific and practical issues within the lesson itself. In geography education, this approach is particularly beneficial for fostering critical and systematic thinking among students.

For example, a teacher might introduce real-world challenges such as the drying of the Aral Sea or climate change, asking students to analyze the issue and propose potential solutions. This method not only strengthens students' geographical knowledge but also develops their problem-solving and analytical skills.

Research confirms that problem-based learning significantly accelerates cognitive engagement, promoting creative thinking and independent decision-making abilities among students. By actively engaging in discussions, evaluating different perspectives, and formulating solutions, students gain a deeper, more applied understanding of geography [7]. Thus, by mastering problem-based learning methodologies, future geography teachers will develop the ability to anticipate complex situations in lesson planning and design scenarios that guide students toward problem-solving strategies. This enhances their capacity to create engaging and thought-provoking learning experiences.

Among the innovative teaching methods, the integration of digital technologies into education deserves special attention. Today, geography lessons can be enriched with information technologies, multimedia, and Geographic Information Systems (GIS) to deliver educational content in a **more** interactive and engaging manner.

The use of distance learning platforms, virtual laboratories, and electronic maps in lesson planning requires teachers to develop digital competencies. Therefore, training future educators in effectively utilizing digital tools, designing projects, and developing lesson plans through online resources is essential.

Organizing specialized training and workshops on digital tools not only enhances teachers' project design competence but also ensures that their overall professional skills align with modern educational standards. By embracing these technological advancements, educators can create more dynamic, data-driven, and student-centered learning environments that reflect the demands of 21st-century education.

The results of the experimental study on developing project design competence in future geography teachers demonstrated positive improvements. The pilot study involved 131 students specializing in pedagogical education, with 69 students in the experimental group and 62 in the control group.

At the outset, an initial assessment was conducted to evaluate both groups' baseline competencies in areas such as lesson planning, the application of interactive methods, and instructional design. The findings revealed that both groups had nearly identical initial scores, with most students demonstrating an average level of project design competence.

Over the course of one semester, a specialized program was implemented in the experimental group. This program included:

- Assignments requiring students to design geography lessons enriched with STEAM elements.

- Hands-on workshops on project-based learning methodologies.

- Mini-projects focused on textbook development.

- Gamification-based educational games and problem-solving training.

Students worked in small groups to develop integrative geography projects, such as *"Environmental Issues in My School's Surroundings"*, and presented implementation scenarios for these projects. Each student also defended their lesson project using digital presentations and interactive materials.

Throughout the process, teacher-researchers closely observed students' engagement. The study recorded notable improvements in students' creativity, active participation, and independent decision-making skills.

At the end of the semester, both groups underwent a final attestation and diagnostic assessment. The comparative analysis revealed a significant improvement in project design competence among students in the experimental group.

- Specifically:

- 11% of students in the experimental group achieved a high level in lesson planning and the application of innovative methods, whereas in the control group, this figure was only 5%.

- The competence growth rate was also notably higher in the experimental group. The difference between the initial and final test scores averaged 75 points, while in the control group, the increase was only 59 points.

- Interviews and surveys with students confirmed an increased interest in innovative methods and a more creative approach to lesson planning.

The experiment validated the initial research hypothesis: when innovative pedagogical technologies are applied in a comprehensive manner, future teachers' project design competence develops more effectively.

Several important observations emerged from the experimental process:

1. Initial Challenges and Adaptation: At the beginning, students struggled with project-based activities; However, with methodological guidance and hands-on exercises, their confidence grew, and they developed teamwork skills in project development.

2. Impact of Gamification: Lessons that incorporated gamification elements significantly increased students' motivation for lesson planning; Unlike traditional semester lesson plans, students began proposing creative, unconventional teaching approaches.

3. Experience with Digital Platforms: Conducting online project presentations on digital platforms provided students with practical experience in modern educational environments; Collectively, these factors contributed to higher outcomes in the experimental group, demonstrating the effectiveness of a multi-

faceted approach in developing future geography teachers' project design competence.

The experience of foreign countries in modernizing education plays a crucial role in shaping innovative teaching practices. Global advancements in pedagogical innovations offer valuable insights that can be effectively adapted to Uzbekistan's educational context.

In developed countries, updating curricula and training teachers to meet 21st-century competencies is a top priority. For instance:

- In the United States, Canada, and European countries, STEAM education has been widely integrated into schools and universities, with dedicated teacher training programs to support its implementation.

- In Russia, a "STEAM Technologies in Education" course has been developed to enhance the professional competencies of future educators, where pre-service teachers engage in integrative project development to refine their methodological skills.

- In Japan, alongside STEM/STEAM approaches, the Lesson Study methodology is applied to enhance teachers' qualifications. In this collaborative lesson analysis model, multiple teachers plan, observe, and evaluate lessons together. This collective reflection helps educators exchange best practices and discover the most effective lesson design strategies.

These international examples demonstrate how structured training programs, interdisciplinary teaching methods, and collaborative lesson planning contribute to improving teachers' project design competence, ultimately leading to higher-quality education.

Gamification and digital learning technologies are widely applied in foreign education systems, demonstrating significant positive outcomes. For example, in South Korea and Singapore, special game-based platforms and applications are commonly used in lessons to increase students' interest in various subjects. In these countries, geography lessons incorporate virtual tours, Geographic Information Systems (GIS), and online maps, enabling students to engage in immersive, real-world learning experiences. As a result, students not only acquire theoretical knowledge but also gain hands-on experience, as if they were participating in remote field expeditions. This approach makes the learning process more dynamic and requires teachers to meticulously plan and design such interactive lessons.

In countries with high-quality education systems, significant state-level attention is given to teachers' professional development. Finland, for instance, mandates that all teachers regularly undergo training in modern pedagogical technologies. To facilitate this, experimental schools have been established where teachers test new methods and exchange experiences. This system ensures that teachers continuously refine their lesson planning and instructional design skills.

Another example is the United Kingdom, where the training of geography teachers includes the integration of fieldwork. Pre-service teachers learn to plan and conduct real-world field studies, equipping them with the expertise to design school excursions and outdoor geography lessons in their future teaching careers. By

participating in hands-on, practical training, these future educators develop the competencies necessary to make geography lessons more engaging, exploratory, and applied to real-world contexts.

These international examples highlight the importance of innovative teaching approaches, continuous professional development, and practical experience in enhancing teachers' project design competence and improving overall education quality.

The study of international experiences demonstrates that the success of innovative approaches largely depends on their systematic implementation and adaptation to local contexts. In the case of Uzbekistan, applying the aforementioned methods requires enhancing teacher training programs and bridging the gap between theoretical knowledge and practical application in universities.

Global experience shows that if future teachers gain hands-on experience with innovative methods during their university studies, they will be able to implement new initiatives more effectively once they begin their teaching careers. Therefore, it is essential to adapt advanced international approaches to the national education system in a way that aligns with local values and educational priorities. This calls for a systematic effort to integrate modern pedagogical innovations while ensuring that they are culturally and contextually relevant to Uzbekistan's educational landscape.

Conclusion. In conclusion, this study confirms that innovative pedagogical approaches significantly contribute to the development of project design competence in future geography teachers. As highlighted in the introduction, today's education sector increasingly demands teachers who can think innovatively and design creative lesson plans.

The findings in the main section demonstrated that integrating STEAM education, project-based learning, gamification, problem-based learning, and digital technologies plays a crucial role in shaping students' theoretical knowledge, practical skills, and creative thinking simultaneously. Moreover, the results of the experimental study indicate that applying these methods in a comprehensive manner leads to substantial improvements in students' lesson planning and instructional design competencies.

Analysis of international experience further reinforces the necessity of strategically implementing innovative methods within Uzbekistan's education system. The study suggests that preparing teachers to adopt modern methodologies is essential for advancing national education standards.

Based on the research findings, the following practical recommendations are proposed:

1. Introducing specialized courses on lesson planning methodologies in pedagogical universities, ensuring that students gain hands-on experience with modern teaching technologies.

2. Expanding opportunities for pre-service teachers to observe and participate in innovative lesson implementations in schools, including mentorship programs to learn from experienced educators.

3. Establishing continuous professional development seminars and training sessions on STEAM education, gamification, and digital pedagogy to enhance teachers' skills in integrating technology-driven approaches into their lessons.

Further research could explore additional aspects of this topic, such as:

- **Refining assessment criteria** for measuring project design competence in geography education.

- **Conducting comparative analyses** of different innovative teaching methods to identify their relative effectiveness.

- **Long-term studies** on the impact of these methodologies, specifically monitoring the effectiveness of newly trained teachers in real classroom settings.

Overall, the widespread adoption of creative and research-driven teaching methods will play a key role in preparing the next generation of geography educators with advanced pedagogical expertise and modern competencies.

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ISHCHI KAMERANI SAMARALI ISHLASHIDA CHIGIT TA'SIRI VA UNING AHAMIYATI

Annotatsiya: Mazkur tadqiqot ishchi kameraning samarali ishlashida chigitning ta'siri va uning ahamiyatini o'rganadi. Ishchi kameralar, asosan, qishloq xo'jaligi texnologiyalarida va sanoat jarayonlarida keng qo'llaniladi, ularning samaradorligi esa turli tabiiy resurslar va materiallarga bog'liq. Chigit tarog'ining mexanik va kimyoviy xususiyatlari, uning ishchi kameraning ishlash samaradorligini oshirishdagi roli o'rganiladi. Tadqiqotda chigitning ishchi kameralar tizimidagi texnologik ahamiyati va uning samaradorlikka ta'siri haqida ilmiy tahlil keltirilgan. Ushbu ishning natijalari, qishloq xo'jaligi va sanoat jarayonlarida chigitning samarali foydalanilishining iqtisodiy va ekologik ahamiyatini ko'rsatadi.

Kalit so'zlar: ishchi kamera, chigit tarog'i, samaradorlik, texnologik jarayon, ekologik ahamiyat.

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THE IMPACT AND SIGNIFICANCE OF COTTON SEED ON THE EFFICIENT OPERATION OF WORKING CHAMBERS

Abstract: This research explores the impact and significance of cotton seeds on the efficient operation of working chambers. Working chambers are widely used in agricultural and industrial processes, and their efficiency largely depends on various natural resources and materials. The mechanical and chemical properties of cotton seeds play a crucial role in enhancing the performance of working chambers. The study analyzes the technological importance of cotton in working chambers and its effect on their productivity. The results highlight the economic and ecological importance of effective cotton utilization in agriculture and industry.

Keywords: working chamber, cotton seeds, efficiency, technological process, ecological significance.

Ishchi kameralar turli sanoat va qishloq xo'jaligi jarayonlarida keng qo'llaniladigan muhim mexanik tizimlardir. Ularning samarali ishlashi, asosan, ishlov berish jarayonlarida foydalaniladigan materiallar va texnologiyalarga bog'liq. Shu bilan birga, tabiiy materiallar, xususan, chigit (*Gossypium*) tarog'i va uning xususiyatlari, ishchi kameraning samarali ishlashiga sezilarli ta'sir ko'rsatadi.

Tadqiqotda chigit tarog'ining ishchi kameralar tizimidagi roli va uning samaradorlikka ta'siri ilmiy asosda o'rganiladi.

Chigit tarog'ining mexanik va kimyoviy xususiyatlari ishchi kameraning ishlash samaradorligini oshirishda muhim omil hisoblanadi. Chigit o'zining yuqori darajadagi plastiklik va elastiklik xususiyatlariga ega bo'lib, bu ishchi kameraning texnik xususiyatlarini optimallashtirishga yordam beradi. Chigit tarog'ining mexanik mustahkamligi, uni ishchi kameralar tizimiga kiritishda foydali resurs sifatida ishlatilishini ta'minlaydi. Masalan, chigitning mikroskopik tuzilishi uning namlikni yaxshi saqlashiga yordam beradi, bu esa ishchi kameraning davomiyligi va samaradorligini oshiradi (Ibragimov, 2020).

Kimyoviy xususiyatlar jihatidan chigit tarkibida mavjud bo'lgan organik kislotalar va yuqori ozuqa moddalar, ishchi kameraning funktsional xususiyatlarini kuchaytiradi va materiallar o'rtasidagi o'zaro ta'sirni kuchaytiradi. Tadqiqotlar shuni ko'rsatadiki, chigit tarkibidagi kimyoviy moddalarning turli sanoat jarayonlarida samarali ishlashiga imkoniyat yaratadi (Jalilov, 2021).

Ishchi kameraning samarali ishlashi, nafaqat texnologik jarayonlarga, balki materiallarning sifatiga ham bog'liq. Chigit tarog'i ishchi kameraning mexanik tizimlarida foydali xususiyatlar yaratishi mumkin, masalan, uning engil vaznini va yuqori darajada qattiqligini hisobga olgan holda. Chigit tarog'idan foydalangan holda ishlab chiqilgan ishchi kameralar tez-tez uzoq muddatli ishlashga va yuqori samaradorlikka ega bo'ladi (Khamidov, 2019).

Chigitning ishlash jarayonidagi asosiy ahamiyati uning ekologik jihatidir. Chigit, tabiiy va qayta ishlanadigan material sifatida, ishlatilganidan so'ng chiqindilarni kamaytiradi va ekologik barqarorlikni ta'minlashga yordam beradi. Shuningdek, chigit tarog'ining sifatli ishlov berilishi ishlab chiqarish jarayonlarida kamroq energiya sarflashni ta'minlaydi va shu bilan birga ekologik ta'sirni kamaytiradi (Yusufov, 2022).

Chigit tarog'ining ishlatilishi iqtisodiy samaradorlikni oshirishda ham katta ahamiyatga ega. Chigitni ishchi kameralar tizimlarida qo'llash, ishlab chiqarish xarajatlarini kamaytirish va resurslardan samarali foydalanishga imkon beradi. Chigitning qayta ishlanishi, uni sanoat jarayonlarida ishlatish, shuningdek, chiqindilarni kamaytiradi va resurslarning qayta ishlanadigan materiallar sifatida ishlatilishini ta'minlaydi (Mammadov, 2023).

Ekologik jihatdan chigit tarog'ining ishlatilishi nafaqat chiqindilarni kamaytirish, balki ularni ekologik toza materiallarga aylantirish imkoniyatini yaratadi. Chigitning organik xususiyatlari, uni tabiatda tezda parchalanadigan material sifatida ishlatishga imkon beradi. Bu esa uning ekologik barqarorlikni ta'minlashdagi ahamiyatini oshiradi.

Chigit tarog'ining mexanik xususiyatlari ishchi kameraning samarali ishlashida katta ahamiyatga ega. Tarog'ning yuqori plastiklik va elastiklik xususiyatlari, ayniqsa, ishchi kamerada yuzaga keladigan mexanik bosimlarga qarshi turish qobiliyatini oshiradi. Chigit tarog'i, uning tolalari va tuzilishi tufayli, ishchi kameraning mexanik yuklarni engillashtirish va texnik quvvatni oshirishda

foydalidir. Bu xususiyatlar, shuningdek, ishchi kameraning uzluksiz ishlashini ta'minlab, uni uzoq muddat xizmat qilishga yordam beradi.

Shuningdek, chigit tarog'ining zichligi va mustahkamligi, energiya sarfini kamaytirishga yordam beradi. Yengil, ammo mustahkam bo'lgan material sifatida, chigit tarog'i energiya samaradorligini oshiradi, chunki u ishchi kameraning mexanik tizimlarini yengillashtiradi va bu orqali ularning ishlash samaradorligini oshiradi (Mamedov, 2022).

Chigit tarog'ining kimyoviy tarkibi ham uning samaradorligiga sezilarli ta'sir ko'rsatadi. Chigit tarkibida o'ziga xos organik kislotalar, yog'lar va ozuqa moddalar mavjud bo'lib, bu xususiyatlar ishchi kameralar tizimida materiallar o'rtasida kimyoviy reaksiyalarni engillashtiradi. Chigitning kimyoviy tarkibi materiallarning o'zaro ta'sirini yaxshilaydi, bu esa ishchi kameraning samarali ishlashini ta'minlaydi.

Bundan tashqari, chigitning biologik parchalanish xususiyati uning ishlatilganidan so'ng ekologik tozaligini ta'minlaydi. Tabiiy, qayta ishlanadigan material sifatida, chigit ekologik jihatdan xavfsiz va uning kimyoviy moddalari tabiiy muhitga zarar yetkazmaydi. Bu ishchi kameraning ishlash jarayonida ekologik xavfsizlikni oshiradi.

Chigit tarog'ining ekologik ahamiyati juda yuqori, chunki u tabiiy va qayta ishlanadigan material hisoblanadi. Chigitning tabiiy bo'lishi uning atrof-muhitga zarar bermasligini ta'minlaydi, ayniqsa, sanoat jarayonlarida ishlatilganda. Chigitni ishlatish, chiqindilarni kamaytirish va ishlab chiqarishda tabiiy resurslardan samarali foydalanishni ta'minlashga yordam beradi. Shuningdek, chigit tarog'ining ishlatilishi chiqindi materiallarni kamaytiradi, bu esa sanoat jarayonlarining ekologik barqarorligini oshiradi.

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FARG'ONA VODIYSIDA KO'P FUNKSIYALI PARK KOMPLEKSLARINI SHAKLLANTIRISH

Annotatsiya: Ushbu maqola shaharning Markaziy hududlarida joylashgan degradatsiyaga uchragan shahar hududlaridan, jamoat maqsadlaridan foydalanish imkoniyati masalasiga bag'ishlangan. Ularning funktsional, ijtimoiy va tijorat salohiyatining ta'rifi Dukchi Eshon ko'chasi bo'ylab joylashgan Andijon shahri hududi misolida keltirilgan.

Kalit so'zlar: hududni funktsional rayonlashtirish; obodonlashtirish; me'moriy va rejalashtirish yechimlari.

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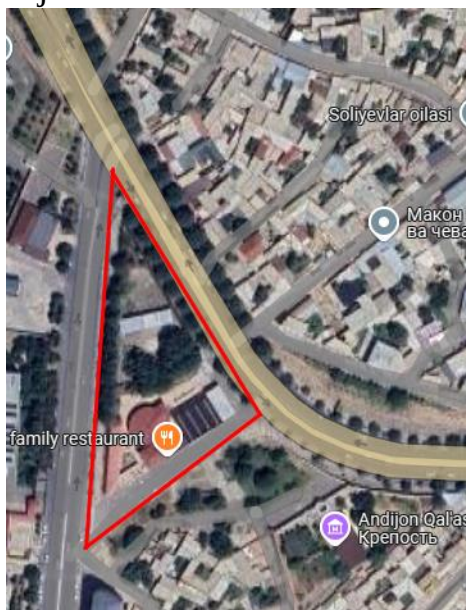
FORMATION OF MULTIFUNCTIONAL PARK COMPLEXES IN THE FERGHANA VALLEY

Abstract: This article is devoted to the issue of the possibility of using degraded urban areas located in the central districts of the city for public purposes. The definition of their functional, social and commercial potential is given by the example of the district of the city of Andijan, located along Dukchi Eshon Street.

Keywords: functional zoning of the territory; landscaping; architectural and planning solutions.

So'nggi o'n yilliklarda zamonaviy shaharlarning rejalashtirish tuzilishi tartibsiz ravishda rivojlanib bormoqda, buning natijasida shahar maketining Markaziy qismida bir qator hududlar vujudga keldi, ulardan funktsional foydalanish shahar aholisi va atrofdagi mahallalar aholisining odati bilan belgilanadi. Shaharsozlik kodeksiga binoan shaharning barcha shahar hududlari uchun bosh rejasida ulardan foydalanish tartibi va funktsional maqsadi belgilanadi. Shu maqsadda har bir yer uchastkasi uchun funktsional zonaning o'ziga xos turini belgilaydigan topografik, ekologik, iqtisodiy va rejalashtirish omillarini hisobga olgan holda hududlarni rejalashtirish loyihalari ishlab chiqilmoqda [1]. Biroq, bir qator yer uchastkalaridan funktsional foydalanish turlari xaotik tarzda rivojlandi va funktsional foydalanish turini aniq aniqlash qiyin, chunki u tadbirkorlar, shahar aholisi va hokimiyat manfaatlariga zid keladi.

Bunday manfaatlar kesishmasining misoli sifatida Andijon shahridagi Dukchi Eshon ko'chasi bo'ylab joylashgan hududni keltirish mumkin. Hudud Andijon shahrida joylashgan bo'lib, hudud ma'muriy hududlar bilan turar-joy mikrorayoniga tutashgan. Sayt shahar markazida joylashgan va transport markazlariga nisbatan yaqin. Hozirgi vaqtda hudud umumiy foydalanish hududi sifatida ishlatiladi. Biroq, hudud hech qanday obodonlashtirishga ega emas, buning natijasida hududning 50% hech qanday tarzda foydalanilmaydi va axlatxona va zich butalardir. Hududda butalar, kofe qo'shimchalari, ovqatlanish joylari ko'rinishidagi obodonlashtirish qoldiqlari mavjud.



1 Rasm. Qurilish boshlanganda ko'rib chiqilayotgan hududning fotosurati

Ushbu hududdan foydalanish bilan bog'liq manfaatlar to'qnashuvining sabablari uning joylashuvi va joriy ishlatilishi ko'chirilgan. Sayt investitsiya nuqtai nazaridan juda jozibali joylashuvga, shuningdek deyarli tekis relyefga ega. Natijada, turli tadbirkorlar ushbu hududga sarmoya kiritish uchun loyihalarni ishlab chiqdilar. Hududning bir qismi ko'p qavatli uylar qurilishi uchun berilgan. Qolgan hududlarda qurilish uchun jamoat restoranlari, barlar va savdo-ko'ngilochar markazlar loyihalari taklif etilgan. Biroq, loyihalar shahar aholisini tanqid qildi yoki boshqa sabablarga ko'ra yopildi. Shahar aholisining tanqidlari ularning g'oyalari va hududdan foydalanish odati bilan bog'liq edi. Hududning tashlab ketilishi va degradatsiyasiga qaramay, u qo'shni hudud aholisi tomonidan sport, it yurish, bolalarni velosipedda sayr qilish joyi sifatida faol foydalaniladi. Shunga ko'ra, agar ushbu hudud sotilsa va ishlab chiqilsa, shahar aholisi shahardagi xaotik, ammo yashil burchagini yo'qotsa. Savdo markazining qurilishi butunlay yashil hududlarni yo'q qilmasligi mumkin, ammo ularni sezilarli darajada kamaytiradi va o'zgartiradi. Zamonaviy turar-joy majmuasining qurilishi, o'z navbatida, fuqarolarning hududga kirishini butunlay to'sib qo'yadi. Bu yerda tomonlar, hududdan foyda olishni istagan investorlar, obodonlashtirish bo'lmasa ham, hech bo'lmaganda ushbu shaklda hududni saqlab qolishni istagan aholi va qurilish investitsiyalari hisobiga byudjetni

to'ldirish imkoniyatiga ega bo'lgan shahar hokimiyati o'rtasida ziddiyat yuzaga keldi. Vaziyatlarni hal qilishning mumkin bo'lgan variantlari asosida ijobiy va salbiy natijalarning qiyosiy tahlili keltirilgan.

Eng oddiy echimlardan biri bu shaharda yashil maydonni saqlab qolish uchun ma'lum bir hududda keyingi qurilishni to'liq taqiqlashdir. Ushbu qaror shahar aholisiga juda mos keladi, ammo shahar ma'muriyatiga deyarli mos kelmaydi. Buning sababi hududni minimal talab qilinadigan parvarish qilishdir, bu esa o'z navbatida moliyaviy xarajatlarni keltirib chiqaradi. Hududda to'liq, obodonlashtirilgan parkni qurish to'g'risidagi qaror shahar byudjetidan yanada ko'proq xarajatlarni talab qiladi, bu esa hududni parvarish qilish xarajatlarini keltirib chiqaradi. Ushbu qaror fuqarolarga aniq mos keladi, ammo byudjet taqchilligi sharoitida shahar bunday xarajatlarni qoplay olmaydi.

Federal dasturlar bo'yicha ob'ektlarni joylashtirish ushbu muammoni hal qilishi mumkin, ammo bunday joylashtirish bilan loyihaaning fuqarolarning xohish-istaklariga emas, balki hududning dastur talablariga muvofiqligini isbotlash kerak bo'ladi. Shunga ko'ra, dasturga qarab, qurilish muammoni hal qilishi va tomonlarning mojarosini kuchaytirishi mumkin, bu holda bir tomon – shahar aholisining noroziligi.

Obodonlashtirilgan hududga yozilgan jamoat yoki madaniy-ko'ngilochar ob'ekt hududida qurilish. Bunday qurilish bilan binoning qurilish maydonini sayt maydonining 10-30% oralig'ida cheklash va shu bilan shahar aholisi uchun yashil maydonni saqlab qolish mumkin. Biroq, muammoni hal qilishning ushbu varianti uchun shahar byudjetining moliyaviy xarajatlari miqdori ushbu hududda yangi obodonlashtirilgan Park qurilishi bilan taqqoslaganda yanada oshadi. Ushbu yechim shaharda munitsipal jamoat yoki madaniy-ko'ngilochar majmuaga ehtiyoj bo'lgan holat uchun eng dolzarbdir.

Xuddi shunday holat ushbu hududda savdo va ko'ngilochar markazni amalga oshirish bilan bog'liq. Savdo majmualari asosan to'rtburchaklar shaklga ega bo'lib, ular saytning o'lchamlariga yaxshi mos keladi va sayt maydonini sotish uchun foydali chakana savdo maydonlariga imkon qadar samarali aylantirishga imkon beradi. Biroq, Novosibirsk va Sibir mintaqasining boshqa shaharlari savdo-ko'ngilochar majmualari arxitekturasini o'rganayotganda, saytning katta qismi to'xtash joylari, transport va logistika kommunikatsiyalari uchun ajratilgan degan xulosaga kelishimiz mumkin. Saytni tashkil etishning ushbu sxemasi ishlab chiquvchilar uchun mantiqiy va moliyaviy jihatdan samarali, shuning uchun u savdo va ko'ngilochar komplekslarni loyihalashda ishlatiladi. Muammoni hal qilishning ushbu variantida ishlab chiquvchi shahar markazida katta er uchastkasini olish orqali g'alaba qozonadi, shahar byudjeti yangi qurilish hisobiga to'ldiriladi, ammo bunday qaror shahar aholisiga mos kelmaydi. Ko'rib chiqilayotgan hudud uchun "Kamenka" savdo-ko'ngilochar majmuasini joylashtirish rejalashtirilgan edi, ammo uning joylashuvi shahar aholisi tomonidan yashil maydonlarni kesish va hududni odatdagidek ishlatish mumkin emasligi sababli salbiy qabul qilindi. Uy-joylarni joylashtirish variantidan farqli o'laroq, bozor mikrorayon aholisi va shahar

aholisining saytga kirishini cheklamaydi, ammo sport dam olish uchun yashil maydondan bu hudud katta olomon bilan shovqinli avtoturargohga aylanadi [4,5].

Muammoni hal qilishning ilgari taklif qilingan variantlari, tomonlar uchun reaksiya va oqibatlarni baholash asosida muammoni hal qilishning murosali variantlarini ko'rib chiqish taklif etiladi. Ko'p funktsiyali savdo pavilonini qurishga ruxsat bering, lekin arxitektura va rejalashtirish echimlari va er uchastkasini rejalashtirish sxemasi uchun qo'shimcha talablarni tavsiflang. G'oya yashil maydonlarni maksimal darajada saqlashdir. Cheklovlar ochiq er usti to'xtash joyini va maydonni obodonlashtirish darajasini kamaytirish uchun bir qator choralarni o'z ichiga olishi kerak. Shuningdek, talablar binoning qurilish maydoniga tushgan yashil maydon maydonining bir qismini saqlab qolish uchun boshpana maydonining ma'lum foizini obodonlashtirish majburiyatini o'z ichiga olishi mumkin. Tomni obodonlashtirish bo'yicha talablar ko'rib chiqilayotgan sayt uchun juda muhimdir, chunki uning bo'ylab relyefning pasayishi xarakterlidir, bu esa savdo majmuasini ikkinchi qavatda Park maydonining sun'iy davomini yaratib, pasaytirilgan darajada joylashtirishga imkon beradi. Ushbu qaror sizga xususiy kapitalni saytga sarmoya kiritishga imkon beradi va shu bilan uni shahar byudjetiga jalb qiladi, bu esa shahar ma'muriyatini uch baravar oshiradi. Hududni o'zgartirish va obodonlashtirish shahar aholisi tomonidan noaniq qabul qilinishi mumkin, ammo loyihaning tegishli sifati bilan yangi yashil hududlarni saqlash yoki tiklash ijobiy qabul qilinishi mumkin. Ushbu variantlarning barcha asosiy xarajatlari xususiy kapitalga yuklanadi. Ochiq er usti to'xtash joylarini taqiqlash yer osti yoki er osti to'xtash joylarini qurishni o'z ichiga oladi, bu esa investorlarni o'z xarajatlarini oshirishga majbur qiladi. Xuddi shu holat peyzajlangan tom bilan bog'liq. Butalar va daraxtlarni ekish uchun yashil tomni qurish mumkin, ammo bu tuzilmalarni mustahkamlash, drenaj tizimini ishlab chiqish va to'g'ridan-to'g'ri ekish uchun xarajatlarga olib keladi [6]. Shuningdek, ta'sirlanmagan hududni minimal obodonlashtirish investorlarning xarajatlariga ta'sir qiladi. Shuningdek, shaharning Markaziy qismidagi uchastkaning joylashuvi va narxini hisobga olish kerak, ko'rib chiqilayotgan hududning barcha uchastkalarining taxminiy hisob-kitoblariga ko'ra, ularning kadastr qiymati ikki milliard so'mni tashkil qiladi. Albatta, ko'plab me'moriy, rejalashtirish va tashkiliy talablar potentsial investorlarni ushbu hududda qurilishdan uzoqlashtiradi, mos ravishda investorlar uchun subsidiya yoki boshqa moliyaviy imtiyozlar zarur. Moliyaviy imtiyozlar shahar byudjetiga tushumlarning pasayishiga olib keladi. Shuningdek, ushbu variantni ta'minlash uchun ushbu tadbir uchun mos hududlarni aniqlash va ularda yangi shaharsozlik qoidalarini joriy etish uchun shaharining yerdan foydalanish va rivojlantirish bo'yicha bosh rejasi va qoidalari bilan ishlash zarur. Ushbu ish mumkin bo'lgan qurilishni amalga oshirish vaqtini kechiktirishi mumkin. Taklif etilayotgan variant hududning mavjud inqirozini hal qilishi mumkin, ammo qo'shimcha tayyorgarlik va Qonunchilik bazasini talab qiladi [4,5].

Muqobil kompromis variant sifatida xizmat ko'rsatish infratuzilmasi bo'lgan ko'p qavatli ko'p funktsiyali kvartiralarini joylashtirish taklif etiladi. Biroq, ularni joylashtirish, shuningdek, oldingi versiyada ko'rsatilgan shaharsozlik qoidalari bo'yicha ma'lum tayyorgarlik ishlarini talab qiladi. Qarorning ma'nosi uy-joy va

politsiya bo'linmalarining investitsion rentabelligini, ularni hududning mavjud yashil maydonini buzmaydigan tarzda joylashtirish imkoniyatini hisobga oladi. Kvartiralar yangi uy-joy formati bo'lib, uning Qonunchilik bazasi ularning huquqiy xususiyatlarini doimiy ravishda aniqlashtirish bosqichida. Kvartira majmuasi va turar-joy majmuasi o'rtasidagi asosiy farq-bu qo'shni hududga bo'lgan talab, uning mavjudligi uyni o'rab olish zarurligiga olib keladi. Qarorning ma'nosi bir nechta baland binolarni to'g'ridan-to'g'ri yashil maydonga bir-birining orasidagi masofada joylashtirishdir. Komplekslarning to'xtash joylarini pastki qavat darajasida joylashtirish va shu bilan ishg'ol qilingan maydonni minimallashtirish. Mahalliy hududni tashkil etishning hojati yo'qligi tashkilotning yong'in texnikasining harakatlanish imkoniyatini talab qiladi, uning harakati mustahkamlangan maysazor yoki maxsus rasmiylashtirilgan yo'llar bo'ylab tashkil etiladi. Ushbu qaror hududni investorlar uchun yanada jozibador qiladi, chunki u so'nggi yillarda mashhur bo'lgan hashamatli uy-joylarni qurish uchun maydon bo'ladi. Yangi qurilish orqali byudjetni to'ldirish ham shahar byudjetiga yoqimli ta'sir qiladi, ammo shahar ma'muriyati shunga o'xshash shaharsozlik qoidalarini ishlab chiqishi va butun hududni obodonlashtirish uchun subsidiyalarga o'tishi kerak. Shahar aholisi muammoni hal qilishning ushbu variantini noaniq qabul qilishi mumkin, ammo bu yerda baholashga loyihaning sifati va shaharni tartibga solish bo'yicha tayyorgarlik ishlari ham ta'sir qiladi [4,5].

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EFFECTIVENESS OF FLIPPED LEARNING IN EFL CLASSES

Abstract: *Flipped learning is an innovative approach designed to increase student engagement in the learning process and to present information more effectively to teachers. This method, unlike traditional teaching methods, allows students to study the material on their own before the lesson. This article provides information on the effectiveness of flipped learning in EFL (English as a Foreign Language) lessons.*

Keywords: *flipped learning, pedagogical approach, innovative technologies, English, education, discussion, communication.*

INTRODUCTION

EFL (English as a Foreign Language) lessons are an educational process aimed at learning English in Uzbek. Today, due to globalization and technological progress, English plays an important role in international communication and intercultural dialogue. In countries like Uzbekistan, learning English is necessary not only for academic success for the younger generation, but also for expanding future job opportunities. Therefore, various pedagogical approaches and methods are used to make the educational process more effective and interesting.

MATERIALS AND METHODS

The concept of flipped learning allows students to independently study video lessons, articles or other educational materials before the lesson. During the lesson, students have the opportunity to apply the learned materials in practice, ask questions and discuss them. This approach helps students to actively participate in the lesson, exchange ideas with each other, and collaborate. The effectiveness of flipped learning in EFL lessons is manifested in several ways. First, students have the opportunity to learn at their own pace. This, in turn, develops students' self-regulation skills. By studying the materials before the lesson, students feel prepared during the lesson and have the opportunity to ask more questions from the teacher.

This process increases students' ability to express their thoughts and creates opportunities for discussion. Flipped learning lessons are more interactive and interesting. Students interact with each other during the lesson, which helps to strengthen their relationships. [1] Flipped learning also helps students develop independent learning skills. By learning materials in their own time, students develop self-management and independent thinking skills. This helps students succeed in their future education and work. Students feel more prepared by studying independently and expanding their knowledge.[2]

RESULTS AND DISCUSSIONS

Another advantage of flipped learning is that it encourages the effective use of technology. Students master modern technologies by using online resources before class. This helps increase students' digital literacy. By using technology in their lessons, students further expand their knowledge and adapt to the modern learning environment. Flipped learning also allows teachers to conduct lessons in a more interesting and innovative way. Teachers can use various interactive methods in lesson planning. This increases students' interest in the lesson and increases their motivation. Teachers can use various methods such as games, discussions, and group work to ensure active participation of students during the lesson.[3]

To evaluate the effectiveness of the flipped learning method, it is important to monitor the results of students and their interest in the lesson. The impact of the flipped learning method can be assessed by students' self-assessment and expression of their opinions. Students have the opportunity to express their opinions based on the material studied before the lesson. This increases the ability of students to apply their knowledge and creates opportunities for them to communicate with each other. Another important aspect of this approach is that flipped learning provides students with the opportunity to self-assess. Students can independently assess their knowledge before the lesson, which helps them develop themselves. In the process of self-assessment, students can identify their strengths and weaknesses, as well as think about how they can improve themselves. This process increases students' self-awareness and helps them achieve their goals.[4]

Students have the opportunity to familiarize themselves with interesting materials to study before the lesson. This increases students' interest in the lesson and allows them to expand their knowledge. Students feel more motivated by working with materials that suit their interests. Flipped learning allows teachers to plan their lessons more effectively. Teachers have the opportunity to adapt and update lessons, taking into account the interests and needs of students.[6]

CONCLUSION

In conclusion, flipped learning is an effective approach in EFL lessons that increases students' active participation, develops independent reading skills, and allows teachers to plan their lessons more effectively. This method helps to increase student interest and make the learning process more interesting and interactive. Flipped learning creates new opportunities for teachers and students in a modern educational environment and helps to make the learning process more effective. Through the flipped learning approach, students have the opportunity to

independently develop their knowledge and collaborate with each other. This will be an important foundation for their future success.

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ATTRACTION OF INVESTMENTS FOR INNOVATIVE MANAGEMENT IN ENTERPRISES

Abstract: *The scientific article describes investments for innovative management of enterprises and changes of gross value production of enterprises of the Republic Uzbekistan. Moreover, the ways of investments for the industries are presented as well.*

Key words: *investments, innovation, company, development, integration, medium and large enterprises, economy, modernization, manufacture and production.*

Introduction. As it is known, development of structures and mechanisms of innovative activity is a necessary condition for the development of market economy. At present, this question for Uzbekistan has become much more central as the state economic policy among priorities continues stimulating the attraction of foreign investments and maintaining the economic growth of the country. The system of innovative activity in domestic enterprises does not play last role in the achievement of given tasks.

Literature review. The issues and researches of improving the mechanism of financial incentives for innovative activities in enterprises are reflected in the scientific research of famous foreign scientists E. Mansfield, Y. Schumpeter, V. Rügemer, S. Tatsun, B. Tviss, B. Santo, K. Openlender, K. Christensen, P. Doyle, P. Drucker, A. Barker, B. Milner and others.

In economic literature, in most cases, they approach the classification of innovations according to material criteria and note the following types of them:

- product innovations (new products in the production or consumption sectors);
- technological innovations (new production technologies);
- organizational and management innovations (new methods of production management and work organization);
- social innovations.

Problems of joint-stock property, mechanisms of interacting interests of various participants of the enterprise, formation of national model of a innovative activity are analyzed in scientific researches of Berkinova B, Gulyamova S, Hamidulina M, Yakusheva R, Fattahovoy J, Zaynutdinova Sh, Vohidova M.

In the process of market reforms carried out in Uzbekistan almost all large enterprises have been transformed to joint-stock companies (joint-stock enterprise) as well as the household associations have been established which head companies

are also joint-stock enterprise. Presently, joint-stock companies (corporations) provide most parts of raw material for reproduction.

Results and discussions. Owners of joint-stock enterprise are shareholders. Giving the capitals to the joint-stock enterprise, they do not participate in management of its current innovative activity; do not represent it in mutual relations with an external world. These functions are delegated by hired operators (managers) who are allocated with the right to care of another's property. At the same time, shareholders take up the whole risk connected with an effective utilization of the share capital. In addition, there are a number of issues before shareholders: how to limit the behavior of managers focused on extraction of personal benefits; how to induce managers to operate effectively the enterprise; how to secure itself against unqualified managers.

Today, both businessmen and foreign investor are concerned about the development of innovative activities in Uzbekistan for it is directly connected with the main question for them- the right of the proprietor to freely control his profit.

Therefore, the reason of recent crisis in South East Asia was backwardness of the innovative governance, in relation with the Organization on economic cooperation and development (OECD) has developed and has confirmed principles of the innovative governance which have obtained the international recognition as in the countries with transitive period of economy do not have a single model of an effective innovative activity and there are various approaches to their application.

Therefore, today the basic aim and task of our state experts is to search for effective ways of innovative activity in the Republic of Uzbekistan.

As it shows the numerous researches conducted in the USA, Asian countries, European and Latin America, the overwhelming majority of investors consider that at an estimation of companies as potential object for an investment, and the attention to an estimation of financial indicators of the companies should be given to work of boards of directors. Then, out of two companies with approximately identical financial indicators, investors will prefer the innovative activity which is better organized. The size of awards for the level of innovative activity varies from 18 to 27 % depending on the price of stocks.

Shareholders are considered to be legitimate owners of corporation and suppliers of the capital. At a stage of development of the enterprise of attracting external capital often is the vital necessity. However, investors give the capital only to those who maintains to practice of effective innovative activity.

Questions of the effective organization of innovative activity are a subject of long-term discussions and researches. Even the countries with sufficiently developed market economy ambiguously approach to define the effectiveness of existing mechanisms of management. Distinctions in legal systems, institutional structures and traditions offer various approaches to the solution of problems available in this area where each country has obtained unique experience in the solution of own problems of economic growth.

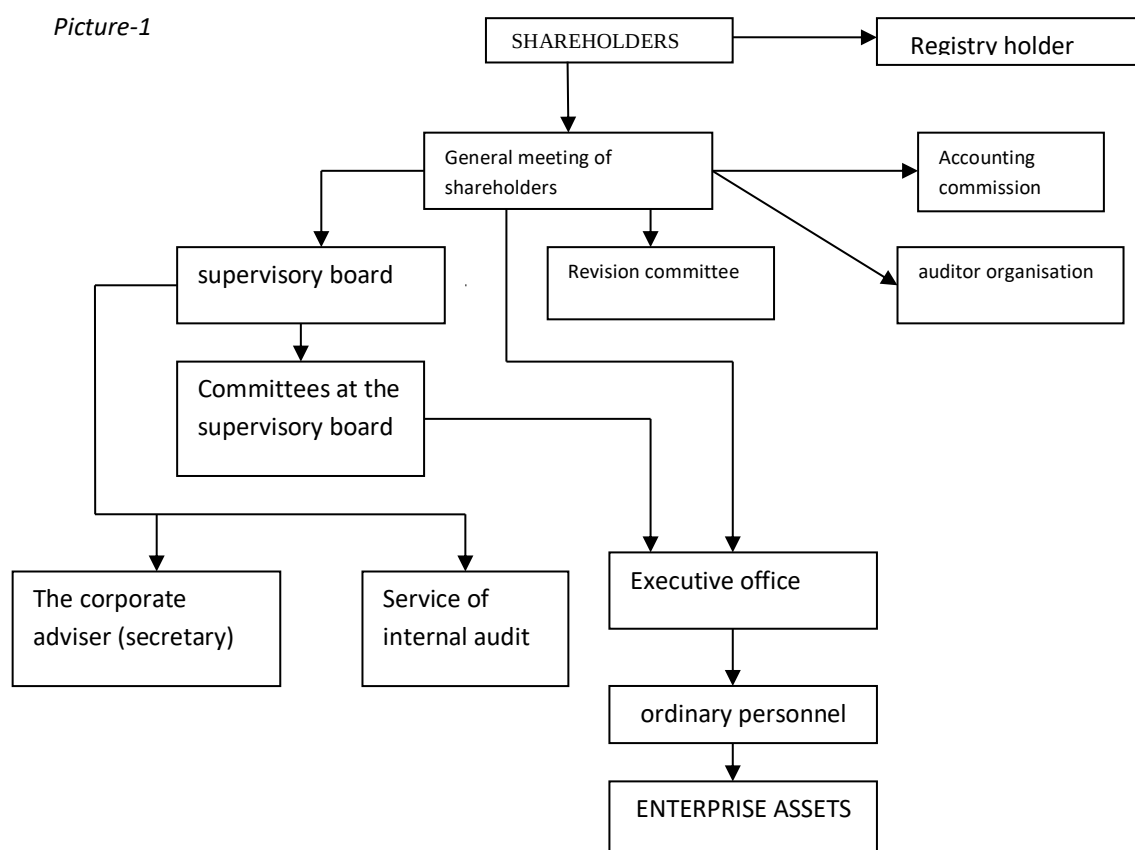
However, the most widespread and applied approaches to define innovative activity are the followings:

- The approach to definition of innovative activity as managements of integration association. For example, according to I.A.Hrabrovoy, the corporate governance/innovative activity is a management of organizational-legal registration of business, optimization of organizational structures, construction mutual enterprise relations according to the accepted purposes¹. S.Karnauhov defines innovative activity as management of a certain set of synergistic effects.

- The earliest and most often used approach is based on following consequences from essence of the corporate form of business - division of institute of proprietors and institute of managing directors - and concludes in protection of interests of a certain circle of participants of corporate relations (investors) against inefficient activity of managers.

For the last few years there have been historical transformations in economy of Uzbekistan. The structure of national models of innovative activity was formed. With insignificant additions, conformable to the most authoritative opinions and recommendations, it is possible to present schematically (pic)².

Picture-1



Distinctive signs of the given scheme from other analogues are:

¹ Hrabrova I.A.corporate governance: integration questions. - M.: the Science and technics, 2000.-198 p.

²Hamidulin M, the Concept of construction of national model of a corporate governance//J.Market, money and the credit.-2007. №5.-P.28-33.

- The account of the fact of division from owners of function of a property management at preserving function of possessing it, that is available in the hierarchy scheme: the owner - a buffer control of the property - the property;

- Including additional elements in structure of an innovative activity in addition to traditional inclusion.

However, without improvement of skills of management by the companies focused on receiving profit, without improvement of system of protection of the rights of shareholders investment from external sources remains for the Uzbek companies problematic. Besides, innovative activity improvement of quality is not only stimulation of inflow of the foreign capital, but also modernization of work of the organization as a whole. Transition from closed and at times business not under control to proprietors to the business mutual relations based on principles of a transparency and the external control will essentially increase possibilities for economic growth in Uzbekistan.

In our point of view "bottlenecks" in the system of innovative activity of the Uzbek companies is possible to carry the following:

- Formal participation of members of the supervisory boards in management of the companies that leads to discredit the idea of creation of these bodies as authorized representatives of shareholders;

- Low professionalism and insufficient efficiency of functioning the supervisory boards do not allow to carry out the complete control over activity of the enterprise and to take adequate measures on achievement of the purposes established by shareholders;

- Not opened or incomplete disclosing the information on structure of the property and real owners of the companies that reduces interest of investors and complicates making decisions on investment;

- Non-use of the international standards of the financial reporting (ISFR) that is considered by foreign investors as opacity;

- Untimely or incomplete disclosing of the information to shareholders, infringement of their rights (especially minority shareholders) at participation in general meeting;

- Closeness of the companies regarding development and management strategy, including management of risks that makes activity of the enterprise badly predicted, so unattractive for investors;

- The formal estimation of an overall members' performance of the supervisory board and managers of the enterprise, weak communication of their compensation with results of activity of the enterprise that negatively affects quality of work;

- A dominating role of the manager (director) as "owner" of the enterprise, testifying to a passive role of the supervisory board and lacking conducting in practice of good innovative activity;

- Nonpayment or scanty payment of dividends that frequently testifies non-well thought strategy of managers on reinvestment the received profit, and oblivion of that fact that owners of these means are shareholders. The level innovative

activity depends not only on internal managerial processes in the enterprise (micro level), but also from external factors (macro level).

Conclusion. It is necessary to draw a conclusion that modernization of industrial branch of the Republic of Uzbekistan, technological updating and development demands large-scale use of foreign investments and an effective utilization of every entered sum of investment.

The decision of these questions will allow: initially, to raise efficiency of innovative activity in joint-stock companies; secondly, to provide conditions and guarantees of attraction of the investment; thirdly, to satisfy with the qualitative goods in internal and foreign market; fourthly, to reduce state interventions in corporation managements. Thus, realization and developments of innovative activity are favorable for both shareholders, investors, managers of corporation and for the government.

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THE FAILURE OF ECONOMIC AID TO STIMULATE SUSTAINABLE ECONOMIC GROWTH

Abstract: *Economic aid has been a significant tool in international development, yet many recipient countries continue to struggle with poverty despite decades of assistance. This paper explores the key reasons why economic aid often fails to drive sustainable economic growth. Issues such as corruption, dependency on aid, poor economic policies, lack of infrastructure, political instability, demographic challenges, trade barriers, and ineffective foreign aid models are examined. Furthermore, the paper discusses potential solutions, including governance improvements, economic self-sufficiency, trade policy reforms, targeted aid programs, and increased foreign direct investment. Addressing these challenges is essential for ensuring that economic aid translates into long-term development.*

Keywords: *Economic aid, poverty, corruption, dependency, economic policies, infrastructure, political instability, trade barriers, foreign direct investment.*

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BARQAROR IQTISODIY O'SISHNI RAG'BATLANTIRISH UCHUN IQTISODIY YORDAMNING MUVAFFAQIYATSIZLIGI

Annotatsiya: *Iqtisodiy yordam xalqaro rivojlanishning muhim vositasi bo'lib kelgan, ammo ko'plab oluvchi mamlakatlar yordamning o'nlab yillariga qaramay, hanuzgacha qashshoqlik bilan kurashmoqda. Ushbu maqolada iqtisodiy yordamning barqaror iqtisodiy o'sishga turtki bera olmasligining asosiy sabablariga e'tibor qaratiladi. Korrupsiya, yordamga qaramlik, noto'g'ri iqtisodiy siyosat, infratuzilmaning yetishmovchiligi, siyosiy beqarorlik, demografik muammolar, savdo to'siqlari va samarasiz tashqi yordam modellarining ta'siri tahlil qilinadi. Shuningdek, maqolada boshqaruvni yaxshilash, iqtisodiy o'z-o'zini ta'minlash, savdo siyosatini isloh qilish, maqsadli yordam dasturlari va to'g'ridan-to'g'ri xorijiy investitsiyalarni oshirish kabi muqobil yechimlar taklif etiladi. Ushbu muammolarni hal qilish iqtisodiy yordamning uzoq muddatli rivojlanishga aylanishi uchun juda muhimdir.*

***Kalit so‘zlar:** Iqtisodiy yordam, qashshoqlik, korrupsiya, qaramlik, iqtisodiy siyosat, infratuzilma, siyosiy beqarorlik, savdo to‘siqlari, to‘g‘ridan-to‘g‘ri xorijiy investitsiyalar.*

Introduction

With wealthier countries and organizations lending struggling economies material and financial support, economic aid has long been a crucial instrument in international development. However, poverty persists in many nations even after decades of aid. This paradox raises critical questions: Why does economic aid often fail to lift nations out of poverty? What structural, political, and social factors contribute to the persistent underdevelopment in many parts of the world? This article explores the reasons behind the failure of economic aid to bring sustainable prosperity to recipient nations. Corruption and poor management are two of the main reasons economic help doesn't have the desired effect. Financial resources are misallocated, siphoned off by dishonest officials, or spent inefficiently in many poor countries due to inadequate institutions. According to a research by Moyo (2009) in *Dead help*, because foreign help frequently goes into the wallets of political elites rather than being used for the general good, it encourages reliance and facilitates corruption. In a similar vein, a 2020 World Bank research estimated that corruption costs developing nations \$1.26 trillion a year, a substantial sum that might be used for infrastructure and economic expansion. The development of a culture reliant on help is another important problem. Instead of utilizing help as a short-term boost to achieve self-sufficiency, many recipient countries end up being dependent on ongoing support. This dependence deters investment, local economic endeavors, and the production of domestic income. In *The White Man's Burden*, William Easterly (2006) emphasizes how governments frequently put obtaining foreign aid ahead of promoting domestic economic growth, undermining incentives for innovation and entrepreneurship. This dependence circle makes it difficult for governments to move from aid-reliant economies to self-sustaining ones. Economic policies have a vital influence in deciding how successfully help is employed. In many situations, nations that receive help lack solid economic policies, which leads to wasteful use of cash and inadequate economic performance. The International Monetary Fund (IMF) and World Bank, for example, mandated austerity measures and economic liberalization in developing nations during the 1980s and 1990s through their structural adjustment programs (SAPs). These policies, which were meant to spur growth, frequently led to economic stagnation, a worsening of social inequality, and a decrease in public investment on basic services (Stiglitz, 2002). Strong infrastructure, such as communication networks, water supplies, energy, and roadways, is necessary for economic growth. However, the absence of these necessary infrastructure in many developing nations makes it challenging to draw in investment and expand enterprises. According to an African Development Bank assessment from 2021, African nations' productivity might drop by as much as 40% due to poor infrastructure. Even when help is provided for the building of infrastructure, corruption, inefficiency, and inadequate upkeep can make these

initiatives ineffectual. Economic advancement is significantly hampered by political unrest and instability. Large-scale population relocation, investment deterrence, and economic disruption are all consequences of war, civil unrest, and unstable administrations. For instance, during the previous 20 years, billions of dollars have been sent to Afghanistan. However, sustained economic progress has been thwarted by enduring violence and inadequate governance. According to Collier (2007), political instability and ethnic conflicts frequently impede assistance operations in many sub-Saharan African countries. Prolonged poverty is also influenced by demographic variables, such as poor literacy and rapid population expansion. Rapid population expansion puts a burden on already scarce resources and slows the increase of per capita GDP in many developing countries. Economic production is also hampered by insufficient labor skills and educational attainment. According to UNESCO (2022), educational disparities in developing nations impede economic diversification and technical breakthroughs, making it challenging for those countries to make the shift to higher-income economies. Trade restrictions put in place by wealthy countries are a problem for many developing countries. Poor countries' capacity to export goods is restricted by industrialized countries' subsidies and tariffs, which also limit their economic progress. African and Asian farmers, for instance, find it challenging to compete in the global market due to the significant subsidies that the United States and the European Union give its farmers (Oxfam, 2020). Poor nations continue to face economic disadvantages as a result of this trade policy mismatch. Short-term assistance is sometimes given precedence over long-term development in traditional foreign aid schemes. In times of crisis, humanitarian help is crucial, but it can backfire if it takes the place of sustainable economic practices. Due to poor administration, a lack of local participation, and an excessive focus on short-term assistance rather than restoring economic underpinnings, billions of dollars in aid following the 2010 earthquake in Haiti did not result in long-term economic progress (Schwartz, 2017). Economic progress requires private investment just as much as foreign help. However, weak legal systems, insufficient security, and unpredictable economic environments prevent many developing nations from attracting foreign direct investment.

Conclusion

Although the goal of economic help is to reduce poverty, corruption, reliance, bad policies, inadequate infrastructure, and imbalances in international commerce frequently cause it to fail. Traditional assistance techniques must give way to tactics that encourage economic competitiveness, self-reliance, and better governance in order to end the cycle of poverty.

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HUDUDIY INFRATUZILMA VA BARQAROR RIVOJLANISHNING O'ZARO BOG'LIQLIGI

Annotatsiya. Ushbu maqola hududiy infratuzilma va barqaror rivojlanishning o'zaro bog'liqligini o'rganishga bag'ishlangan. Maqolada infratuzilma tizimlarining barqaror rivojlanishdagi ahamiyati, ularning iqtisodiy, ijtimoiy va ekologik jihatlari tahlil qilinadi. Shuningdek, infratuzilma loyihalarini barqaror rivojlantirishning zamonaviy usullari va kelajakdagi yo'nalishlari haqida fikr yuritiladi. Maqola infratuzilma va barqaror rivojlanishni muvofiqlashtirish orqali ijtimoiy-iqtisodiy taraqqiyotni ta'minlashning ilmiy asoslarini taqdim etadi.

Kalit so'zlar: hududiy infratuzilma, barqaror rivojlanish, iqtisodiy o'sish, ekologik muvozanat, ijtimoiy taraqqiyot.

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INTERCONNECTION OF REGIONAL INFRASTRUCTURE AND SUSTAINABLE DEVELOPMENT

Annotation. This article explores the interrelationship between regional infrastructure and sustainable development. It analyzes the importance of infrastructure systems in achieving sustainable development, focusing on economic, social, and environmental aspects. The article also discusses modern methods for developing sustainable infrastructure projects and future trends. By aligning infrastructure development with sustainability goals, the paper provides a scientific basis for promoting socio-economic progress.

Keywords: regional infrastructure, sustainable development, economic growth, ecological balance, social progress.

Kirish

Zamonaviy jamiyatda hududiy infratuzilma va barqaror taraqqiyot o'rtasidagi uzviy bog'liqlik ijtimoiy hamda iqtisodiy taraqqiyotning muhim omillaridan biri hisoblanadi. Infratuzilma tarmoqlari – transport, energetika, suv bilan ta'minlash, telekommunikatsiya va boshqa asosiy yo'nalishlar – hududlarning iqtisodiy-ijtimoiy rivojiga bevosita ta'sir ko'rsatadi. Barqaror taraqqiyot esa hozirgi avlod ehtiyojlarini qondirish barobarida kelajak avlodlarning imkoniyatlarini saqlab qolishga qaratilgan konsepsiya sifatida namoyon bo'ladi.

Hududiy infratuzilmaviy tarmoqlarning rivoji mahalliy hamda mintaqaviy iqtisodiyotni mustahkamlash, aholining yashash sharoitlarini yaxshilash va

ekologik muammolarni bartaraf etish uchun mustahkam poydevor yaratadi. Biroq, infratuzilma loyihalarini amalga oshirish jarayonida resurslarni tejash, ekologik muvozanatni saqlash va ijtimoiy tenglikni ta'minlash kabi omillar muhim ahamiyat kasb etadi.

Mazkur maqolada hududiy infratuzilma va barqaror taraqqiyot o'rtasidagi o'zaro aloqadorlik, ularning dolzarbligi hamda rivojlantirishning zamonaviy yondashuvlari tahlil qilinadi. Tadqiqotning asosiy maqsadi infratuzilmaviy tizimlarni barqaror tamoyillar asosida rivojlantirish orqali ijtimoiy-iqtisodiy taraqqiyotni ta'minlashning ilmiy asoslarini yoritishdan iborat.

Mavzuga oid adabiyotlar tahlili.

Hududiy infratuzilma va barqaror rivojlanish mavzusi so'nggi yillarda ko'plab tadqiqotlar va ilmiy ishlarning markazida bo'lib kelmoqda. Bu mavzu bo'yicha o'tkazilgan tadqiqotlar infratuzilma tizimlarining ijtimoiy-iqtisodiy rivojlanishdagi o'rni, ularning atrof-muhitga ta'siri va barqaror rivojlanish maqsadlariga erishishdagi ahamiyatini o'rganishga qaratilgan.

Birinchi navbatda, Birlashgan Millatlar Tashkiloti (BMT) tomonidan qabul qilingan "Barqaror rivojlanish maqsadlari" (Sustainable Development Goals – SDGs) hujjatida infratuzilmaning barqaror rivojlanishdagi o'rni ta'kidlangan. SDGsning 9-maqsadi (Industriya, innovatsiyalar va infratuzilma) infratuzilma tizimlarini barqaror rivojlantirish orqali iqtisodiy o'sishni rag'batlantirish, ijtimoiy tenglikni oshirish va ekologik muvozanatni saqlashni nazarda tutadi (United Nations, 2015).³

Jahon Banki (World Bank) tomonidan o'tkazilgan tadqiqotlar shuni ko'rsatadiki, infratuzilma loyihalarini iqtisodiy o'sishni rag'batlantirish bilan birga, aholining turmush darajasini oshirishga ham xizmat qiladi. Biroq, infratuzilma loyihalarini amalga oshirishda resurslarni tejash, atrof-muhitga salbiy ta'sirni minimallashtirish va mahalliy aholining ishtirokini ta'minlash kabi masalalar muhim ahamiyatga ega (World Bank, 2020).⁴

OECD (Iqtisodiy Hamkorlik va Rivojlanish Tashkiloti)ning tadqiqotlarida mintaqaviy infratuzilma loyihalarining barqarorligi va ularning rivojlanishdagi o'rni ta'kidlangan. Xususan, mintaqaviy hamkorlik va infratuzilma loyihalarini muvofiqlashtirish orqali resurslarni samaraliroq taqsimlash va barqaror rivojlanishni ta'minlash mumkinligi ko'rsatib berilgan (OECD, 2019).⁵

Akademik adabiyotlarda esa infratuzilma loyihalarining barqarorligini ta'minlash uchun yangi texnologiyalar va innovatsiyalardan foydalanishning ahamiyati ta'kidlangan. Masalan, Griggs va boshqalar (2013) o'z tadqiqotlarida barqaror rivojlanish maqsadlarini amalga oshirishda infratuzilma tizimlarini modernizatsiya qilish va ekologik jihatdan toza texnologiyalarni joriy etishning zarurligini ta'kidlaydilar.⁶

³ United Nations. (2015). Sustainable Development Goals.

⁴ World Bank. (2020). Infrastructure and Sustainable Development.

⁵ OECD. (2019). Regional Development and Infrastructure.

⁶ Griggs, D., et al. (2013). Policy: Sustainable development goals for people and planet. *Nature*, 495(7441), 305-307.

Flyvbjerg (2014) o'zining tadqiqotlarida yirik infratuzilma loyihalarini amalga oshirishda moliyaviy va ekologik xavflarni minimallashtirishning usullarini ko'rib chiqadi. Uning fikricha, infratuzilma loyihalarini rejalashtirish va amalga oshirishda aniq ma'lumotlar va ilg'or texnologiyalardan foydalanish loyihalarining muvaffaqiyatini ta'minlashda muhim rol o'ynaydi.⁷

Hududiy infratuzilma va barqaror rivojlanish masalalari bo'yicha olib borilgan ilmiy tadqiqotlar ushbu yo'nalishning dolzarbligini ko'rsatadi. Xalqaro iqtisodchilar va ekologlarning asarlarida infratuzilmaviy rivojlanishning iqtisodiy barqarorlik va ekologik muvozanatga ta'siri chuqur o'rganilgan. Xususan, J. Friedman (1966) va P. Krugman (1991) kabi iqtisodchilar hududiy infratuzilmaviy tizimlarning mintaqaviy iqtisodiy o'sishdagi rolini tahlil qilganlar.

Hududiy infratuzilma va barqaror rivojlanish o'rtasidagi bog'liqlik zamonaviy jamiyat va iqtisodiyotning rivojlanishida asosiy omillardan biridir. Infratuzilma tizimlarini barqaror rivojlantirish orqali iqtisodiy o'sishni rag'batlantirish, ijtimoiy tenglikni oshirish va atrof-muhitni muhofaza qilish mumkin.

Tadqiqot metodologiyasi.

Ushbu maqolada hududiy infratuzilma va barqaror rivojlanishning o'zaro bog'liqligini o'rganish uchun turli ilmiy metodlardan foydalanildi. Tadqiqotning asosiy maqsadi infratuzilma tizimlarining barqaror rivojlanishdagi o'rni, ularning iqtisodiy, ijtimoiy va ekologik jihatlarini tahlil qilish, shuningdek, ularni rivojlantirishning zamonaviy usullarini ko'rib chiqishdan iborat.

Tadqiqotda ilmiy adabiyotlar, xalqaro tashkilotlar hisobotlari va statistik ma'lumotlarni tahlil qilish asosida infratuzilma va barqaror rivojlanishning o'zaro bog'liqligi o'rganildi. Birlashgan Millatlar Tashkiloti (BMT), Jahon Banki va OECD kabi tashkilotlarning hisobotlari, shuningdek, akademik jurnallarda chop etilgan ilmiy maqolalar asosida mavzuga oid eng so'nggi yondashuvlar va tadqiqotlar tahlil qilindi.

Tadqiqot jarayonida turli mintaqalar va mamlakatlarning infratuzilma loyihalarini qiyosiy tahlil qilish orqali ularning barqaror rivojlanishdagi samaradorligi baholandi. Masalan, rivojlangan va rivojlanayotgan mamlakatlarning infratuzilma loyihalari qiyoslanib, ularning iqtisodiy, ijtimoiy va ekologik ta'sirlari ko'rib chiqildi.

Infratuzilma loyihalarining barqaror rivojlanishga ta'sirini baholash uchun statistik ma'lumotlardan foydalanildi. Xususan, infratuzilma investitsiyalari, iqtisodiy o'sish ko'rsatkichlari, energiya samaradorligi va atrof-muhitni muhofaza qilish bo'yicha statistik ma'lumotlar tahlil qilindi.

Tadqiqot metodologiyasi infratuzilma va barqaror rivojlanishning o'zaro bog'liqligini chuqur o'rganishga imkon beradi. Tahliliy, qiyosiy, statistik va amaliy metodlardan foydalanish orqali infratuzilma loyihalarining barqarorligini ta'minlashning ilmiy asoslari ishlab chiqildi. Bu metodlar kelajakda infratuzilma

⁷ Flyvbjerg, B. (2014). What you should know about megaprojects and why: An overview. Project Management Journal, 45(2), 6-19.

tizimlarini barqaror rivojlantirish bo'yicha amaliy yechimlarni ishlab chiqishga yordam beradi.

Tahlil va natijalar

Hududiy infratuzilma va barqaror taraqqiyot o'rtasidagi o'zaro aloqadorlikni o'rganish natijalari shuni ko'rsatadiki, infratuzilmaviy rivojlanish iqtisodiy yuksalishning asosiy omillaridan biri sifatida namoyon bo'ladi. Mintaqaviy infratuzilmaning puxta rivojlanishi ishlab chiqarish jarayonlarini optimallashtirish, biznes muhitini yaxshilash va aholi turmush darajasini ko'tarishda muhim rol o'ynaydi. Shu bilan birga, zamonaviy infratuzilma loyihalari hududlarning raqobatbardoshligini oshirish hamda sarmoyalarni jalb qilishda muhim ahamiyat kasb etadi.

Olib borilgan tadqiqot natijalari quyidagilarni tasdiqlaydi:

Transport infratuzilmasining rivojlanishi – yuk tashish xarajatlarini kamaytirish, hududlar o'rtasidagi integratsiyani kuchaytirish va iqtisodiy faollikni rag'batlantirish imkonini beradi. Samarali yo'l tarmoqlari va jamoat transportining kengayishi iqtisodiy hamkorlikni rivojlantirib, aholining bandlik darajasini oshiradi. Shu bilan birga, ekologik toza transport tizimlarining joriy qilinishi, masalan, elektr avtomobillarga o'tish va avtomatlashtirilgan boshqaruv tizimlaridan foydalanish, atrof-muhitga salbiy ta'sirni kamaytirishga xizmat qiladi.

Energetika infratuzilmasining barqarorligi – sanoat salohiyatini oshirish va ekologik muvozanatni saqlashda muhim omil bo'lib xizmat qiladi. O'rganishlar shuni ko'rsatmoqdaki, qayta tiklanadigan energiya manbalariga asoslangan infratuzilma hududiy iqtisodiyotni diversifikatsiya qilish va ekologik yuklamani kamaytirishga imkon yaratadi. Quyosh va shamol energetikasini keng rivojlantirish mintaqalarning energetik mustaqilligini mustahkamlashga xizmat qiladi. Shu bilan birga, aqlli energiya tarmoqlarining joriy qilinishi energiya samaradorligini oshirish va resurslardan oqilona foydalanishga yordam beradi.

Suv ta'minoti va kanalizatsiya tizimlarining taraqqiyoti – aholining sog'lom turmush tarzini ta'minlashda hal qiluvchi omillardan biridir. Resurslarni samarali boshqarish va ilg'or texnologiyalarni joriy etish orqali suvdan tejamkorlik bilan foydalanish imkoniyatlari oshadi. Jumladan, yomg'ir suvidan foydalanish, suvni tozalash va qayta ishlash tizimlarining rivojlanishi suv taqchilligini kamaytirish hamda ekologik xavfsizlikni ta'minlashda muhim o'rin tutadi.

Raqamli infratuzilmaning rivojlanishi – hududlarning innovatsion taraqqiyotiga xizmat qilib, ta'lim, sog'liqni saqlash va iqtisodiy jarayonlarni yangi bosqichga olib chiqadi. Telekommunikatsiya va axborot texnologiyalarining keng tatbiq etilishi mintaqaviy tafovutlarni kamaytirishda muhim rol o'ynaydi. Keng polosali internet, 5G texnologiyalarining rivojlanishi hamda raqamli xizmatlarning kengayishi tadbirkorlikni rivojlantirish, masofaviy ish va ta'lim olish imkoniyatlarini kengaytirishga yordam beradi.

Ijtimoiy infratuzilmaning barqaror rivojlanishi – ta'lim, sog'liqni saqlash va ijtimoiy xizmatlar infratuzilmasining rivoji bevosita inson kapitalining yuksalishiga xizmat qiladi. Ta'lim va sog'liqni saqlash tizimlarining uzluksiz rivojlanishi jamiyatning intellektual salohiyatini oshirish va aholining farovonligini

ta'minlashga hissa qo'shadi. Zamonaviy texnologiyalar asosida tibbiyot xizmatlarini rivojlantirish, masalan, telemeditsina imkoniyatlaridan foydalanish, chekka hududlardagi aholiga sifatli tibbiy xizmat ko'rsatish imkoniyatini yaratadi.

Ekologik jihatdan barqaror infratuzilmaning ahamiyati – yashil infratuzilmani rivojlantirish atrof-muhitga bosimni kamaytirishga imkon yaratadi. Ekologik toza qurilish materiallaridan foydalanish, yashil hududlarni kengaytirish va chiqindilarni qayta ishlash infratuzilmalari muhitning muvozanatini saqlashga xizmat qiladi.

O'tkazilgan tahlillar shuni tasdiqlaydi: barqaror rivojlanish tamoyillariga asoslangan infratuzilma loyihalarining amalga oshirilishi uzoq muddatli iqtisodiy samaradorlikni oshirish va ekologik barqarorlikni ta'minlashga xizmat qiladi. Hududiy infratuzilmani rivojlantirishda innovatsion texnologiyalarni joriy qilish va davlat-xususiy sheriklik mexanizmlaridan samarali foydalanish muhim ahamiyatga ega.

№	Ta'sir yo'nalishi	Tavsif	Natija
1	Iqtisodiy ta'siri	Yaxshi rivojlangan infratuzilma savdo, sanoat va iqtisodiy faollikni rag'batlantiradi.	Infratuzilma loyihalari iqtisodiy o'sishni rag'batlantirishning asosiy vositasidir.
2	Ijtimoiy ta'siri	Transport, suv va kanalizatsiya tizimlari aholining turmush sifatini yaxshilaydi va ijtimoiy tenglikni ta'minlaydi.	Infratuzilma loyihalari ijtimoiy adolatni oshirish va aholining turmush darajasini yaxshilashga xizmat qiladi.
3	Ekologik ta'siri	Qayta tiklanadigan energiya manbalari va ekologik texnologiyalar infratuzilmaning barqarorligini ta'minlaydi.	Barqaror infratuzilma loyihalari atrof-muhitni muhofaza qilish va ekologik muvozanatni saqlashga yordam beradi.
4	Mintaqaviy hamkorlik	Infratuzilma loyihalarini amalga oshirishda xalqaro va mintaqaviy hamkorlik samaradorlikni oshiradi.	Mintaqaviy hamkorlik infratuzilma loyihalarining samaradorligini oshirish va barqaror rivojlanish maqsadlariga erishish uchun muhim omil hisoblanadi.
5	Yangi texnologiyalar	Aqlli shaharlar, elektr transporti va raqamli texnologiyalar infratuzilma tizimlarini optimallashtiradi.	Yangi texnologiyalar infratuzilma tizimlarini barqaror rivojlantirishning asosiy vositasidir.
6	Moliyaviy jihatlar	Infratuzilma loyihalarini moliyalashtirishda davlat, xususiy sektor va xalqaro tashkilotlarning hamkorligi muhim.	Infratuzilma loyihalarini moliyalashtirishda ko'p tomonlama hamkorlik zarur.

1-jadval Hududiy infratuzilma va barqaror rivojlanish haqida⁸

Hududiy infratuzilmaning strategik rivoji iqtisodiy mustahkamlikni ta'minlash, ekologik barqarorlikni saqlash va aholining turmush sifatini yaxshilashda hal qiluvchi omil bo'lib xizmat qiladi. Shu sababli, infratuzilmani barqaror rivojlantirishning ilmiy asoslarini chuqur o'rganish va amaliyotga joriy etish hududlarning uzoq muddatli raqobatbardoshligini oshirish uchun ustuvor yo'nalishlardan biri hisoblanadi.

Hududiy infratuzilma va barqaror rivojlanish o'rtasidagi bog'liqlik iqtisodiy, ijtimoiy va ekologik jihatlarni qamrab oladi. Infratuzilma tizimlarini barqaror rivojlantirish orqali iqtisodiy o'sishni rag'batlantirish, ijtimoiy tenglikni oshirish va atrof-muhitni muhofaza qilish mumkin. Kelajakda yangi texnologiyalar va mintaqaviy hamkorlik infratuzilma loyihalarining barqarorligini ta'minlashda asosiy rol o'ynaydi.

Xulosa va takliflar

Hududiy infratuzilma va barqaror rivojlanish o'rtasidagi o'zaro bog'liqlik zamonaviy jamiyatning barqaror iqtisodiy-ijtimoiy taraqqiyoti uchun muhim omillardan biri hisoblanadi. Tadqiqot natijalari shuni ko'rsatadiki, infratuzilma tizimlarining samarali rivojlanishi nafaqat iqtisodiy o'sishga turtki beradi, balki ekologik muvozanatni saqlash va aholining turmush sifatini oshirishga ham xizmat qiladi. Biroq, infratuzilmaviy loyihalarni rejalashtirish va amalga oshirishda resurslarni samarali boshqarish, ekologik xavfsizlikni ta'minlash va ijtimoiy tenglik tamoyillariga rioya qilish zarur.

Hududiy infratuzilma va barqaror rivojlanish o'rtasidagi bog'liqlik zamonaviy jamiyat va iqtisodiyotning rivojlanishida asosiy omillardan biridir. Infratuzilma tizimlarini barqaror rivojlantirish orqali iqtisodiy o'sishni rag'batlantirish, ijtimoiy tenglikni oshirish va atrof-muhitni muhofaza qilish mumkin. Quyida tadqiqot natijalari asosida ishlab chiqilgan xulosa va takliflar keltirilgan:

Infratuzilma barqaror rivojlanishning asosiy omilidir. Transport, energetika, suv ta'minoti va telekommunikatsiya kabi infratuzilma tizimlari iqtisodiy o'sishni rag'batlantirish, ijtimoiy adolatni ta'minlash va atrof-muhitni muhofaza qilish uchun zarurdir.

Barqaror infratuzilma loyihalari resurslarni tejash va ekologik muvozanatni saqlashga yordam beradi. Qayta tiklanadigan energiya manbalari, energiya samaradorligi va ekologik toza texnologiyalardan foydalanish infratuzilmaning barqarorligini ta'minlaydi.

Mintaqaviy hamkorlik infratuzilma loyihalarining samaradorligini oshirishda muhim rol o'ynaydi. Resurslarni samarali taqsimlash va barqaror rivojlanishni ta'minlash uchun davlatlar va xalqaro tashkilotlar o'rtasidagi hamkorlik zarur.

Yangi texnologiyalar va innovatsiyalar infratuzilma tizimlarini barqaror rivojlantirishning asosiy vositasidir. Aqlli shaharlar, elektr transporti, sun'iy

⁸ Muallif tomonidan yaratildi

intellekt va katta ma'lumotlar kabi texnologiyalar infratuzilmaning samaradorligini oshirishga yordam beradi.

–Infratuzilma loyihalarini barqaror rivojlantirishga qaratilgan strategiyalar ishlab chiqish. Davlatlar infratuzilma loyihalarini rejalashtirishda barqarorlik prinsiplarini asosiy yo'nalish sifatida qo'llashlari kerak.

–Qayta tiklanadigan energiya manbalaridan foydalanishni rag'batlantirish. Quyosh, shamol va gidroenergiya kabi qayta tiklanadigan energiya manbalarini joriy etish orqali infratuzilmaning ekologik barqarorligini ta'minlash mumkin.

– Mintaqaviy hamkorlikni kuchaytirish. Infratuzilma loyihalarini amalga oshirishda mintaqaviy hamkorlikni rivojlantirish orqali resurslarni samaraliroq taqsimlash va barqaror rivojlanishni ta'minlash mumkin.

–Yangi texnologiyalarni joriy etish va innovatsiyalarni qo'llab-quvvatlash. Aqlli shaharlar, elektr transporti va boshqa innovatsion yechimlarni qo'llash orqali infratuzilma tizimlarini modernizatsiya qilish kerak.

– Infratuzilma loyihalarini moliyalashtirishda ko'p tomonlama hamkorlikni rivojlantirish. Davlat, xususiy sektor va xalqaro tashkilotlarning hamkorligi infratuzilma loyihalarini moliyalashtirishning asosiy manbai bo'lishi kerak.

– Mahalliy aholining ishtirokini ta'minlash. Infratuzilma loyihalarini amalga oshirishda mahalliy aholining ehtiyojlari va fikrlari hisobga olinishi, ularning ishtiroki ta'minlanishi kerak.

Hududiy infratuzilma va barqaror rivojlanish o'rtasidagi bog'liqlikni chuqur o'rganish va ularni muvofiqlashtirish orqali jamiyat va iqtisodiyotning uzoq muddatli rivojlanishini ta'minlash mumkin. Infratuzilma tizimlarini barqaror rivojlantirish bo'yicha qabul qilinadigan chora-tadbirlar nafaqat bugungi avlodning ehtiyojlarini qondirish, balki kelajak avlodlarning imkoniyatlarini himoya qilishga ham xizmat qiladi.

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NOTIPOVOY RIVOJLANAYOTGAN BOLALAR QOMATLARI TAHLILI

Annotatsiya: Bugungi kunda bolalar qomatining ortopedik noto‘g‘ri rivojlanishi bu turdagi rivojlanish yildan-yilga o‘z ta‘sirini ko‘rsatish orqali, bolalar uchun turli hil sog‘liq bilan bog‘liq bo‘lgan bukchayish, kurak sohasini noto‘g‘ri o‘sishi kabi muammolar tahlili.

Kalit so‘zlar: Qomat, bolalar, suyaklar, bukchaygan, skolioz, notipovoy

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AN ATYPICAL ANALYSIS OF THE CONDITION OF DEVELOPING CHILDREN

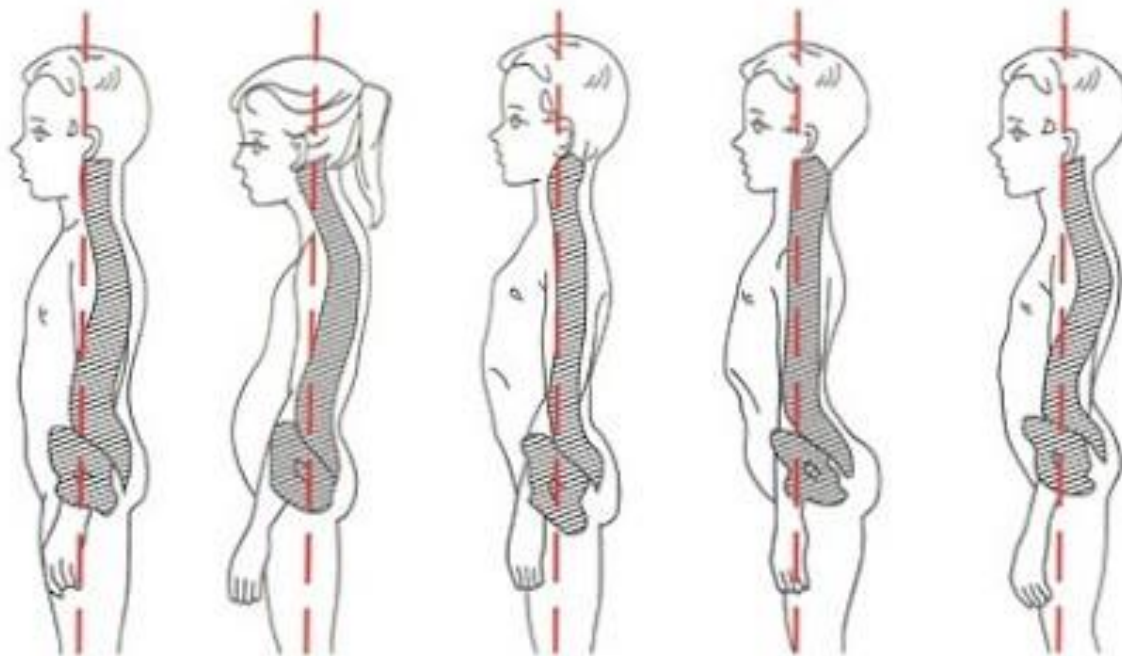
Abstract: orthopedic malformation of the figure of children today, an analysis of problems such as curvature, abnormal growth of the scapular area, which are associated with various health problems in children, showing the impact of this type of development from year to year.

Keywords: figure, children, bones, hunched over, scoliosis, typical

KIRISH So‘nggi yillarda Respublikamiz ishlab chiqarish salohiyatini iqtisodiy ko‘taradigan dunyo bozorida haridorgir yengil sanoat mahsulotlarini ishlab chiqarishni yo‘lga qo‘yish, yengil sanoatni fan va texnika taraqqiyotiga asoslanib eng muhim, eng dolzarb sohaga aylantirish bugungi kundagi ustivor vazifalardan hisoblanadi. Bu takomillashuv uni avtomatlashtirish va

mexanizatsiyashtirish yangi texnika va texnologiyani qo'llash orqali amalga oshirilmoqda. Shu bilan birga, jahon bozorlarida raqobatning kuchayishi, xorijiy ishlab chiqaruvchilar tomonidan aralash turdagi mahsulotlar ishlab chiqarish hisobiga xarajatlarning kamaytirilishi ushbu sohani rivojlantirish bo'yicha qo'shimcha chora-tadbirlarni taqozo etmoqda. Respublikada keng turdagi sifatli to'qimachilik va tikuv-trikotaj mahsulotlari ishlab chiqarilishini tashkil etish, uning ishlab chiqarilishini mahalliyashtirishni chuqurlashtirish shuningdek, bolalar kiyimlarini ishlab chiqaruvchilarning eksport salohiyatini oshirishga qaratilgan kompleks chora-tadbirlar amalga oshirilmoqda.

Bolalarda qaddi qomatning shakllanishi ularning jismoniy va ruhiy o'sishi va rivojlanishiga imkon beradigan muhim jarayondir. Bu jarayon suyaklar, mushaklar, organlar va to'qimalarning o'sishini, shuningdek, kognitiv, hissiy va ijtimoiy ko'nikmalarni rivojlantirishni o'z ichiga oladi. Shu bilan birga, bolalarda qaddi qomatning shakllanishi bilan bog'liq bir qancha kamchiliklar ham mavjud. Bularga semirish xavfi, rivojlanishning kechikishi va jismoniy shikastlanishlar kiradi. Bolalarda qaddi qomatning shakllanishi tananing suyaklari, mushaklari va to'qimalarining o'sishi va rivojlanishini o'z ichiga olgan muhim jarayondir. Bolalarda qaddi qomatni to'g'ri shakllantirish ularning jismoniy salomatligi uchun juda muhimdir, chunki bu ularning kuchli suyaklari va mushaklarini rivojlanishini va sog'lom vaznni saqlashini ta'minlaydi. Bundan tashqari, bolalarda qaddi qomatning shakllanishi ularning ruhiy salomatligi uchun juda muhimdir, chunki bu ularning o'zini o'zi qadrlashi va tana qiyofasiga ta'sir qilishi mumkin.

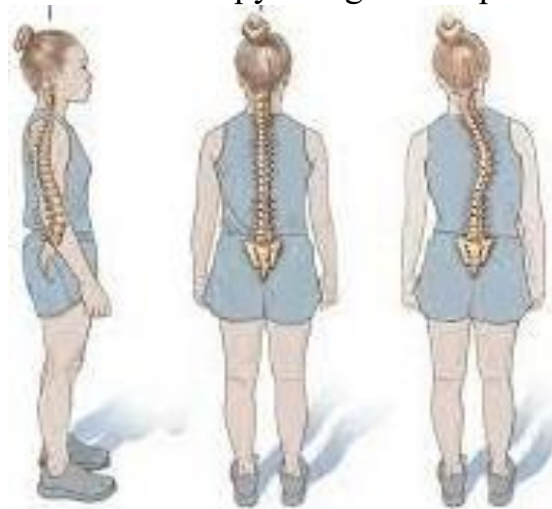


1 -rasm. Bolalar qomat turlar.

Bolalarda qaddi qomatning shakllanishi ularning jismoniy va ruhiy o'sishi va rivojlanishiga imkon beradigan muhim jarayondir. Bu jarayon suyaklar, mushaklar,

organlar va to'qimalarning o'sishini, shuningdek, kognitiv, hissiy va ijtimoiy ko'nikmalarni rivojlantirishni o'z ichiga oladi. Shu bilan birga, bolalarda qaddi qomatning shakllanishi bilan bog'liq bir qancha kamchiliklar ham mavjud. Bularga semirish xavfi, rivojlanishning kechikishi va jismoniy shikastlanishlar kiradi.

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2 -rasm. Bolalar umurtqa pog'onasi o'zgarishi.

Bolalarda qaddi qomatning shakllanishiga ta'sir qiluvchi omillarga genetika, ovqatlanish, jismoniy faollik va atrof-muhit omillari kiradi. Genetika bolalarning

bo'yi, vazni va tana shakli kabi jismoniy xususiyatlarini aniqlashda muhim rol o'ynaydi. Shu bilan birga, ovqatlanish va jismoniy faollik kabi atrof-muhit omillari ham bolalarning shaklini shakllantirishga ta'sir qilishi mumkin. Meva, sabzavotlar, yog'siz oqsillar va to'liq donalar kabi turli xil ozuqaviy moddalarga boy oziq ovqatlarni o'z ichiga olgan sog'lom ovqatlanish bolalarda qaddi qomatning to'g'ri shakllanishiga yordam beradi. Bundan tashqari, yugurish, sakrash va o'ynash kabi muntazam jismoniy faoliyat kuchli suyaklar va mushaklarni qurishga yordam beradi.



Bundan tashqari bolalarda qaddi qomatning shakllanishi ularning jismoniy va ruhiy o'sishi va rivojlanishiga imkon beradigan muhim jarayondir. Bu jarayon

suyaklar, mushaklar, organlar va to'qimalarning o'sishini, shuningdek, kognitiv, hissiy va ijtimoiy ko'nikmalarni rivojlantirishni o'z ichiga oladi. Shu bilan birga, bolalarda qaddi qomatning shakllanishi bilan bog'liq bir qancha kamchiliklar ham mavjud. Bularga semirish xavfi, rivojlanishning kechikishi va jismoniy shikastlanishlar kiradi.

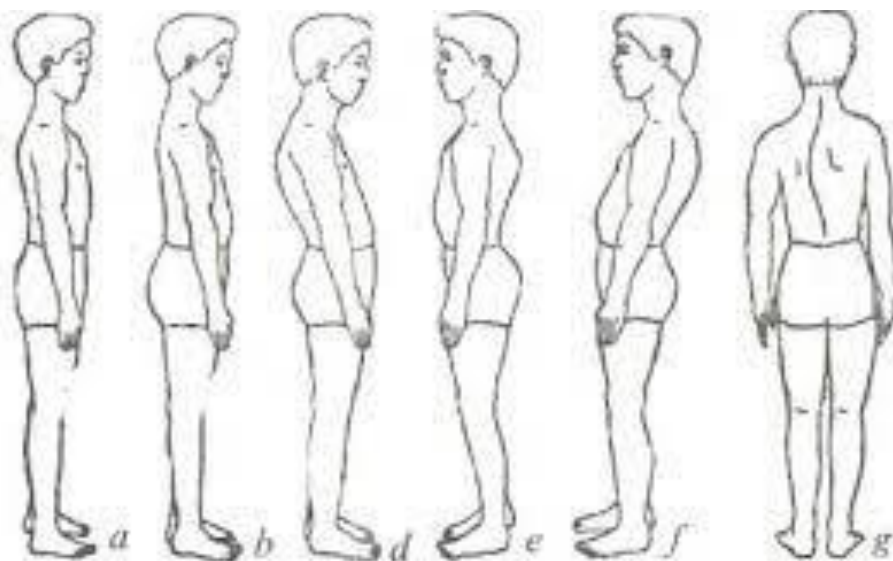
Qad-qomatining buzilishidan faqat odamning tashqi ko'rinishi o'zgarmasdan, balki u ichki a'zolar (o'pka, yurak, jigar, buyrak, oshqozon va ichak kabilar)ning rivojlanishi va funksiyasiga ham salbiy ta'sir ko'rsatadi. Bunday odamlar jismoniy mehnat qilganida, jismoniy tarbiya va sport bilan shug'ullanganida nafasi qisadi, yurak urishi tezlashadi, tez charchaydi va hokazo. Bolaning qad-qomati normal shakllanishi uchun quyidagi gigiyena qoidalariga amal qilish kerak: - bolani yoshligidan tekis va bir oz qattiqroq to'shakda yotishga o'rgatish lozim, yostiq pastroq bo'lishi kerak. To'shakning qalinva yurnshoq bo'lishi, yumshoq pmjinali karavot, baland yostiq bolaning umurtqa pog'onasi qiyshayib qolishiga sabab bo'ladi; bolani olti oylik bo'lguncha o'tqazmaslik, o'n oylik bo'lguncha oyog'ida uzoq vaqt tik turg'azmaslik kerak, chunki bu yoshdagi bolalarning umurtqa pog'onasi, oyoq suyaklari egiluvchan bo'lganligi sababli tana massasini ko'tara olmasdan, egrilanib qolishi mumkin.

Bolalarda qaddi qomatni to'g'ri shakllantirish muhim bo'lsa-da, bu jarayon bilan bog'liq potentsial kamchiliklar ham mavjud. Eng muhim muammolardan biri bu jismoniy faoliyatning etishmasligi va noto'g'ri ovqatlanish natijasida yuzaga keladigan bolalikdagi semirishdir. Bolalikdagi semirish diabet, yurak-qon tomir kasalliklari va qo'shma muammolar kabi turli xil sog'liq muammolariga olib kelishi mumkin. Bundan tashqari, tana qiyofasini salbiy his qiladigan va qaddi qomatsini 122 shakllantirish bilan bog'liq o'zini past baholaydigan bolalar ovqatlanish buzilishi va boshqa ruhiy salomatlik muammolarini rivojlanish xavfi ostida bo'lishi mumkin. Bolalarda qaddi qomatning to'g'ri shakllanishiga ko'maklashish uchun yoshligidan sog'lom odatlarni rag'batlantirish zarur.

Ota-onalar va tarbiyachilar muvozanatli ovqatlanishni ta'minlash, muntazam jismoniy faoliyatni rag'batlantirish va ijobiy tana qiyofasini rag'batlantirish orqali farzandlarining jismoniy va ruhiy salomatligini qo'llab-quvvatlashlari mumkin. Bundan tashqari, sog'liqni saqlash xodimlari va o'qituvchilar sog'lom odatlarni targ'ib qilishda va bolalarda qaddi qomatni shakllantirish bilan bog'liq potentsial muammolarni aniqlashda hal qiluvchi rol o'ynashi mumkin.

Qaddi qomatning to'g'ri shakllanishi bolalarning jismoniy va ruhiy salomatligi uchun juda muhim bo'lsa-da, bu jarayon bilan bog'liq bir qancha kamchiliklar ham mavjud. Bolalikdagi semirish butun dunyo bo'ylab o'sib borayotgan muammo bo'lib, diabet, yurak-qon tomir kasalliklari va qo'shma muammolar kabi turli xil sog'liq muammolariga olib kelishi mumkin. Rivojlanishning kechikishi genetik yoki atrof-muhit omillari tufayli ham yuzaga kelishi mumkin va kognitiv, hissiy va ijtimoiy faoliyatda uzoq muddatli buzilishlarga olib kelishi mumkin. Yoriqlar, burmalar va ko'karishlar kabi jismoniy shikastlanishlar baxtsiz hodisalar yoki sport jarohatlari tufayli yuzaga kelishi va bolalarning jismoniy rivojlanishiga ta'sir qilishi mumkin. Bolalarda figurani to'g'ri

shakllantirish ularning jismoniy va ruhiy salomatligi uchun muhim bo'lsa-da, bu jarayon bilan bog'liq potentsial kamchiliklar mavjud.



Bolalarda figurani shakllantirishning eng muhim kamchiliklariga quyidagilar kiradi:

1. Bolalikdagi semirish: bolalarda figurani shakllantirishning eng muhim kamchiliklaridan biri bu bolalarda semirish xavfi. Bu jismoniy faollikning yetishmasligi va noto'g'ri ovqatlanish natijasida yuzaga kelishi mumkin va diabet, 123 yurak-qon tomir kasalliklari va qo'shma muammolar kabi turli xil sog'liq muammolariga olib kelishi mumkin.

2. Salbiy tana qiyofasi: shakllanishidan norozi bo'lgan bolalarda salbiy tana qiyofasi paydo bo'lishi mumkin, bu ularning ruhiy salomatligiga sezilarli ta'sir ko'rsatishi mumkin. Salbiy tana qiyofasi ovqatlanish buzilishi, tashvish, depressiya va ijtimoiy izolyatsiya kabi bir qator muammolarga olib kelishi mumkin.

3. O'zini past baholash: figuraning shakllanishidan norozi bo'lgan bolalar o'zlarini past baholashlari mumkin, bu ularning ishonchi va umumiy farovonligiga ta'sir qilishi mumkin. O'z-o'zini past baholash yomon akademik ko'rsatkichlar, ijtimoiy qiyinchiliklar va ruhiy salomatlik muammolari kabi muammolarga olib kelishi mumkin.

4. Bezorilik va masxara qilish: ortiqcha vaznli yoki shakllanishidan norozi bo'lgan bolalar tengdoshlari tomonidan bezorilik va masxara qilish ehtimoli ko'proq bo'lishi mumkin. Bu ularning ruhiy salomatligi va farovonligiga sezilarli ta'sir ko'rsatishi mumkin, bu esa tashvish, depressiya va ijtimoiy izolyatsiya kabi muammolarga olib keladi.

5. Sog'liqni saqlash muammolari: shakl shakllanishi yomon bo'lgan bolalarda turli xil sog'liq muammolari, jumladan, tayanch-harakat muammolari, qo'shma muammolar va yurak-qon tomir kasalliklari xavfi yuqori bo'lishi mumkin.

Bolalarda figurani shakllantirish bilan bog'liq ushbu mumkin bo'lgan kamchiliklarni yoshligidan sog'lom odatlar va ijobiy tana qiyofasini targ'ib qilish orqali hal qilish juda muhimdir. Bunga muntazam jismoniy faoliyatni rag'batlantirish, muvozanatli ovqatlanishni ta'minlash va bolalarning rivojlanishi uchun qo'llab-quvvatlovchi va qabul qiluvchi muhitni targ'ib qilish kiradi. Bolalarning jismoniy va ruhiy salomatligiga ustuvor ahamiyat berib, biz figurani shakllantirish bilan bog'liq mumkin bo'lgan kamchiliklarni yumshatishga va ularning umumiy farovonligini qo'llab-quvvatlashga yordam beramiz

Genetika bolalarning jismoniy xususiyatlarini aniqlashda muhim rol o'ynasada, ovqatlanish, jismoniy faollik va tarbiya uslublari kabi atrof muhit va xulq-atvor omillari ham bu jarayonga ta'sir qilishi mumkin. Qaddi qomatning to'g'ri shakllanishi bolalarning jismoniy va ruhiy salomatligi uchun juda muhimdir, ammo bu jarayon bilan bog'liq bir qator kamchiliklar ham mavjud. Bolalikdagi semirish, rivojlanishning kechikishi va jismoniy shikastlanishlar bolalar salomatligi va farovonligiga uzoq muddatli ta'sir ko'rsatishi mumkin bu muammolarni hal qilish ota-onalar, o'qituvchilar, tibbiyot xodimlari va siyosatchilarni qamrab oladigan ko'p qirrali yondashuvni talab qiladi. Sog'lom ovqatlanish odatlarini rag'batlantirish, jismoniy faollikni targ'ib qilish, sifatli tibbiy yordam olish imkoniyatini ta'minlash va xavfsiz va qo'llab-quvvatlovchi muhitni ta'minlash bolalikdagi semirish, rivojlanishning kechikishi va jismoniy jarohatlar xavfini kamaytirishga yordam beradi. Bundan tashqari, rivojlanish kechikishi bo'lgan bolalarga erta aralashuv va qo'llab-quvvatlash ularning uzoq muddatli natijalarini yaxshilashga yordam beradi. Xulosa va takliflar: Bolalarda qaddi qomatning shakllanishi turli omillar ta'sirida bo'lgan murakkab jarayondir. Qaddi qomatning to'g'ri rivojlanishi bolalarning jismoniy va ruhiy salomatligi uchun juda muhim bo'lsa-da, bu jarayon bilan bog'liq bir qancha kamchiliklar ham mavjud. Ushbu muammolarni hal qilish ota-onalar, o'qituvchilar, tibbiyot xodimlari va siyosatchilarning hamkorlikdagi sa'y-harakatlarini talab qiladi. Bolalarda qaddi qomatni shakllantirish ularning jismoniy va ruhiy salomatligiga ta'sir qiluvchi muhim jarayondir.

Skolioz (umurtqalarning noto'g'ri rivojlanishi tufayli) bo'lishi mumkin, lekin ko'proq 5—15 yashar bolalarda, ayniqsa o'quvchilar orasida uchraydi. O'quv mashg'ulotlari vaqtida bolalar partada gavdasini noto'g'ri tutib o'tirishi natijasida umurtqa pog'onasiga va muskullariga og'irlik bir xilda tushmaydi.



Oqibatda muskullar bo‘shashib qoladi. Umurtqa pog‘onasi boylamlari va shaklining o‘zgarishi turg‘un skoliozga sabab bo‘ladi. Bolalarning yoshligida raxit bilan og‘riganligi, katta yoshdagilarning esa doim bir qo‘lda yuk ko‘tarishi ham skoliozga olib kelishi mumkin. Umurtqaning sinishi yoki uning ayniqsa sil oqibatida yemirilishi natijasida ham skolioz ro‘y beradi. Kishining bir oyog‘i kalta bo‘lib, o‘sha tomonga engashib qadam tashlashi funksional skoliozga olib keladi. Skoliozning oldini olish uchun bolalarni partada va stol atrofida to‘g‘ri o‘tirishga o‘rgatish, vrach buyurgan davo badan tarbiyasi mashqlarini qunt bilan bajarish, massaj qilish, serharakat o‘yinlar, ochiq havoda sayr qilish, kattalar esa mehnat bilan dam olishni to‘g‘ri almashtirib turishi, ish vaqtida i.ch. gimnastikasi bilan shug‘ullanishi lozim.

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THE DEVELOPMENT AND CULTURAL SIGNIFICANCE OF NATIONAL AND BELT WRESTLING

Abstract. *National wrestling and belt wrestling are traditional forms of combat sports that have deep roots in various cultures and civilizations. These forms of wrestling have evolved over centuries, serving not only as a means of physical contest but also as a reflection of cultural identity, values, and social cohesion. This article examines the historical development of national wrestling and belt wrestling, tracing their origins, transformations, and their role in shaping the cultural and sporting landscapes of their respective regions. The research explores how these wrestling styles have been preserved, adapted, and institutionalized in modern times, and how they continue to influence both traditional and contemporary sports practices.*

Keywords. *National Wrestling, Belt Wrestling, Traditional Sports, History of Wrestling, Cultural Identity, Combat Sports, Evolution of Wrestling, Folklore.*

Wrestling has a rich and diverse history that spans across various cultures and regions. As one of the oldest forms of combat, wrestling has evolved from ancient rituals and contests into organized sports, deeply intertwined with the social, cultural, and national identities of different societies. National wrestling and belt wrestling, as traditional forms of grappling, are prime examples of how sports can reflect the unique characteristics and values of a culture.

This article focuses on the historical development of these two types of wrestling, highlighting their origins, the factors influencing their growth, and their relevance today. By exploring their cultural significance and tracing their evolution, we can gain a deeper understanding of how wrestling has shaped and been shaped by the societies in which it developed.

National wrestling, often referred to as "folk wrestling" or "traditional wrestling," varies widely across regions but generally shares common elements of physical strength, technique, and the use of the body to overpower an opponent. It often emerged in rural and warrior societies where physical contests were not only a form of entertainment but also a means of preparing for battle.

The earliest forms of national wrestling can be traced to ancient civilizations. Historical records suggest that various forms of wrestling were practiced in Mesopotamia, ancient Egypt, and Greece. Over time, these traditions were passed down through generations, with each region developing its unique variations and rules based on local customs and needs. In countries like Turkey, Iran, Japan, and

Mongolia, wrestling became more formalized and embedded in the culture, with competitions being held at religious festivals and social gatherings.

Belt wrestling, or "Kuresh," is a distinctive form of wrestling where participants wear a belt or sash that they use to control and manipulate their opponent. The roots of belt wrestling can be traced back to Central Asia, particularly among Turkic and Mongol peoples. This wrestling style was not only a form of physical contest but also a way to demonstrate strength, skill, and honor.

Belt wrestling's significance can be seen in the historical records of nomadic tribes who practiced the sport as part of their cultural rituals. It was often part of the rites of passage for young men, signifying their transition into adulthood and readiness for battle. As with national wrestling, belt wrestling played a crucial role in military training, as it developed both physical strength and strategic thinking.

Both national wrestling and belt wrestling served a broader social and cultural purpose beyond mere competition. They were integral to community life, acting as a tool for teaching values such as bravery, resilience, and respect for tradition. In many societies, wrestling contests were held during important cultural celebrations, festivals, and religious observances. These events not only reinforced social bonds but also acted as a form of storytelling, where the history, myths, and legends of a community were passed down through generations.

In the context of belt wrestling, the sport was often seen as a demonstration of strength and valor, particularly in nomadic societies where physical prowess was highly valued. Wrestlers were seen as heroes, and their victories in the arena symbolized their personal honor and the strength of their community.

Over time, national wrestling began to evolve from informal contests to organized competitions. The codification of rules, the establishment of weight categories, and the organization of national and international championships played a significant role in the development of modern wrestling as a recognized sport. In countries like Turkey, the practice of Greco-Roman and freestyle wrestling can trace their origins to traditional forms of national wrestling, which were formalized in the late 19th and early 20th centuries.

As modern sports organizations like the International Wrestling Federation (FILA) began to oversee international competitions, national wrestling traditions were adapted to fit into the global sporting framework. However, many of these traditional forms of wrestling, such as Turkish "Yağlı Güreş" (oil wrestling) and Russian "Sambo," have retained their cultural significance and continue to be practiced in their traditional forms alongside modern variations.

Belt wrestling, particularly in Central Asia, also underwent a transformation with the advent of modern sport. Initially a part of nomadic rituals and warrior training, belt wrestling has been institutionalized in various countries, especially in the former Soviet Union and Turkey. In recent years, organizations such as the International Kuresh Federation have been established to promote and standardize the sport, organizing world championships and preserving its cultural heritage.

Despite its evolution into a more structured form, belt wrestling remains deeply connected to its traditional roots. In many regions, it is still practiced as a

way to maintain cultural identity and celebrate ancestral practices. It has also gained popularity internationally, with many countries outside of Central Asia recognizing its unique qualities and integrating it into their own sporting cultures.

Both national wrestling and belt wrestling continue to be practiced in their traditional forms while adapting to modern trends. In countries like Turkey, Uzbekistan, and Kazakhstan, traditional wrestling festivals and competitions remain popular, attracting large audiences and providing a platform for young wrestlers to showcase their skills. At the same time, international recognition and the establishment of formalized competitions ensure that these sports remain relevant in the global sporting arena.

Efforts to preserve these forms of wrestling have led to the creation of cultural preservation programs, where young people are taught not only the physical techniques of wrestling but also the history and traditions behind these sports. These initiatives ensure that the cultural heritage associated with wrestling is maintained, even as modern sports continue to evolve.

The historical development of national wrestling and belt wrestling is a testament to the enduring importance of physical contests in shaping the cultural, social, and historical identities of various societies. From their origins in ancient rituals to their evolution into modern sports, these wrestling traditions have remained deeply rooted in the values of strength, honor, and community. As they continue to evolve, they offer a unique window into the cultural landscapes of the regions where they originated, providing both a physical and symbolic connection to the past. The ongoing preservation and promotion of these wrestling forms will ensure their relevance for future generations, maintaining their place in the broader history of combat sports.

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SPORT VA JISMONIY FAOLIYATDA JAROHATLARNING OLDINI OLISH VA REABILITATSIYA QILISH

Anotatsiya: Sport va jismoniy faoliyatdagi jarohatlar tez-tez uchraydi va insonning sog'lig'i va sport faoliyatiga uzoq muddatli oqibatlariga olib kelishi mumkin. Samarali oldini olish strategiyalari va rehabilitatsiya protokollari shikastlanish xavfini minimallashtirish va optimal tiklanishni ta'minlash uchun muhimdir. Ushbu tadqiqot jarohatlarning oldini olish bo'yicha dalillarga asoslangan yondashuvlarni, jumladan, biomexanik tahlillarni, tuzilgan o'quv dasturlarini, nerv-mushak mashqlarini va himoya vositalaridan to'g'ri foydalanishni o'rganadi. Bundan tashqari, u tiklanishni osonlashtiradigan va qayta shikastlanishning oldini oladigan progressiv fizika terapiyasi, regenerativ tibbiyot va psixologik yordam kabi zamonaviy rehabilitatsiya usullarini o'rganadi.

Kalit so'zlar: Sport jarohatlari, jarohatlarning oldini olish, rehabilitatsiya, fizioterapiya, biomexanika, sport tibbiyoti, regenerativ tibbiyot, nerv-mushak mashqlari

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PREVENTION AND REHABILITATION OF INJURIES IN SPORTS AND PHYSICAL ACTIVITY

Abstract: Injuries in sports and physical activity are common and can have long-term consequences for an individual's health and athletic performance. Effective prevention strategies and rehabilitation protocols are essential to minimize the risk of injury and ensure optimal recovery. This study examines evidence-based approaches to injury prevention, including biomechanical analysis, structured training programs, neuromuscular training, and the proper use of protective equipment. It also examines modern rehabilitation techniques, such as progressive physical therapy, regenerative medicine, and psychological support, that can facilitate recovery and prevent re-injury.

Keywords: Sports injuries, injury prevention, rehabilitation, physiotherapy, biomechanics, sports medicine, regenerative medicine, neuromuscular training

Kirish

Sport va jismoniy faoliyat umumiy salomatlik, jismoniy tayyorgarlik va aqliy farovonlikka sezilarli hissa qo'shadi. Biroq, yuqori intensiv mashg'ulotlar va raqobatbardosh sport turlarida ishtirok etishning ortishi jarohatlar darajasining oshishiga olib keldi, bu ham professional sportchilar, ham dam olish ishtirokchilariga ta'sir ko'rsatdi. Sport jarohatlari sinishi, ligamentlarning cho'zilishi

va mushaklarning yorilishi kabi o'tkir travmatik jarohatlardan tortib, tendinit va stress sinishi kabi surunkali haddan tashqari foydalanish holatlariga qadar bo'lishi mumkin. Bu jarohatlar nafaqat sport ko'rsatkichlariga to'sqinlik qiladi, balki to'g'ri davolanmasa, uzoq muddatli mushak-skelet tizimining asoratlariga ham olib kelishi mumkin.

Ushbu maqola sport va jismoniy faoliyatda jarohatlarning oldini olish va reabilitatsiya qilish bo'yicha dalillarga asoslangan yondashuvlarni o'rganishga qaratilgan. Sport tibbiyoti va reabilitatsiya fanidagi so'nggi yutuqlarni tahlil qilib, ushbu tadqiqot uzoq muddatli tayanch-harakat sog'lig'ini mustahkamlash va sport samaradorligini optimallashtirishda multidisipliner yondashuvning muhimligini ta'kidlaydi.

Sport va jismoniy faoliyatda jarohatlarning oldini olish va reabilitatsiya qilish sportchilarning uzoq muddatli salomatligi, xavfsizligi va samaradorligini ta'minlashning muhim jihatlaridir. Professional va ko'ngilochar sport turlarida ishtirok etishning ortib borishi bilan jarohatlanish darajasi oshdi, bu jarohatlar xavfini kamaytiradigan va samarali tiklanishni rag'batlantiradigan dalillarga asoslangan strategiyalarni amalga oshirishni muhim qiladi. Sportdagi jarohatlar o'tkir jarohatlardan, masalan, sinishlar va ligamentlarning yirtilishidan tortib, tendinit va stressli sinishlar kabi surunkali haddan tashqari yuklanish holatlariga qadar bo'ladi. To'g'ri profilaktika choralari va reabilitatsiya protokollari sportchining chidamliligini sezilarli darajada oshirishi va jarohatlar tufayli ishlamay qolish vaqtini minimallashtirishi mumkin.

Sport jarohatlarining oldini olish uchun biomexanik tahlil, kuch va konditsioner dasturlari, moslashuvchanlik mashqlari va nerv-mushak mashqlarini o'z ichiga olgan kompleks yondashuv talab etiladi. Jarohatlarning oldini olishning asosiy tamoyillaridan biri sportchilarning to'g'ri tayyorgarlik usullariga rioya qilishlarini ta'minlash va mashg'ulotlarning intensivligi va hajmini bosqichma-bosqich oshirishdir. Trening yukidagi keskin o'zgarishlar mushaklar, tendonlar va ligamentlarga ortiqcha stress qo'yishi mumkin, bu esa shikastlanish xavfini oshiradi. Adekvat dam olish vaqtlari, o'zaro mashg'ulotlar va sportchining o'ziga xos ehtiyojlariga moslashtirilgan individual mashqlarni o'z ichiga olgan tuzilgan o'quv dasturlari mushak-skelet tizimining kuchlanishini oldini olishga yordam beradi.

Shikastlanishning oldini olishning muhim jihati isitish va sovutish tartiblarini to'g'ri bajarishdir. Isitish mashqlari qon oqimini oshirish, mushaklarning elastikligini oshirish va nerv-mushaklarning muvofiqlashtirilishini yaxshilash orqali tanani jismoniy kuchga tayyorlaydi. Dinamik cho'zish, harakatchanlik mashqlari va sportga xos harakatlar mushaklarning kuchlanishi va ligamentlarning cho'zilishi ehtimolini kamaytirishga yordam beradi. Kuchli faollikdan so'ng sovutish metabolik chiqindilarni olib tashlashni osonlashtirish va qattqlikni oldini olish orqali tiklanishni rag'batlantiradi. Yoga yoki muvozanat mashqlari kabi moslashuvchanlik va proprioepsiya mashg'ulotlarini o'z ichiga olish sportchining jismoniy stressga bardosh berish qobiliyatini yanada oshiradi.

Jarohatlarning oldini olishda asbob-uskunalar va atrof-muhitning rolini e'tiborsiz qoldirmaslik kerak. Tegishli himoya vositalarini, masalan, dubulg'a, og'iz

himoyasi va brakatlarni kiyish travma bilan bog'liq jarohatlar xavfini sezilarli darajada kamaytiradi. Etarli qo'llab-quvvatlash va zarbani yutishni ta'minlaydigan to'g'ri poyabzal, ayniqsa, yuqori ta'sirli sport turlarida juda muhimdir. Bundan tashqari, yiqilishning oldini olish va qo'shma stressni kamaytirish uchun o'yin sirtlari yaxshi saqlanishi kerak. Hidratsiya va ovqatlanish jarohatlarning oldini olishda bir xil darajada muhimdir, chunki suvsizlanish va noto'g'ri ovqatlanish odatlari mushaklarning charchashiga, kramplarga va tiklanishning buzilishiga olib kelishi mumkin.

Eng yaxshi profilaktika choralariga qaramay, jarohatlar sport va jismoniy faoliyatning muqarrar qismidir. Shikastlanish sodir bo'lganda, tiklanish va takrorlanish ehtimolini kamaytirish uchun yaxshi tuzilgan reabilitatsiya jarayoni juda muhimdir. Reabilitatsiyaning dastlabki bosqichi og'riqni nazorat qilish, yallig'lanishni kamaytirish va shikastlangan hududni himoya qilishga qaratilgan. Tez-tez ishlatiladigan RICE (Dam olish, Muz, Siqish, Balandlik) protokoli davolashning dastlabki bosqichlarida samarali bo'ladi. Shu bilan birga, uzoq muddatli immobilizatsiyadan qochish kerak, chunki bu mushaklar atrofiyasiga va bo'g'imlarning qattiqligiga olib kelishi mumkin.

Sog'ayish jarayoni davom etar ekan, reabilitatsiya dasturlari kuch, moslashuvchanlik va funktsional harakatni tiklashga o'tadi. Jismoniy terapiya bu jarayonda muhim rol o'ynaydi, bu mashqlarni o'z ichiga oladi, ular asta-sekin og'irlikni ko'tarish faoliyatini qayta tiklaydi, bo'g'imlarning barqarorligini yaxshilaydi va nerv-mushak nazoratini tiklaydi. Reabilitatsiya mashqlari sport mashg'ulotlariga o'tishdan oldin kam ta'sirli harakatlardan boshlab progressiv bo'lishi kerak. Funktsional tayyorgarlik, qarshilik mashqlari va pliometrik mashqlar kuch va chidamlilikni tiklashga yordam beradi, shu bilan birga sportchining harakatga ishonchini qayta tiklashini ta'minlaydi.

Reabilitatsiyadagi eng muhim muammolardan biri bu sportchining qachon o'yinga qaytishga tayyorligini aniqlashdir. Vaqtdan oldin qaytish qayta jarohat olish xavfini oshirishi, tiklanishni uzaytirishi va sportchining karerasini tugatishi mumkin. Shu sababli, o'yinga qaytish qarorlari kuch, harakat oraliq, barqarorlik va umumiy funktsional tayyorgarlikni ob'ektiv baholashga asoslangan bo'lishi kerak. Sport tibbiyoti mutaxassislari ko'pincha mezonlarga asoslangan rivojlanish modellaridan foydalanadilar, bu esa sportchilarning to'liq faoliyatni davom ettirishdan oldin aniq jismoniy va ishlash ko'rsatkichlariga mos kelishini ta'minlaydi. Psixologik tayyorgarlik yana bir muhim omildir, chunki qayta jarohat olish qo'rquvi sportchining o'ziga bo'lgan ishonchi va ishlashiga ta'sir qilishi mumkin.

Reabilitatsiya sohasidagi zamonaviy yutuqlar, masalan, regenerativ tibbiyot, biomexanik tahlillar va shaxsiy reabilitatsiya dasturlari tiklanish natijalarini sezilarli darajada yaxshilagan. To'qimalarni davolashni tezlashtirish uchun trombotsitlarga boy plazma (PRP) terapiyasi, ildiz hujayralarini davolash va ekstrakorporeal zarba to'lqini terapiyasi kabi usullar tobora ko'proq foydalanilmoqda. Texnologiyalar, jumladan, harakatni suratga olish tahlili va taqiladigan qurilmalar integratsiyasi sportchining tiklanish jarayonini yanada aniqroq kuzatish imkonini beradi. Virtual

haqiqat va kognitiv trening ham reabilitatsiya davrida vosita o'rganish va nerv-mushak moslashuvini yaxshilash vositalari sifatida paydo bo'ladi.

Jismoniy tiklanishdan tashqari, ruhiy salomatlikni qo'llab-quvvatlash reabilitatsiyaning muhim tarkibiy qismidir. Jarohatlar sportchilar uchun hissiy jihatdan bezovta bo'lib, tashvish, umidsizlik yoki hatto tushkunlikka olib kelishi mumkin. Sport psixologlari jarohat olgan sportchilarga tiklanishning psixologik jihatlarini yengishda, o'ziga ishonchni tiklashda va motivatsiyani saqlab qolishda muhim rol o'ynaydi. Kognitiv-xulq-atvor strategiyalari, vizualizatsiya usullari va maqsadlarni belgilash ramkalari sportchilarga reabilitatsiya jarayonida diqqatni jamlashga va ijobiy bo'lishga yordam beradi.

Jarohatlarning oldini olish va reabilitatsiya qilishning yaxlit yondashuvi sport shifokorlari, fizioterapevtlar, kuch va konditsionerlar bo'yicha murabbiylar, dietologlar va psixologlar o'rtasidagi hamkorlikni o'z ichiga oladi. Ushbu ko'p tarmoqli jamoa sportchilarning o'ziga xos ehtiyojlariga moslashtirilgan har tomonlama yordam ko'rsatishini ta'minlaydi. Harakat skriningi, yukni boshqarish va to'g'ri biomexanika bo'yicha ta'lim kabi jarohatlarning uzoq muddatli oldini olish strategiyalari jarohatlarning takrorlanishini kamaytirish va sportning uzoq umr ko'rishini oshirish uchun juda muhimdir.

Xulosa qilib aytganda jarohatlarning oldini olish va reabilitatsiya qilish uchun yaxlit va ilmiy asoslangan yondashuv sport samaradorligini oshirish va mushaklar-skelet tizimining uzoq muddatli salomatligini ta'minlash uchun zarur. Sport shifokorlari, fizioterapevtlar, dietologlar, psixologlar va kuch-quvvat bo'yicha murabbiylarning hamkorligi keng qamrovli tiklanish va profilaktika tizimini mustahkamlaydi. Jarohatlarning oldini olish va tuzilgan reabilitatsiyani birinchi o'ringa qo'yish orqali sportchilar jarohatlarning karyerasi va umumiy farovonligiga uzoq muddatli ta'sirini kamaytirish bilan birga eng yuqori ko'rsatkichni saqlab qolishlari mumkin.

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MODERN APPROACHES TO DEVELOPING NON-PHILOLOGY STUDENTS' COMMUNICATIVE COMPETENCE IN ENGLISH BASED ON SOFTWARE TOOLS

Annotation: *With the advancement of modern information technologies, software tools are increasingly being used in the educational process. This article discusses modern approaches to developing communicative competence in English for non-philology students, the role of software tools, and their effectiveness.*

Keywords: *foreign language, software tools, communicative competence*

Introduction

In today's globalized world, English holds a leading position as a means of international communication. Effective communication in English is essential even for students in non-philological fields. Although these students do not specialize in linguistic disciplines, they are required to use English in their future professional activities, including international collaboration, studying foreign sources, and participating in international scientific research. Therefore, developing their communicative competence is a pressing issue. Communicative competence refers to an individual's ability to express thoughts fluently, listen, comprehend, and engage in effective communication. Developing this competence is crucial for every future specialist in order to exchange information in English within their professional field, work with international scientific and technical publications, communicate with foreign experts, participate in research projects, and establish remote collaborations using modern technologies.

Research Methodology

This article presents a theoretical and diagnostic analysis of modern approaches to developing communicative competence in English for non-philology students, the role of software tools, and their effectiveness.

Discussion

Today, there are hundreds of different software tools available for learning English. Online platforms and mobile applications provide students with the opportunity to study languages independently, while AI-powered chatbots enhance the learning process by making it more engaging and facilitating real-time communication. This means that students can tailor their language learning experience according to their individual needs and preferences. Compared to traditional teaching methods, learning English through software tools offers several advantages, such as creating an interactive and engaging environment, expanding opportunities for practical language use, ensuring a personalized approach, enabling

real-life language application, and encouraging students to engage in self-directed learning.

Modern software tools are crucial in developing communicative competence in English for non-philology students. The effectiveness of language learning can be enhanced through online platforms, chatbots, virtual reality (VR) and augmented reality (AR) technologies, and video conferencing. Interactive approaches, hybrid learning, and gamification methods motivate students to participate actively in the learning process. Contemporary language learning is not only about acquiring grammatical and lexical knowledge but also about developing the ability to use the language effectively in real-life communication. From this perspective, methodological approaches aimed at developing communicative competence play a significant role in the education system. Communicative competence refers to a learner's ability to use language tools correctly and effectively in various speech situations. Below, some modern approaches to developing communicative competence in English for non-philology students are outlined.

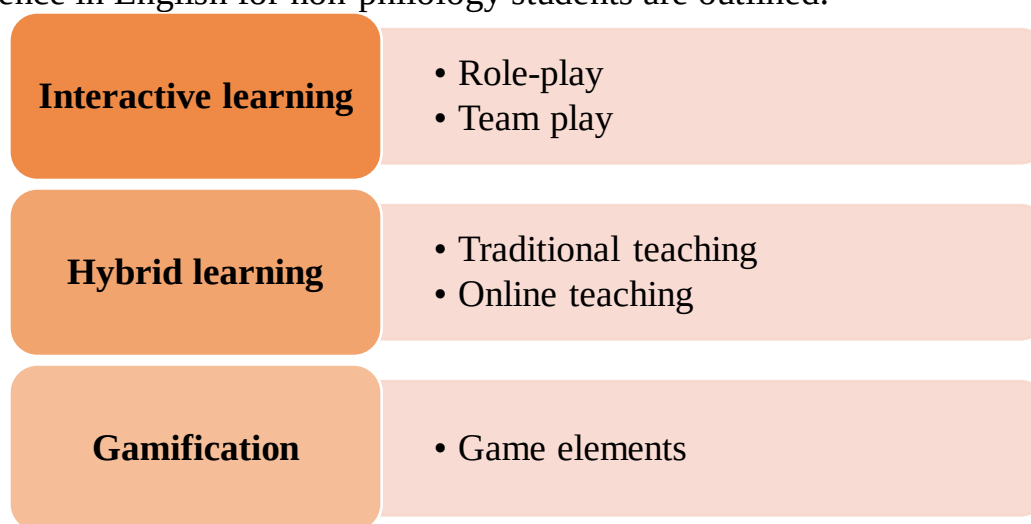


Figure 1. *Modern Methods for Developing Communicative Competence*

The communicative approach is aimed at ensuring students actively participate in the communication process, encouraging speech activities, and providing opportunities for free expression of thoughts. Using this approach not only boosts students' confidence in communication but also helps reinforce their grammatical knowledge through natural speech situations.

Interactive teaching methods focus on developing students' mutual cooperation, incorporating role-playing games, debates, and discussions. These methods encourage students to be more active in lessons and create conditions for them to use language creatively. The situational approach, on the other hand, helps develop practical skills by creating real-life communication scenarios in the language learning process. For example, situations such as trade, customer service, and formal meetings are simulated, allowing students to learn and apply appropriate language structures.

Overall, methodological approaches aimed at developing communicative competence serve to increase students' engagement, improve their speaking skills, and make the language learning process more effective and engaging. Integrating these approaches into modern educational environments enhances the quality of the learning process and helps learners achieve higher levels of language proficiency.

In modern language education, various software tools contribute to the development of communicative competence in English. Some examples include:

- **Online platforms and applications:** Duolingo, Busuu, BBC Learning English, EnglishCentral

- **AI-powered chatbots:** ChatGPT, Mondly Chatbot

- **Virtual and augmented reality technologies:** VRChat, Mondly AR

- **Video conferencing and remote learning platforms:** Zoom, Microsoft Teams, Google Meet, Edmodo, Moodle

These tools help non-philology students not only use English correctly from a grammatical perspective but also apply it effectively in communication.

Conclusion

In today's era of globalization, effective communication in English is an essential skill for specialists in any field. In particular, non-philology students often need to work with foreign sources, participate in international projects, and communicate with foreign professionals in their careers. Therefore, improving their communicative competence in English is one of the key objectives of the modern education system.

With the advancement of information technology, the use of software tools for teaching English is expanding. In the future, these approaches are expected to become even more advanced, making the language learning process easier with the help of artificial intelligence and innovative technologies. Hence, educators and researchers should continue exploring effective ways to integrate modern software tools into language education.

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OQOLTIN DISTRICT POPULATION HEALTH AND ITS GEOGRAPHICAL FEATURES

Annotatsiya: The article provides a comprehensive analysis of the geographical location, natural conditions, and positioning of Oqoltin District. It thoroughly examines the district's population composition, gender ratio, age group distribution, as well as health indicators, demographic changes, and social conditions. The geographical, economic, and social differences among settlements are analyzed, with specific analytical conclusions presented for each settlement.

Keywords: population, birth rate, mortality, disease, OP, KTMP, OSHP, men, women.

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OQOLTIN TUMANI AHOLISI SALOMATLIGI VA UNING GEOGRAFIK XUSUSIYATLARI

Annotatsiya: Maqolada Oqoltin tumani geografik o'zni, tabiiy sharoitlari va joylashuvi keng qamrovli tarzda tahlil qilingan. Tumanning aholi tarkibi, jinsiy nisbat, yosh guruhlari bo'yicha taqsimlanishi, shuningdek, aholining salomatlik ko'rsatkichlari, demografik o'zgarishlar va ijtimoiy sharoitlar chuqur o'rganilgan. Aholi punktlari orasida geografik, iqtisodiy va ijtimoiy farqlar tahlil qilinib, har bir aholi punkti uchun alohida tahliliy xulosalar keltirilgan.

Kalit so'zlar: aholi, tug'ilish, o'lim, kasallik, OP, KTMP, OSHP, erkaklar, ayollar.

Oqoltin District is located in the Syrdarya region and was established on August 29, 1971. The district borders the Republic of Kazakhstan to the north, Mirzachul District of Jizzakh region to the northwest, Dostlik District to the

southwest, and Sardoba (Sharof Rashidov) District to the south. To the northeast and southeast, it shares borders with Mirzaobod District. The total area of the district is 0.55 thousand km.

1-Table

General geographical description of Okoltin district

District name	Oqoltin District
Date of establishment	August 29, 1971
Area	0.55 thousand km ²
Population	56.6 thousand people
Relief	Plain

Source: The table is based on data from the Statistics Department of the Syrdarya region.

Population: In 2025, the population of Oqoltin District is expected to reach **56.6 thousand people**. In terms of ethnic composition, the majority are **Uzbeks**, along with **Kazakhs, Tajiks, Russians, Tatars**, and representatives of other nationalities. The **average population density is 95.9 people per km²**, which is **twice lower** than the regional average. [1].

If we analyze the population composition using a linear **R equation**:

$$R = \frac{E}{A}$$

Here:

- **R** represents the ratio of men and women.
- **E** represents the number of men.
- **A** represents the number of women.

Oqoltin district: Men: 50,4%, - Women: 49,6%

$$\text{So, } R = \frac{50.4}{49.6} \approx 1.016$$

It means:

Since **-R > 1**, the number of men is greater than the number of women.

- If **R = 1**, the number of men and women would be equal.

- If **R < 1**, the number of women would be greater.

Based on the above situation, the ratio can be analyzed as follows:

1. Birth Ratio – Naturally, more boys are born, contributing to the **R > 1** condition.
2. Migration – More men may have stayed or arrived in search of work.
3. Mortality Rate – Age composition and life expectancy also affect this ratio.

A linear analysis shows that a slightly higher number of men can lead to changes in the labor market, social relations, and family structures.

Natural Movements and Demographic Indicators of Okoltin District

Population

	People		Coefficient, per 1,000 population in per mille	
	2023	2024	2023	2024
Natural Population Growth	901	960	16,2	17,1
Births	1170	1228	21,1	21,9
Deaths	269	268	4,9	4,8
Registered Marriages	401	388	7,2	6,9
Divorces	91	85	1,6	1,5
Immigrants	311	436	5,6	7,8
Emigrants	463	572	8,4	10,2

Source: The table was compiled by the authors based on data from the Statistics Department of the Syrdarya region.

In January-December 2024, the number of births reached 1,228 people, which is 58 more than in the same period of 2023 (1,170 people). The birth rate coefficient also increased:

- 2024 – 21.9 per mille,
- 2023 – 21.1 per mille,
- Increase – 0.8 per mille.

In January-December 2024, the number of deaths was 268 people, which is 1 less than in the same period of 2023 (269 people). The mortality rate coefficient also decreased:

- 2024 – 4.8 per mille,
- 2023 – 4.9 per mille,
- Decrease – 0.1 per mille.

As of January-December 2024, the natural population growth was 960 people, which is 59 more than in the same period of 2023 (901 people).

In January-December 2024, the Civil Registry Offices recorded:

- 388 marriages,
- 85 divorces.

Per 1,000 people:

- Marriage rate coefficient – 6.9 per mille (7.2 per mille in 2023).
- Divorce rate coefficient – 1.5 per mille (1.6 per mille in 2023).

This indicates that the number of marriages has slightly decreased, while the number of divorces has also slightly declined.

The Population Assigned to KTMP, OP, and OSHP in Oqoltin District and Primary Disease Indicators

№	KTMP OP, OSHP name	Name of the MFY	Population	Number of Patients
1	KTMP	A. Navoiy	2908	9562
		Saxovat	3420	
		Ko'rkam Diyor	5460	
		Yangi Tashkent	1626	
		Tashkent	2595	
2	Andijan	Andijan	6207	551
3	A.Toirov	Shodlik	3420	1760
4	Z. Babur	Akhillik	6030	5295
5	Uchtam	Uchtom	886	59
6	Ferghana	Yangi Hayot	3017	1592
		Mustaqillik	3451	
		Boston	5852	
Total:	6	11	52304	18694

Source: The table was compiled by the authors based on data from the Oqoltin District Statistics Department.2024

In Oqoltin District, the total number of families is 12,852. The number of families with children under 18 is 8,180, while large families (with 4 or more children) total 1,360. The number of single-parent families (where either the father or mother is absent) is 572, and families with persons with disabilities amount to 754. There are 299 families with members suffering from serious chronic illnesses.

Additionally, there are 26 elderly individuals (65 years and older) living alone, while 375 families are engaged in family entrepreneurship. The number of families with members who have gone abroad for work is 691.

Economy Cotton farming is the main sector of the district's economy. The total land area of the district exceeds 36.9 thousand hectares, of which:

- 19.9 thousand hectares are allocated for cotton,
- 14.1 thousand hectares are used for grain crops,
- Additionally, vegetables, melons, and fodder crops (alfalfa) are cultivated, along with orchards, vineyards, and mulberry plantations.

Livestock farming is also developed, with cattle breeding and silkworm production playing an important role. The district has a cotton processing plant, 22 general education schools, 3 colleges, libraries, cultural centers, a central hospital, a polyclinic, and other medical institutions.

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APPLICATION OF DIDACTIC TOOLS IN EXTRACURRICULAR ACTIVITIES FOR TECHNOLOGY LESSONS IN PRIMARY GRADES

Annotation: *This article incorporates insights from educational psychology, focusing on students' psychological engagement in the process of studying extracurricular activities within modern didactic learning. One of the key requirements of the teaching profession is pedagogical mastery, which a teacher must demonstrate in every lesson. The educational material highlights the unique characteristics of this process, considering factors such as students' age, content specificity, and the psychological principles governing the learning process.*

Keywords: *method, principle, technology, education, pedagogical technology, creative ability, profession, technique, innovative pedagogical technology.*

In the modern era, the effectiveness and success of activities in every field depend on the professional training of specialists, their level of skills, their creative approach to performing their duties, and their diligent and consistent self-improvement. In an age of rapidly developing technologies, educating the younger generation requires not only directing them toward socially necessary activities but also considering their mastery of lessons and the resulting outcomes. Great scholars who have made significant contributions to the development of world science—such as A. Navoi, M. Kashgari, Imam al-Bukhari, Abu Nasr Farabi, Yassawi, and A. Avloni—have emphasized the importance of education and upbringing in their works, highlighting the deep connection between the two. In today's rapidly evolving world, it is crucial to provide education to the younger generation using the latest modern technologies and methods to prepare them for life.

In this regard, further strengthening and improving educational work among adolescents is essential. Morality is the foundation of a person's character, and it cannot be achieved without a conscious, socially responsible, and well-rounded individual. Therefore, moral education and upbringing play a key role in shaping an independent, well-developed individual. The all-round development of the younger generation is not limited to the proper organization of the educational process and mastery of subjects. Extracurricular education is an integral part of the continuous education system, providing opportunities for students to engage in additional learning, primary vocational training, and the selection and practical application of various fields, including mass sports, cultural aesthetics, and folk crafts. It serves as a means of organizing students' free time effectively and fostering their personal growth. It is essential to guide students toward professional fields, enhance the effectiveness of lessons, foster their creativity, and comprehensively prepare them for real-life challenges. This can be achieved by incorporating modern pedagogical

technologies into technology lessons and extracurricular activities through practical training.

An analysis of the theoretical and practical foundations of the research problem reveals that primary education teachers, particularly those specializing in natural sciences, tend to master the theoretical and practical aspects of pedagogical technologies more quickly and thoroughly compared to teachers of social and humanitarian subjects. This can be attributed to the structured and statistical nature of the methods used to assess the effectiveness of the educational process, as well as the specific knowledge, skills, and competencies required of primary school students.

In today's educational landscape, innovation is closely linked to the reform and modernization of higher education, both in terms of content and organizational structure. Over the past three decades, the rapid development of pedagogical education theory has served as the foundation for these advancements. Scholars such as A.A. Abdulina, E.V. Bondarevskaya, V.I. Zagvyazinsky, V.S. Ilin, N.M. Kan-Kalik, and V.A. Slastenin have contributed significantly to this field. Among the modern innovative trends in pedagogical education, they highlight the development of personalized (individualized) learning theories, methodologies, and approaches aimed at fostering student-centered education. [1]

The educational and developmental significance of extracurricular activities in technology education has been further enhanced through the use of various methods. These activities create a foundation for students to become self-motivated, increase their confidence, and strive toward their goals. This scientific work comprehensively examines the main goals and objectives of extracurricular activities and develops various methods for providing scientific and methodological recommendations for primary school students, teachers, and educational organizers.

When conducting school-based and extracurricular activities, educators face the crucial task of fostering students' moral and intellectual development based on universal and comprehensive values. Extracurricular activities play a key role in shaping a child's social standing within a group, determining peer relationships, and positively influencing their moral education. It is essential to explain to students the immense significance of both school and extracurricular activities in their overall development.

When organizing and conducting extracurricular activities, educators must focus on teaching students how to solve educational tasks independently, select appropriate problem-solving methods, regulate their behavior, and apply independent work skills to real-life situations. Independence, as a concept, consists of four key components: independent thinking, discipline, organization, and self-control. Monitoring the development of these aspects is one of the teacher's most important and challenging responsibilities in leading extracurricular activities. To achieve this, it is necessary to systematically assess students' progress and analyze their development. Teachers can implement various control methods, excluding traditional classroom assessment techniques.

In these activities, the most capable students may be given the opportunity to work with drafts, where they record learning tasks, outline rules, and provide examples that support these rules. Though brief, these records reflect the student's thought process.

Extracurricular activities in primary education, when integrated with modern technologies, provide children with opportunities to engage in activities aligned with their interests. Primary school students naturally acquire both education and moral values through their participation in these activities. Well-structured extracurricular programs not only reinforce knowledge gained in lessons but also foster students' personal growth. At the same time, these activities support the development of individual abilities. Since students' interests vary widely, teachers must possess a high level of skill and adaptability to meet their needs effectively. Meeting the interests of each student, responding to them appropriately, and creating opportunities for cultural enrichment are essential requirements in education. In technology education, extracurricular activities are an integral part of the school's overall educational and developmental work. These activities not only help consolidate the knowledge gained in lessons but also foster the comprehensive development of students, enabling them to apply what they have learned in practice.

Extracurricular activities simultaneously broaden students' knowledge and worldview. In technology education, they serve as a crucial tool for sparking students' interest in science, technology, and various fields of art. Therefore, effectively utilizing the educational and developmental significance of extracurricular activities—along with understanding the pedagogical requirements and leadership aspects involved—is a key component of the learning process.

Every extracurricular activity, when planned and executed with clear objectives, lays the foundation for improving the quality of education. The organizer should not rely solely on existing methods and techniques but should actively seek and implement new approaches. Mastery of each educational method is essential, as the leader must fully understand its essence to effectively guide students. High-quality education is achieved through the timely and well-structured implementation of extracurricular activities based on modern educational technologies.

In technology education, selecting relevant and advanced topics for extracurricular activities in primary grades plays a vital role in shaping students' worldview and stimulating their curiosity. Each topic should encourage critical thinking, creativity, and deep reflection. Since education and upbringing go hand in hand, it is essential to meet modern educational demands in a timely manner. Beyond providing knowledge and skills, education should expose students to innovations aligned with contemporary programs, incorporating modern technologies to prepare them for future challenges.

The "BLIS-O'YIN" method is considered one of the most effective methods in technology lessons. This method is aimed at teaching students to correctly organize the sequence of actions, think independently and logically, and select the necessary from a variety of ideas and information based on the subject being

studied. In the process of applying this method in the lesson, students are divided into 2 groups. The groups are formed in a circle and separate tasks are given to each group. Information about the tasks is reflected in the objects prepared in the form of cubes. Students express their independent thoughts and opinions using this information. They also need to find the sequence of practical work performed based on the information provided for the tasks. This encourages students to independently carry out logical thinking and the correct organization of the work process. Therefore, interactive and pedagogical technologies should be used in each lesson with the right selection.

During each session, students should be able to identify their talents as a result of the ideas and thoughts that interest them. The “Brainstorming” method is usually done orally, in which the teacher asks questions, and the students express their thoughts one by one, and everyone should express their opinion on the given question. In this method, all ideas should not be discussed until they have been demonstrated. During the session, the procedure and purpose of the process in this method should be explained to the students.

Extracurricular activities organized in the field of technology education are one of the means of comprehensive development of the student's personality.

In technology education, based on long-term experience in extracurricular activities, it is important to organize handicraft exhibitions between classes, which will create opportunities for practical training and skills. Organized activities in the classroom and outside of school complement the educational activities of students. They contribute to the correct formation of their worldview and moral development. They create a basis for connecting theoretical knowledge with practical production. The tasks of the organizer who leads extracurricular and extracurricular activities are also multifaceted.

The “Issiq orindik” method is considered one of the most effective methods in technology lessons. This method is aimed at teaching students to correctly organize the sequence of actions, think independently and logically, and select the necessary from a variety of ideas and information based on the subject being studied. In the process of applying this method in the lesson, students are divided into 2 groups. The groups are formed in a circle and separate tasks are given to each group. Information about the tasks is reflected in the objects prepared in the form of cubes. Students express their independent thoughts and opinions using this information. They also need to find the sequence of practical work performed based on the information provided for the tasks. This encourages students to independently carry out logical thinking and the correct organization of the work process. Therefore, interactive and pedagogical technologies should be used in each lesson with the right selection.

In conclusion, I can say that the extracurricular activities spent with students, by enriching their free time with meaningful and educational content, further complement and expand the educational process. This process, in turn, serves as an incentive for students to seek knowledge independently. During independent work, the child creates the basis for increasing his abilities, as well as his initiative.

Therefore, special attention is paid to making students' extracurricular activities meaningful. Extracurricular activities and clubs play a special role in raising the young generation, who are the foundation of our future, as well as well-rounded individuals, in revealing their hidden abilities, and in making them feel like necessary individuals for society.

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THE IMPACT OF CONSUMER BEHAVIOR ON ECONOMIC DEVELOPMENT

Abstract. *Consumer behavior plays an important role in every economic system, as they shape supply and demand in the market. Understanding consumers, their behavior and decision-making processes are important for economic development. Changes in behavior have an impact not only on the local market, but also on the global economy. Changes in consumer behavior affect the demand for new products and services, prices, quality and efficiency. In this article, we will try to analyze how consumer behavior affects economic development.*

Keywords: *Consumer, behavior, economic development, market, demand, supply.*

Introduction. Consumer behavior is an integral part of economic development. This behavior shapes economic processes and ensures market equilibrium. The decisions made by consumers, their needs and desires directly affect the production and service sectors. Also, socio-cultural factors, personal values and economic conditions play an important role in shaping consumer behavior. For example, the values and moral norms of society influence the choices, actions and attitudes of consumers. Consumer behavior is part of the national culture and affects lifestyle and identity. Also, with the development of market relations and increased competition, the influence of consumer behavior on the activities of market participants is increasing. At the same time, socio-cultural, economic and psychological factors are important in shaping consumer decisions. These factors determine the lifestyle, social role and personal identity of consumers.

Literature Review. Many scholars have conducted research on the relationship between consumer behavior and economic development. Samuelson (1980) emphasized the role of rational behavior in consumer decision-making in his economic theories. He analyzed the impact of consumer decisions on various goods and services on economic outcomes. Hicks (1939) developed theories on changes in consumer behavior, especially changes in income and prices. Behaviorists such as Thaler (1980) and Ariely (2008) analyzed consumers not only from an economic perspective, but also from a psychological perspective. They showed that consumer behavior is often shaped by mental rules and intuitive decisions.

Research methodology. This article uses two main methodologies to analyze the impact of consumer behavior on economic development:

1. Empirical analysis: This method analyzes statistical data to study the relationship between various economic indicators (consumption levels, inflation rates, economic growth) and consumer behavior.

2. Theoretical analysis: The impact of consumer behavior on economic systems is analyzed by applying economic and behavioral theories. This process is based on a model of rational and non-rational decisions to understand behavior.

Analysis and results. The impact of consumer behavior on economic development is manifested in several directions. The manifestation of this impact is clearly observed in the following main aspects. The table below presents the main factors and mechanisms of influence that indicate the impact of consumer behavior on economic development.

Table 1

Factors that reflect the impact of consumer behavior on economic development⁹

№	Factors	Mechanism of action
1	Formation of supply and demand	Consumer interest in certain goods and services leads to increased demand, which expands production and stimulates economic growth.
2	Costs and investments	Consumers' propensity to increase spending attracts additional investment in manufacturing and service sectors, stimulates the emergence of new businesses, and supports economic growth.
3	Technological innovation and innovative procurement	Consumer demand for new technologies leads to the development of new products and services, which in turn shapes new directions of economic development.
4	Social change and consumer behavior	Social and cultural trends influence consumer choices, leading to the emergence of new products and services and innovating the market.
5	Economic stability and inflation	Consumers' tendency to spend cautiously helps keep inflation low, which ensures economic stability.
6	International trade and the global economy	Consumer behavior shapes demand in international markets, which leads to global economic changes.

⁹ Author's development

7	Markets and competition	Consumer interest in a variety of products and services forces companies to create new products, make prices competitive, and improve quality, which drives economic development.
8	Social and environmental responsibility	Increasing consumer demand for environmental and social responsibility is driving the development of new industries, which in turn impacts the economic system.

The impact of consumer behavior on economic development is broad and multifaceted. They accelerate economic development by shaping market demand, supporting technological innovation, implementing social change, and ensuring economic stability. Therefore, understanding and studying consumer behavior is important in formulating economic policies and developing development strategies.

The following results were obtained in the process of studying the impact of consumer behavior on economic development:

- **The impact of behavior on economic growth:** The level of spending by consumers directly affects economic growth and the creation of new jobs. The presence of high consumer demand contributes to the development of production and the expansion of the market.

- **Psychological factors of consumers:** The emotions of consumers determine what decisions they make in changing economic conditions. People often form the demand for a particular product based on psychological and emotional factors.

- **Technological innovations and consumer behavior:** Innovative technologies (for example, online shopping) are having a significant impact on consumer behavior. This, in turn, increases the efficiency of the economic system and creates new jobs.

- **Global Impacts:** Consumer behavior and purchasing habits in the global marketplace affect economic growth. In particular, consumer needs and wants play a significant role in international trade and export-import transactions.

Suggestions. The following suggestions can be considered for a more in-depth analysis and improvement of the impact of consumer behavior on economic development:

- **Promotion of social and cultural values:** Increasing the social and cultural values of society, developing environmental awareness will increase consumer demand for environmentally friendly products. This will lead to the development of new industries and economic growth.

- **Expanding research in the field of economic psychology:** Studying consumer decision-making processes from a psychological perspective helps to understand their behavior and is important in formulating economic policy.

- **Strengthening consumer protection:** Protecting consumer rights through the development of consumerism, ensuring their safety, and increasing demand for quality products will help ensure economic stability.

- **Market competitiveness:** Encouraging companies to innovate by increasing consumer interest in a variety of products and services, which increases production efficiency and stimulates economic growth.

- **Promoting international trade:** Global consumer demand is changing the patterns of production and trade in the international economy. Therefore, promoting international trade and studying consumer behavior support economic growth.

These proposals are aimed at improving the impact of consumer behavior on economic development, and their implementation is important for ensuring economic stability and growth.

Conclusion. Consumer behavior is the basis of economic development. Changes in consumer behavior shape supply and demand in markets, and also support economic growth and social well-being. However, consumer decision-making is often based on psychological factors and misunderstandings. This can create some uncertainties in the economic system. At the same time, technological innovations and changes in the global market are leading to the emergence of new forms of consumer behavior. In the future, it will be important to develop effective consumer policies that adapt to the changing conditions of economic development.

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THE ROLE OF BIG DATA IN MODERN ECONOMIC DECISION-MAKING

Abstract: *Big data has revolutionized economic decision-making by enabling real-time analysis, predictive modeling, and efficient resource allocation. This paper explores the applications of big data in economic forecasting, financial market analysis, business strategy, smart city planning, and environmental economics. While big data provides enhanced accuracy, efficiency, and transparency, it also presents challenges related to data privacy, bias, infrastructure, and ethical concerns. Addressing these limitations is crucial to harnessing the full potential of big data in shaping modern economies.*

Keywords: *Big data, economic decision-making, financial markets, predictive analytics, machine learning, smart cities, business strategy, data privacy, policy-making, resource allocation.* Introduction

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ZAMONAVIY IQTISODIY QARORLARNI QABUL QILISHDA KATTA MA'LUMOTLARNING ROLI

Annotatsiya: *Katta ma'lumotlar iqtisodiy qaror qabul qilish jarayonini tubdan o'zgartirib, real vaqt rejimida tahlil qilish, bashorat qilish va samarali resurs taqsimotini amalga oshirish imkonini berdi. Ushbu maqolada katta ma'lumotlarning iqtisodiy bashorat qilish, moliyaviy bozor tahlili, biznes strategiyasi, aqlli shahar rejalashtirish va atrof-muhit iqtisodiyotidagi qo'llanilishi o'rganiladi. Katta ma'lumotlar aniqroq prognozlash, samaradorlik va shaffoflikni oshirsa ham, u ma'lumotlar maxfiyligi, noto'g'ri ma'lumotlarning mavjudligi, infratuzilma va axloqiy muammolar bilan bog'liq qiyinchiliklarni ham keltirib chiqaradi. Ushbu muammolarni hal qilish katta ma'lumotlarning zamonaviy iqtisodiyotda to'liq imkoniyatlaridan foydalanish uchun muhim hisoblanadi.*

Kalit so'zlar: *Katta ma'lumotlar, iqtisodiy qaror qabul qilish, moliyaviy bozorlar, bashoratli tahlil, mashinani o'rganish, aqlli shaharlar, biznes strategiyasi, ma'lumotlar maxfiyligi, siyosat yuritish, resurs taqsimoti.*

Introduction

Data is an essential tool for governments, businesses, and politicians in the modern world. Big data's rise has revolutionized economic decision-making by enabling more precise forecasts, effective resource distribution, and improved policy development. Traditional economic models are now more dynamic and

responsive to current market conditions due to the enormous volume, velocity, and diversity of big data. With an emphasis on its uses, benefits, drawbacks, and potential, this article explores the utilization of big data in economic decision-making.

Methods

This study examines the use of big data in contemporary economic decision-making using a qualitative methodology. To give a thorough grasp of how big data affects financial market research, company strategies, and economic policies, information was gathered from industry publications, scholarly journals, and real-world case studies. To guarantee a comprehensive assessment of the subject, the study relies on secondary sources, such as government documents, company white papers, and peer-reviewed journals.

Results

Big data refers to the massive and complex datasets generated from various sources, including social media, financial transactions, IoT devices, sensors, and more. These datasets are characterized by the "3 Vs":

1. Volume – The sheer quantity of data being generated every second.
2. Velocity – The speed at which data is created, collected, and processed.
3. Variety – The diverse types of data, including structured (numerical data from databases) and unstructured (text, images, videos).

In the field of economics, big data is utilized to analyze market trends, consumer behavior, financial risks, and macroeconomic indicators, enabling informed decision-making.

1. Macroeconomic Analysis and Forecasting

Big data provides governments and central banks with unprecedented speed and precision in tracking key economic indicators, such as GDP growth, inflation rates, and employment figures. Policymakers may keep an eye on the state of the economy in real time by using big data analytics, which uses sources including social media sentiment analysis, digital payment transactions, online job ads, and satellite imaging. For instance, real-time mobility data from Google and Apple was used to track consumer spending trends and economic activity during the COVID-19 pandemic, helping authorities create tailored stimulus plans.

2. Financial Market Analysis and Risk Management

Because it makes it possible to detect fraudulent behavior, optimize risk management strategies, and anticipate stock price fluctuations, big data analytics is crucial in the financial markets. High-frequency trading (HFT) companies analyze vast amounts of market data, including order book dynamics, price trends, and trading volumes, using complex big data algorithms. They then execute trades in milliseconds.

3. Consumer Behavior and Business Strategy

Big data is used by businesses to comprehend consumer preferences and suitably tailor their products and advertising activities. Every day, e-commerce platforms examine millions of customer interactions to provide personalized suggestions and enhance pricing strategies.

Discussion

1. Improved Predictive Power and Accuracy

By integrating several data sources, big data enables more precise economic forecasting. Conventional economic models often relied on limited datasets, which led to less accurate forecasts.

2. Increased Productivity and Financial Savings

Economic evaluations need less time and resources because to big data's automation of data collection and processing.

3. Informed Policy-Making Through real-time economic pattern analysis, governments may develop more effective fiscal and monetary policies.

4. Increased Openness in the Market

By spotting fraudulent activity and ensuring regulatory compliance, big data improves financial market transparency.

1. Concerns about Data Security and Privacy

Concerns regarding security and privacy are raised by the enormous amount of data collected. Fraud and identity theft may arise from unauthorized access to private or sensitive financial data.

2. Bias and Data Quality

Poor economic decisions may arise from data that is erroneous, insufficient, or biased.

3. Infrastructure and Technical Obstacles

Big data analytics implementation calls for highly skilled workers and advanced computer technology.

Conclusion

Big data has emerged as a crucial element of contemporary economic decision-making, providing profound understanding and exceptional forecasting abilities. It enables better informed, effective, and transparent decision-making and is extensively employed in many fields, such as financial markets, supply chain management, urban planning, and environmental policy. But only by addressing important problems like data security, quality assurance, cybersecurity, and ethical considerations will its full potential be realized. Big data will play a bigger role in the global economy as technology advances because it will accelerate innovation, enhance resource allocation, and support sustainable development.

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THE IMPORTANCE OF GREEN ENERGY IN UZBEKISTAN'S ECONOMIC DEVELOPMENT

Abstract: The transition to green energy presents Uzbekistan with a unique opportunity to achieve sustainable economic growth. By utilizing its vast solar, wind, and hydropower resources, the country can reduce its dependence on fossil fuels, attract foreign investment, create new job opportunities, and enhance energy security. Additionally, green energy initiatives contribute to environmental protection and improved public health. This paper explores Uzbekistan's renewable energy potential, economic benefits, government initiatives, and key challenges in implementing green energy projects. Policy recommendations, including investment incentives, infrastructure modernization, and regulatory reforms, are proposed to ensure a successful transition toward a sustainable energy sector.

Keywords: Green energy, renewable energy, Uzbekistan, solar power, wind energy, hydropower, economic growth, energy security, foreign investment, job creation, environmental sustainability, public health, infrastructure modernization, policy reforms, regulatory framework, energy transition.

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O'ZBEKISTONNING IQTISODIY RIVOJLANISHIDA YASHIL ENERGETIKANING AHAMIYATI

Annotatsiya: Yashil energiyaga o'tish O'zbekiston uchun barqaror iqtisodiy o'sishga erishish imkoniyatini taqdim etadi. Mamlakat quyosh, shamol va gidroenergetika resurslaridan foydalanish orqali qazilma yoqilg'ilarga bog'liqlikni kamaytirishi, xorijiy investitsiyalarni jalb qilishi, yangi ish o'rinlari yaratishi va energiya xavfsizligini oshirishi mumkin. Shuningdek, yashil energiya tashabbuslari atrof-muhitni muhofaza qilish va jamoat salomatligini yaxshilashga hissa qo'shadi. Ushbu maqolada O'zbekistonning qayta tiklanadigan energiya salohiyati, iqtisodiy foydalari, hukumat tashabbuslari va yashil energiya loyihalarini amalga oshirishdagi asosiy muammolar tahlil qilinadi. Muvaffaqiyatli o'tishni ta'minlash uchun investitsiya rag'batlari, infratuzilmani modernizatsiya qilish va tartibga solish islohotlarini o'z ichiga olgan siyosiy tavsiyalar taklif etiladi.

Kalit so'zlar: yashil energetika, qayta tiklanadigan energiya, O'zbekiston, quyosh energiyasi, shamol energiyasi, gidroenergetika, iqtisodiy o'sish, energiya xavfsizligi.

Introduction

The transition to green energy is not merely an environmental necessity for Uzbekistan but a strategic economic opportunity that can drive sustainable development. By integrating renewable energy sources into its energy matrix, Uzbekistan can reduce dependency on fossil fuels, attract foreign investment, create employment opportunities, and improve public health outcomes. Furthermore, leveraging solar, wind, and hydropower will enhance energy security, stabilize prices, and promote industrial diversification. A well-structured policy framework, infrastructure modernization, and collaboration with international organizations will be instrumental in ensuring a smooth transition toward a resilient and sustainable energy sector.

Methods

To understand how Uzbekistan can benefit from green energy, this research incorporates a review of existing literature, policy analysis, and case studies of successful green energy transitions in other countries. Primary data sources include government reports, international energy agency publications, and financial institution assessments. The study also evaluates the economic impact of renewable energy projects and identifies barriers to implementation, proposing potential solutions.

Results

Uzbekistan receives ample sunlight, with an average of 300 bright days each year, making solar energy one of the most promising renewable resources in the country. Additionally, the nation has significant wind energy potential, particularly in the Navoi and Bukhara provinces. Hydropower is another key component, with Uzbekistan already utilizing part of its water resources for energy generation. Expanding these green energy sectors would diversify Uzbekistan's energy mix and reduce its reliance on natural gas, which currently dominates energy production. Green energy provides substantial economic advantages to Uzbekistan. It promotes job creation, attracts foreign investment, ensures energy security, and improves public health. By reducing dependence on fossil fuels, the country can stabilize energy prices, increase industrial efficiency, and enhance overall economic resilience. Additionally, a cleaner environment leads to lower healthcare costs and a more productive workforce, further driving economic growth. Investing in green energy infrastructure will generate thousands of new job opportunities in manufacturing, installation, maintenance, and research. The establishment of renewable energy plants, battery storage facilities, and smart grid technologies will contribute to the development of new industries, fostering economic diversification. Governments and investors worldwide are prioritizing sustainable initiatives. By implementing clear renewable energy legislation and offering incentives, Uzbekistan can attract international investors interested in financing green projects. Collaborations with foreign partners can provide funding, technical expertise, and advanced technologies to expedite the country's transition to a green economy. With a growing population and increasing energy demand, Uzbekistan faces challenges in maintaining a stable and affordable power supply. By utilizing its renewable

energy potential, the country can reduce dependence on fossil fuel imports and stabilize energy costs, making electricity more accessible and affordable for businesses and households. A transition to green energy would significantly cut carbon emissions, improving air quality and public health. This is particularly crucial in urban areas where pollution from traditional energy sources affects millions of people. Lower pollution levels contribute to a healthier workforce, leading to higher productivity and reduced healthcare expenses. The Uzbek government has already taken steps to support renewable energy through legal frameworks and strategic initiatives. The "Concept of Providing Uzbekistan with Electric Energy for 2020-2030" aims to increase the share of renewables in total energy production.

Discussion

Despite its potential, Uzbekistan faces several challenges in the transition to green energy. These include high initial investment costs, infrastructure limitations, and regulatory complexities.

- Initial High Investment Costs: Large-scale renewable projects require substantial upfront capital. To address this, Uzbekistan can introduce tax incentives, public-private partnerships, and favorable loan conditions. Establishing green energy funds, promoting crowdfunding platforms for community-driven projects, and exploring carbon credit trading can generate additional revenue for green energy investments.

Conclusion

Uzbekistan is at a critical juncture where embracing renewable energy can drive long-term economic prosperity. By leveraging its renewable resources, establishing investor-friendly regulations, and modernizing its energy infrastructure, the country has the potential to become a green energy leader in Central Asia. This transition will improve energy security, economic resilience, and innovation while enhancing environmental quality and public health. A firm commitment to green energy will ensure a more sustainable and equitable economy, securing long-term prosperity for future generations.

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THE RISE OF DIGITAL PAYMENTS IN UZBEKISTAN: TOWARDS A CASHLESS ECONOMY

Abstract: *Uzbekistan is undergoing a rapid digital transformation, with digital payments playing a key role in this shift. Traditionally a cash-based economy, the country has seen increased electronic transactions, mobile banking, and fintech advancements. This paper explores the emergence of digital payments in Uzbekistan, analyzing the current landscape, the role of fintech and e-commerce, the challenges faced, and the opportunities for achieving a cashless economy.*

Keywords: *Digital payments, fintech, cashless economy, mobile banking, e-commerce, Uzbekistan, financial inclusion, cybersecurity, government policies, financial technology.*

Introduction

In recent years, Uzbekistan has seen a rapid digital transition, with one of the most noticeable features being the increased use of digital payment methods. Traditionally a cash-based economy, Uzbekistan is currently seeing an increase in electronic transactions, mobile banking, and fintech advancements. This trend is being driven by various factors, including government initiatives, advancements in financial technology, and an increasing demand for convenience and security in financial transactions. This paper investigates the rise of digital payments in Uzbekistan, the obstacles and opportunities that accompany this transformation, and the potential for establishing a cashless economy.

Methods

This study is based on a review of government policies, financial sector reports, and market data related to Uzbekistan's digital payment landscape. Data sources include official reports from the Central Bank of Uzbekistan, commercial bank publications, fintech company websites, and global financial organizations such as the World Bank. The research methodology involves analyzing trends in digital payments, assessing the role of financial technology, and evaluating policy measures to understand the prospects for a cashless economy in Uzbekistan.

Results

Historically, Uzbekistan has depended largely on cash transactions due to cultural preferences, insufficient banking infrastructure, and legislative restrictions. However, during the last decade, the financial industry has seen tremendous transformation, driven by government reforms and technology advancements. One of the key drivers of this trend has been the government's emphasis on financial digitization. The Central Bank of Uzbekistan has implemented several policies to promote electronic payments, such as encouraging businesses to accept digital transactions and improving financial inclusion. The implementation of the Unified

Payment System (HUMO) and the expansion of the UzCard network have provided a solid foundation for digital transactions. Uzbek commercial banks have also played a crucial role in this shift by developing mobile banking applications and online payment systems. Leading banks such as Kapitalbank, Ipak Yuli Bank, and Asaka Bank have introduced user-friendly smartphone applications that enable clients to make payments, transfer funds, and manage their accounts more efficiently. This has led to a rise in cashless transactions across the country. The emergence of financial technology (fintech) companies has accelerated the adoption of digital payments in Uzbekistan. Fintech startups and established organizations are providing innovative payment solutions for consumers and businesses. Platforms like Payme, Click, Apelsin, and Paynet have revolutionized the way consumers pay for goods and services by enabling seamless and secure transactions through mobile applications. E-commerce has also played a vital role in promoting digital payments. As more people use online shopping platforms like Uzum Market, Oson, and other e-commerce sites, the demand for digital payment solutions has surged. The COVID-19 pandemic further reinforced this trend, as movement restrictions forced many businesses and consumers to conduct transactions online. Another significant factor driving the growth of digital payments in Uzbekistan is the increasing adoption of smartphones and internet access. As mobile phone usage expands, more individuals gain access to digital financial services, enabling them to make online purchases, pay utility bills, and transfer money conveniently.

Discussion

Despite significant progress, Uzbekistan faces several challenges in transitioning to a fully cashless economy:

1. **Limited Financial Literacy:** Many individuals, especially in rural areas, lack awareness of digital payment systems. The adoption of cashless transactions is hindered by concerns over security and insufficient knowledge about their benefits.
2. **Cybersecurity Risks:** As digital payments increase, so do the risks of cyberattacks and fraud. Strengthening security measures and educating users about safe online transactions are essential to maintaining trust in the digital payment ecosystem.
3. **Cash-Centric Culture:** Many Uzbeks still prefer cash transactions due to long-standing practices. Additionally, some businesses resist digital payments due to tax concerns and a preference for untraceable transactions.
4. **Infrastructure and Connectivity Issues:** While urban areas have better access to internet and financial services, rural regions often lack the necessary infrastructure for seamless digital transactions.

Despite these challenges, Uzbekistan has significant potential to transition to a cashless economy. Several opportunities can be leveraged to accelerate this transformation:

1. **Government Support and Policy Reforms:** Continued financial regulatory reforms and incentives for businesses to accept digital payments can encourage adoption. Tax incentives for digital transactions and stricter regulations on cash-based payments could drive the transition.

2. Increased Financial Inclusion: Expanding banking services to the unbanked and underbanked population can integrate more people into the digital financial ecosystem. Microfinance institutions and digital wallets can play a crucial role in achieving this goal.

3. Advances in Blockchain and Digital Currencies: Uzbekistan has shown interest in exploring blockchain technology and digital currencies. If implemented successfully, these technologies can enhance digital payments and provide secure, efficient alternatives to traditional banking.

4. Public Awareness Campaigns: Educational programs promoting digital literacy can help dispel misconceptions about digital payments and build consumer trust. Collaboration among banks, fintech companies, and the government can facilitate widespread awareness campaigns.

Conclusion

Uzbekistan is on an exciting journey of digital transformation, with digital payments playing a pivotal role in shaping the country's economic future. While challenges exist, the increasing adoption of fintech solutions, government initiatives, and evolving consumer behavior indicate a strong push towards a cashless economy. By addressing gaps in financial literacy, enhancing cybersecurity, and improving infrastructure, Uzbekistan can accelerate its shift to a secure, efficient, and inclusive digital financial ecosystem. The future of digital payments in Uzbekistan is promising, and with the right policies and technological advancements, a cashless economy could soon become a reality.

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JADIDCHILIK HARAKATINING VUJUDGA KELISHI VA UNING IJTIMOIY-FALSAFIY AHAMIYATI

Annotatsiya. *Ushbu ilmiy maqolada yurtimiz tarixida o'chmaz iz qoldirgan ajdodlarimiz jadidlar haqida, uning vujudga kelishi va ijtimoy-falsafiy ahamiyati haqida so'z boradi.*

Kalit so'zlar. *Jadidchilik, millat, taraqqiyot, Markaziy Osiyo, Chor Rossiyasi, demokratik harakat, milliy ozodlik.*

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THE EMERGENCE OF THE JADID MOVEMENT AND ITS SOCIO- PHILOSOPHICAL SIGNIFICANCE

Abstract. *This scientific article discusses the Jadids, our ancestors who left an indelible mark on the history of our country, their emergence and socio-philosophical significance.*

Keywords. *Jadidism, nation, development, Central Asia, Tsarist Russia, democratic movement, national liberation.*

XIX asrning oxiri XX asrning boshi jahon sivilizatsiyasining taraqqiyotida keskin burilishlar davri bo'ldi. Bu davrda chuqur islohotlar, birinchi va ikkinchi jahon urushi bo'lib, ilm-fan taraqqiyotida tub sifatiy o'zgarishlar ro'y berdi. Bir jamiyatning butunlay yod jamiyat ta'sirida qolishi nafaqat hayotda balki kishilarning falsafasida ham inqilob yasadi. XIX asrning oxiri va XX asrning boshida Markaziy Osiyoda ham boshqa mintaqalarda bo'lgani kabi o'zgacha fikrlovchi, yangicha qarash vakillari shakllanib bordi.

XIX asrning ikkinchi yarmida O'rta Osiyoda ijtimoiy-iqtisodiy tuzum qoloq, fuqarolarning turmush tarzi o'ta past, madaniy-ma'naviy hayotida islom dini peshvolarining ta'siri kuchli edi. Insonlar dunyoqarashida tasavvuf falsafasi an'analarini tiklashga intilish kuchayib borayotgan bir vaziyatda, unga qarshi kuchlar bilan tafovutlar kelib chiqdi.

XIX asr oxiri XX asrning boshlarida siyosiy, madaniy, iqtisodiy jihatdan inqiroz xolatiga tushib qolgan, mustamlaka tufayli rivojlanish past darajada bo'lgan o'lkada Turkiston ziyolilari chor Rossiyasining mustamlakachilik zulmidan qutulish, o'z milliy davlatchiligini tuzish, iqtisodiy va madaniy taraqqiyotga yo'l ochish, xalqqa ziyo tarqatish choralari ko'rdi. Bu borada jadidchilik xarakati katta rol o'ynadi. Jadidchilik rus mustamlaka siyosatiga qarshi milliy demokratik harakat bo'lib, u o'sha davr Turkistondagi qoloq iqtisodiy, ijtimoiy va madaniy sharoitda yashayotgan xalqlarni ma'rifatlashtirish, jamiyat xayotida ijtimoiy va madaniy

isloxoatlar o'tkazish, pirovardida milliy mustaqillik g'oyalarini xayotga tadbiq etish maqsadini o'z oldiga qo'ygan edi. O'rta Osiyo nisbatan Rossiya imperiyasining harbiy jihatdan ustunligi mahalliy aholining ochiqdan ochiq kurash olib borishiga imkon bermadi. Shuning uchun ham Vatan, millat, xalq qayg'usini tushungan kishilar, ayniqsa, ziyolilar xalqni ozodlikka eltuvchi yo'l bu - xalqni ma'rifatli qilish deb bildi. Ular xalqni ma'rifatli qilmasdan turib, mustaqillikni qo'lga kiritib bo'lmaydi, deb hisoblaganlar. Ziyolilar xalq orasida ilg'or g'oyalarni tarqatish maorif tizimini asosiy vosita deb bildilar. O'lka milliy ziyolilarining jamiyatni yangilashga va isoh qilishga qaratilgan harakati jadidchilik nomi maydonga chiqdi.

Jadidchilik yoki jadidizm (arabcha: جديد *jadīd* — yangi) — XIX asr oxiri XX asr boshida Turkiston, Kavkaz, Qrim, Tatariston hayotida muhim ahamiyat kasb etgan ijtimoiy-siyosiy, ma'rifiy harakatdir. Jadidchilik dastlab XIX asrning 80-yillarida Qrimda vujudga keldi. XIX asrning 90-yillaridan O'rta Osiyoda tarqaldi.

Jadidchilik avvaliga madaniyat sohasidagi harakat sifatida faoliyat yuritgan. Bu oqim vakillari taraqqiyot uchun kurashish, turkiy tillarni rivojlantirish, shu tillardagi adabiyotni boyitish, dunyoviy ilmlarni o'rganish, fan yutuqlaridan foydalanish hamda ayollar va erkaklar tengligi uchun kurashishga chaqirishgan. Keyinchalik jadidchilar panturkizm g'oyalarini targ'ib qilishgan.

Sovet davrida yozilgan adabiyotlarda jadidchilikka „burjua-liberal, millatchilik harakati“ deb ta'rif berilgan. Bu davrda asosan tanqid qilingan jadidchilik namoyandalari nomi SSRI parchalanib ketganidan keyin qayta tiklandi.

Jadidchilik dastlab XIX asrning 80-yillarida Qrimda Ismoilbek Gasprinskiy rahbarligida qrimtatarlar o'rtasida vujudga keldi.

Jadidchilik harakati namoyandalari ko'pincha o'zlarini taraqqiyparvarlar, keyinchalik jadidlar deb atashgan. O'sha davrning ilg'or taraqqiyparvar kuchlari, birinchi navbatda, ziyolilar mahalliy aholining umumjahon taraqqiyotidan orqada qolayotganligini his etib, jamiyatni isloh qilish zaruriyatini tushunib yetgandilar. Jadidchilik mohiyat e'tibori bilan avvalo siyosiy harakat edi. Uning shakllanish va mag'lubiyatga uchrash davrlari bo'lib, ularni shartli ravishda to'rtga bo'lish mumkin. Turkiston, Buxoro va Xiva hududida bu davrlar 1895-1905; 1906-1916; 1917-1920; 1921—1929-yillarni o'z ichiga oladi.

Millat istiqbolini o'ylovchi taraqqiyparvar kuchlar xalqning deyarli barcha tabaqalari — hunarmand, dehqon, savdogar, mulkdor, ulamolar orasida mavjud edi. Ziyolilar dastlab chorizmga qarshi kurashni xalqni asriy qoloqlikdan uyg'otish — siyosiy-ma'rifiy jabhadan boshlashga qaror qildilar. Jadidchilik harakati ana shunday tarixiy bir sharoitda Turkiston mintaqasida rivojlanish uchun o'ziga qulay zamin topdi.

Jadidlar orasidan yetuk olimlar, sanoat va ziroatchilik sohalarining zamonaviy bilimdon mutaxassislari, madaniyat arboblari yetishib chiqib, yurtning obod va o'z vatanlarini mustaqil ko'rishni orzu qildilar va shu yo'lda kurashdilar. Jadidlarning Turkiston mustaqilligi uchun kurashida asosan quyidagi yo'nalishlar ustuvor edi:

- yangi usul maktablari tarmog'ini kengaytirish; qobiliyatli yoshlarni chet elga o'qishga yuborish;

- turli ma'rifiy jamiyatlar va teatr truppalari tuzish;
- gazeta va jurnallar chop qilish, xalqning ijtimoiy-siyosiy ongini yuksaltirish bilan Turkistonda milliy demokratik davlat qurish.

Jadid ziyolilarining kuchli partiyasi tashkil qilingan taqdiridagina bu ishlarni amalga oshirish mumkin edi.

Jadidchilikning asosiy g'oya va maqsadlari quyidagilar edi:

Turkistonni o'rta asrlarga xos qoloqlik va diniy xurofotdan ozod etish, shariatni isloh qilish, xalqqa ma'rifat tarqatish,

Turkistonda muxtoriyat hukumatini barpo etish uchun kurash, Buxoro va Xivada konstitutsiyaviy monarxiya va parlament, keyinchalik demokratik respublika tuzumini o'rnatish orqali ozod va farovon jamiyat qurish, barqaror milliy valyutani joriy qilish va milliy qo'shin tuzish.

“XIX asr ijtimoiy-falsafiy, diniy-axloqiy, siyosiy va madaniy taraqqiyotda so'nggi va keyingi yuz yillikning boshlanish davri bo'lib, g'oyaviy-nazariy va mafkuraviy qarashlarning shakllanish xilma-xilligi bilan ajralib turadi. Jadidlar harakati vujudga kelguniga qadar Turkistonda turli ma'naviy-g'oyaviy va mafkuraviy oqimlar qadimchilar, islohotchilar, bedilchilar, mashrabxonlar, shuningdek, Markaziy Osiyo, umuman turkiy xalqlarga taalluqli bo'lgan tafakkurning turli shakllari, ijtimoiy-falsafiy mazmun va yo'nalishga ega bo'lgan ma'rifiy ta'limotlar va nazariyalar mavjud edi”.

Demak, bu davrda nafaqat jadidlar harakati balki boshqa g'oyaviy ta'limotlar ham shakllandi. Kishilarning dunyoqarashida tasavvuf falsafasi an'analarini tiklashga intilish kuchayib borayotgandi. Bu davrda O'rta asr musulmon mutafakkirlarining asarlarini qayta nashr etish ishlari boshlandi. Kalom falsafasi, shariat axloqiga oid klassik adabiyotlar arab-fors tilidan turkiy tillarga tarjima qilinib nashr etildi. Masjid va madrasalarda Bedilxonlik, diniy ulamolar tomonidan qadimchilik harakatlari, sherxonliklar avj oldi. O'rta Osiyoda ma'rifatparvarlik harakati kishilarning ilm-fan taraqqiyotiga, umuminsoniy qadriyatlarga, ijtimoiy-iqtisodiy, madaniy-ma'naviy qoloqlikni bartaraf etishga bo'lgan intilishining natijasi edi.

Jadidlar turli mamlakatlardagi taraqqiyot va islohotlar uchun olib borilgan harakatlarning tajribasini milliy asosda qayta ishlashga intildi. Mustamlakachilikka qarshi kurashning bosh g'oyasi ana shu murakkab sharoitda shakllanib yetildi. Bu davr haqida shunday deyilgan: “Tarixdan shu narsa ma'lumki, har bir kichik harakat ertangi katta harakatning zamini vazifasini o'taydi. Bu kungi mag'lubiyat ertangi g'alabaning amalga oshuvida ozmi-ko'pmi rol o'ynaydi. Busiz jamiyatning rivojini tasavvur etish qiyin”.

Jadidlikning poydevori, tamal toshi usuli jadid maktablarining tashkil qilinishi edi. Hamonki, maqsad jamiyatni yangilash ekan, uni yangi avlodgina qilishi mumkin edi. Buning uchun esa zamon talabiga mos yoshlarni tarbiyalash masalasi jadid allomalarining oldiga qo'yilgan bosh masala bo'ldi. 1900-1925 yillar “jadidchilik” tushunchasining paydo bo'lishi o'z davrining eng peshqadam, tashabbuslar davridir.

XIX asrning oxiri va XX asrning boshida Turkistondagi ijtimoiy-siyosiy va falsafiy qarashlar eng avvalo millat yoshlarini tarbiyalash va yangicha ko‘rinishdagi ta’lim tizimidan foydalanishni maqsad qilgan. Dastlab xususiy jadid maktablarini ochib yoshlarga ta’lim bera boshlagan bo‘lsa, keyinchalik jadid maktablari shakllanishi keng quloch yozib bordi. Mintaqaning turli hududlarida o‘ziga xos tarzda bunday maktablar ochila boshladi. Shu o‘rinda jadid maktablarining faoliyati haqida bo‘lgan quyidagi fikrga e’tibor bersak, “Biz turkistonliklar ham 15 yil bo‘ladirki, bu dunyoda o‘zgalardek taraqqiy va toliy etmak orzusi bilan yangi maktablar ocha boshladik. Yolg‘iz erkak bolalarimizni tarbiya etarg‘a kirishdik, ammo qizlarimizning tarbiyasiga hozirgacha hech bir ahamiyat bermadik”. 1910 yili bu “usuli jadid”, ya’ni jadid maktablari yopildi. Ammo bu maktablarning yopilishi jadidlik harakatini susaytirolmadi, aksincha yanada rivojlanishi uchun xizmat qildi. Bundan “ko‘rinib turibdiki, jadidlik keng ijtimoiy masalalar va ma’rifatparvarlik g‘oyalarni ilgari surish maqsadida shakllangan ijtimoiy-falsafiy yo‘nalish bo‘lgan”. Ammo jadidlik ta’limotiga munosabat faqatgina mustaqillik yillarida o‘z mavqeini tiklab bordi.

Jadidlarning asosiy maqsadi dunyoviy ilmlarni egallagan yoshlarni tarbiyalash va ularning ma’naviy ongini oshirish, o‘z vazifasini o‘tay olmay qolgan eskicha ta’lim tizimiga yangicha innovatsion g‘oyalarni singdirish edi. Bundan tashqari ular ijtimoiy hayot tarzini zamonaviy hayotga moslashtirish, milliy va zamonaviy armiyani joriy etish, diniy va dunyoviy, axloqiy normalarni inobatga olgan holda yangi qonunchilik konsepsiyasini ishlab chiqish va joriy etish, davlatning boshqaruv tizimini isloh etish, hududiy tarqoqlikni bartaraf etish chora-tadbirlarini ishlab chiqish, jamiyat rivojlanishining barcha sohalari uchun milliy kadrlarni tayyorlash, davlatlar bilan diplomatik aloqalarni va tashqi siyosat konsepsiyasini o‘rnatish kabi bir qancha masalalarni ilgari surdi.

Fikrimizning xulosasida Turkistonda vujudga kelgan jadidlikning asosiy bosh maqsadi jamiyat taraqqiyoti uchun lozim bo‘lgan barcha sohalarda innovatsion g‘oyalarni joriy qilish edi. Bu bilan jadidlar xalqning yashash tarzini o‘zgartirishni, ularning ma’naviy ongini rivojlantirishni asosiy maqsadlaridan biriga aylantirgan. Jadidlar Turkistonda milliy rivojlanish pozitsiyasining boshida jamiyatning siyosiy, iqtisodiy va ma’naviy taraqqiyotini ta’minlash g‘oyasini olib chiqdi. Ular siyosiy faoliyatida mustaqillik g‘oyalari bilan yo‘g‘rilgan maqsadni ilgari surdi. Bu harakatni biz jadidlarning Chor Rossiyasining tajovuziga qarshi qaratilgan kurashida ko‘rishimiz mumkin. Jadidlar milliy rivojlanish bilan qaramlikka qarshi kurashmoq lozimligini angladi. Bu g‘oyalar jadidlar siyosiy faoliyatining asosini tashkil etdi. Shuning uchun jadidlar mazlum xalqni ozodlik kurashiga chorladi

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ZAVOD VA FABRIKALARNING EKOLOGIYAGA TASIRI VA UNI BARTARAF ETISH YO'LLARI

Annotatsiya; Ushbu maqolada zavod va fabrikalarning ekologiyaga, insonga, o'simlik va hayvonlarga tasiri bayon etilgan. Respublikamizdagi zavodlardan chiqarilayotgan gazlar va ularni bartaraf qilish yo'llari haqida fikr yuritilgan.

Kalit so'zlar; Oltingugurt qo'shoksidi, freon, azot oksidlari, ammiak, dioksinlar, furanlar va kislotali yomg'irlar.

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THE IMPACT OF FACTORIES AND FACTORIES ON THE ECOLOGY AND WAYS TO COMBAT IT

Abstract: This article describes the impact of factories and plants on the environment, humans, plants and animals. It discusses the gases emitted from factories in our republic and ways to eliminate them.

Key words: Sulfur dioxide, freon, nitrogen oxides, ammonia, dioxins, furans, and acid rain.

Kirish. Agar havo tarkibida karbonat angidridi miqdori oshib boraversa, uning ifloslanishining oldi olinmasa yana 50 yildan so'ng yer yuzasi harorati o'rtacha 1,5-3 C ga oshishi mumkin. Natijada muzliklarning erishi, okean suvlari sathining ko'tarilishi, quruqliklarning bir qismini suv bosishi, geografik muhitning o'zgarishi sodir bo'ladi. Akademik A.P.Vinogradov va Fransua Ramada ma'lumotlariga ko'ra, hozirga kelib atmosferadagi uglerod oksidi yildan –yilga ortib bormoqda.

Asosiy qism. Uglerod aylanma harakatining buzilishi va atmosferada oltingugurt qo'shoksidi yig'ilishi yerdagi kimyoviy muvozanatga katta ta'sir ko'rsatadi. Atmosfera havosi asosan yonilg'i resurslaridan foydalanish ko'lamining o'sishi hisobiga ifloslanadi. Sanoat korxonalari va transport vositalarining jadal suratlarda rivojlanishi va katta miqdorda yonilg'ilarning yondirilishi natijasida atmosferadagi erkin kislorod zaxiralari tez sur'atlar bilan sarf bo'lmoqda va uglerod

oksidining miqdori keskin oshmoqda. Oqibatda tabiatda uglerodning aylanma harakati buzilmoqda.

O'zbekiston Respublikasi hududida joylashgan 2600 dan ortiq korxonalardan yiliga 164 ming tonna 150 turdagi ifloslantiruvchi moddalar havoga chiqarib yuborilmoqda. Ulardan 87 foizi respublikaning asosiy sanoat potentsiali hisoblangan Toshkent, Qashqadaryo, Buxoro, Farg'ona, Navoiy viloyatlarida joylashgan korxonalar hissasiga to'g'ri keladi. Ozon yemiruvchi moddalarning atrof muhitga ta'siri birinchi marta 1980 - yilning o'rtalarida Antarktida ustidagi stratosferadagi ozon qatlamining 1975 –yildagi holatiga nisbatan 60-70 foiz kamayishining kuzatilishi bilan aniqlangan. Umumiy kenglikda ozon qatlamining taxminan 3-6 foizga siyraklashgan.

Mamlakatimizda atrof-muhitni muhofaza qilish, xususan, sanoat korxonalarining atrof muhitga ta'sirini kamaytirish orqali ekologik holatni yaxshilash borasida izchil ishlar olib borilmoqda. Shu bilan birga, bu borada o'tkazilgan tahlil natijalari sanoat korxonalarida atrof-muhitni muhofaza qilish masalalarida kompleks yondashuv va strategik rejalashtirishning samarali va zamonaviy usullarini joriy etish zaruratini ko'rsatmoqda.

Yuqorida aytib o'tilgan masalalar yuzasidan bir qator ishlar amalga oshirildi. O'zbekiston Respublikasi Prezidentining 2019-yil 4-oktabrdagi PQ-4477-son qarori bilan tasdiqlangan 2019–2030-yillarda O'zbekiston Respublikasining “yashil” iqtisodiyotga o'tish strategiyasida bir qator vazifalar belgilab berilgan.

Unga ko'ra:

- ✓ tabiiy resurslardan barqaror va samarali foydalanish;
- ✓ milliy iqtisodiyotning tabiiy ofatlar va iqlim o'zgarishiga nisbatan barqarorligini mustahkamlash;
- ✓ milliy iqtisodiyot, xususan, sanoatning “yashil” va kam uglerodli rivojlanishini ta'minlash;
- ✓ ekologiyaga zarar yetkazmaydigan infratuzilmani shakllantirish va sanoat korxonalarida aylanma (sirkulyar) iqtisodiyot amaliyotini joriy qilish, bunda, modernizatsiya jarayonlarini rag'batlantirish masalalari asosiy vazifa etib belgilangan.

Shuningdek, hozirda Hukumat qaroriga asosan, tarmoq korxonalarida ekologik vaziyatni yaxshilash, tabiiy resurslardan oqilona foydalanish va tarmoqni chiqindisiz sohaga aylantirish, shuningdek, aylanma iqtisodiyot amaliyotini joriy qilish bo'yicha “yo'l xaritasi” amalga oshirilmoqda.

Kislotali yomg'irlar o'rmonlarning yo'q bo'lib ketishi, hosilning nobud bo'lishi, tuproq unumdorligining pasayib ketishiga sabab bo'lmoqda. Kislotali yomg'irlar yog'ishining oqibatini AQSH, Germaniya, Chexiya, Shveysariya, Avstraliya va sanoati rivojlangan boshqa ko'plab mamlakatlarda kuzatish mumkin. Kislotali yomg'irlar nafaqat suvning o'simlik va hayvonot olami uchun zarar yetkazadi, balki ular yerdagi o'simliklarni ham nobud qiladi.

Buyuk Britaniyalik olim Parts Gosawining fikriga ko'ra sanoatlashuv darajasi oshishi jiddiy muammolardan biri bo'lib, butun atrof-muhitga salbiy

ta'sir qildi. Atrof-muhitni ifloslantiruvchi sanoatlarning shakllanishining asosiy sababi e'tiborsizligi va moddiy manfaatlar natijasidir. Uning fikriga ko'ra sanoatlashuv darajasining yuqori bo'lishi sanoatning barcha tarmoqlariga salbiy ta'sir qilishini tahlil qilgan (1-rasm).

Sanoat tarmog'i	Ta'siri
QURILISH SANOATI	Karbonat angidrid, metan va boshqa chiqindilarni chiqishi, havoni ifloslantiradigan va hissa qo'shishi mumkin bo'lgan mahsulotlar global iqlimni o'zgarishiga olib keladi.
ELEKTROTEXNIKA SANOAT	Ko'p miqdorda xavfli maishiy chiqindilarni yer yuzasida qolib ketishi bilan izohlanadi. Agar bu buyumlar to'g'ri qayta ishlanmasa, qolgan mahsul zaxarli kimyoviy modda sifati qolib ketadi.
KIMYO SANOATI	Mineral o'g'itlar atrof-muhitda metan, karbonat angidrid kabi moddalar, shuningdek, ammiak va azot, ularning emissiyasi global isish va ob-havoning keskin o'zgarishiga olib keladi.
TEKSTIL SANOATI	To'qimachilik mahsulotlarini ishlab chiqarish jarayonida katta miqdorda energiya talab qilinadi. Bu o'z navbatida ifloslanishni keltirib chiqaradi. Mahsulotlarni bo'yash, oqartirish yoki matolarga pardoq qo'shish ko'pincha o'z ichiga yuqori zaxarli kimyoviy moddalardan foydalanishni oladi.
TOG'-KON SANOATI	Suvning ifloslanishi, biologik xilma-xillikning yo'qolishi, tuproq eroziyasi va ifloslanish.
OZIQ-OVQAT SANOATI	Oziq-ovqat mahsulotlari global gazning to'rtidan bir qismidan ko'prog'ini (26%) tashkil qiladi. Dunyodagi yashashga yaroqli (muz va cho'llardan xoli) yerlarning yarmidan ko'pi qishloq xo'jaligi uchun foydalaniladi.

1-rasm. Sanoat tarmoqlarining atrof-muhitga ta'siri

Noqulay meteorologik sharoitlar natijasida atmosferada chiqindi gazlar konsentratsiyasi oshib bormoqda. Bu esa qalin toksik tumanlar hosil bo'lishiga sabab bo'lmoqda. Toksik qalin moddalarning to'planishi hisobiga insonlar orasida og'ir kasalliklardan nobud bo'lish holatlari kuzatilmoqda.

Havoni ifloslantiruvchilar umumiy toliqishni, ish faoliyatining kamayishini, yo'tal, o'pka va ko'zlarning turli kasalliklarini keltirib chiqaradi. Kimyoviy moddalarning inson organizmiga mutagen, konserogen, allergen, aterosklerotik kabi ta'sirlari aniqlangan.

Pestitsidlar muntazam me'yordan 3-4 va 9 marta ko'p qo'llanilgan hududlarda yurak-tomir tizimining kasallanish darajasi 1.2 va 2.2 marta oshganligi ma'lum. Kelajakda pestitsidlarni ishlatish natijasida bolalarning nobud bo'lishi,

aholi o'rtasida bronxit, bronxial astma, avitaminoz va boshqa kasalliklarning ortib borishi bashorat qilinmoqda.

Atmosfera havosining chiqindilar bilan ifloslanishi XX asrdan e'tiboran tez sur'atlar bilan yuz berganligi qayd etilgan. Katta shaharlarda atmosfera havosi tarkibidagi chang miqdorining har xil bo'lishi shaharlar ozodaligiga ko'kalamzorlashtirilganligiga, sanoat korxonalarining katta–kichikligiga va ularni shahar hududida joylashganligiga bog'liq. Atmosfera havosidagi chang zarrachalari inson organizmiga yomon ta'sir ko'rsatadi. Changlarning asorasti ular tarkibidagi kimyoviy moddalarning biologik faolligiga, tabiatiga, fizik jihatiga bog'liq bo'ladi. Havodagi chang tarkibida qo'rg'oshin, marganets, kadmiy, ftor aerzollari organizmga tutashib surunkali kasalliklarni paydo qiladi. Kamqonlik, flyuoroz, poliartrit, polinervit kabi kasalliklar kelib chiqadi.

1980-yillarning boshlarida qo'shni Tojikistonda alyuminiy zavodi ishga tushirilishi bilan O'zbekistonning Surxondaryo viloyatiga qarashli ko'pgina tumanlarida ekologik jihatdan tang ahvol yuzaga keldi. Zavod atmosferaga ko'p miqdorda ftorli vodorod, uglerod oksidi, oltingugurt gazi, azot oksidlarini chiqarib tashlagan. Vodiyning yuqori qismida Tojikistonning O'zbekiston bilan chegarasida joylashgan zavodning chiqindilari tog'dan vodiya tomonga esadigan shamol bilan birga Respublikaning chegaradosh bo'lgan Surxondaryo viloyatining Sariosiyo, Uzun, Denov, Oltinsoy tumanlari hududiga tarqalgan.

Ftorli vodorodning chorva mollari va poliz ekinlariga salbiy ta'siri oshib borgan. Har yili O'zbekiston hududida joylashgan zavodlardan havoga 4 mln tonnaga yaqin zararli moddalar chiqarilmoqda. Bu moddalarning deyarli yarmi uglerod oksidiga, 15 foizi uglevodorodlarga, 14 foizi oltingugurt qo'shoksidiga, 9 foiz azot oksidiga, 8 foiz qattiq moddalarga va 4 foizga yaqini o'ziga xos o'tkir zaharli moddalarga to'g'ri keladi.

Xulosa va takliflar. Atmosferaga chiqarilayotgan zararli gazlarning ekologiyaga ta'sirini kamaytirishning bir nechta yo'llari va usullari bor. Yashil makon loyihasi bo'yicha daraxtlar ekilib, ko'kalamzorlashtirish va o'rmonlarni tiklash lozim. O'rmonlar atmosferaga chiqayotgan zararli moddalarni yutadi va ekologiya ifloslanishini kamaytirdi. Qayta ishlash va chiqindilarni kamaytirilishi ham samarali yo'llardan biri. Atmosfera havosi ifloslanmasligi uchun quyosh, shamol, gidroenergetika resurslaridan foydalanish zarur.

Zavod va fabrikalardan chiqayotgan zararli gazlarning insonga, o'simliklarga va hayvonlarga ta'sirini kamaytirish uchun qayta ishlash usulidan foydalanish lozim. Aholini zavod va fabrikalar hududidan boshqa joylarga ko'chirish kerak. Bu holatlarni to'liq bartaraf qilish imkoniyati yo'q. Qisman bo'lsada kamaytirish mumkin. Texnologik innovatsiyalarni, yangilangan va ekologik jihatdan xavfsiz texnologiyalarni ishlab chiqish va ulardan foydalanish zarur.

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MAKTABGACHA TA'LIM YOSHIDAGI BOLALARGA TA'LIM - TARBIYA BERISHDA PEDAGOG VA OTA-ONALAR HAMKORLIGI

Annotatsiya: Ushba maqolada bola tarbiyalashda ota-ona va pedagogning o'rni. Bola tarbiyalashda ota-onaning o'z vazifalari. Maktabgacha ta'lim tashkilotining maqsadi. Bola rivojlanishida oilaning hamkorligi.

Kalit so'zlar: Maktabgacha ta'lim tashkiloti, bola, tarbiya, oila, ota-ona, hamkorlik

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PEDAGOGICAL AND PARENTAL COOPERATION IN THE EDUCATION OF CHILDREN OF PRESCHOOL AGE

Annotation: The article discusses the role of parents and educators in raising a child. The responsibilities of parents in raising a child. The purpose of a preschool educational organization. Family cooperation in the development of a child.

Keywords: Preschool educational organization, child, upbringing, family, parents, cooperation

Bolaning farovonligi uning oila a'zolari va yaqinlarining Maktabgacha ta'lim tashkiloti ahamiyatini tushunishiga bog'liq. Ota-onaning ta'lim va tarbiya jarayoniga qatnashishga jalb qilinganda va o'z hissasini qo'shganda bolalar yaxshiroq ta'lim oladilar va rivojlanadilar. Maktabgacha ta'lim tashkilotining ota-onalar bilan hamkorligi maktabgacha ta'lim sifatining muhim tarkibiy qismlaridan biridir. Farzandga yaxshi tarbiya berish ota-onaning asosiy mas'uliyatli vazifalaridan biridir.

Bola asosan ona qornida tarbiya oladi. Ona homila vaqti qaysi mashg'ulot bilan ko'proq shug'ullansa bola shunga mehr qo'yadi. Bu borada ular har qadamda mas'uliyat bilan yondashmog'i lozim. Kelajakdagi yo'li ravon bo'lishini istagan har bir ota-onalar sarflaydigan vaqtini va harakatini ertaning buyuk insonlari bo'lgan farzandlarini ulg'aytirish uchun sarflashlari lozim. Farzand kamoloti uchun sarflangan har bir daqiqa ertangi farovon hayot uchun tamal toshi bo'ladi desak hech mubolag'a bo'lmaydi. Agar ota-ona vaqtida farzandiga e'tibor qaratmasa, uning kelajagi uchun qayg'urmasa, keyinchalik afsus – nadomat bilan yashashi muqarrar. Bu kelajakda muammolarni yuzaga chiqarishi mumkin. O'sha vaqtda esa muammolarni hal qilishga kech bo'lishi mumkin. Shunday ekan, farzandining

taqdiri uchun e'tiborli bo'lib, uning xulqi, tarbiyasiga va ilm olishiga befarq bo'lmaslik lozim.

Buyuk mutafakkir shoirimiz Alisher Navoiy farzand tarbiyasi xususida shunday deydi: "Yosh bolaga nisbatan eng zarur ish bilki, uni kichkinaligidan parvarish qilishdir. Qatrani sadaf tarbiya qilgani uchun odamlarning boshiga chiqib sharaf topdi. Tarbiyaning yana biri bo'laga ilm-u adab o'rgatish uchun muallim chaqirishdir. O'g'ling bilimsizligicha qolib ketsa, ajab kamchilik bo'ladi. Unga sening shafqat qilishing foydalidir, lekin buning ortiqchasi zarardir". Bu fikrlar orqali qattiqqo'llik va shafqatning me'yorda bo'lishini bilish mumkin.

Davlat o'quv dasturini amalga oshiruvchi pedagog bolaning shaxsiga hurmat ko'rsatadi va ta'lim va tarbiya jarayonini dastur tamoyillariga muvofiq tashkil qiladi. Pedagog fasilitator sifatida bolalarga ta'lim va tarbiya berishda o'z bilimi, ko'nikma va resurslaridan foydalanadi. Pedagog ta'lim va tarbiya jarayonini rejalashtiradi, bolaning har tomonlama rivojlanishiga va uning salohiyatini ochishga hissa qo'shadigan rivojlantiruvchi muhitni yaratadi. Buning uchun pedagog bolaning rivojlanish xususiyatlarini biladi, uning his-tuyg'ularini tushunadi, har bir bolaning ehtiyojlari va qiziqishlarini aniqlaydi va hisobga oladi. Pedagog guruhda shunday inklyuziv muhit yaratadiki, unda har bir bola o'zini ardoqli, qobiliyatli va ta'lim jarayoniga jalb qilingandek his qilishi kerak. Pedagog bolaning mustaqil harakat qilish, natijalarga erishish va yutuqlarni amalga oshirish hamda ulardan zavqlanish qobiliyatini rivojlantirishga hissa qo'shadi. Pedagog, shuningdek, bolalarda zarurat bo'lganida, har bir bola tarbiyachidan yordam va dalda olishi mumkinligiga ishonch hissining paydo bo'lishiga yordam beradi. Pedagog doimiy ravishda kasbiy kompetentligini takomillashtirish uchun o'z kasbiy faoliyatini hujjatlashtiradi, tahlil qiladi va baholaydi.

Pedagog bolaning, ota-onalarning va mahalliy jamoatchilik vakillarining fikri va tajribasini hurmat qiladi va o'z ishini teng sheriklik asosida quradi. Xalqimizda "Qush uyasida ko'rganini qiladi" degan naql bejizga aytilmagan. Bola uchun ota-onasi, dunyodagi eng aqlli inson qahramon, hamma narsani biluvchi shaxs hisoblanadi. Bola ota-onasida nima ko'rsa bu u uchun to'g'ri. Chunki ota-onasi bola uchun eng bilimli insondir. U juda qiziquvchan bo'ladi. Ota-onasi kitob olib o'qisa, bola kitob oladi, telefon olsa telefon oladi. Bilasizmi, nega chet elda bola tug'ulganidan ota-onasi bola yonida faqat kitob oladi? Bola asta-sekin o'zini anglab boshlagandan bola oldiga ota-ona o'tirib ikki yoniga telefon va kitob qo'yadilar va bola yonida telefonni surib qo'yib kitob oladilar va o'qiy boshlaydilar. Buni ko'rgan bola ham qiziqib telefon emas, balki kitob ushlaydi. Aslida oila tarbiyasida pedagogning o'zni davlat o'quv dasturini amalga oshiruvchi pedagog bolaning shaxsiga hurmat ko'rsatadi va ta'lim va tarbiya jarayonini dastur tamoyillariga muvofiq tashkil qiladi. Pedagog fasilitator sifatida bolalarga ta'lim va tarbiya berishda o'z bilimi, ko'nikma va resurslaridan oydanadi. Pedagog ta'lim va tarbiya jarayonini rejalashtiradi, bolaning har tomonlama rivojlanishiga va uning salohiyatini ochishga hissa qo'shadigan rivojlantiruvchi muhitni yaratadi. Buning uchun pedagog bolaning rivojlanish xususiyatlarini biladi, uning his-tuyg'ularini tushunadi, har bir bolaning ehtiyojlari va qiziqishlarini aniqlaydi va hisobga

oladi. Pedagog guruhda shunday inklyuziv muhit yaratadiki, unda har bir bola o'zini ardoqli, qobiliyatli va ta'lim jarayoniga jalb qilingandek his qilishi kerak. Shuning uchun ota-ona pedagog birgalikda bu muvozanatni ushlab turishi, hamkorlikda tarbiya berishi lozim.

Maktabgacha ta'lim tashkilotida bola rivojlanishini qo'llab-quvvatlash va uni amalga oshirish, qo'shimcha ta'lim xizmatlari va ota-ona hamkorligi

Bolaning maktabgacha ta'lim tashkilotida rivojlanishini qo'llab-quvvatlash va uni amalga oshirishi uchun maktabgacha ta'lim tashkiloti javobgar bo'ladi.

Qo'shimcha ta'lim xizmatlari maktabgacha ta'lim tashkiloti tomonidan imkoniyatlardan kelib chiqqan holda bola va aholi ehtiyojlaridan mos ravishda tashkil etiladi.

Qo'shimcha ta'lim xizmatlari fakultativ hisoblanadi va ularni tashkil qilishda ko'ngillilar ota-ona va homiyilar ishtirok etishi mumkin.

MTTda alohida ehtiyojga ega bo'lgan bolalarni qo'llab-quvvatlash va uni amalga oshirish uchun maktabgacha ta'lim tashkiloti rahbari javobgar bo'ladi.

Bolaning har tomonlama rivojlanishini ta'minlash uchun maktabgacha ta'lim tashkiloti ota-onalar bilan o'zaro hamkorligini quyidagi shakllari tashkil qilish mumkin:

Ota-onaning maktabgacha ta'lim haqidagi fikrini inobatga olish;

Ilk rivojlanish masalalaridan ota-onalariga bilim berish;

Ota-onalarni o'quv-tarbiyaviy jarayonida faol qatnashishga jalb qilish;

Ota-onalarning tashkilot hayotida ishtirok etish borasidagi tashabbusini qo'llab-quvvatlash.

Ota ona bilan ishlashda quyidagi ish shakllaridan foydalaniladi.

1. Davra suhbatlari

2. Ota onalar bilan uchrashuvlar

3. Ota-onalar haftaligi

4. Bayramlar

5. Ota-ona halqasi

6. Ochiq eshiklar kuni

7. Konferensiyalar kabilar hisoblanadi

Natijalar. Ushbu tadqiqot natijalari maktabgacha yoshdagi bolalarni o'qitish va tarbiyalashda o'qituvchilar va ota-onalar hamkorligining muhim rolini ko'rsatadi, bu ham miqdoriy, ham sifat ma'lumotlari bilan tasdiqlangan. Statistik tahlil shuni ko'rsatdiki, ota-onalari va o'qituvchilari muntazam muloqotda bo'lgan bolalarning 78 foizi ijtimoiy ko'nikmalarni sezilarli darajada yaxshilagan, shu bilan birga bunday hamkorlik minimal bo'lgan muhitdagi bolalarning atigi 45 foizi ($p < 0,05$). Bundan tashqari, kognitiv rivojlanishni baholash shuni ko'rsatdiki, ota-onalari va o'qituvchilari juda faol bo'lgan bolalar standartlashtirilgan erta savodxonlik va hisoblash testlarida kamroq hamkorlikda yordamga ega bo'lgan tengdoshlariga qaraganda o'rtacha 23% yuqori ball olgan.

Xulosa qilib aytganda, ma'lumotlar o'qituvchi va ota-onalar hamkorligining maktabgacha yoshdagi bolalarning rivojlanishiga o'zgartiruvchi ta'sirini ta'kidlaydi. Hamkorlik ekotizimini rivojlantirish orqali o'qituvchilar va oilalar ta'lim natijalarini

sezilarli darajada oshirishlari va bolalarni kelajakdagi akademik muvaffaqiyatlarga tayyorlashlari mumkin.

Oilada ma'naviy-ruhiy muhit, bola tarbiyasida g'oyat muhim ahamiyatga ega bo'ladi. Oila sog'lom, yetuk farzandni ulg'aytirib kamol toptirishda mas'uldir. Farzandni sog'lom, yetuk, bilimli, shijoatli qilib voyaga yetkazish oilaga, ota-onaga bog'liqdir. Shuning uchun ota-onalar bolalarga e'tiborli bo'laylik.

Foydalanilgan adabiyotlar

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THE BRAIN'S ROLE IN BODY MANAGEMENT

Abstract: *This article highlights the scientific breakthroughs of renowned researchers who have explored how the brain governs the body. The human body coordinates its functions with other organs and systems through the brain. Prominent scientists like I.P. Sechenov and N.P. Pavlov have extensively studied and shared insights into brain activity. Despite numerous studies, the human brain remains one of the most enigmatic and least understood aspects of science. It has yet to fully reveal its mysteries. The brain's gray matter shapes a unique inner world, filled with memories, fantasies, emotions, and desires. With the advancement of innovative research techniques and the availability of cutting-edge equipment in the field of neuropathology, scientists have uncovered many of the brain's hidden secrets.*

Key words: *neurophysiology, brain, memory, organ, medicine, function, arousal signal.*

With the development of new methods in neuroscience, the natural potential of the human brain becomes the subject of scientific research. V.M. Bekhterev, N.P. Kobozhev and many others have shown in their research that the brain is not capable of fully conscious and completely unconscious functions due to the low transmission rate of electrical influences of the brainstem¹. It is known that impulses in synapses are delayed by 0.2-0.5 milliseconds, whereas human thinking is developed very quickly. At this stage of the development of neopathophysiology, we understand the function of nerve cells very well. According to scientist Anokin's research, the system of sensory-biological effects is temporarily involved in the formation of dependent reactions in each cortical cell. PET allows you to identify areas that perform a certain mental function, but you don't know what is happening in these areas, in what order and how signals are sent to nerve cells and how they interact with each other. The brain map identifies areas responsible for certain mental functions. But there is another, very important level of interaction between cells and the brain - a group of newborn nerve cells, whose functions are of great scientific interest.

Many areas of the brain are involved in controlling the body. The brain is an important organ of the human body because it provides information about the condition of our muscles, joints and skin, intelligently controls our body, especially when a person is ill: the brain turns on auto mode, many functions work autonomously. This is due to the fact that on the frontal surface of the cortex, information about receptors is located close to the center of the head. That is, the area is located in the occipital cortex, which is responsible for understanding the state of the body and its organs.

In cases of lethargy or coma, certain regions of the human brain detect that the person seems to have left their body and is observing themselves from a different part of the room, often from above. The person then recounts this experience to doctors once they are revived. These visions are managed by the multimodal sensory cortex (located in the temporal region), which serves as the central hub of the brain's network, connecting various body parts into a unified form and thus capturing the image.

Furthermore, the brain has a topological map of spatial locations, primarily based on visual data. This map outlines the boundaries of body parts and their interrelations. To the left of these boundaries lies a temporary system linked to the encoding of shapes and the "what?" function.

Additionally, the brain generates semantic representations. While "images" only convey information about one's own body, semantic representations describe the entire body as well as those of others. This process plays a crucial role in shaping our perception.

The body's interaction with the external environment is based on a model of the outside world and a model of the body created by the brain (the "body motif"). Body behavior is based on the internal structure of the body and the control of this action by the brain (whether we want to take something or start something). The course of movement is often compared to waiting for the actual update of information about emotions.

In his work "The Image of the Brain," I.M. Sechinov argued that intellectual processes are based on a reactive theory of action. He gave positive evidence of the reflexive nature of mental activity, that is, all experiences, thoughts, and feelings come from any general stimulation of the body¹.

Pavlov developed his theory of dependent reactions, according to which the horizontal cortical temporal relationships in the formation of dependent reactions are characterized by nerve centers - involuntary centers and the influences of dominant centers.

There was a lot of research by V.M. Bekhterev, who also studied the brain. He introduced a method to study the pathways of nerve fibers and cells, thereby creating an "atlas of the brain." One of the real breakthroughs in detecting deep brain activity is the possibility of direct contact with brain cells. The method involves the direct transfer of electrodes to the brain for diagnostic and therapeutic purposes. After stimulation, the electrodes are implanted in different parts of the brain, enhancing their activity, which allows us to study the processes there.

It was believed that the brain was divided into well-defined areas, each of which was responsible for its specific function. For example, this area is responsible for turning the little finger, and this area is responsible for love. These searches are based on simple observations.

Currently, it is clear that not everything is so simple: brain cells from different areas of the brain function very hard, and it is impossible to give a clear assessment of the functioning of the brain, memory, speech. It is still difficult to say whether this brain unit is not a part of the brain, but is a broader network and is responsible

for the perception of only one area, while the other is responsible for the perception of words and sentences.

The complex function of the brain, which provides a high level of mental activity, is similar to the flash of a firework: first we see a lot of light, then there is blinking, fading, some parts are dark, others are flashing. Similarly, an excitatory signal is sent to a specific area of the brain, but the activity of nerve cells follows its own specific rhythm. Due to these features, the destruction of some brain cells may be irreversible for the brain, while others can change the properties of nerve cells, namely plasticity, in order to "reconstruct" nerves.

If cortical neurons independently solve a particular problem in the brain, thereby increasing their activity, then the frequency of deep nerve impulses decreases. The types of brain functions are possible when decoding neural code, meaning you can understand how the structures and structures of individual non-synchronous systems are connected to the entire brain.

According to the researchers, a high-frequency area was found around the brain that differs from the normal biological area of humans. The mental area provides a rapid overall course of all neuropathological processes. It was decided that there was so much energy left in this mental area that it needed special satellite crystals. They allow you to store important information about the release of energy in your body's proteins.

In the 1960s, Professor Kobozhev from Moscow State University, while investigating the phenomenon of consciousness, concluded that the physiological anatomy of the brain alone does not ensure mental and other cognitive functions. This is made possible by external sources of hypersensitive particles that serve as a foundation for the release of energy influencing mental and emotional states. Research has demonstrated that organelles are capable of capturing the flow of psychic energy. It was discovered that adrenal crystals function as carriers of holograms, which determine the spatial development of all psychological events created at birth. The fat gland crystal contains significant information about various positive and negative experiences in a person's life.

The psychic effects of these single crystals dictate how and what events unfold in a person's life. Many individuals are unaware of this process and lack full awareness of their energy and informational potential.

In critical situations where immediate action is necessary, the intense production and release of "heavy" energy is triggered, signifying the discharge of a large amount of energy from its source. Metaphorically, one might say that a person possesses their own nuclear reactor. This sparks a self-sufficient psychological process akin to an epilepsy lens and activates an anti-crisis program. However, the release of this powerful supernatural energy is short-lived, and once the crisis is resolved, the overwhelming moments of initial psychological stress are forgotten. Many individuals are unable to consciously control psychic energy and utilize it to solve various problems.

Contemporary neuropathological science focuses heavily on studying the release of psychological energy in the brain. Numerous institutes and laboratories

are working on theoretical aspects of this field, and their progress enables practical psychology to tackle the challenge of activating the reservoirs of the human psyche. Standard issues can be addressed by accumulating experience and strengthening the nervous system through psychological training. More complex and unconventional problems can be resolved by activating efficient development programs that awaken the latent potential of the psyche. This approach makes it possible to fully unlock the individual's potential and offer effective methods for its realization.

In 40-70 years, the brain has its own characteristics. The mental "strength" of a healthy lifestyle does not decrease with age, but only increases. The maximum expression of body function is from 40 to 60 years. Since the age of 50, people have been using both hemispheres to solve problems.

It is believed that middle-aged people are more resistant to stress and are able to work more effectively in situations of severe emotional stress. Brain neurons do not die if a person does not have a serious mental function. The amount of white matter in the brain increases with age and reaches a peak after 60 years, with a significant increase in experiment¹. The brain is considered strong, full and ready to work at the age of 40-70 years, but it is in decline and does not function normally. Some psychologists have come to the same conclusion: with age, the brain begins to function more efficiently than at a young age, if a person leads a proper lifestyle.

In conclusion, social neuroscience, in practice, is an interdisciplinary field that brings together the scientific interests of researchers from various sectors. Clearly, in the realm of geopolitics, Marx's prophecy is becoming a reality in the sense that, in the future, there will be no significant distortion in the physical and social sciences. Instead, it will evolve into a great science.

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AXBOROT ASRIDA ZAMONAVIY KUTUBXONACHILARNING O'RNINI VA ULARNING KASBIY MAHORATI

Annotatsiya: Maqolada kitob, kutubxona va kutubxonachining vazifasi va Qarshi davlat universiteti kutubxonasi haqida fikrlar bayon etilgan. Ya'ni kutubxona – qadimiy qo'lyozmalar, badiiy, ilmiy kitoblar saqlanadigan va kishilik jamiyati tarixini avlodlardan – avlodlarga yetkazadigan muassasa ekanligi to'g'risida hamda bu maskanda insoniyat erishgan barcha ilmlar, turli fan sohalari bo'yicha shaklidan, xilidan, turidan, tilidan qat'i nazar, adabiyotlar to'planganligi haqida so'z yuritilgan.

Kalit so'zlar: kitob, qo'lyozma, kutubxona, katalog, elektron resurs, zamonaviy texnologiyalar, havo elementlari, onlayn resurslar.

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THE ROLE OF MODERN LIBRARIANS IN THE INFORMATION AGE AND THEIR PROFESSIONAL SKILLS

Abstract: The article presents thoughts on the book, library, and librarian responsibilities, as well as the library of Qarshi State University. That is, a library is an institution that stores ancient manuscripts, artistic and scientific books, and passes down the history of human society from generation to generation, and in this place, literature is collected on all sciences that humanity has achieved, in various fields of science, regardless of their form, type, type, and language.

Keywords: book, manuscript, library, catalog, electronic resource, modern technologies, air elements, online resources

Kirish. Insoniyat tomonidan yaratilgan yozuvdan keyingi ikkinchi kashfiyot sifatida – kitob yuzaga keldi. Kitob insoniyat tarixiy taraqqiyotining bilim va ilm mezoni sifatida baholanadi. Kitob — insonning eng yaqin do'sti va maslahatchisi, aql qayrog'i va bilim manbaidir. Kitob fikrlash quroli, xazinalar kaliti, tafakkur manbai bo'lgani uchun ham xalqimiz uni nonday aziz, mo'tabar va muqaddas deb hisoblagan. Kishilik jamiyatining madaniyati uning kitobida aks etadi. Inson o'zining fikrlash qobiliyati, ma'naviyat dunyosi bilan tirik.

Davrlar davomida kitobning shakl-shamoyili, sifati, bezatilishi, tashqi ko'rinishi, ishlab chiqarilishi takomillashib bordi. Antik davrda o'rama kitoblar shakllangan bo'lsa, keyinchalik eramizning IV asriga kelib, muqovaga ega qo'lyozma kitoblar paydo bo'ldi. XV asrga kelib esa qo'lyozmalarni qo'lda

ko'chirib yozishdan kitob chop etishga o'tildi. XX asr oxiriga kelib esa ilg'or mamlakatlarda elektron shakldagi kitoblar yuzaga keldi. Ammo har qanday shaklda bo'lmasin, kitobning mohiyati o'zgarmaydi. Qo'lyozma holida ham, matbaa holida va elektron shaklda ham kitob o'zining tub mohiyatini, ahamiyatini yo'qotmaydi, uning o'rnini boshqa narsa egallay olmaydi.

Yurtboshimizni kitobxonlik madaniyatini yuksaltirishga qaratilayotgan alohida e'tibori tufayli barcha ta'lim maskanlaridagi o'tkazilayotgan "Yosh kitobxon", "Kirobxonlar bayrami", ko'rik tanlovlari, jumladan Qarshi davlat universitetida ishlayotgan zamonaviy kutubxona va kitob do'konlari "Mahalla yoshlari bilan ishlash xonasi" yosh avlodni ma'naviy va intellektual ehtiyojini qondirishda, kitobga oshno bo'lishida muhim o'rin tutmoqda. Sohibqiron Amir Temur ta'biri bilan aytganda, "Kitob (bitig) barcha bunyodkorlik, yaratuvchilik va aql-idrokning, ilmu donishning asosidir, hayotni yaratuvchi murabbiydir".

Asosiy qism: Insoniyatning eng ilg'or qismi bo'lgan ilm ahli tomonidan yaratilgan qo'lyozmalar va kitoblar qanday holatda va qayerda saqlanishi lozim. Albatta kitoblar maxsus havo elementlari ya'ni harorat, namlik, shamolatilish va boshqa texnik imkoniyatlar mavjud joylarda – kutubxonalarda maxsus malakali mutaxassislar (kutubxonachi) tomonidan saqlanishi maqsadga muvofiq. Shu o'rinda kutubxonachi va uning vazifalariga e'tiborni qaratish o'rinlidir. Dastlab, kutubxonachilarning vazifasi faqat kerakli kitobni tezda topish edi. Ammo kutubxonada kitob zaxiralarining ko'payishi bilan kutubxonachilar faoliyati ko'lam ham kengayib bordi. Zamonaviy kutubxonachi - bu nafaqat kitobxonga kerak bo'lgan kitobni tezda topibgina qolmay, balki bosma nashrlarni saqlashning barcha xususiyatlarini (shu jumladan qadimiy nusxalarini) biladigan, fondni tashkil qiladigan va kutubxonachi - bu nafaqat kitoblarni tartibga soluvchi inson, balki bilim tarqatuvchi, kitobxonlarga yo'l ko'rsatuvchi va ilm-ma'rifat rivojiga hissa qo'shuvchi mutaxassisdir. Uning vazifalari turli yo'nalishlarni o'z ichiga oladi va doimo o'zgarib borayotgan axborot jamiyatida yanada muhim ahamiyat kasb etmoqda.

Kutubxonachining asosiy vazifalari nafaqat yangi kitoblarni ro'yxatga olish, ularni kataloglashtirish va foydalanuvchilarga qulay tartibda taqdim etish, kutubxonada mavjud adabiyotlarni nazorat qilish, ularni saqlash va yangilash hisoblanadi. Har bir kitobxon tashrifchisi o'ziga kerak kitob yoki ma'lumotni topishi uchun kutubxonachi tomonidan yo'nalish va maslahat oladi. Ayniqsa ilmiy - tadqiqot ishlari bilan shug'ullanayotgan talabalar, magistrlar, doktorantlar va olimlar uchun to'g'ri adabiyot tanlashda kutubxonachining o'zni beqiyosdir.

Zamonaviy kutubxonachilar nafaqat bosma kitoblar bilan, balki elektron resurslar, onlayn ma'lumotlar bazalari va raqamli kutubxona tizimlari bilan ham ishlashlari kerak. Bugungi kunda ko'plab kutubxonalar elektron kataloglar va internet bazalaridan foydalanishni joriy etmoqda. Jumladan Qarshi davlat universiteti kutubxona fondida 600 mingga yaqin kitob fondi bo'lib, shulardan 70 foizga yaqini elektron kataloglashtirilgan kitoblar mavjud bo'lib, yiliga 10 mingdan ortiq kitobxonlar bizga murojaat qiladi.

Kutubxonachi nafaqat kitoblarni saqlaydi, balki madaniy - ma'rifiy tadbirlarni o'tkazib, keng omma o'rtasida kitobxonlikni targ'ib qila oladigan mutaxassis ham bo'lishi talab etiladi. Kitobxonlik haftalari, adabiy uchrashuvlar, yozuvchi va shoirlar bilan suhbatlar-bularning barchasi kutubxonachining faol ishtirokida amalga oshiriladi.

Axborot texnologiyalari rivojlanishi bilan kutubxonachilik kasbi ham rivojlanmoqda. Elektron kitoblar, audio, video materiallar, virtual kutubxonalar-bularning barchasi kutubxona xizmatlarining bir qismiga aylanib bormoqda.

Kutubxonachi - bu bilim targ'ibotchisi, kitob va axborot vositasida jamiyatga xizmat qiluvchi fidoiy inson hisoblanadi. Uning faoliyati natijasida odamlarning ilm-ma'rifatga yaqinlashishi, kitob mutaolasining rivojlanishi va madaniy saviyasining oshishi kuzatiladi. Shunday ekan, kutubxonachilik kasbi bugungi kunda ham dolzarb va muhim soha hisoblanadi.

Xulosa. Har bir kutubxonaning o'z tarjimai holi, o'z tarixi, o'z vazifasi bor. Qarshi davlat universiteti kutubxonasi ham 2025 yilda 80 yillik yubeleyini nishonlash arafasida, 1945-yil 1-sentyabrda Buxoro birlashgan pedagogika va o'qituvchilar institutining Qarshi filiali sifatida faoliyat boshlagan davrdan tashkil etilgan bo'lib, bugungi kunda u nafaqat Qashqadaryo viloyatining balki Respublikamiz janubiy mintaqasi eng yirik oliygohining yagona madaniyat markazidir. Bu yerda barcha yoshdagi kitobxonlar uchun dam olish va foydali vaqt o'tkazish uchun sharoitlar yaratilgan: talabalar uchun 4 ta kompyuter xonalari, 200 kitobxonga mo'ljallangan 2 ta kitob mutoalasi zali, QR kodli qurilma, 3D qurilmasi, skaner qurilmalari mavjudki barchasi kitobxonlarning vaqtlarini maroq bilan o'tkazishiga xizmat qilib kelmoqda.

Bugungi kunda Qarshi davlat universitetida 20 mingdan ziyod bakalavr hamda magistrlar tahsil olishmoqda va ularga mingga yaqin oqituvchi – professorlar ta'lim va tarbiya berishmoqda. Jumladan talabalarning ta'lim va tarbiya olishlarida kutubxona hamda kutubxona ishchi va xodimlarining ham o'rni beqiyosdir. Universitetimizning kutubxona xodimlari ishga yangi texnologiyalarni faol qo'llamoqdalar. Har yili 50 ga yaqin ko'ngilochar va ma'rifiy tadbirlar o'tkaziladi. Kutubxonaning universal fondi badiiy va ilmiy muxlislaridan tortib, viloyatimiz madaniyati ixlosmandlarigacha bo'lgan turli qiziqishlarga ega tashrif buyuruvchilarni o'ziga jalb qiladi

Kutubxonachi-faqatgina kitoblarni saqlovchi emas, balki jamiyatni ma'naviy boyituvchi, kitobxonlik madaniyatini shakllantiruvchi mutaxassisdir. Uning mehnati ilm-ma'rifatga bo'lgan ishtiyoqni oshiradi va insonlarni kitob orqali yangi bilim va kashfiyotlarga yetaklaydi.

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SHAHARLARNING RIVOJLANISH MUAMMOLARINI GEOGRAFIK TADQIQ ETISHNING METODOLOGIK ASOSLARI

Annotatsiya. Mazkur maqolada shaharlarning rivojlanish muammolarini geografik tadqiq etishning uslubiy masalalari tahlil qilinadi. Urbanizatsiya jarayonlari natijasida yuzaga kelayotgan muammolarni o'rganish uchun kompleks, tizimli va kartografik tahlil usullaridan foydalanish zarurati asoslanadi. Shahar geografiyasini tadqiq qilishning nazariy va amaliy ahamiyati yoritilib, metodologik yondashuvlarning dolzarbligi muhokama qilinadi. Ushbu maqola geografiya va urbanizatsiya sohasida tadqiqot olib borayotgan olimlar hamda mutaxassislar uchun foydali bo'lishi mumkin.

Kalit so'zlar: shahar geografiyasi, urbanizatsiya, shahar rivojlanishi, metodologik yondashuvlar, kartografik tahlil, hududiy rejalashtirish, barqaror rivojlanish.

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METHODOLOGICAL ISSUES OF GEOGRAPHIC RESEARCH ON URBAN DEVELOPMENT PROBLEMS

Annotation. This article analyzes the methodological aspects of studying urban development issues from a geographical perspective. The necessity of using comprehensive, systematic, and cartographic analysis methods to examine problems arising from urbanization processes is substantiated. The theoretical and practical significance of urban geography research is highlighted, and the relevance of methodological approaches is discussed. This article may be useful for researchers and specialists conducting studies in geography and urbanization.

Keywords: urban geography, urbanization, urban development, methodological approaches, cartographic analysis, spatial planning, sustainable development.

Shaharlarning rivojlanishi zamonaviy geografiya fanining dolzarb tadqiqot yo'nalishlaridan biri hisoblanadi. Urbanizatsiya jarayonlari bilan bog'liq muammolarni geografik nuqtai nazardan o'rganish shahar muhiti, resurslardan foydalanish va hududiy rejalashtirish masalalarini tahlil qilishni talab etadi. Ushbu tadqiqot yo'nalishida metodologik yondashuvlarni ishlab chiqish shaharlarning barqaror rivojlanishini ta'minlashda muhim ahamiyat kasb etadi.

Shahar tushunchasi ko'p qirrali bo'lib, u tadqiqot maqsadiga qarab turli olimlar tomonidan har xil talqin qilinadi. Ushbu tushuncha qat'iy ilmiy atama emas. Turli mamlakatlarda va tarixiy davrlarda "shahar" tushunchasi turli mazmun va o'ziga xos belgilarga ega bo'lgan ijtimoiy-madaniy hodisalarga nisbatan qo'llangan. Shaharlar insoniyatning qadimgi davrlaridayoq yashash maskani shakli sifatida shakllangan. Turli tarixiy davrlarda ularning vujudga kelishi muayyan hududlarda turli omillar bilan belgilanib kelgan. Asosiy omillar qatoriga odatda quyidagilarni kiritish mumkin: aholi xavfsizligini ta'minlash zarurati, suv va oziq-ovqat manbalariga yaqinlik, ishlab chiqarish va savdo aloqalarini rivojlantirish uchun qulay sharoitlarning mavjudligi va boshqa ijtimoiy-iqtisodiy omillar.

Zamonaviy shaharlar, ayniqsa yirik megapolislar, ilmiy-texnik taraqqiyotning yetakchilari bo'lib, jamiyat hayotining barcha sohalarida — ijtimoiy, iqtisodiy, madaniy, ilmiy va siyosiy yo'nalishlarda — o'zgarishlarning asosiy tashabbuskorlari hisoblanadi.¹⁰

Ensiklopedik manbalarda shahar tushunchasi turlicha talqin qilinadi. S. Ojegovaning "Rus tili lug'ati"da shahar so'zi "yirik aholi punkti, shu bilan birga ma'muriy, savdo, sanoat va madaniy markaz" sifatida tariflangan.¹¹ Shunga o'xshash ta'rif B.A. Vvedenskiy tahriri ostidagi "Ensiklopedik lug'at"da ham keltirilgan bo'lib, unda "shahar aholi soniga 5-7 ming kishiga yetgan va asosan transport, sanoat, savdo, madaniy hamda ma'muriy-siyosiy funksiyalarni bajaruvchi aholi punkti" deb tavsiflanadi.¹²

Shaharlarning shakllanish va rivojlanish jarayonlarini tushuntirishga har xil nazariy yondashuvlar mavjud.¹³

• **Markaziy joylar nazariyasi** – shaharlarning geografik joylashuvi va xizmat ko'rsatish tarmog'ining rivojlanishini tushuntiradi.

• **Urbanizatsiya nazariyasi** – shaharlarning o'sish jarayoni, ijtimoiy-iqtisodiy o'zgarishlar va aholining shahar muhitiga moslashuvini o'rganadi.

• **Shahar tizimlari nazariyasi** – shaharlarning o'zaro aloqalari va hududiy rejalashtirish jarayonlarini tahlil qiladi.

• **Modernizatsiya va globalizatsiya nazariyalari** – shaharlarning global iqtisodiyot va texnologik rivojlanish ta'sirida qanday o'zgarishini ko'rib chiqadi.

Kartografik tahlil va GIS texnologiyalarining rivojlanishi urbanizatsiya jarayonlarini modellashtirish va bashorat qilish imkoniyatini kengaytirmoqda. Tadqiqotlar shuni ko'rsatadiki, kartografik usullar shaharlarning hududiy rivojlanish dinamikasini tahlil qilish va rejalashtirishda samarali vosita hisoblanadi.¹⁴ Bundan tashqari, shahar infratuzilmasini optimallashtirishda raqamli texnologiyalarning roli ham ortib bormoqda. Urbanizatsiya jarayonining jadallashishi shahar muhitining o'zgarishiga, infratuzilma bosimining ortishiga va

¹⁰ Никонова Я.И. Организация стратегического планирования устойчивого развития крупных городов: теоретические и методологические аспекты / Я.И. Никонова, М.В. Каркавин, Е.С. Димакова; под ред. А.Г. Ивасенко. – Новосибирск: Изд-во СО РАН, 2008. – 234 с.

¹¹ Ожегов С.И. Словарь русского языка / Под ред. Н.Ю. Шведовой. – М., 1990. – 770 с.

¹² Энциклопедический словарь / Под ред. Б.А. Введенского: в 3 т. – М., 1964.

¹³ Christaller, W. (1933). *Die zentralen Orte in Süddeutschland*. Gustav Fischer Verlag.

¹⁴ Anderson, P. *Cartographic Methods in Urban Studies*. – London: Routledge, 2019. – 250 p.

ekologik muammolar yuzaga kelishiga olib kelmoqda. Jahon bankining 2022-yilgi hisobotiga ko'ra, urbanizatsiya darajasi global miqyosda 56% ga yetgan bo'lib, 2050-yilga borib bu ko'rsatkich 68% ga yetishi prognoz qilinmoqda. Quyidagi jadval urbanizatsiyaning rivojlanishi bo'yicha asosiy statistik ma'lumotlarni aks ettiradi:

1-jadval

Urbanizatsiya rivojlanishining asosiy ko'rsatkichlari (2000–2050)¹⁵

Yil	Urbanizatsiya darajasi (%)	Shahar aholisi (mlrd)	Uy-joy narxi o'sishi (%)
2000	46%	2.9	10%
2010	52%	3.5	20%
2020	56%	4.3	35%
2030*	63%	5.1*	45%*
2050*	68%	6.5*	60%*

Geografik tadqiqotlarda kompleks, tizimli va kartografik tahlil usullari shaharlarning rivojlanish jarayonlarini chuqur o'rganishga imkon beradi. Kompleks yondashuv shahar muammolarini turli jihatlar – iqtisodiy, ijtimoiy, ekologik va demografik – orqali tahlil qilishni nazarda tutadi. Masalan, Birlashgan Millatlar Tashkiloti (BMT) ma'lumotlariga ko'ra, urbanizatsiya natijasida havo ifloslanishi dunyo bo'ylab yillik 4,2 million o'lim holatiga sabab bo'layotganini qayd etgan. Tizimli yondashuv esa shaharlarning rivojlanishini mintaqaviy va global jarayonlar bilan bog'liq holda o'rganishga yordam beradi

Shahar geografiyasini o'rganishda hududiy rejalashtirish va barqaror rivojlanish tamoyillariga asoslangan yondashuvlar dolzarb hisoblanadi. Hududiy rejalashtirish shaharlarning muvozanatli rivojlanishini ta'minlashga xizmat qilib, tabiiy resurslardan oqilona foydalanish va ekologik muammolarni kamaytirish imkonini beradi. Barqaror rivojlanish tamoyillariga asoslangan urbanizatsiya esa ekologik toza va ijtimoiy adolatli shahar muhitini yaratishga qaratilgan¹⁶.

Ko'plab olimlar, jumladan, BMT tarkibiga kiruvchi moliya va ijtimoiy masalalar departamentining aholi masalalari bo'yicha ekspertlari global iqtisodiy tizimdagi yirik shaharlarni miqdoriy mezonlar asosida ajratib ko'rsatadilar. Bular jumlasiga quyidagi xususiyatlarga ega bo'lgan shaharlar kiradi:

- aholi soni 10 million kishidan yuqori bo'lgan;
- aholi zichligi kamida har bir km² ga 2000 kishi zichligiga ega bo'lgan;

¹⁵ UN. *Global Urbanization Trends and Projections*. – New York: United Nations, 2021.

¹⁶ Miller, T., Wilson, G. *Regional Planning and Sustainable Urbanization*. – Cambridge: Cambridge University Press, 2022. – 290 p.

- yagona transport tarmog‘i bilan bog‘langan ko‘plab qo‘shni shahar aglomeratsiyalarining qo‘shilishi natijasida shakllanadigan eng yirik aholi joylashuv shakli sifatida ulkan hududiy ko‘lamga ega bo‘lgan.

Xulosa qilib shuni aytish mumkinki, ushbu maqolada shahar geografiyasini tadqiq etishning metodologik asoslari, urbanizatsiya jarayonlarini o‘rganishning zamonaviy usullari va shahar infratuzilmasini rivojlantirish strategiyalari tahlil qilinadi. Tadqiqot natijalari urbanizatsiya bilan bog‘liq muammolarni samarali hal qilish va shaharlarni barqaror rivojlantirish bo‘yicha ilmiy asoslangan takliflar ishlab chiqishda foydali bo‘lishi mumkin.

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URBAN ENVIRONMENTAL MANAGEMENT: ECOLOGICAL AND ECONOMIC ASPECTS OF CREATING GREEN INFRASTRUCTURE

Abstract: *The urban environment is primarily understood as a combination of natural, biological, climatic, social, and economic factors that affect the quality of life and well-being of the population living in urban areas. This includes air and water quality, soil conditions, biodiversity, noise levels, climate change, and many other factors. Improving the urban environment and identifying and assessing performance indicators are key aspects of urban environmental management. This article discusses the main areas of urban environmental management and their effectiveness.*

Keywords: *green infrastructure, urban ecology, environment, environmental sustainability, ecological environment, level of greenery*

Introduction. In the modern world, the rapid development of cities has a negative impact on the environment. As a result of urbanization, the amount of waste in cities is increasing, which, in turn, leads to air, soil, and water pollution. These issues disrupt the ecological balance and reduce biodiversity. At the same time, noise pollution in urban areas is rising, negatively affecting people's psychological and physical health. Climate change further exacerbates the heat island effect in cities and increases the risk of extreme weather events. These factors pose a serious threat to the health and lifestyles of urban residents. Therefore, it is necessary to implement effective measures to ensure ecological sustainability and protect the environment. This situation has, in fact, become one of the most pressing issues of the 21st century. The causes of urban environmental pollution can be attributed to the increasing urban population and the low level of environmental awareness among residents. As people treat nature, nature responds accordingly—meaning that the most polluted cities and those suffering the most from the consequences are inhabited by city dwellers themselves. An alternative solution to this problem is urban environmental management, which involves organizing green infrastructure and creating urban green spaces.

The President of the Republic of Uzbekistan, Shavkat Mirziyoyev, in his speech at the session of the Legislative Chamber of Parliament, specifically addressed issues related to ecology and climate change. According to the head of state, air and water pollution, soil erosion, desertification, and the indiscriminate use of fossil fuels contribute to global warming, an increase in natural disasters, and environmental and public health damage. In response, Uzbekistan launched the

nationwide “Green Space” project three years ago. In cooperation with neighboring countries, the Regional Climate Strategy was implemented, and the Central Asian University for the Study of Environment and Climate Change was established in the capital. Additionally, Uzbekistan initiated two key resolutions adopted by the UN on these matters.

At the same time, “green” energy is becoming one of the driving forces of the country’s economy. Based on public opinions and suggestions, 2025 was declared the “Year of Environmental Protection and the Green Economy” [1]. This year, key priorities include the introduction of “green” technologies, water conservation, a significant increase in green areas, mitigating the consequences of the Aral Sea tragedy, addressing waste management issues, and, most importantly, improving public health. Furthermore, enhancing the urban environment from both ecological and economic perspectives is an increasingly urgent matter.

Methods. This article uses territorial, historical geographical analysis, geographical comparison, comparative description and cartographic methods. The information is based on official websites and official statements, in particular, data from the State Statistics Agency. The map was developed based on digital satellite data.

The level of study of the topic. Theoretical and methodological issues of urban geography and geourbanization have been scientifically studied by foreign and local experts. In particular, in the research on urban geography and urbanization problems, the research and scientific works of foreign researchers J. Gibbs's theory of "Stage Urbanization" [15], Frederick Starr's "Modular Construction" concession, T. Kontuli and H. Dearden's concept of "Differential Urbanization", as well as the research and scientific works of specialists of the Russian geourbanization scientific school such as G.M. Lappo [8], Y. N. Pertsik [11], V.G. Davidovich [4], Y.G. Saushkin [14], B.S. Khorev [18] are considered significant.

In addition, the works of American scientists such as Richard Florida[5], Edward Glaeser, David Harvey, Saskia Sassen, Allan G. Noble are also widely used by today's researchers.

The research and scientific works of O.B. Ata-Mirzaev [3], A. Rafikov [13], T.I. Raimov, A.S. Soliev [16], A.A. Qayumov [15], T.N. Mallabaev, Z.H. Rayimzhanov, Z.T. Abdalova [2], S.K. Tashtaeva[16,17] M.M. Egamberdieva [17], S.S. Zokirov [19], Z.N. Tojiev, etc. on the economic geographical study of cities in Uzbekistan are considered significant.

Goals and objectives. The purpose of this article is to study the economic and ecological aspects of the impact of green spaces on the urban environment. To achieve this goal, the following tasks have been defined:

- to identify the main factors in the formation of the urban environment;
- the economic significance of urban green spaces;
- the role of urban green spaces in maintaining ecological stability;
- to determine and assess the amount of green spaces in the city of Namangan.

Results. The urban environment can be examined from various perspectives, primarily including ecological, economic, socio-psychological, religious, cultural, political, and demographic aspects (Figure 1). These factors serve as the main

components shaping urban life. One of the defining characteristics of the urban environment is its high population density. This density results from a large number of people migrating to cities from different regions for education, employment, and other purposes, alongside permanent residents. Additionally, buildings and residential areas are densely situated. A well-developed transport system, as well as access to education, medical institutions, and service facilities, are key factors that determine the advantages of urban life.

When studying the urban environment from an *economic perspective*, several challenges arise. One of them is that for a city to develop its own unique environment, it must be economically advanced, with a stable population, technological progress, employment opportunities, high income levels, reasonable housing prices, and well-developed infrastructure. Collecting comprehensive and accurate data on these indicators requires significant effort and resources. Additionally, economic security—having a high income level—is essential for a stable urban life.

The socio-psychological state of a city is largely determined by its population density, as well as the character, mentality, customs, and traditions of its residents. For example, by comparing the psychology of people living in an ancient city with those in a highly modernized city, one can observe significant differences in behavior, lifestyle, and social interactions.

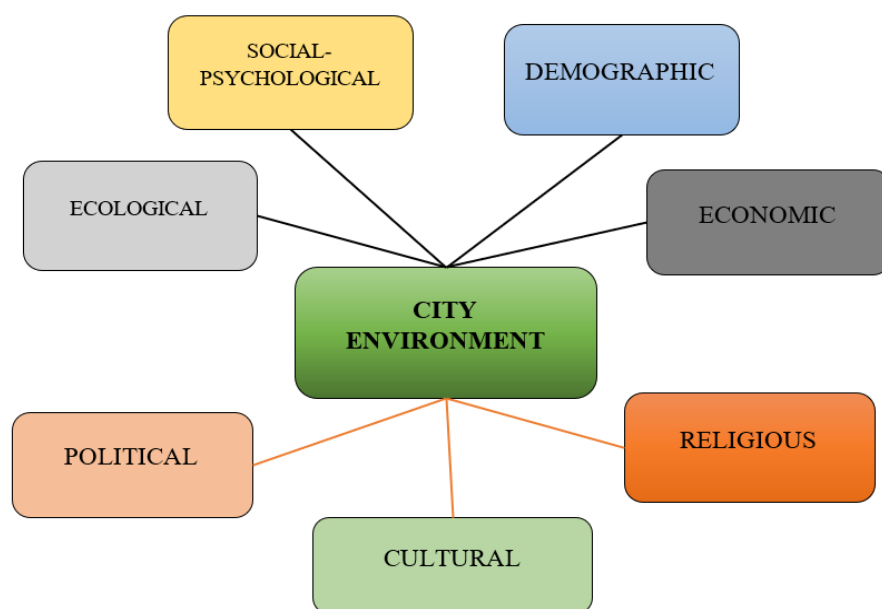


Figure 1. Aspects of urban environment research [7]

Note: The drawing was created by the author

The ecological environment of a city encompasses both natural and man-made elements and their interactions. It includes the relationship between human-made structures—such as infrastructure, buildings, and roads – and the natural environment, including plants, animals, and ecosystems. The urban ecological environment is often influenced and altered by human activities such as urbanization, industrialization, and population growth. These processes can result in habitat loss, biodiversity decline, pollution, and changes in the local climate.

A key component of the urban ecological environment is the concept of urban ecosystems. These are self-regulating systems within cities that provide essential services to residents. Urban ecosystems include green spaces such as parks, gardens, and roadside trees, as well as water bodies like rivers, lakes, and ponds. Green spaces play a crucial role in maintaining ecological balance, improving air quality, regulating temperature, and enhancing overall urban sustainability.

The demographic environment of a city refers to the composition and characteristics of its population. It plays a crucial role in urban planning, helping policymakers, researchers, and businesses understand the city's social structure and potential development opportunities. Key demographic factors include population density, birth and death rates, marriage and divorce rates, family composition, age structure, ethnic and cultural diversity, population size, education levels, and migration patterns influenced by cultural and socio-economic changes.

The religious environment of a city significantly shapes its cultural, social, and historical landscape. Many cities are home to followers of multiple religions, including major world faiths such as Christianity, Islam, Judaism, Hinduism, Buddhism, and Sikhism. This religious diversity contributes to a rich and inclusive urban environment. Cities often feature a variety of religious landmarks, including churches, mosques, synagogues, gurdwaras, and monasteries. These places of worship serve not only as sacred spaces but also as cultural and social centers. Religious values influence various aspects of urban life, shaping social norms, education, charitable activities, and moral standards.

The political environment of a city refers to the overall political landscape and the development of local governance. It includes factors such as affiliations with ruling political parties, prevailing ideologies, public movements, and key state policies. Additionally, it encompasses administrative structures, city governments, and buildings of state significance.

The cultural environment of a city shapes its identity and cultural heritage, playing a crucial role in forming the community's collective culture. It includes various elements such as art, history, traditions, celebrations, festivals, and social norms. Cities often have a rich artistic and architectural heritage that reflects their historical influences. This is evident in paintings, sculptures, and iconic buildings that enhance the city's visual appeal. Museums, galleries, and public art installations further enrich the cultural landscape. Cities with a vibrant cultural environment typically host numerous institutions and organizations dedicated to cultural activities, including theaters, music academies, literary societies, and dance troupes.

[7]

Urban environmental management requires an integrated approach based on the following factors:

- Considering factors that negatively impact the environment when planning urban development projects.
- Developing measures to prevent and reduce pollution of soil, water, and air from industrial, transportation, and household waste sources.
- Planning adaptation strategies for adverse weather conditions, climate change (extreme heat, severe cold), and natural geographical phenomena.
- Incorporating the opinions of local residents in urban environmental decision-making and involving them in the implementation of policies and regulations.
- Preserving the natural environment within the city and minimizing water, air, and soil pollution through the development of green infrastructure.
- Regularly developing, monitoring, and evaluating strategies for sustainable urban environmental management.

Based on these factors, it is possible to create a healthy and sustainable urban environment in the future. Green infrastructure takes various forms, such as parks, ornamental trees and flowers along streets and roads, hanging gardens, green roofs and walls, as well as aesthetically appealing green spaces (greenways and trails) arranged linearly along rivers, lakes, and canals in large cities.

To develop green infrastructure, urban planning projects must first establish the location, external design, and a detailed implementation plan. Identifying the most effective areas for green spaces requires consideration of engineering and geographical survey results. The size of the green space and the necessary technical services are then determined accordingly. Additionally, public participation plays a crucial role in green space management. To achieve this, it is essential to foster ecological literacy and environmental awareness among the population.

The ecological significance of green infrastructure lies primarily in the role of green plants in purifying urban air. During photosynthesis, plants reduce harmful gases in the urban atmosphere, helping to control air pollution [11]. This is why trees such as spruce and pine are commonly planted along streets and roadsides—they effectively absorb harmful gases like CO₂ emitted from vehicles, industry, and other sources while producing oxygen.

In addition to trees, vertical greenery in the form of hanging gardens on residential building walls further contributes to air purification and cooling effects. Parks and botanical gardens not only serve as spaces for cultural recreation but also play a key role in reducing fatigue and stress among city dwellers. The presence of well-developed service sectors within these parks enhances their functionality and accessibility. Large urban parks, which embody the natural beauty of the environment, attract people of all ages. Notable examples include Dubai's "Miracle Garden" and Singapore's "Gardens by the Bay," both of which showcase how green spaces can enhance the urban environment while maintaining ecological balance.

Furthermore, urban green infrastructure preserves biodiversity and helps prevent the deterioration of the microclimate. By incorporating greenery, cities can

mitigate the urban heat island effect, regulate temperatures, and support sustainable living. Overall, green infrastructure plays a vital role in improving urban environments, contributing to both ecological health and human well-being.

The economic importance of green infrastructure is that it provides a wide range of economic benefits:

reduces infrastructure costs; thereby, it can reduce the need for expensive urban pollution control devices,

prevents rapid warming or cooling of urban air; that is, it can stabilize it (through which urban residents use less heating or cooling devices in their homes and organizations),

increases property values: according to studies, residential areas near green spaces are distinguished by their quality of life, aesthetic appeal compared to others and are more desirable to buyers and tenants. This leads to an increase in the cost of housing. For example, it was found that the cost of residential buildings around the Afsonalar Vodiysi park in Namangan is 1.5-2 times more expensive than in other parts of the city.

job creation: through the development and support of green infrastructure, jobs can be created in landscaping, construction and other related sectors. Green infrastructure projects can provide employment to local workers and contribute to their economic development. For example, according to the Namangan City Improvement Department, more than 270 people are currently employed.

tourism development: Green spaces attract both tourists and residents. They provide residents with opportunities for recreation and social interaction. Parks and green spaces allow local residents to earn economic income by supporting businesses related to tourism and recreation.

Based on the data, a study was conducted in the city of Namangan, Namangan region, using statistical analysis. According to the results of the study, the total area of Namangan city is 168.3725 sq. km, of which green areas account for 149.8493 sq. km. When determining the total amount of green areas available for public use, the percentage of areas with no greenness, as well as those with low, medium, and high greenness indicators, was identified (Table 1).

Table 1

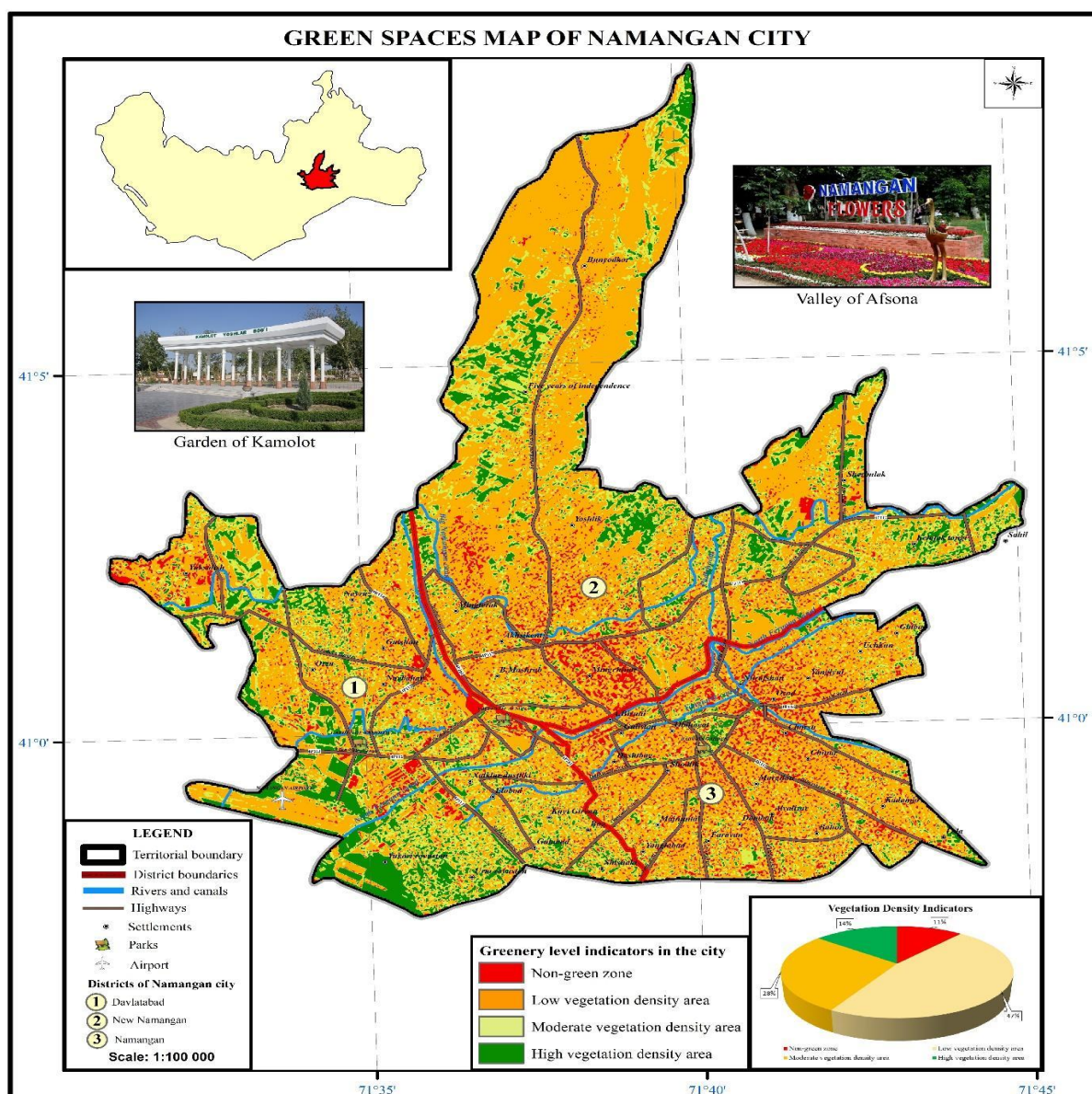
Indicators of the level of greenery in Namangan

№	City greenness levels	Amount (%)	Area (sq km)
1	An area without greenery	11%	18.5207 sq km
2	Low-green area	47%	79.1339 sq km
3	Area with average level of greenery	28%	47.1436 sq km

4	Area with high level of greenery	14%	23.5718 sq km

Note. The table was created by the author

Namangan city is divided into 3 city districts: Davlatabad, “New Namangan” and Namangan cities. Green spaces are not just green gardens and parks, but also ornamental trees and plants, green areas on streets and sidewalks. According to the data obtained, it was determined that more than 77 sq km of green space falls on “New Namangan”, more than 57 sq km on Davlatabad district, and more than 34 sq km on Namangan city. Davlatabad district is the leader in terms of the high level of greenery. Areas with no greenery in the city occupy 11% of the city, mainly occupied by buildings, structures, cultural and historical sites, and residential buildings. Areas with a low level of greenery make up 47% of the city. 28% of the city area is occupied by medium-level green spaces. It was determined that green spaces account for 14% of the total area of the city, or more than 23 sq km. Based on the data obtained, a map of green spaces in Namangan was created using ESRI's ArcGIS 10.8 software (see Figure 2).



Note. The map was created by the author

Maps and tables developed based on spatial data revealed that the Davlatabad district of Namangan city has a larger area of green spaces that are conducive to air quality, health, and living comfort than other parts of the city (Figure 2).

One of the centers of attraction for the city's population is the parks, and there are four main large parks in the city: the Valley of Legends, the Zakhiriddin Mukhammad Babur National Park, Mashrab, and Kamolot Gardens. Namangan becomes the most popular place in the Republic in May and June. The reason is that the "Flower Festival" takes place for about a month. Namangan residents prepare for this holiday and display all kinds of flowers. In 2024, the 63rd anniversary of the holiday was widely celebrated. The festival is visited not only by residents of Uzbekistan but also by flower lovers from the Central Asian region, as well as by interested people from countries such as Russia, China, and South Korea. Green infrastructure helps the population in cities adapt to climate change by reducing the

impact of extreme weather events on the city. Rapid urban climate adaptation will help protect infrastructure such as businesses, factories, and plants from climate-related risks.

Holding festivals like this in the city, in addition to its ecological benefits, brings many economic benefits and is an important factor in further increasing the city's economic opportunities and tourism potential.

Conclusion. The environmental and economic aspects of green infrastructure in urban environmental management are closely related and complementary processes. As discussed in this article, green infrastructure contributes significantly not only to environmental improvement but also to the economic development of cities.

1. From an environmental perspective, green infrastructure provides significant benefits by improving air and water quality, increasing biodiversity, adapting to climate change, and reducing the urban heat island effect. These benefits not only enhance the overall state of the environment but also improve residents' health and quality of life. The presence of green spaces reduces stress, increases physical activity, and promotes overall well-being.

2. From an economic perspective, green infrastructure offers long-term cost savings and revenue opportunities. Reducing the need for gray infrastructure, increasing real estate values, developing tourism, and creating new jobs are all economic benefits of investing in green infrastructure. Additionally, the use of green technologies and innovations contributes to energy conservation and the efficient use of resources.

3. However, several important aspects must be considered for the effective management of green infrastructure. The importance of good planning and design, adequate funding, the training of qualified personnel, and public engagement should be emphasized. It is crucial to balance environmental and economic considerations in the design and implementation of green infrastructure. Excessive environmental requirements may be economically unfeasible, while an overemphasis on economic benefits can negatively impact the environment.

In conclusion, the creation and management of green infrastructure are essential components of urban environmental management, providing long-term environmental and economic benefits. Through effective management and smart planning, we can make cities more sustainable, prosperous, and livable. In the future, research into the development and effectiveness of green infrastructure should continue, and its importance in public policy should be further strengthened.

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DEVELOPING CRITICAL THINKING THROUGH ENGLISH LANGUAGE TEACHING IN NON-PHILOLOGICAL INSTITUTIONS

Annotation. *This article examines the role of critical thinking in English language teaching (ELT) within non-philological higher education institutions. Critical thinking plays a crucial role not only in language learning but also in professional education, where students need to analyze, evaluate, and apply knowledge effectively. The study explores methods such as inquiry-based learning, debates, problem-solving exercises, and the use of authentic materials to enhance students' analytical skills. Additionally, it highlights the challenges of integrating critical thinking into ELT and offers recommendations for overcoming these difficulties. The research emphasizes the effectiveness of interactive and modern teaching approaches in fostering both language proficiency and intellectual development.*

Keywords: *Critical thinking, English language teaching, non-philological education, inquiry-based learning, problem-solving, professional communication.*

INTRODUCTION

In modern higher education, it is essential not only to acquire language proficiency but also to develop critical thinking skills. In non-philological institutions, English language teaching is often considered a supplementary course rather than an integral part of students' professional development. However, contemporary educational approaches emphasize that English is not just a means of communication but also a tool for fostering independent thinking, analytical skills, and logical reasoning. Integrating critical thinking into English language teaching (ELT) helps students not only improve their linguistic competence but also prepares them for professional challenges, enabling them to analyze information, solve problems, and make well-reasoned decisions. This article explores the importance of critical thinking in ELT within non-philological institutions, discussing effective strategies, methods, and challenges in implementing this approach.

In modern education, critical thinking is considered one of the most essential skills for students across various disciplines. For students in non-philological institutions, where English serves as a tool for acquiring professional knowledge rather than the primary subject of study, developing critical thinking skills through English language teaching (ELT) is of great importance. Traditional methods of teaching English in such institutions often focus on grammar, vocabulary memorization, and basic communication skills, which may not be sufficient for fostering deep analytical abilities. However, incorporating critical thinking

strategies into ELT can help students not only improve their language skills but also enhance their ability to analyze, evaluate, and synthesize information critically.

The ability to think critically enables students to approach problems logically, assess different perspectives, and make well-reasoned decisions. In non-philological faculties such as engineering, medicine, business, and technology, where professionals need to engage in problem-solving and decision-making, developing critical thinking through ELT becomes even more relevant. English is not merely a subject but a means of accessing global knowledge, engaging in international communication, and participating in academic and professional discussions. Thus, integrating critical thinking into ELT should be a priority for educators in these institutions.

One effective method of fostering critical thinking in English language instruction is inquiry-based learning, which encourages students to ask questions, conduct research, and actively engage with content. Instead of simply memorizing vocabulary and grammatical structures, students are challenged to explore real-world issues, analyze data, and present their findings in English. This approach not only improves language proficiency but also trains students to approach information critically, consider multiple viewpoints, and develop well-supported arguments. For example, students in medical faculties can be given case studies in English, where they analyze symptoms, discuss potential diagnoses, and justify their treatment choices. Similarly, engineering students can engage in English-language discussions on sustainable development, weighing the pros and cons of different technological solutions.

Debates and argumentative discussions are another powerful tool for integrating critical thinking into ELT. By engaging in structured debates, students learn to formulate arguments, defend their opinions with evidence, and critically assess opposing viewpoints. This method not only enhances their English-speaking skills but also develops their ability to construct logical arguments, detect inconsistencies, and think on their feet. Educators can design debate topics relevant to students' fields, such as ethical issues in artificial intelligence for IT students or global economic policies for business students. Through these discussions, students gain confidence in expressing their ideas in English while simultaneously developing analytical and evaluative skills.

Problem-solving and decision-making activities in ELT help students connect language learning with real-world challenges. Instead of passively absorbing information, students actively engage with problems, evaluate possible solutions, and justify their decisions in English. This can be implemented through business simulations, role-playing exercises, and collaborative projects that require teamwork and critical analysis. For example, business students can be assigned a simulation where they analyze market trends and propose strategic business plans, presenting their findings in English. Similarly, engineering students can work on hypothetical project proposals, discussing the feasibility of different materials and technologies in English. These activities help students see English as a practical tool for professional success rather than just an academic requirement.

Using authentic materials such as opinion articles, research papers, and TED Talks can further enhance critical thinking in ELT. Exposure to diverse perspectives and complex arguments challenges students to engage in deeper analysis and reflection. Instead of relying on simplified textbook dialogues, students can be encouraged to read real-world texts, summarize key points, identify biases, and form their own opinions. Watching and analyzing English-language documentaries or interviews with experts in their fields allows students to practice listening comprehension while engaging with meaningful content. These activities encourage students to question assumptions, recognize different viewpoints, and develop independent thinking skills while improving their English proficiency.

Despite the clear benefits, implementing critical thinking strategies in ELT within non-philological institutions comes with challenges. Many universities still adhere to traditional lecture-based teaching methods that prioritize rote learning over active engagement. Instructors may struggle with a lack of resources, limited time for language courses, or resistance from students who are accustomed to passive learning. Additionally, students who lack confidence in their English skills may hesitate to participate in discussions or express their opinions openly. Addressing these challenges requires a shift in teaching methodologies, greater access to authentic learning materials, and a more student-centered approach to ELT.

Integrating critical thinking into ELT has numerous advantages for students in non-philological faculties. It equips them with problem-solving abilities, enhances their capacity for logical reasoning, and prepares them for professional communication in global contexts. By developing critical thinking skills, students become more effective decision-makers, adaptable professionals, and engaged global citizens. They learn to approach information critically, articulate their ideas clearly, and engage in meaningful academic and professional discussions. Furthermore, students who develop critical thinking skills through ELT are better prepared for lifelong learning, as they gain the ability to independently evaluate new information and adapt to changing professional demands.

In conclusion, developing critical thinking through English language teaching is essential for students in non-philological institutions. By incorporating inquiry-based learning, debates, problem-solving activities, and authentic materials into ELT, educators can create a more dynamic and intellectually stimulating learning environment. Overcoming the challenges of implementation requires innovative teaching strategies, greater institutional support, and a commitment to fostering higher-order thinking skills. Ultimately, by integrating critical thinking into English language instruction, universities can better prepare students for academic and professional success, equipping them with the cognitive and linguistic abilities needed to thrive in an increasingly complex and interconnected world.

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INNOVATIONS IN THE STAGED EDUCATION SYSTEM

Annotation: *Current problems of teaching with the help of innovative technologies in the differential education system, conceptual ideas, communications, and information based on the selection of ways and means of applying highly effective modern education and innovation technologies in the educational process are highlighted.*

Keywords: *science, technology, digital tools, mobile learning (m-learning), inclusive education, personalized learning, digitalization.*

Innovations in differentiated education involve the use of new approaches, technologies, and methods to take into account the diverse needs and abilities of students. The differentiated education system aims to create conditions for each student to receive an educational experience that is tailored to their individual characteristics, including their learning speed, interests, and cognitive abilities [1-2].

Use of technology and digital tools - Modern educational technologies such as online platforms, interactive whiteboards, learning apps, and virtual labs enable personalized learning by providing access to a variety of materials and tasks.

Mobile learning (m-learning) - the introduction of mobile devices and applications allows students to access educational materials anytime, anywhere. This allows the needs of different students to be met, allowing them to work at their own pace [2-3].

Inclusive education is the development of inclusive approaches where every student can participate in the educational process, regardless of physical or intellectual limitations. This includes the use of assistive technologies, adapted educational materials and methods that take into account the characteristics of perception and assimilation of information.

Personalized learning - This approach involves creating personalized learning paths where students choose topics and assignments based on their interests and needs. This can be achieved by analyzing data about each student (for example, through learning management systems) and providing appropriate resources for their development.

Project-based and problem-based learning - these methods emphasize solving real-world problems, allow students to work in groups, and develop collaboration and critical thinking skills. This promotes greater differentiation in learning as each student can choose a project or assignment that matches their interests and abilities [4].

Flexible forms of learning - Blended (or blended) learning, which combines face-to-face classes and online courses, as well as flexible study schedules, allows for accommodating different learning styles and learning paces. This is especially useful for students of different levels.

Adaptive assessment systems - introducing new approaches to assessment that allow you to track the success of each student, identify their strengths and weaknesses, and adjust the educational process based on this information. Such systems often use algorithms that adapt assignments and tests based on student performance.

Gamification - the use of game elements in the educational process helps increase student motivation and engagement [4-5]. Individual achievements, rankings, and elements of competition allow each student to differentiate their approach, making the learning process more engaging and personalized.

There are several types of gamification: intrinsic, extrinsic, and behavior modification. Internal gamification works within a single organization and the motivational component must be consistent with the management and incentive system of that company. External gamification, on the other hand, helps improve the relationship between the coach and the student. Some of its elements are present in the general secondary education system [3-5]. It is mostly used in schools and especially in programs for elementary school teachers. Because elementary school students are more playful psychophysiologically. This is explained by the high level of effectiveness of teaching them through various games and interesting activities [4-5]. It helps the student to master the subject quickly, easily, and with great interest. This will certainly be convenient for the teacher as well.

Conclusion: Thus, innovations in differentiated education and digitization aim to create a more flexible, personalized, and inclusive learning environment that respects the diversity of learners and helps each individual develop their abilities and potential, leading to a further increase in the quality of education.

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ENRICHING WATERMELON DRINK WITH NUTRIENTS

Abstract. *The article explores ways to enhance watermelon drinks with additional nutrients to improve their health benefits. Watermelon is rich in water, vitamins, and antioxidants that promote hydration and immunity. Adding dairy products, chia seeds, citrus fruits, ginger, probiotics, and nuts enhances its nutritional value. These ingredients support heart health, regulate blood sugar, improve digestion, and provide satiety. Nutrient-enriched watermelon drinks are an easy way to make a diet more nutritious and beneficial.*

Keywords: *watermelon, hydration, antioxidants, vitamins, probiotics, chia seeds, ginger, digestion, immunity, nutrition*

Introduction

Watermelon (*Citrullus lanatus*) is a refreshing, sweet, and nutritious fruit that thrives in warm climates. It is primarily composed of water and contains essential vitamins, minerals, and antioxidants such as vitamin C, potassium, magnesium, and beta-carotene. Due to its high water content, watermelon is a perfect choice for hydration, especially in hot weather. However, there are ways to further enhance watermelon beverages by adding extra nutrients. In this article, we will explore how watermelon drinks can be enriched with additional beneficial nutrients.

Health Benefits of Watermelon Drink

Watermelon's most notable benefit is its high water content, making it an excellent option for hydration. It helps quench thirst and refreshes the body quickly due to its natural sugars, which provide an immediate energy boost. In addition to water, watermelon contains essential nutrients such as vitamin C, which supports immune health and promotes healthy skin, and potassium, which helps regulate blood pressure. Watermelon also contains lycopene, an antioxidant that contributes to heart health and may reduce the risk of certain cancers.

Although watermelon drinks offer a variety of health benefits, adding additional nutrients can significantly improve their nutritional profile.

Ways to Enrich Watermelon Drink with Nutrients

1. Milk and Dairy Products: Adding milk or yogurt to watermelon juice can significantly boost its nutritional value. Dairy products provide proteins, calcium, and other essential nutrients that promote bone health and overall well-being. Combining milk with watermelon creates a creamy, delicious, and nourishing drink that supports both hydration and nutrition.

2. Chia Seeds or Flaxseeds: Incorporating chia seeds or flaxseeds into a watermelon beverage enhances its fiber, omega-3 fatty acids, and antioxidant

content. These seeds not only improve digestion but also aid in weight management and heart health by providing healthy fats and dietary fiber. Their absorption of water makes the drink thicker, adding a satisfying texture.

3. Lemon or Fresh Fruits: To boost the vitamin C content of your watermelon drink, consider adding lemon, orange, or other citrus fruits. Vitamin C plays a key role in supporting the immune system and promoting skin health. Additionally, adding fresh fruits will naturally sweeten the drink while providing additional vitamins and antioxidants.

4. Ginger or Fresh Turmeric: Adding ginger or turmeric to watermelon drinks can enhance their flavor while boosting their anti-inflammatory properties. Ginger is known to aid digestion and alleviate nausea, while turmeric provides curcumin, an antioxidant that helps reduce inflammation and supports joint health.

5. Probiotics: Probiotics can be incorporated into watermelon drinks through ingredients like kefir or yogurt. These beneficial bacteria improve gut health, support digestion, and boost the immune system. By adding probiotics to a watermelon drink, you also enhance its nutritional profile, making it not only refreshing but also gut-friendly.

6. Nuts or Oats: Nuts like almonds, walnuts, or oats can be added to watermelon drinks for an extra boost of healthy fats, protein, and fiber. These additions make the drink more filling and provide sustained energy. The combination of nuts and watermelon enhances the drink's nutritional density, making it a balanced and hearty beverage.

Health Benefits of Nutrient-Enriched Watermelon Drink

A watermelon drink enriched with additional nutrients offers several health benefits:

- **Supports Heart Health:** The potassium, magnesium, and calcium content found in nutrient-enriched watermelon drinks helps support cardiovascular health by regulating blood pressure and maintaining healthy blood vessels.

- **Boosts Immunity:** With added vitamin C, probiotics, and antioxidants, these drinks support the immune system, helping the body fight off infections and illnesses.

- **Helps Regulate Blood Sugar:** While watermelon naturally contains sugars, combining it with other ingredients like nuts, seeds, and dairy can help balance blood sugar levels and provide sustained energy.

- **Promotes Digestive Health:** The fiber, probiotics, and anti-inflammatory ingredients in enriched watermelon drinks can help improve digestion and reduce inflammation, leading to better overall gut health.

- **Increases Satiety:** The addition of protein, healthy fats, and fiber from seeds, nuts, and dairy helps the drink provide a feeling of fullness, making it a satisfying snack or meal supplement.

Conclusion

Enriching watermelon drinks with additional nutrients is an easy way to make them not only more delicious but also more nutritious. By adding ingredients like milk, seeds, fresh fruits, ginger, or probiotics, you can boost the health benefits of

this refreshing drink. Whether you're seeking hydration, a digestive boost, or a nutrient-packed snack, an enriched watermelon drink is a perfect choice for your health and wellness needs.

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IMPROVED CONTROL MEASURES AGAINST MAIZE BLADDER BLACK MOTH DISEASE

Abstract: *This article deals with the study of the effect of modern improved control measures against the black moth disease of corn planted after winter wheat, and the effectiveness of 3 chemicals was determined in the experiment.*

Key words. *Soil, variety, corn, seedling thickness, growth and development, pathogen, chemicals. Bayleton Bubble black moth, yield.*

Maize is not only a favorite food product of our people, but also a crop that is harmful for livestock. Its important point is that in addition to the development of animal husbandry, nutritious silage is made from corn stalks. Nevertheless, in the following years, the products obtained from it are not enough, the main reason for this is not only the quality of grain, but also the spread of diseases, which causes a part of the crop to die.

But in advanced farms and advanced farms, they are able to get a high yield of corn and stalks.

To date, a number of our scientists against the disease of the black blister moth of corn have been able to reduce the disease of the black blister moth by taking modern control measures against this disease.

For example, 2.0-2.5 l/ton of ponaktin 35 m chemical mode at least one month before planting corn grains. He concluded that the treatment was effective. Other experiments have shown that different chemicals have different effects on the fungus that causes the black blister moth disease of corn. It turned out to be 15%, which led to an increase in productivity with a decrease in disease.

According to his information, since the fungus of the black blister moth is a pathogen that loves extreme moisture, it is necessary not to water too strongly during the irrigation stage, otherwise it will cause the pathogen to spread over a large area. .

Taking into account that the *Ustilago zeae* fungus is dangerous, agrotechnical measures should be applied separately to the corn field during the vegetation period. Taking this into account, we conducted a field experiment in the training field of the Andijan Institute of Agriculture and Agro-Technology in order to determine the fungicidal ability of various chemicals against the black moth disease of corn.

The experiment consists of 4 and 4 options, and all options are located on one level. Each option consists of 8 rows, the length of one row is 50 meters, and the area occupied by one option is 240 square meters. Uzbekistan-306 MV as the main variety was planted for grain and silage on April 19. The planting pattern was 60 x 20-1. 7 days after sowing the seeds, when we calculated the degree of germination

according to the options, the highest germination was recorded in the 3rd option, i.e. it was 81.3%, while in the control option on this date it was 76.2%. The indicator in the data obtained on April 30, compared to the previous data, the full germination of the seeds in the control options was 1 day later than in the other options.

In nature, corn does not choose land, but if proper agrotechnical measures are applied to it, better results can be achieved. It is known from our experience that when considering the growth of corn in the situation of May 15, the height of the growth branch was close to each other, i.e. from 38.7 to 42.8 cm. was. But in the subsequent observations, this equality was broken. According to the data from July 1, option 3 turned out to be the best, the height of corn stalks in Buvariani is 62.4 cm.

On this date, the height of the corn stalks of the control variant was 50.1 cm, the difference between them was 12.3 cm, that is, the corn stalks of the control variant were lagging behind in growth. However, in the following days, this phenomenon deepened, especially in the data presented on August 1, the height of the corn stalks in the variant with the Bayleton chemical substance added to the soil at the rate of 1 l/ha per hectare increased to 114.3 cm, while in the control variant on this date the height of corn stalks is 89.4 cm. that is, this option grew 24.9 cm lower than option 3

The more agrotechnical measures are carried out correctly for corn, the more new features will appear in these plants. An example of this can be seen in the example of the experiment we are conducting, the rapid growth of the plant started to produce new leaves. Each stem in this variant has 10.8 leaves.

Effect of various chemicals on the growth and development of corn

t/ r	Experiment option	Seeds output % at the expense of	Dates taken into account				Number of leaves		Num ber of sales
			VI	VII	VIII	IX	VIII	IX	
1	Nazorat	95.7	38.7	50.1	73.7	89.4	6.8	7.6	2.0
2	Raksil	96.2	41.3	56.9	81.1	97.9	7.4	9.4	2.7
3	Bayleton	96.0	42.8	62.4	97.6	114.3	9.11	12.2	4.0
4	Vitovaks 200 ff	95.3	40.6	58.6	84.3	102.8	8.2	10.8	3.5

On this date, 7.6 leaves were formed on each stalk of corn stalks of the control variant. Or there were less than 3.2 leaves compared to option 3. In the standard version, this indicator was 1.8 more leaves compared to the control. In the process of hanging, this law is preserved. According to the obtained data, the most fertile product turned out to be option 3, the characteristic of this option was that in each option, 4 pods were formed, compared to the control option, more than 2.0 pods per stem 'talas formed. During this period, the reference variant was 0.7 more than the

control variant. It should be concluded that regardless of the soil conditions for corn, it depends on the measures taken.

Fungicidal ability of different chemicals against black blister moth of maize.

t/r	Experiment option	Seedling thickness. in the account	Dates taken into account				Biological efficiency
			1VI	1VII	1VIII	1IX	
1	Nazorat	56.5	-	3.6	7.2	13.5	-
2	Raksil(etalon)	56.9	-	0.5	3.7	8.1	85.7
3	Bayleton	57.2	-	-	0.9	2.5	95.7
4	Vitovaks-200ff	57.4	-	-	2.4	6.8	88.0

When proper agrotechnical measures are observed for any agricultural crops, developing crops will definitely have a higher resistance to any disease causing agent, therefore, the period of cohabitation will be extended by 6-8 days. It can be seen from the given table 4 that the infection of corn with black blister moth disease was different according to the variants.

According to the received information, no disease was observed in all options on June 1. However, since July 1, the incidence in the control option was 3.6%, while in the reference option it was 0.5%, and in options 3 and 4, the incidence was not observed. In the data, all variants were observed in corn stalks infected with black blister moth. According to the obtained data, the most incidence was observed in the stems of the control variant, that is, 7.2%, while the least incidence was recorded in 3 variants, in this variant, the incidence was 0.9%. In the subsequent observations, the information obtained deepened, in the calculations carried out on September 1, a strong infection was seen in the control option, 13.5% damage was observed, while in the same period, this appearance was 2.5% in the corn stalks of the 3 options. the difference between 11.0 was less. The best biological efficiency was 95.7% in option 3, while in the reference option it was 85.7%.

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CHAQALOQLARDA GEMODINAMIKANI BAHOLASHNING INSTRUMENTAL USULLARI

Annotatsiya: Yurak indeksini monitoring qilish gemodinamikani boshqarishda muhim ma'lumotlarni taqdim etishi mumkin. Bolalarda yurak indeksini o'lchash uchun ko'plab asboblari va bir nechta usullar mavjud, lekin yangi tug'ilgan chaqaloqlarda bu juda murakkab. Ushbu maqolada yurak indeksini monitoring qilish uchun turli uskunalar va usullar ko'rib chiqilib, har bir texnologiyani afzalliklari va asosiy cheklovlari ko'rsatilgan, shuningdek, o'lchashning asosiy prinsiplari qisqacha tushuntirilgan.

Kalit so'zlar: yurak chiqarilishi, o'lchash usullari, chaqaloqlar

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INSTRUMENTAL APPROACHES TO HEMODYNAMIC ASSESSMENT IN NEWBORNS

Abstract: Cardiac output monitoring can provide important information for hemodynamic management. Many instruments and several methods are available to measure cardiac output in children, but this remains very difficult in newborns. An overview of the various equipments and methods for monitoring cardiac output is given, indicating the advantages and main limitations of each technology, as well as a short explanation of the basic principles of measurement.

Keywords: *cardiac output, measurement methods, infants*

Klinik baholashda yurak indeksini bilvosita parametrlar yordamida baholash, klinitsistning tajribasidan qat'i nazar, aniq emasligi ma'lum [1]. Ob'ektiv yurak indeksini monitoring qilish bemor uchun foydali bo'lishi va kasallanish va o'lim darajasini kamaytirishi mumkin. Past yurak indeksini bolalarda o'lim darajasining oshishi bilan bog'liq [2], va shok diagnostik jarayonida har qanday kechikish o'lim darajasini oshiradi [3]. Yangi tug'ilgan chaqaloqlarda past tizimli qon oqimi periventrikulyar va/yoki ichki miyaning qon ketish xavfini oshiradi [4-6], oliguriya va keyinchalik giperkaliemiya [7], elektroensefalografiyadagi to'lqinlarning faolligining pasayishi [8], o'lim va nevrologik rivojlanishning buzilishi [9] bilan bog'liq. Shuning uchun, og'ir kasal yangi tug'ilgan chaqaloqlarda yurak indeksini monitoring qilish orqali past tizimli qon oqimi xavflarini oldini olish mumkin [10]. **Maqsad:** yangi tug'ilgan chaqaloqlarda og'ir holatlarda yurak indeksini monitoring qilish uchun mavjud usullarni ko'rib chiqish, shuningdek, ularning afzalliklari va cheklovlariga e'tibor qaratishdir.

Impulsli rangli densitometriya (IRD). Qon tarkibida rangning konsentratsiyasini pulsli densitometriya usuli orqali polifunksional monitorlar yordamida PiCCO texnologiyasi bilan bajariladi [11, 12]. PiCCO texnologiyasi, gemodinamik holatni kuzatish usuli bo'lib, u transpulmonal termodilütsiya va puls to'lqinining shaklini tahlil qilish kombinatsiyasiga asoslangan [13, 14]. Arterial qon ichidan indosiyanin yashil (ICY) konsentratsiyasini o'lchash uchun qiyofani tiklash maqsadida qonni to'g'ridan-to'g'ri va uzluksiz invaziv olish hozirda faqat tadqiqot maqsadlarida ishlatiladi. Qonning katta hajmini olish zaruriyati tufayli ushbu asarli usul bolalarda qo'llanilmaydi. Biroq, yangi usul bo'lgan impulsli rangli densitometriya (IRD) yordamida kiritilgan ICY, barmoq uchi sensor yordamida noinvaziv ravishda aniqlanishi mumkin. IRD faqat kattalarda tasdiqlangan, lekin bolalarda emas, chunki kichik bolalar va yangi tug'ilgan chaqaloqlardan ishonchli puls to'lqini shakllarini olish juda qiyin [15, 16].

Ultratovushli dopplerografiya – bu Doppler effekti asosida ultratovushni o'rganish usuli. Effektning mohiyati shundaki, harakatda bo'lgan ob'ektlardan ultratovush to'lqinlari o'zgartirilgan chastotada aks etadi. Ushbu chastota o'zgarishi o'rganilayotgan tuzilmalar harakatining tezligiga proporsionaldir - agar harakat sensor tomon yo'nalgan bo'lsa, chastota oshadi, agar sensoridan uzoqlashayotgan bo'lsa, kamayadi. Qon oqimi tezligini o'lchash uchun ultratovush nuri ishlatilishi mumkin, chunki harakatda bo'lgan eritrotsitlar aks etgan signalning chastotasida o'zgarish (doppler o'zgarishi) yuzaga keltiradi. Doppler o'zgarishining spektral tahlili tezlik-vaqt egri chiziqlarini beradi. Masalan, asosiy o'pka arteriyasi orqali o'tadigan zarba hajmini hisoblash mumkin, agar qon oqimi tezligi va tomirning kesma maydoni ma'lum bo'lsa. Zarba hajmini yurak urishlarining chastotasiga ko'paytirish orqali yurak chiqishi qiymatini olish mumkin. 2003 yilda Chew va boshqalar doppler yordamida bolalarda yurak chiqishini o'lchashga bag'ishlangan sharhni e'lon qildilar, unda takrorlanuvchanlik, tizimli xato va aniqlikka e'tibor qaratilgan, bu esa rangni suyultirish texnologiyalari, Fick usuli va termodilütsiya

bilan solishtiriladi. Mualliflar, doppler tahlili yordamida olingan yurak chiqishi o'lovlarini eng ko'p tendentsiyalarni kuzatish uchun foydali ekanligini ta'kidlashdi, mutlaq qiymatlarni o'lchash o'rniga. Doppler yurak chiqishi o'lovlaridagi nisbatan katta tarqalish bir nechta omillar, masalan, tezlik-vaqt integrali (TVI) baholashdagi murakkablik, burchakdan kelib chiqadigan hisoblash xatolari va kesma maydonini to'g'ri o'lchashdagi muammolar tufayli yuzaga keladi. Kesish burchagidagi 5-10° xato qon oqimi tezligini o'lchashda $\pm 20\%$ xatoga olib keladi.

Transtorakal exokardiografiya (TTExoKG). "Funksional exokardiografiya" termini Kluckow et al. tomonidan kiritilgan bo'lib, bu usul yangi tug'ilgan chaqaloqlarda miokard funksiyasini, tizimli va o'pkali qon oqimini, yurak ichidagi va tashqi shuntlarni, organlar va to'qimalarning perfuziyasini baholash uchun yotqizilgan joyda echokardiografiyani qo'llashni ta'riflaydi [18, 19]. TTExoKG yordamida chap (ChQQ), o'ng qorincha (O'QQ) yoki yuqori kovak venada qon oqimini (YKVQ) o'lchash mumkin. Chap qorincha oqimini o'lchash uchun transtorakal usul bolalarda qon oqimini o'lchashning qabul qilingan standart usullari bilan taqqoslangan [20]. O'ng qorincha va yuqori kovak vena oqimini o'lchash esa qabul qilingan standart usullarga muvofiqligi tasdiqlanmagan.

Qizilo'ngach orqali echokardiografiya (QExoKG) yurakni haqiqiy vaqtda vizualizatsiya qilish imkonini beradi, bunda chap va/yoki o'ng qorinchaning chiqish traktida ICB hamda aorta va/yoki o'pkali klapaning PIIC ni o'lchash mumkin. Natijada chap va o'ng qorinchaning oqimini o'lchash mumkin. Bundan tashqari, yurakning anatomiyasini, oldingi yuklanish holatini va qisqarishni baholash mumkin. QExoKG asosan tug'ma yurak nuqsonlari bo'lgan bolalarda kardiojarrohlik operatsiyalari davomida funksional va struktural vizualizatsiya uchun qo'llaniladi. QExoKG ni faqat 3 kg dan og'ir bolalarda o'tkazish tavsiya etiladi, garchi operatsiya davomida 1,6 kg dan kam vaznli chaqaloqlarda muvaffaqiyatli qo'llanilgan [21]. Biroq, past vaznli yangi tug'ilgan chaqaloqlar traxeya va bronxlarning siqilishi, traxeyaning kutilmagan ekstubatsiyasi, oshqozonning perforatsiyasi, aortaning siqilishi va chap atriymning siqilishi kabi asorotlar xavfiga eng ko'p duch kelishadi.

Qizilo'ngach orqali dopplereografiya (QOD). QOD yordamida qon oqimi tezligi pastga tushuvchi aortada, ovqat trubkasida joylashgan ultratovush zondidan foydalanib o'lchanadi. Bolalarda foydalanish bo'yicha xabarlar cheklangan. Zondning o'lchami tufayli bu usul asosan 3 kg dan og'ir chaqaloqlarda qo'llaniladi. Ultrasonik nurlari aortaga qarab yo'naltirilishi kerak va signal sifatini tekshirish zarur. Aorta KKM ni M-rejimida echokardiografiya yordamida o'lchash yoki yosh, jins, bo'y, vazn yoki tana yuzasi maydoni asosida nomogramma yordamida baholash mumkin. Biroq, aorta PIIC statik parametr emas, chunki u o'rtacha arterial bosimdagi o'zgarishlarga qarab o'zgarishi mumkin [22].

Teri orqali dopplereografiya (TOD). Qon oqimi tezligini yuqoridagi aortada, sternum chuqurligida joylashgan noinvaziv ultratovush zondi yordamida o'lchash mumkin.

Qon oqimining tezligi uzluksiz to'lqinli doppler yordamida ko'tarilgan aorta joylashgan joyda o'lchanadi. O'lchangan yurak chiqishi umumiy tizimli qon

oqimining ko'rsatkichi bo'lib, koronary qon oqimini hisobga olmaydi. Zond shuningdek, o'lchov uchun o'pka arteriyaga qaratilishi mumkin. Aortaning va/yoki o'pka klapaning kesim maydoni o'sish, vazn va yoshdan foydalanib hisoblanadi. Phillips va boshqalar 37 ta muddatidan oldin tug'ilgan yangi tug'ilgan bolalarda TOD va QOD o'rtasidagi moslikni baholadilar va o'rtacha og'ish 0,00 l/min, aniqlik $\pm 0,16$ l/min va xato 43% ni aniqladilar.

Arterial puls konturini tahlil qilish (APKT) arterial puls bosimining to'lqin shakliga asoslangan holda har bir urishdan urishga qadar urush hajmini o'lchaydi. Arterial bosim to'lqini boshlang'ich bosim to'lqini va periferik tomirlar tomonidan qaytarilgan bosim to'lqini natijasida hosil bo'ladi. To'lqin shakli turli (patofiziologik) sharoitlarga qarab o'zgaradi va o'lchov joyiga bog'liq.

Aortada bosim va oqim o'rtasida chiziqli bog'lanish yo'qligi ma'lum, bu asosan aorta poydevorining impedansi, aortaning elastikligi va tizimli qon tomir qarshiligi bilan bog'liq. Bu shuni anglatadiki, puls konturini tahlil qilish yurak chiqishidagi o'zgarishlarni aniqlash uchun ishlatilishi mumkin va o'lchovlarni odatda boshqa texnologiyalar, masalan, transpulmonal termal yoki litiy dilütsiya yordamida kalibrlash zarur. Yaqinda oldin kalibrlashni talab qilmaydigan APKT monitorlari taqdim etildi. Kiritilgan holatda yangi tug'ilgan bolalarda puls konturini tahlil qilish bo'yicha nashr etilgan ma'lumotlar yo'q.

Transtorakal elektr impedans (TTEI) hozirgi kunda yagona qon chiqarish metodidir. Qonning elektr o'tkazuvchanligi mushaklar, yog' va havodan yuqoridir. Yuksak chastotali juda past kuchlanishli tok, elektrodlar orqali ko'krak qafasiga yuboriladi va asosan qon orqali tarqaladi. Shuning uchun, ko'krakdagi qon hajmining pulsatsion o'zgarishlari elektr qarshiligining o'zgarishiga olib keladi. Sistola vaqtida impendansdagi o'zgarishlar qon chiqarish bilan proporsionaldir. Sistol vaqtida impendansning kamayishi qon hajmining ko'payishi, oqim tezligining oshishi va eritrotsitlarning bir chiziqqa joylashishi bilan bog'liqdir. 1989 yilda birinchi marta Tibballs va boshqalar yangi tug'ilgan chaqaloqlarda TTEI bo'yicha yagona nazoratli tadqiqot o'tkazdilar va o'rtacha og'ish - 0,23 l/min - TTExoKG ni standart metod sifatida aniqladilar.

Shunday qilib, chaqaloqlarda yurak indeksini monitoring qilish juda murakkab vazifa bo'lib qolmoqda, turli xil texnologiyalarning mavjudligiga qaramay. Bundan tashqari, gemodinamik parametrlarning noto'g'ri talqini monitoring tizimining noto'g'ri qo'llanilishiga va potentsial jiddiy yon ta'sirlarga, shuningdek, iatrogenik jarohat xavfini oshirishi mumkin.

Hozirgi kunda yangi tug'ilgan chaqaloqlarda qon chiqarishni o'lchash uchun klinik standart mavjud emas, bu esa gemodinamikani boshqarish uchun qo'llaniladi. APKT va TTEI kabi metodlar kelajakda neonatologik gemodinamikani baholash uchun diagnostik vositalar sifatida xizmat qiladi. Shuningdek, TTExoKG yordamida potentsial oqimlarni va/yoki bo'lmacha shuntlarni baholash yurak indeksini to'g'ri talqin qilish uchun muhimdir, qaysi metodologiya qo'llanilishidan qat'i nazar.

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TALABALARNING KOMPYUTER-MODELLASH KOMPETENTLIGINI RIVOJLANTIRISH

Annotatsiya: Ushbu maqolada talabalarning kompyuter-modellash kompetentligini rivojlantirishning ahamiyati, metodlari va ta'lim jarayonidagi o'rni tahlil qilinadi. Kompyuter-modellash bugungi kunda ilm-fan, texnologiya va boshqa sohalarda keng qo'llaniladigan muhim vosita bo'lib, talabalarga murakkab tizimlarni tushunish, real dunyo muammolarini yechish va innovatsion g'oyalarni ishlab chiqish imkoniyatini beradi. Maqolada kompyuter-modellashni o'rgatishda foydalaniladigan usullar, zamonaviy texnologiyalar, dasturlash tillari va simulyatsiya platformalari haqida batafsil ma'lumotlar keltirilgan. Shuningdek, talabalar uchun zamonaviy o'qitish metodlari va yondoshuvlar, masalan, loyiha asosida o'qitish, guruhli ishlash, mentorlik va interaktiv materiallar yordamida bu kompetentlikni rivojlantirish mumkinligi ta'kidlangan. Ushbu maqola ta'lim tizimini takomillashtirishga, kompyuter-modellashni o'rgatishning samaradorligini oshirishga va kelajakdagi mutaxassislarni tayyorlashga yordam berishi kutilmoqda.

Kalit so'zlar: Kompyuter-modellash, kompetentlik, ta'lim metodlari, dasturlash, simulyatsiya, interaktiv o'quv materiallari, loyiha asosida o'qitish, zamonaviy texnologiyalar, talabalar, ta'lim jarayoni, guruhli ishlar, mentorlik.

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DEVELOPING STUDENTS' COMPUTER MODELING COMPETENCY

Annotation: This article analyzes the importance, methods, and role of developing students' computer modeling competencies in the educational process. Computer modeling is a vital tool widely used in modern science, technology, and other fields, enabling students to understand complex systems, solve real-world problems, and generate innovative ideas. The article provides detailed information on the methods used to teach computer modeling, including modern technologies, programming languages, and simulation platforms. Furthermore, it emphasizes how competencies can be developed through contemporary teaching methods and approaches, such as project-based learning, group work, mentoring, and interactive materials. This article aims to improve the educational system, enhance the effectiveness of teaching computer modeling, and assist in preparing future specialists.

Keywords: *Computer modeling, competency, teaching methods, programming, simulation, interactive learning materials, project-based learning, modern technologies, students, educational process, group work, mentoring.*

Kirish

Zamonaviy ta'lim tizimida talabalarning kompyuter-modellash kompetentligini rivojlantirish muhim ahamiyatga ega. Kompyuter modellari zamonaviy ilm-fan, texnologiya va muhandislik sohalarida keng qo'llanilmoqda. Ular nafaqat murakkab tizimlarni tushunish, balki real dunyo muammolarini yechish uchun ham zarur vosita hisoblanadi. Shu bilan birga, talabalar uchun bu kompetentlikni rivojlantirish ularga yangi bilimlarni o'zlashtirishda yordam beradi va kelajakda ish bozorida muvaffaqiyatli faoliyat yuritishlariga imkon yaratadi. Ushbu maqolada kompyuter-modellashning ahamiyati, talabalarda bu kompetentlikni rivojlantirish usullari va o'qitish metodologiyalari haqida so'z boradi.

Kompyuter-modellash va uning ta'limdagi ahamiyati

Kompyuter-modellash, ya'ni murakkab tizimlarning raqamli nusxalarini yaratish jarayoni, bir qator sohalarida muhim o'rin tutadi. Bu jarayon talabalarga matematik, fizika, iqtisodiy va boshqa ijtimoiy fanlar bo'yicha bilimlarni yanada chuqurroq tushunishga yordam beradi. Kompyuter modellari yordamida talabalar real dunyo tizimlarini simulyatsiya qilish imkoniyatiga ega bo'ladi, bu esa ular uchun o'rganishni yanada qiziqarli va samarali qiladi.

Kompyuter-modellash talabalar uchun murakkab matematik modellarni tushunish va amaliyotda qo'llash ko'nikmalarini rivojlantirishga yordam beradi. Bu nafaqat texnik ko'nikmalarni, balki analitik fikrlash, tanqidiy fikrlash va muammolarni hal qilish qobiliyatlarini ham oshiradi.

Kompyuter-modellash kompetentligini rivojlantirishda zarur ko'nikmalar

Kompyuter-modellash kompetentligini rivojlantirishda talabalar quyidagi asosiy ko'nikmalarni egallashlari zarur:

- **Matematik va analitik fikrlash:** Kompyuter-modellash ko'pincha murakkab matematik modellarni yaratishni talab qiladi. Talabalar bu jarayonda matematik usullarni qo'llashni o'rganadilar.

- **Dasturlash:** Modellash jarayonida talabalarga dasturlash tillarini o'rganish, ularni amaliyotda qo'llash zarur. Dasturlash bo'yicha ko'nikmalarni egallash, talabalar uchun kompyuter-modellashning asosi hisoblanadi.

- **Simulyatsiya va tahlil qilish:** Modelni yaratishdan tashqari, uni sinovdan o'tkazish, turli parametrlar bilan tahlil qilish va natijalarni baholash ham muhim ko'nikmadir. Talabalar bu ko'nikmalarni amaliy mashg'ulotlar orqali rivojlantiradilar.

- **Problemalarni aniqlash va hal qilish:** Kompyuter-modellash tizimlarining samaradorligini ta'minlash uchun talabalar tizimli muammolarni aniqlash va ularni echish ko'nikmalarini o'zlashtirishlari lozim.

Kompyuter-modellashni o'qitish usullari

Kompyuter-modellashni samarali o'rgatish uchun ta'lim metodologiyasi va yondoshuvlar muhim ahamiyatga ega. Quyidagi metodlar va yondoshuvlar talabalar uchun eng samarali hisoblanadi:

- **Loyiha asosida o'qitish (Project-based learning):** Kompyuter-modellashni o'rgatishda talabalar loyiha asosida o'quv jarayonida ishtirok etishlari kerak. Bu usul, talabalarni amaliyotda modellarni yaratish va tahlil qilishda ko'proq jalb qiladi, ularning kompetentliklarini rivojlantirishga yordam beradi.

- **Simulyatsiyalar va amaliy mashg'ulotlar:** Kompyuter-modellashni amaliyotda o'rgatish orqali talabalar real hayotdagi tizimlarni simulyatsiya qilish imkoniyatiga ega bo'ladi. Bu usul, ular uchun nafaqat nazariy bilimlarni, balki amaliy ko'nikmalarni ham oshiradi.

- **Interaktiv o'quv materiallari va onlayn platformalar:** Kompyuter-modellashni o'rgatishda interaktiv dasturlar va onlayn platformalar yordamida talabalar o'zlarining o'quv jarayonlarini nazorat qilishlari mumkin. Bu, ularning o'z-o'zini o'rganish va rivojlantirish imkoniyatlarini kengaytiradi.

- **Mentorlik va guruhli ishlar:** Talabalar guruhlar bilan ishlash orqali o'zlarining bilim va ko'nikmalarini mustahkamlashlari mumkin. O'qituvchilar mentor sifatida talabalarni qo'llab-quvvatlab, ularning jarayonlarni tushunishiga yordam berishlari kerak.

Kompyuter-modellashning kelajagi va talabalarga ta'siri

Kompyuter-modellash kompetentligi nafaqat ilm-fan va texnologiya sohalarida, balki boshqa ko'plab sohalarda ham talab qilinadi. Talabalar bu ko'nikmalarni egallash orqali kelajakda innovatsion g'oyalarni ishlab chiqish, muammolarni hal qilish va yangi texnologiyalarni yaratishda ishtirok etish imkoniyatiga ega bo'ladilar. Kompyuter-modellashning kelajagi haqida gapirganda, uning har qanday sohada, jumladan, iqtisodiyot, tibbiyot, ekologiya, transport va boshqa sohalarda qo'llanilishi yanada kengayishi kutilmoqda. Talabalar bu kompetentlikni egallagan holda zamonaviy dunyoda muvaffaqiyatli ishlashlari mumkin.

Xulosa

Kompyuter-modellash kompetentligini rivojlantirish talabalar uchun katta ahamiyatga ega, chunki bu ko'nikmalar ularning kelajakdagi kasbiy faoliyatida, shuningdek, jamiyatda ijtimoiy va iqtisodiy rivojlanishga hissa qo'shishda muhim rol o'ynaydi. Zamonaviy texnologiyalar va innovatsion o'qitish metodlarini qo'llash orqali talabalarga bu kompetentlikni o'rgatish, ularning bilim va ko'nikmalarini kengaytirishga yordam beradi. Ta'lim tizimi bu jarayonni qo'llab-quvvatlab, talabalar uchun yangi imkoniyatlar yaratishi zarur.

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**KIMYOVIIY XAVFLI OBYEKTlardagi texnogen tusdagi
AVARIYALAR VA ULAR BILAN BOG'LIQ FAVQULODDA
VAZIYATLARDAN AHOLINI VA HUDUDLARNI MUHOFAZA QILISH**

Annotatsiya: Ushbu maqolada kimyoviy xavfli obyektlardagi texnogen tusdagi avariylar va ular bilan bog'liq favqulodda vaziyatlardan aholi va hududlarni muhofaza qilish choralari tahlil qilingan. Kimyoviy xavfli obyektlardagi avariylar, asosan, texnologik buzilishlar, inson xatolari yoki tabiiy ofatlar natijasida yuzaga kelishi mumkin. Avariylarning turlari, ularning aholige va atrof-muhitga ta'siri, shuningdek, favqulodda vaziyatlardan aholi va hududlarni muhofaza qilish uchun zarur bo'lgan texnik va uyushmalar choralari mufassal bayon qilingan. Bundan tashqari, evakuatsiya jarayonlari, avariylarga ogohlantirish va xavfsizlikni ta'minlash uchun muhim usullar hamda texnik xizmat ko'rsatishning ahamiyatiga e'tibor qaratilgan. Maqola kimyoviy xavfli obyektlar bilan ishlashda xavfsizlikni ta'minlashga qaratilgan muhim tavsiyalarning aniq ko'rsatmalarini taqdim etadi.

Kalit so'zlar: Texnogen avariylar, favqulodda vaziyatlar, aholi muhofazasi, xavfsizlik choralari, evakuatsiya, xavfli moddalar, xavfli obyektlardagi portlashlar, texnik xizmat, ogohlantirish tizimlari, xavfsizlik standartlari.

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**PROTECTION OF THE POPULATION AND TERRITORIES FROM
TECHNOGENOUS ACCIDENTS AT CHEMICALLY HAZARDOUS
SITES AND EMERGENCY SITUATIONS RELATED TO THEM**

Annotation: The article analyzes man-made accidents at chemically hazardous facilities and measures to protect the population and territories from related emergencies. Accidents at chemically hazardous facilities can occur mainly as a result of technological failures, human errors or natural disasters. The types of accidents, their impact on the population and the environment, as well as technical and organizational measures necessary to protect the population and territories from emergencies are described in detail. In addition, special attention is paid to evacuation procedures, emergency warnings and critical safety methods, as well as the importance of maintenance. The article provides clear

recommendations of important recommendations aimed at ensuring safety when working with chemically hazardous facilities.

Key words: *Man-made accidents, emergencies, population protection, safety measures, evacuation, hazardous substances, explosions at hazardous facilities, maintenance, warning systems, safety standards.*

Kirish

Kimyoviy xavfli obyektlar (KHO) — kimyoviy moddalarni ishlab chiqarish, saqlash va ular bilan ishlashni talab qiladigan obyektlardir. Bunday obyektlardagi texnologik buzilishlar, portlashlar va toksik moddalarning tarqalishi aholi, atrof-muhit va iqtisodiyot uchun katta xatarlarni keltirishi mumkin. Kimyoviy xavfli obyektlardagi texnogen tushdagi avariya va ular bilan bogʻliq favqulodda vaziyatlardan aholi va hududlarni muhofaza qilish choralarini kurish muxim ahamiyat kasb yetadi.

Texnogen tushdagi favqulodda vaziyatlar orasida kuchli tasir etuvchi zaharli moddalar bilan bogʻliq obyektlardagi avariya oʻzining keltiradigan talofatlari yuqoriligi bilan ajralib turadi. Bunday obyektlarda avariya sodir boʻlgan taqdirda, faqat obyekt ishchilarining salomatligiga xavf tugʻdirmasdan, balki uning atrofida joylashgan hudud aholisiga ham xavf tugʻdiradi. Chunki, ular yuqori zaharlilik hususiyatiga ega boʻlgan va maʼlum sharoitlarda (asosan kimyoviy xavfli obyektlardagi avariya) odamlar va jonivorlarning ommaviy zaharlanishini keltirib chiqara oladigan, shuningdek atrof muhitni zararlay oladigan kimyoviy birikmalardir. Shu sababli ham bunday turdagi avariya sodir boʻlganda aholi xavfsizligini taminlashning ilmiy-uslubiy asoslarini ishlab chiqishga zarurat tugʻilmoqda [5].

Kuchli tasir etuvchi zaharli moddalarning asosiy qismi avtotransportlar yordamida korxonalarga tashib yetkaziladi. Tashish jarayonida ularning toʻkilishi kuzatilsa yoki kuchli tasir etuvchi zaharli moddalar bilan bogʻliq obyektlarda avariya sodir boʻlgan taqdirda zudlik bilan tarqalgan moddaning turi, uning atrof-tabiiy muhit va insonlarning hayoti va salomatligiga koʻrsatishi mumkin boʻlgan salbiy tasirlari aniqlanadi hamda olingan natijalarga asosan muhofazalanish usullari qoʻllaniladi [3].

Shu sababli ham mustaqillik yillarida mamlakatimizda favqulodda vaziyatlarning oldini olish, ular sodir boʻlganida harakat qilish boʻyicha yaxlit davlat tizimi va uning muvofiqlashtiruvchi organi sifatida Oʻzbekiston Respublikasi Favqulodda vaziyatlar vazirligi tashkil etildi, sohaning zarur meyoriy-huquqiy bazasi shakllantirildi [1].

Adabiyotlar tahlili va metodologiya

Bizga malumki, obyektlarda ishchi-xodimlarni kimyoviy zaharlanishdan muhofaza tadbirlari korxonadagi xizmat tuzilmalari, qutqaruv tuzilmalariga kiruvchi qutqaruvchilar tomonidan amalga oshiriladi. Shu sababli har bir qutqaruvchi zaharli moddalarning xossalari xabardor boʻlishi talab etiladi. Shu bilan birga zaharli moddalar bilan ishlaydigan ishchi va hodimlar ham zaharli moddalarning inson organizmiga koʻrsatadigan salbiy tasirlari, ulardan

muhofazalanish usullarini bilishlari lozim. Shuningdek zaharli moddalardan muhofazalanishda qo'llaniladigan zamonaviy shaxsiy himoya vositalari turlari va ulardan foydalanish usullarini bilishlari talab etiladi.

Mazkur sohasidagi asosiy dolzarb masala bu kuchli tasir etuvchi zaharli moddalar ishlatiladigan ishlab chiqarish korxonalarining ishchi-hodimlari hamda korhona atrofidagi aholini FV yuz berganda to'g'ri harakat qilishga o'rgatish, korhona hodimlarini malakasini oshirish va dastgohlar sozligini doimiy nazorat qilish orqali yuzaga kelishi mumkin bo'lgan FVning oldini olish yoki uning talofatlarini minimallashtirishni taminlashning ilmiy-uslubiy asoslarini ishlab chiqilmaganligi hamda mamlakatimizda malakali kadrlarni tayyorlashdan iboratdir. Shuningdek, fuqaro muxofazasi borasida muntazam ravishda amalga oshiriladigan ishlarni uzluksiz ravishda takomillashtirib borilishi; fuqaro muhofazasi mutaxassislari ilg'or tajriba usullarini amaliy tarzda egallab olishi, metodik, psixologik va boshqa jihatdan eng so'nggi yutuqlarini muntazam ravishda o'zlashtirishi, ish amaliyotiga tatbiq etib borishi zarurligini anglay olishi; qutqaruv ishlari va bu jarayonini takomillashtirish, uni mazmunini chuqurlashtirish va sifatini oshirish maqsadida zarur himoya ishlarini tashkil etilishi zarurligi muammoning dolzarbligini belgilaydi.

Muhokama va natijalar

Shuni alohida takidlash lozimki, ko'pincha ishlab chiqarish texnologik jarayonlarining va inshootlarni ekspluatatsiya qilish qoidalarining buzilishi natijasida zaharli moddalar tarqalishi va ulardan aholini muhofaza qilish chora-tadbirlarini amalga oshirilishi talab etiladi.

Radiatsiyaviy, kimyoviy va yong'in xavfi bor shaharlar va aholi punktlarini, KTEZM, portlash xavfi bor bo'lgan va biologik vositalari bo'lgan obyektlarni, odamga kuchli ta'sir etuvchi moddalar tashiydigan transport vositalarining temir yo'l uzellarini, neft-gaz konlari, neft quvurlari, gidrouzellar va boshqa obyektlarning ro'yxati aniq keltiriladi. Talofat hududidagi, shuningdek qo'shni hududlardagi epidemiologik, epizootik, elifitotik va seysmik faol hududlar, tabiiy ofatlar bo'ladigan joylar, sanoat va qishloq xo'jaligiga yetishi mumkin bo'lgan zararlar hamda shu hududlardagi aholi soni va ko'riladigan taxminiy talofatlar miqdori ko'rsatiladi.

Kuchli ta'sir etuvchi zaharli moddalarning bir necha turlari mavjud, ularning fizikaviy xossalari turlicha bo'lib, bo'g'uvchi, nafas olish organlari orqali inson tana azolariga salbiy tasir ko'rsatish xususiyatiga ega. Kuchli ta'sir etuvchi zaharli moddalar bilan inson organizmi zaharlanganda modda turiga qarab zaharlanish belgilari turlicha bo'ladi.

Ammiak NH_3 – rangsiz bo'g'uvchi xususiyatga ega bo'lgan, o'yekir xidli zaharli gazdir. U inson organizmiga tasir etganda avvalo nafas olish organlariga salbiy tasir ko'rsatib, burun bitishi, yo'tal, nafas olishning qiyinlashishi, yurakning tez-tez urishi, puls urishining tezlashishi kuzatiladi. Ammiakning bug'i terini va shilliq qavatlarning tasirchanligini oshishiga, qichishish, terining qizarishi, ko'zning achishishi va yoshlanishiga olib keladi. Uning ishlab chiqarish korxonalarida havodagi yo'l qo'yiladigan konsentratsiyasi 20mg/m^3 . 40mg/m^3

konsentratsiyasida insonlar hididan sezishlari mumkin. $500\text{mg}/\text{m}^3$ ni tashkil qilsa, insonlarda nafas olgan zahoti o'lim holati kuzatiladi.

Xlor – Cl_2 yashil- sariq tusli o'tkir bo'g'uvchi hidli zaharli gaz hisoblanadi. Inson organizmi hlor bilan zaharlanganda- ko'krakda og'riq poydo bo'lishi, ko'z yoshlanishi, quruq yo'tal, ko'ngil aynash, qayt qilish, muvozanatni yo'qotish, nafas yetishmaslik holatlari kuzatiladi.

Hlorning ishlab chiqarish korxonalarida havodagi yo'l qo'yiladigan konsentratsiyasi $1\text{ mg}/\text{m}^3$. Hlorning minimal seziladigan miqdori $2\text{ mg}/\text{m}^3$, $10\text{ mg}/\text{m}^3$ konsentratsiyasi esa inson organizmiga salbiy tasir ko'rsatadi. Agar uning havodagi miqdori $100\text{-}200\text{ mg}/\text{m}^3$ ga teng bo'lsa 30-60 daqiqa shu joyda bo'lgan inson uchun xavfli hisoblanadi, konsentratsiyasi undan ortib ketsa, keskin o'lim sodir bo'ladi[3].

Yuqorida ko'rganimizdek, har bir kimyoviy zaharli moddaning chegaraviy yo'l qo'yiladigan konsentratsiyasi mavjud. Quyidagi omillar sababli kuchli tasir etuvchi zaharli moddalar bilan bog'liq obyektlarda avariya sodir bo'lishi hamda zaharli moddalarning chegaraviy yo'l qo'yiladigan konsentratsiyasi oshib ketishi oqibatida korxona ishchi-hodimlari va yon atrofdagi aholining salomatligiga salbiy tasir ko'rsatishi mumkin:

- xavfli obyektlarning noqulay joylashuvi;
- ishlab chiqarish vositalarining eskirishi, avariya holatiga kelishi;
- kuchli ta'sir etuvchi zaharli moddalardan foydalanish, saqlash va tashishning ortishi;
- ishchilar kasbiy mahoratining, mehnat madaniyatining tushib ketishi hamda malakali kadrlarning kamayib ketishi;
- rahbar hodimlarning masuliyatsizligi, ishlab chiqarish va texnologik jarayonlarda intizomning tushib ketishi;
- kimyoviy xavfli obyektlar holatining yetarli darajada nazorat qilinmasligi;
- zararli va xavfli omillarni nazorat qilish tizimining mukammal emasligi;
- texnika xavfsizligi qoidalariga amal qilish darajasining tushib ketishi.

Kuchli ta'sir etuvchi zaharli moddalar (KTZEM) bilan bog'liq bo'lgan obyektlarda avariya va halokatlar oqibatlarini bartaraf etishda avariya-qutqaruv va boshqa kechiktirib bo'lmaydigan ishlarni tashkil etish, o'z vaqtida va sifatli razvedka ishlarini olib borish muhim ahamiyatga egadir.

Razvedkani radiatsiya va kimyoviy razvedka tuzilmalaridan tashkil etilgan guruh zvenolari olib boradi hamda quyidagi ishlarni amalga oshiradi[2]:

1. Avariya sodir bo'lgan joy va kuchli tasir etuvchi zaharli modda turi, shuningdek hudud va obyektning zaharlanganlik darajasi va ko'lami aniqlanadi
2. Zararlangan hudud chegarasini aylanib o'tiladi hamda hududdan chiqishning havfsiz yo'nalishlari aniqlanadi.
3. Tuproq, suv va boshqa tashqi muhit obyektlaridan namunalar olinadi va tahlil qilish uchun laboratoriyaga yuboriladi.
4. Kimyoviy zararlangan hudud o'chog'idagi odamlar holatini baholanadi.

5. KTEZMning hududga yoki atmosferaga tarqalayotganligi aniqlanishi bilanoq obyekt ishchi va hizmatchilari hamda yaqin atrofda yashovchi aholiga havf haqida habar beriladi.

Avariya sodir bo'lgan obyektida birinchi navbatda kuchli ta'sir etuvchi zaharli moddalarning to'kilishi yoki tarqalishini to'htatish tadbirlari amalga oshiriladi hamda zararlangan hududning chegarasi belgilanadi. Bu hududga avariyaning oqibatlarini bartaraf etishda qatnashmaydigan shahslarning kirishlariga ruhsat etilmaydi. Bu hudud alohida mahsus ishchi va hizmatchilardan tashkil topgan guruh tomonidan o'rab olinadi[3].

KTEZMlar bilan zararlangan havoning tarqalish yo'nalishini, zararlangan hududlardan havfsiz chiqish yo'llarini va muhitni aniqlash uchun gidrometeorologik kuzatishlariga alohida etibor beriladi. Avariya sodir bo'lgan hududdan chiqish uchun eng qisqa shamol esadigan va balandlikdan o'tadigan shamol yo'nalishiga perpendikulyar bo'lgan yo'nalish tanlanadi.

Jabrlanganlarga eng qisqa vaqt ichida tibbiy yordam ko'rsatiladi.

Zararlangan o'choq cheklangandan keyin zaharlangan hududlarni zararsizlantirish ishlari olib boriladi. Obyektlarni, asbob uskunalarni zararsizlantirish manbai sifatida KTEZMning neytrallashtiruvchi moddalar tanlanadi.

KTEZM bilan zararlangan o'choqda olib borilayotgan ishlar jarayonida xavfsizlik talablariga rioya qilish lozim, jalb etiladigan mutaxassislar gazniqob, muhofaza kiyimi hamda shahsiy himoya vositalari, dori-darmon qutisi bilan taminlanadilar. Zararlangan hududda ish boshlashdan oldin jalb etilgan qutqaruvchilar bilan KTEZM turi va sodir bo'lgan vaziyat haqida yo'riqnoma o'tkaziladi [4].

Yuqorida ko'rsatilgan xolatlardan kelib chiqqan holda shuni xulosa qilish munkinki, hozirgi kunda ishlab chiqarish jarayonida, qishloq xo'jaligi va hayotimiz mobaynida yuzlab har xil kimyoviy birikmalar ishlatilmoqda. Ular insoniyat, hayvonot olami va o'simlik dunyosi uchun zararli hisoblanib, ularning soni kun sayin ortayotganini ko'rishimiz mumkin. Shu sababli ham, yuzaga kelishi mumkin bo'lgan favqulodda vaziyatlar xavfi ortaveradi. Tabiiy, texnogen va ekologik tusdagi favqulodda vaziyatlar, avariya va fojialar oqibatlarini tugatish bo'yicha to'plangan tajribalar, fuqarolar muhofazasida olingan nazariy bilimlar, yuqorida ta'kidlangan FVlarda, fuqarolarni ongli ravishda tez, qat'iyon harakat qilishga, iqtisodiyot tarmoqlarini tezda qayta tiklab, uni ishga tushirib yuborishga va talofot ko'rganlarga o'z vaqtida kerakli yordamlarni ko'rsata olishga o'rgatadi. Albatta, bu vazifalar, tabiiy ofatlar, avariya va talofotlarning tabiati, tavsifi, kelib chiqish sabablari va ularni keltiradigan oqibatlarini chuqur o'rganish natijasidagina amalga oshiriladi. Shu sababdan fuqaro muhofazasi xodimlari oldiga juda katta ma'suliyat ya'ni (harbiy davrda ham, tinchlik davrida ham) fuqarolarni har qanday yuzaga kelishi munkinki bo'lgan favqulodda vaziyatlarga tayyor bo'lish ruhida o'qitish vazifasini qo'yadi.

O'zbekistonda turli xarakterdagi favqulodda vaziyatlarni bartaraf etish, talofatlar ko'lamini toraytirish, insonlar hayoti va ular tomonidan yaratilgan moddiy

boyliklarga yetadigan zararlarning oldini olish yoki ularni kamaytirishni ta'minlashda ishtirok etadigan barcha xizmatlarning o'zaro munosabatlarini belgilovchi va tartibga soluvchi qator qonunlar va shu sohaga taaluqli bo'lgan Vazirlar Mahkamasining qarorlari va boshqa meyoriy-huquqiy hujjatlar qabul qilingan hamda hayotga joriy etilmoqda.

Xulosa

Kuchli ta'sir etuvchi zaharli moddalar bilan bog'liq favqulodda vaziyatlardan aholini va hududlarni muhofaza qilish tizimini yanada takomillashtirish bo'yicha tavsiyalar [6]:

1. Kimyoviy xavfli obyektlarda (bundan keyin matnda KXO deb yuritiladi) zaharli moddalarni zaharliligi kamroq moddalar bilan alishtirish yoki umuman havoga zaharli moddalar ajralishi uchun sharoitni qirqadigan yangi texnologiyalarni joriy etish;

2. Eskirgan texnologiya va uskunalarni zamon talablariga javob beradiganlari bilan almashtirish;

3. Ishlab chiqarish jarayonlarini mexanizatsiyalashtirish. Natijada, mehnat jarayoni osonlashadi, ishchilarni zaharli moddalar bilan muloqotda bo'lishi sezilarli darajada chegaralanadi.

4. Ish zonasidagi havo muhiti holati ustidan doimiy nazorat olib borish hamda samarali shamollatish tizimlarini o'rnatish;

5. KXO ni aholi yashash hududidan uzoqroq maydonga joylashtirish;

6. KXO ishchi-xodimlari bilan doimiy yo'riqnomalar o'tkazish, shuningdek bosqichma-bosqich ularni shaxsiy himoya vositalari bilan ta'minlash.

Foydalanilgan adabiyotlar:

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YUQORI BOSIMLI GAZ BALLONLARIDAN FOYDALANISHDA XAVFSIZLIK CHORALARINI TA'MINLASH

Annotatsiya: Ushbu maqola yukori bosimli gaz ballonlaridan foydalanishda xavfsizlik choralari ta'minlash masalasini ko'rib chiqadi. Gaz ballonlari sanoat, tibbiyot va boshqa sohalarda keng qo'llaniladi, ammo ularning noto'g'ri foydalanilishi muhim xavflar bilan bog'liq. Maqolada ballonlarning to'g'ri tanlanishi, saqlanishi, texnik holatini tekshirish va ulardan foydalanishda xavfsizlik qoidalariga amal qilish kabi muhim choralar muhokama qilinadi. Shuningdek, avariya holatlarda ishlash va xavfsizlikni ta'minlash uchun ko'riladigan zaruriy tadbirlar haqida ma'lumot berilgan. Maqola ish joylarida xavfsizlikni ta'minlash va inson salomatligini muhofaza qilish uchun muhim yo'riqnomalarni o'z ichiga oladi.

Kalit so'zlar: Xavfsizlik choralari, texnik holat, gaz ballonlaridan foydalanish, ballonlarni saqlash, portlash xavfi, xavfsizlik qoidalar, gazlar, xavfsizlik qurollari, ish joyida xavfsizlik, foydalanish qoidalar.

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WHEN USING HIGH PRESSURE GAS CYLINDERS ENSURE SAFETY MEASURES

Annotation: This article discusses the issue of ensuring safety measures when using high-pressure gas cylinders. Gas cylinders are widely used in industry, medicine and other areas, but their improper use is associated with significant risks. The article discusses such important measures as the correct selection of cylinders, their storage, checking the technical condition and compliance with safety rules when using them. It also provides information on the necessary measures that must be taken to ensure safety and work in emergency situations. The article contains important recommendations for ensuring safety in the workplace and protecting human health.

Key words: Safety measures, technical condition, use of gas cylinders, storage of cylinders, explosion hazard, safety rules, gases, safety weapons, industrial safety, rules of application.

Kirish

Yuqori bosimli gaz ballonlari sanoat va turli sohalarda muhim ahamiyatga ega bo'lib, ularning noto'g'ri foydalanishi katta xavflarga olib kelishi mumkin. Ballonlar bilan ishlashda xavfsizlik choralarini ta'minlash — hech bo'lmaganda texnik xavfsizlik va inson salomatligi uchun juda muhim.

Bugungi kunda iqtisodiyot sohasida va aholi tomonidan tabiiy gaz resurslaridan keng foydalanib kelinmoqda. Aholi o'rtasida va iqtisodiyot tarmoqlarida gaz xavfi bilan bog'liq noxush holatlar hamda har xil avariylarning oldini olish muhim ahamiyat kasb etadi.

Shu o'rinda olovni yuzaga keltiruvchi manbaalardan biri tabiiy gazning ham ahamiyati beqiyos. Ma'lumki, kundalik hayotimizda asosan ikki xildagi gazdan foydalanamiz. Bular metan va propan gazlaridir.

So'nggi vaqtlarda aholi turmush sharoitini yaxshilash maqsadida, "Hududiygazta'minot" korxonalari tomonidan suyultirilgan propan gazi bilan to'ldirilgan maishiy gaz ballonlari yetkazib berilmoqda. Bunda maishiy gaz ballonlaridan faqatgina ovqat tayyorlash maqsadida foydalanilishi ko'zda tutilgan bo'lib, gaz to'ldirish maskanlarida ballonlarga markazlashgan holda texnik xizmat ko'rsatilishi, ularning sinovdan o'tkazilib, gaz to'ldirilishi hamda maxsus jihozlangan transportlarda aholi punktlariga va tarqatish shahobchalariga transportirovka qilinishi tashkil etilgan.

Adabiyotlar tahlili va metodologiya

Shamsov Abdulla(2019) o'z tadqiqotlarida yukori bosimli gaz ballonlarini saqlash va transportirovka qilishdagi xavfsizlik masalalariga alohida e'tibor qaratgan. Uning fikricha, gaz ballonlari yotgan joylarda xavfsizlik talablariga to'la rioya qilish va ularni maksimal darajada zararsiz muhitda saqlash muhimdir. Shuningdek, ballonlar uchun maxsus saqlash joylarini tashkil qilish va ularni har doim namlikdan va yuqori haroratdan himoya qilish muhim.

Gulimova Tatyana(2018) o'zi olib borgan tadqiqotida gaz ballonlarining texnik holatini muntazam tekshirish va ularni to'g'ri foydalanish masalalariga baho bergan. Uning fikricha, ballonlarning fizik va ximik xususiyatlarini davriy tekshirish va ularni ishlatishdagi xavflarni baholash muhimdir.

O'zbekistondagi milliy xavfsizlik standartlari, shu jumladan GOST 51256-2017 va ST SEV 5286-89 kabi standartlar, gaz ballonlarining xavfsizligi bo'yicha ko'rsatmalarni belgilaydi. Bu standartlar bo'yicha, gaz ballonlarini saqlash, transportirovka qilish va ishlatishda xavfsizlik qoidalariga rioya qilish muhimligi ta'kidlangan.

Yukori bosimli gaz ballonlaridan foydalanishda xavfsizlik choralarini tahlil qilish va ularni samarali ta'minlash uchun zaruriy mexanizmlar va yo'llarni aniqlashdan iborat. Yukori bosimli gaz ballonlaridan foydalanishda xavfsizlik choralarini ta'minlashning ijobiy va samarali yo'llarini aniqlash uchun turli usullar va tadqiqotlardan foydalanishni nazarda tutadi. Tadqiqotda amalga oshiriladigan tizimli va ko'p tarmoqli yondashuv har bir xavfsizlik chorasini izchil tadqiq qilish, amalga oshirish va baholashga yordam beradi.

Muhokama va natijalar

Gaz ballonlariga gaz to'ldiruvchi tomonidan texnik xizmat ko'rsatish, sinovdan o'tkazuvchi mutaxassislar hamda transportirovka qiluvchilar maxsus tayyorgarlikdan o'tkazilgan bo'lib, tegishli malaka ko'nikmalariga ega va ular davriy yo'riqnomalardan o'tkazilib boriladi.

Gaz ballonlaridan foydalanish tartibi meyoriy hujjatlar bilan belgilab berilgan qoidalar asosida xonadaonlarni gaz ballonlar bilan jihozlash hamda ularni tarqatish jarayonida iste'molchilarga o'rgatib borilishi tashkil etilgan. Maishiy gaz ballonlaridan xavfsiz foydalanish uchun barcha choralar ko'rilsada, ayrim hollarda ulardan foydalanish qoidalarining buzilishi oqibatida ko'ngilsiz hodisalar yuz berayotganligini aholi o'rtasida gaz ballonlaridan bilib bilmasdan ehtiyotsizlik bilan foydalanishi va ularning texnik nosozligi oqibatida ko'plab yong'in-chaqnashlar yuz berayotganligi ehtimoldan holi emas [1].

Shuni misol keltirish munkinki, 2008 yilning iyul oylari o'rtasida Toshkent shahrining Quyluq dahasida joylashgan "Metan" gaz quyish shahobchasida bir necha kun davomida gaz hidining chiqishini sezishgan, lekin o'z vaqtida shahobcha faoliyatini to'xtatib tegishli choralar ko'rishmagan, natijada kuchli portlash yuz berib, bir necha insonlar turli xil og'ir tan jaroxatlari olishgan. Bundan tashqari yil mobaynida bir necha avtomobillarning noto'g'ri eksluatatsiya qilish oqibatida, metan gazining portlashi xolatlarini misol keltirish mumkin [2].

Ushbu noxush holatlar asosan noto'g'ri foydalanish, texnika xavfsizligiga rioya etmasligi tufayli yuzaga kelishi ehtimoli mavjud:

gaz ballondan gazni yuqori tezlikda olishda, gaz jo'mrak orqali, ballondagi chiqish joyini elektr zaryadlanishi va uchqun hosil qilishi natijasida;

- ballondagi gaz bosimining ruxsat etilgan bosimda to'ldirish (ballondagi bosimning quyosh nuri yoki boshqa issiqlik manbai ta'sirida) jarayonida;

- ballon metalining yemirilishi natijasida devorining yupqalanishi, ballon ishlab chiqilishida talabga javob bermaydigan metallardan foydalanganda, qishki vaqtda havo haroratining pasayishi bilan metalning plastiklik xususiyati pasayib, zarb yetkazilganda gaz ballon korpusining parchalanishi;

- ballonlarning o'z vaqtida texnik sozligi va yaroqliligi maxsus ruxsatnomaga ega bo'lgan tashkilotlar tomonidan tekshiruvdan ya'ni maxsus laboratoriyada sinovdan o'tkazmasdan uzoq vaqt davomida ekspluatatsiya qilish davomida portlashi yoki yorilishi mumkin [3].

Ballonlar bino inshootlarning ichida yoki atmosfera yog'inlari va quyosh nuridan himoyalangan holda tashqarida saqlanishi zarurligi bo'yicha talablar "Aholi ko'p yig'iladigan maskanlar uchun yong'in xavfsizligi qoidalari. YOXQ-01-97"ning 2.2-bandida, SHNK 2.04.08-13ni 9.44-bandida va STX 15-107-14 "Gaz xo'jaligidan texnik foydalanish qoidalari"ning 533-bandida, shuningdek "O'zbekiston Respublikasi xududida ro'zg'orda gazdan foydalanish qoidalari"ning 6-bandiga belgilab berilgan [4].

Gazlashtirilgan xonalarda gaz ballonlari xona isitish tizimining radiatori yoki isitish pechidan, gaz plitasidan, boshqa elektr isitish moslamalaridan va ochiq alangali isitish manbaalaridan qanday masofada bo'lishi shartligi "O'zbekiston Respublikasi xududida ro'zg'orda gazdan foydalanish qoidalari"ning 18.17-

bandida "Gazlashtirilgan xonalarda gaz ballonlari xona isitish tizimining radiatoridan va isitish pechidan 1 (bir) metrdan kam, isitish pechi darchasidan 2 metrdan kam masofada joylashtirilishi taqiqlanganligi" belgilab qo'yilgan [5].

Ballon metalining yemirilishi natijasida ballon devorining yupqalanishi, zarb yetkazilganda ballon metali parchalanishini oldini olish maqsadida to'ldirilgan ballonlar vertikal (tik) holda saqlanishi va uning yiqilmasligi uchun barcha choralar ko'rilish shartligi "Bosim ostida ishlovchi sig'imlarning tuzilishi va xavfsiz foydalanish qoidasi"ning 19-ilovasi 10-bandida belgilab berilgan [6].

Ballonlarning uzoq vaqt davomida ekspluatatsiya qilish davomida portlashi yoki yorilishini oldini olish uchun, ularning texnik sozligi va yaroqliligi maxsus ruxsatnomaga ega bo'lgan tashkilotlar tomonidan o'z vaqtida tekshiruvdan ya'ni maxsus laboratoriyada sinovdan o'tkazilishi shartligi "O'zbekiston Respublikasi gaz xo'jaligini ekspluatatsiya qilish texnik qoidalari"ning 11.4.12-bandida foydalanishda bo'lgan gaz ballonlari 5 yildan kam bo'lmagan muddatda davriy qiyoslashdan o'tkazilishi shartligi" quyidagi talablarga muvofiq belgilab qo'yilgan bo'lib shundan:

- "Aholi ko'p yig'ilgan maskanlar uchun yong'in xavfsizligi qoidalari" hamda "O'zR xududida ro'zg'orda gazdan foydalanish qoidalari" talablarini SHNK 2.04.08-13ning 9.44-bandiga asoan ushbu qoidalar talablariga ko'ra gaz ballon uskunalari javonning o'rnatilishi shartligi, uni o'rnatishga qo'yilgan texnik shartlar va ballonlar soni belgilanishi;

- gaz ballonlari isitish radiatori yoki pechidan, gaz plitasidan, boshqa elektr isitish moslamalaridan va ochiq alangali isitish manbaalaridan qanday masofada saqlash meyorlari "O'zbekiston Respublikasi hududida ro'zg'orda gazdan foydalanish qoidalari"ga rioya qilinishi;

- gaz uskunalari o'rnatilgan oshxona va boshqa tegishli xonalarda gaz xavfsizligi ta'minlash uchun maxsus gazaanalizatorlar o'rnatish va doimiy ravishda jumraklar, ulangan joylardan gaz sizib chiqish holatlarini nazorat qilib turish;

- ballonlarning texnik sozligi va yaroqliligi maxsus ruxsatnomaga ega bo'lgan tashkilotlar tomonidan o'z vaqtida tekshiruvdan ya'ni maxsus laboratoriyada sinovdan o'tkazilishi bo'yicha talablar "O'zbekiston Respublikasi xududida ro'zg'orda gazdan foydalanish qoidalari"ning 18- bandiga asosan sinovdan o'tmagan gaz ballonlaridan foydalanish, ularni saqlash hamda iste'molchi maishiy gaz ballonini to'ldirilishga olib borishi taqiqlanishi bo'yicha tegishli bandlar kiritilishi va ushbu talablarga asoan aholiga va idoralarda yuqoridan qayd etilgan xavfsizlik chorariga javob bermaydigan gaz ballonlaridan umuman foydalanmaslik to'g'risida alohida ko'rsatma va tegishli idoralar ma'sulligini oshirish xavfsizlik choralarini yanada kuchaytirishga erishiladi [7].

Xulosa

Xulosa qilib aytadigan bo'lsak, xavfli tabiiy va texnogen tahdidlar yuzaga kelishini o'z vaqtida profilaktika qilish, ularni oldini olish va salbiy ta'sirlarini kamaytirish tadbirlarini oldindan o'tkazilib borilishi maqsadga muvofiqdir. Favqulodda vaziyatlar ro'y berganda har bir inson vaziyatdan kelib chiqqan holda

to'g'ri harakat qilib, sarosimaga tushmasdan xotirjamlikni saqlagan holda ish ko'rishi, o'ziga va o'zaro birinchi tez tibbiy yordam ko'rsatish ko'nikmalarini bilsalar maqsadga muvofiq bo'lar edi.

Foydalanilgan adabiyotlar ro'yxati:

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2. O'zbekiston Respublikasining "Yong'in xavfsizligi to'g'risida"gi Qonuni 2009 yil 30 sentabr.
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4. O'zbekiston Respublikasi Prezidentining "O'zbekiston Respublikasida favqulodda vaziyatlarning oldini olish va bartaraf etish hamda yong'in xavfsizligini ta'minlashning sifat jihatdan yangi tizimini joriy etish to'g'risida"gi PF-5706-sonli Farmoni 2019 yil 10 aprel.
5. O'zbekiston Respublikasi Prezidentining "Favqulodda vaziyatlar tuzilmalarining faoliyatini yanada takomillashtirish bo'yicha tashkiliy chora-tadbirlar to'g'risida" PQ-4276-sonli Qarori 2019 yil 10 aprel.
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A CRITERIA-BASED APPROACH TO ASSESSING THE STABILITY OF GREEN ECONOMY ENTERPRISES IN UZBEKISTAN

Abstract: *The transition towards a green economy has become an essential strategy for sustainable development, particularly in emerging markets like Uzbekistan. This study evaluates the stability of green economy enterprises using a criteria-based approach, emphasizing the economic, environmental, and social dimensions influencing enterprise sustainability. By analyzing statistical data from national and international sources, we provide insights into the key determinants of green business stability. We propose a methodological framework that integrates financial resilience, regulatory compliance, and environmental impact assessments to facilitate better decision-making for investors and policymakers. Additionally, a comparative analysis with other post-Soviet economies provides a broader perspective on regional trends and challenges.*

Keywords: *Green economy, enterprise stability, sustainability assessment, environmental economics, investment strategies.*

INTRODUCTION

The global shift towards a green economy is driven by the necessity to balance economic growth with environmental sustainability. In Uzbekistan, this transition has gained momentum due to government-led initiatives aimed at fostering renewable energy, sustainable agriculture, and eco-friendly industrial practices [1]. As a landlocked nation with a resource-dependent economy, Uzbekistan faces unique challenges in integrating green policies into its broader economic framework. Despite the adoption of national strategies like the “Green Economy Transition Strategy 2030,” enterprises still encounter obstacles such as limited access to green finance, technological constraints, and policy implementation gaps [2].

This study aims to develop a structured approach to assessing the stability of green enterprises in Uzbekistan, considering financial, environmental, and operational factors. By comparing Uzbekistan’s green business environment with other post-Soviet economies, we seek to identify best practices and areas requiring improvement [3]. The research builds upon existing literature and incorporates real-time statistical data to offer actionable insights for stakeholders.

LITERATURE ANALYSIS

Previous research on the green economy in Uzbekistan and the broader Central Asian region has primarily focused on policy frameworks and investment

trends [4]. Scholars such as Porfiriyeв B.N., Sigova M.V., and Klyuchnikov I.K. have examined the institutional aspects of green transitions, while Uzbek economist Suyunov D.X. has contributed to understanding economic viability and sustainability within the country's green sector [1].

Suyunov D.X.'s work emphasizes the role of government subsidies and international funding in supporting green initiatives in Uzbekistan. His findings indicate that, while the country has made notable progress in renewable energy investments, private sector participation remains limited due to financial risks and regulatory uncertainty [3]. In contrast, studies from developed economies suggest that strong public-private partnerships and innovative financing mechanisms, such as green bonds and carbon credits, enhance the stability of sustainable enterprises [6]. Furthermore, statistical reports from the National Statistics Office of Uzbekistan reveal that between 2015 and 2023, green industry contributions to GDP grew by approximately 6%, yet remain below the regional average [7]. Comparative studies with Kazakhstan and Russia highlight the importance of integrating circular economy principles and advanced technological solutions to ensure business resilience [8]. This study builds upon these insights by integrating financial, environmental, and operational indicators into a comprehensive assessment model. By utilizing national and international data sources, we aim to bridge the gap between theoretical research and practical implementation in Uzbekistan's green economy.

METHOD

This study employs a mixed-method approach, combining qualitative and quantitative data analysis. We utilize statistical indicators from national and international economic reports, evaluating factors such as green investment flows, carbon footprint reduction, and employment rates in sustainable industries [9]. The proposed assessment framework categorizes enterprises based on financial resilience, regulatory compliance, and environmental performance [10]. To ensure robustness, data is collected from government reports, international financial institutions, and corporate sustainability reports. The Analytical Hierarchy Process (AHP) is applied to weigh different criteria, allowing a more structured evaluation of business stability [11]. Regression analysis is conducted to identify the relationships between financial investments and long-term sustainability outcomes.

RESULTS

Our findings indicate that enterprises with diversified green investments and strong regulatory compliance demonstrate higher stability [5]. Statistical analysis reveals that businesses adopting circular economy principles exhibit lower financial volatility and higher growth potential [7].

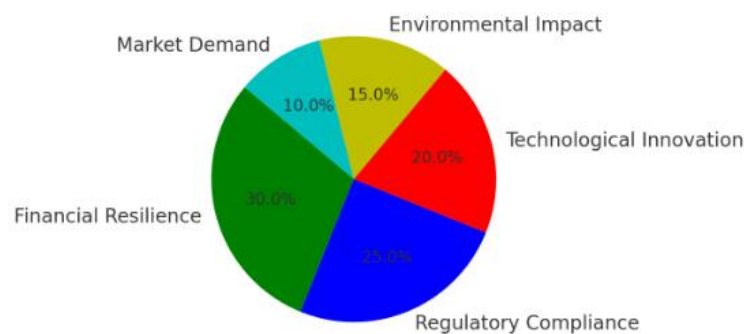


Figure 1. Green Economy Contribution to GDP in 2023

Additionally, firms integrating advanced eco-innovation strategies tend to secure long-term competitiveness in the market [13]. Uzbekistan's green enterprises show steady progress, with renewable energy projects expanding under government-backed initiatives.

However, comparative data suggest that Kazakhstan and Russia have outpaced Uzbekistan in terms of private investment in sustainable industries [12]. This discrepancy highlights the need for enhanced financial incentives and improved regulatory frameworks to encourage green business development.

DISCUSSION

The results underscore the significance of aligning green economy policies with financial incentives and technological advancements. While developed economies have established robust green finance mechanisms, developing nations require targeted support to enhance enterprise stability. This study also highlights potential risks, such as policy uncertainty and technological adaptation challenges, which can impact long-term sustainability [8].

In Uzbekistan, addressing these challenges requires a multi-faceted approach, including:

- Expanding access to green financing through public-private partnerships [9].
- Strengthening policy frameworks to encourage sustainable business practices [13].
- Promoting research and development in green technologies [12].
- Enhancing cross-border cooperation with regional economies to share best practices [10].

CONCLUSION

A criteria-based approach provides a structured methodology for assessing the stability of green economy enterprises. By integrating financial, environmental, and operational indicators, policymakers and investors can make informed decisions to support sustainable business models. Future research should focus on refining these criteria and incorporating real-time economic forecasting models. For Uzbekistan, the transition to a green economy presents both opportunities and challenges. While substantial progress has been made, further investment and policy refinement are required to ensure long-term enterprise stability. This study serves

as a foundation for continued research and policy development in sustainable economic practices.

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NOFILOLOGIK OLIY TA'LIM MUASSASALARI TALABALARIDA KASBIY MALAKALARNI RIVOJLANTIRISHGA QO'YILGAN ZAMONAVIY TALAB VA METODLAR

Annotatsiya: Ushbu maqolada nofilologik oliy ta'lim muassasalari talabalarida kasbiy malakalarni rivojlantirishga qo'yilgan zamonaviy talab va metodlar tahlil qilinadi. Kompetensiyaga yo'naltirilgan ta'lim, raqamli texnologiyalar, amaliyotga asoslangan o'qitish, individual ta'lim yo'nalishi, interfaol metodlar hamda xalqaro tajriba almashinuvi kabi yondashuvlar muhokama qilinadi. Mazkur metodlar talabalarni zamonaviy mehnat bozorining ehtiyojlariga mos ravishda tayyorlash, nazariy va amaliy bilimlarni uyg'unlashtirish, shuningdek, kasbiy rivojlanishni ta'minlashga xizmat qiladi.

Kalit so'zlar: kasbiy malaka, kompetensiyaga yo'naltirilgan ta'lim, raqamli texnologiyalar, amaliyotga asoslangan o'qitish, interfaol metodlar, akademik mobillik, innovatsion ta'lim, soft skills, dual ta'lim, mentorlik.

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MODERN REQUIREMENTS AND METHODS OF PROFESSIONAL COMPETENCE DEVELOPMENT AMONG STUDENTS OF NON- PHILOLOGICAL HIGHER EDUCATIONAL INSTITUTIONS

Annotation: This article will analyze modern requirements and methods of professional competence development among students of non-philological higher educational institutions. Approaches such as competence-based education, digital technologies, practice-based learning, individual learning, interactive methods and international exchange of experience will be discussed. These methods are used to prepare students in accordance with the needs of the modern labor market, to harmonize theoretical and practical knowledge, as well as to ensure professional development.

Keywords: professional qualifications, competence-based learning, digital technologies, practice-based learning, interactive methods, academic mobility, innovative learning, soft skills, dual training, mentoring.

Kirish

Bugungi kunda nofilologik oliy ta'lim muassasalarida talabalarni zamonaviy mehnat bozorining talablariga mos ravishda tayyorlash muhim ahamiyat kasb

etmoqda. Texnologik taraqqiyot, raqamli iqtisodiyot va sanoatning jadal rivojlanishi mutaxassislar oldiga nafaqat nazariy bilimlarni chuqur egallash, balki amaliy ko'nikmalarga ega bo'lish zaruratini ham qo'yimoqda. Shu sababli, kasbiy malakalarni rivojlantirishda innovatsion yondashuvlar va ilg'or pedagogik texnologiyalardan foydalanish muhim sanaladi.

Ushbu maqolada nofilologik oliy ta'lim muassasalari talabalarining kasbiy malakalarini shakllantirishga qo'yilayotgan zamonaviy talablar va ularni rivojlantirish metodlari tahlil qilinadi. Kompetensiyaga yo'naltirilgan ta'lim, raqamli texnologiyalar, amaliy loyihalar asosida o'qitish, individual ta'lim yondashuvlari hamda xalqaro tajriba almashinuvi kabi metodlarning samaradorligi ko'rib chiqiladi. Zamonaviy ta'lim jarayoniga ushbu metodlarni joriy etish orqali malakali mutaxassislarni tayyorlash imkoniyatlari tahlil qilinadi.

Adabiyotlar tahlili

Kasbiy malakalarni rivojlantirish bo'yicha ilmiy-adabiy manbalar tahlili shuni ko'rsatadiki, zamonaviy ta'lim tizimi an'anaviy usullardan interfaol va amaliyotga yo'naltirilgan metodlarga o'tmoqda. Tadqiqotlar ta'lim sifati va mehnat bozorining talablariga mos mutaxassislarni tayyorlash o'rtasidagi bog'liqlikni ko'rsatadi.

Ta'lim jarayonida talabalarni kasbiy faoliyatga tayyorlashda kompetensiyaviy yondashuv asosiy tamoyillardan biri hisoblanadi. J. Raven (2001) va L.M. Mitina (2010) kabi tadqiqotchilar kasbiy kompetensiyani shaxsning nazariy bilimlari, amaliy ko'nikmalari va kasbiy axloqiy qadriyatlarining uyg'unligi sifatida ta'riflashadi. Zamonaviy tadqiqotlarda kasbiy kompetensiyalarning tarkibiy qismlari, ularni rivojlantirish usullari va baholash mexanizmlari keng yoritilgan.

Hozirgi vaqtda onlayn ta'lim, virtual laboratoriyalar, sun'iy intellekt va raqamli platformalar kasbiy ta'lim jarayonining ajralmas qismiga aylanmoqda. YuNESKO (2019) va OECD (2021) hisobotlarida raqamli texnologiyalarning ta'lim sifatiga ta'siri va ularning kasbiy malaka shakllanishiga ijobiy ta'siri tahlil qilingan. M. Fullan (2020) va S. Selwyn (2022) tomonidan olib borilgan tadqiqotlarda raqamli ta'lim muhitlarining talabalar bilimini oshirishdagi roli yoritilgan.

Dual ta'lim modeli Germaniya, Shveysariya va Avstriya kabi mamlakatlarda keng tarqalgan bo'lib, talabalarni o'qish jarayonida ish bilan bog'lashga imkon beradi. Xalqaro tadqiqotlar (Deißinger, 2015; Euler, 2018) bu tizimning amaliy ahamiyatini tasdiqlaydi. Shuningdek, PBL (Project-Based Learning) metodikasi bo'yicha olib borilgan tadqiqotlar (Thomas, 2000; Blumenfeld et al., 1991) talabalar muammolarni hal qilish qobiliyatini oshirishini ko'rsatadi.

Bugungi mehnat bozorida texnik bilimlar bilan bir qatorda kommunikativ ko'nikmalar, kreativ fikrlash, muammolarni hal qilish va liderlik qobiliyatlari muhim ahamiyat kasb etadi. Harvard Business Review (2019) va World Economic Forum (2020) tadqiqotlariga ko'ra, XXI asr mutaxassislari soft skills'ning roli ortib bormoqda. Xususan, D. Goleman (1995) tomonidan ilgari surilgan "emosional intellekt" konsepsiyasi kasbiy rivojlanishda katta ahamiyatga ega.

Erasmus, DAAD, Fulbright kabi xalqaro dasturlar akademik mobillikni rivojlantirishda muhim rol o'ynaydi. Tadqiqotlar shuni ko'rsatadiki, xalqaro tajriba orttirgan talabalar innovatsion fikrlash, madaniy moslashuvchanlik va kasbiy ko'nikmalarni tezroq rivojlantirish imkoniyatiga ega bo'ladilar (Teichler, 2007; Wächter, 2016).

Adabiyotlar tahlili shuni ko'rsatadiki, zamonaviy ta'lim metodlari kasbiy malakalarni rivojlantirishda samarali vositalardan biridir. Kompetensiyaga yo'naltirilgan ta'lim, raqamli texnologiyalar, amaliyotga asoslangan yondashuv va xalqaro hamkorlik zamonaviy mutaxassislarni tayyorlashda muhim rol o'ynaydi. Bu metodlarni nofilologik oliy ta'lim tizimiga integratsiya qilish kelajak avlod mutaxassislarning bozor talablariga moslashishiga yordam beradi.

Tadqiqot natijalari

Tadqiqot natijalari nofilologik oliy ta'lim muassasalari talabalarida kasbiy malakalarni rivojlantirishga qaratilgan zamonaviy talab va metodlarning samaradorligini baholashga qaratildi. Tadqiqot davomida quyidagi natijalar aniqlandi:

Talabalarning 85% kompetensiyaviy yondashuv asosida o'qitilgan taqdirda kasbiy faoliyatga tezroq moslashishini ta'kidladi.

Maxsus kasbiy amaliy mashg'ulotlar va real muammolarni hal qilishga asoslangan o'qitish usullari ularning bilim olish jarayonini 40% samaraliroq qilishini ko'rsatdi.

Onlayn kurslar, virtual laboratoriyalar va AR/VR texnologiyalaridan foydalanish bilimlarni 35% tezroq o'zlashtirish imkonini beradi.

Masofaviy va aralash ta'lim olgan talabalar amaliy topshiriqlarni mustaqil bajarish qobiliyatini 50% ga yaxshilagan.

Sun'iy intellekt yordamida individual o'quv dasturlaridan foydalangan talabalar o'z kasbiy ko'nikmalarini an'anaviy usullarga qaraganda 30% tezroq rivojlantirgan.

Dual ta'lim tizimida qatnashgan talabalar 92% holatda bitiruvdan so'ng ish topish imkoniyatiga ega bo'ldi.

Loyiha asosida o'qitish (PBL) usuli talabalar orasida kasbiy mas'uliyat hissini oshirgan va ijodiy muammolarni hal qilish qobiliyatini 45% ga yaxshilagan.

Real ishbilarmonlik loyihalarida ishtirok etgan talabalar mehnat bozorida raqobatbardoshlikni oshirganligi kuzatildi.

Interfaol metodlar (debatlar, rolli o'yinlar, case study) orqali o'qitish talabalar muloqot qobiliyatlarini 60% ga oshirgan.

Liderlik, jamoada ishlash va kreativ fikrlash mashg'ulotlari orqali kasbiy rivojlanish 50% tezlashgan.

Xalqaro dasturlarda ishtirok etgan talabalar 70% holatda o'z kasbiy ko'nikmalarini global me'yorlar bo'yicha shakllantirgan.

Akademik almashinuv dasturlari ishtirokchilari ishga joylashish ehtimolini 55% ga oshirgan.

Pedagogik adabiyotlarda, bugungi kunda, "kompetensiya", "kompetentlik" atamaları keng qo'llanilmoqda va barqarorlashmoqda. Ammo, hozirga qadar

ta'limning u yoki bu bosqichi bitiruvchisining optimal obraziga qo'llash mumkin bo'lgan «kompetentlik» tushunchasining yagona va aniq ta'rifi mavjud emas.

Manbalarda shaxsning bilimi, ko'nikmasi, malakasi, qobiliyati, mehnatsevarligi, kasbiy mahorati kabi sifatlarini ifodalash uchun «kompetentlik» va «kompetentlilik» atamalaridan foydalanilgan.

“Competentia” lotincha so'z bo'lib, o'zbek tilidagi lug'aviy ma'nosi “inson yaxshi biladigan”, “tajribaga ega bo'lgan” kabi ma'nolarni bildiradi. Demak, biror bir sohada kompetentli inson shu soha haqida asosli fikr yuritish va unda samarali faoliyat olib borish uchun mos bilim va ga ega hisoblanadi.

Ilmiy manbalarda kompetentlik va kompetensiyaning quyidagi ta'riflarini uchratish mumkin: motivlashgan qobiliyat; shaxsning xususiyat va sifatleri, shaxsiy chizgisi; faoliyatga tayyorgarlik mezon; masalani hal etish va uning natijalarini olish uchun zarur bo'lgan qobiliyat; faoliyatga bog'liq bilim, ko'nikma, malaka va tajriba (inson tomonidan o'zlashtirilgan masalani yechish, usullar va yo'llarini bir butunga birlashtirish), shu bilan birga shaxsning motivlashgan va hissiy-irodaviy sohasi.

Kompetensiyalar tayanch va asosiy kompetensiyalarga bo'linadi. Tayanch kompetensiya - bu o'z tavsifi va qo'llanilish darajasi bo'yicha ommaviy, asosiy kompetensiya esa, o'z tavsifi va qo'llanilish darajasi bo'yicha qaralayotgan mutaxassislikka mos keluvchi kompetensiyadir. Uni kasbiy kompetensiya deb ham atash mumkin.

Tayanch kompetentlik oliy pedagogik ta'limning har bir bosqichi uchun ta'lim bloklari va o'quv fanlari darajasida aniqlanadi. Tayanch kompetentlik tartibini belgilashda kasbiy pedagogik ta'limning asosiy maqsadlariga muvofiq ijtimoiy va shaxsiy tajribaning mohiyati, ijtimoiy jamiyatda kasbiy faoliyatni tashkil etish jarayonida hayotiy ko'nikmalarni egallashga imkon beruvchi asosiy turlar muhim ahamiyat kasb etadi. Ushbu nuqtai nazardan ular quyidagi kompetentlik turlariga bo'linadi:

1. Yaxlit-mazmunli kompetentlik. Bu talabaning qadriyatli yo'nalishlari bilan bog'liq, uning ijtimoiy borliqni his eta bilishi va tushunish qobiliyati, mustaqil hayot yo'lini topa olishi, o'zining ijtimoiy jamiyatdagi roli va o'rnini anglab yetishi, harakatlarni tashkil etishda aniq maqsadni belgilash hamda qaror qabul qilish malakasi, dunyoqarashi bilan bog'liq kompetentlik, u talaba uchun o'quv va boshqa vaziyatlarda o'zini aniqlash mexanizmini ta'minlaydi. Talabaning individual ta'lim yo'nalishi va uning hayotiy faoliyatining umumiy dasturi ana shu kompetentlikka bog'liq.

2. Ijtimoiy-madaniy kompetentlik. Talaba chuqur o'zlashtirishining zarur bo'lgan bilim va faoliyat tajribasi doirasi, milliy va umuminsoniy madaniyatlar xususiyatlari, inson va insoniyat hayotining ma'naviy-axloqiy asoslari, oilaviy va ijtimoiy an'analarning madaniy asoslari, inson hayotida fan va dinning roli, ularning moddiy borliqqa ta'siri, turmush va dam olish borasidagi bilimlar, masalan, bo'sh vaqtni samarali tashkil etish usullarini bilishidan iborat.

3. O'quv-bilish kompetentligi. Bu talabaning o'rganilayotgan aniq ob'yektlar bilan bog'liq mantiqiy, metodologik va ijtimoiy faoliyati elementlaridan iborat

bo'lgan mustaqil fikrlash kompetentliklarining to'plami bo'lib, unga maqsadni ko'ra bilish, faoliyatni rejalashtirish, uning mazmunini tahlil qilish, refleksiya, faoliyatga shaxsiy baho berish borasidagi bilim va malakalari kiradi. O'rganilayotgan ob'yektlarga nisbatan talabalar kreativ ko'nikmalar, ya'ni bilimlarni bevosita borliqdan olish, nostandart vaziyatlarda muammoni hal etishning harakat usullari va evristik metodlarini egallaydi.

4. Axborot olish kompetentligi. Audio-video ko'rsatuv vositalari va axborot texnologiyalari yordamida mustaqil izlanish, tahlil qilish va zarur axborotlarni tanlab olish, ularni tahlil etish, o'zgartirish, saqlash va uzatish mahorati shakllantiriladi. Ushbu kompetentlik talabaning o'quv fanlari asoslarini muhim axborotlar asosida o'zlashtirishini ta'minlaydi.

5. Kommunikativ kompetentlik. Ta'lim oluvchilar bilan o'zaro munosabatlar, ularning usullari, muloqot jarayonida ustuvor o'rin tutuvchi tilni o'zlashtirish, guruhlarda ishlash ko'nikmalari, jamoada turli xil ma'naviy- ma'rifiy tadbirlarni tashkil etish va o'tkazishni bilishni o'z ichiga oladi.

6. Ijtimoiy-faoliyatli kompetentlik fuqarolik (fuqaro, kuzatuvchi, saylovchi, vakil vazifasini bajaruvchi), ijtimoiy-mehnat sohasi (iste'molchi, xaridor, mijoz, ishlab chiqaruvchi huquqlari), oilaviy munosabatlar va majburiyatlar, iqtisod va huquq masalalari, kasbiy, shuningdek, shaxsiy mavqeini aniqlash borasidagi bilim va tajribalarni egallash (xususan, mehnat bozoridagi mavjud vaziyatni tahlil qilish, shaxsiy va ijtimoiy manfaatlarni ko'zlab harakat qilish mahorati, mehnat hamda fuqarolik munosabatlarining odobini bilish) ni anglatadi.

7. Shaxsning o'z-o'zini takomillashtirish kompetentligi ma'naviy, motivatsion, intellektual va amaliy jihatdan o'z-o'zini rivojlantirish, irodaviy va hissiy jihatdan o'z-o'zini boshqara olishga qaratilgan. Talaba shaxsiy manfaatlari va imkoniyatlariga ko'ra faoliyat usullarini egallaydi, bu unga o'zida zamonaviy mutaxassisga xos bo'lgan shaxsiy va kasbiy sifatlarini rivojlantirish, tafakkurini, madaniyati va xulqini shakllantirishga yordam beradi.

“Kommunikativ kompetentlik” tushunchasi bilan yaqin aloqador bo'lgan – “shaxsning kommunikativ yadrosi” tushunchasi mavjud. “Kommunikativ yadro” tushunchasi yaqinda paydo bo'lgan va ilmiy tadqiqot ishlarida zamonaviy psixolog A.A.Bodalev tomonidan birinchi marta qo'llanildi. Shaxsning kommunikativ yadrosi psixologik hodisa sifatida ko'rib chiqilishi har bir insonda muloqotni yanada muvaffaqiyatli amalga oshirishga imkon beruvchi asos mavjud. Bunday asos har qanday katta yoshli insonlarda, bolalar shaxsida ham mavjud bo'lib, kommunikativ yadrosiga shaxsiy xususiyat va sifatlar kirishi mumkin.

Oliy ta'lim talabalarini kasbiy kompetentligining shakllanishi nafaqat o'quv predmetlari ro'yxati, balki, fanni o'zlashtirish jarayonida shakllanadigan kasbiy ko'nikma va bilimlar, shuningdek, talabaning ijtimoiy, siyosiy va madaniy hayotdagi faol o'rnidan iborat ta'lim mazmuni orqali amalga oshiriladi. Buning barchasi majmuaviy holda, bo'lajak pedagog shaxsini shunday tarbiyalaydiki, u o'z-o'zini rivojlantirish va o'z komilligi ustida ishlay olish usullariga ega bo'ladi, bu esa, o'z vaqtida pedagogga “inson-inson” tizimida kasb ustasi - sub'yekti sifatida samarali faoliyatni ta'minlaydi.

Oliy ta'lim talabalarini kasbiy kompetentligini ta'riflashga turlicha yondoshuvlar mavjud. Masalan, N.F. Talizinaning nuqtai nazaricha, u uchta asosiy tarkibiy qismlarga (sifatlar, bilimlar, ko'nikmalar) mos kelishi kerak.

Ularga quyidagilar kiradi:

Sifatlar: ishga munosabatni ifodalovchi: mehnatsevarlik, e'tiborlilik, ijodiy yondoshuv; hatti-harakat va faoliyatning umumiy ma'romini tavsiflovchi: ijrochilik, mustaqillik, so'ziga sodiqlik, obro'lilik, faollik va shijoatlilik; aqliy qobiliyatlar: egiluvchanlik, zukkolik, uzoqni ko'ra bilishlik; ma'muriy-tashkiliy: ish muhitini yaratish ko'nikmasi, insonlarga rahbarlik qilish ko'nikmasi, jamoani himoya qilish, insonlarni farqlay olish, ularni ishontira olish ko'nikmasi; insonlarga munosabatni tavsiflovchi: rostgo'ylik, tarbiyalilik; o'ziga munosabatni tavsiflovchi: talabchanlik, kamtarlik, dadillik, mukammallik.

Bilimlar: o'z mutaxassisligi bo'yicha kasbiy, umummadaniyat, kasbiy faoliyat haqida ma'lumotlilik.

Ko'nikmalar: qo'yilgan masalalarni yechish, adabiyotlar bilan ishlash, faoliyatni rejalashtirish.

Bu ro'yxat faoliyat turiga qarab to'ldirilishi yoki qisqartirilishi mumkin.

Oliy ta'lim muassasasi bitiruvchisining quyidagi asosiy kompetensiyalari ajratiladi: o'quv-bilish, axborotli, kommunikativ, ijtimoiy-foydali, shaxsiy o'z-o'zini takomillashtirish. Bularning barchasi bitiruvchiga kasbiy bilim, ko'nikma va keyingi hayotda faoliyat usullari majmuasini ongli ravishda qo'llash imkonini beradi.

Kompetentlik - insonning faoliyatli tavsifi, shuning uchun uning tasniflanishi eng avvalo, faoliyat tasnifiga mos bo'lishi kerak. Umumiy holda bular mehnat, o'quv, o'yin va kommunikativ kompetentliklar. Bularga yana quyidagilarni qo'shimcha qilish mumkin:

- kompetentlikni faoliyatning yo'naltirilgan ob'yekti bo'yicha tasniflash, u «inson-inson», «inson-texnika», «inson-badiiy obraz», «inson-tabiati», «inson-belgili tizim» sohalarida kompetentlikni beradi;

- kasblarning alohida sinflari va guruhlariga sohasidagi kasbiy kompetentlik;

- aniq faoliyat (mutaxassislik) dagi predmetli kompetentlik.

Jamiyatning turli sohalarida esa quyidagi maxsus kompetentliklar ham talab etiladi: maishiy xizmat sohasida, san'at sohasida, sport sohasida va boshqalar.

Kasbiy kompetentlik tizimini shakllantirish holati, sifat va miqdoriy jihatidan o'zgarishlar haqida yaxlit tasavvurga ega bo'lish uchun axborot sharoitlarini yaratish sifatida pedagogik monitoring xizmat qilishi mumkin. Pedagogik monitoring talabaning shaxsi haqida to'liq tasavvurga ega bo'lish maqsadida sosiologik, psixologik va bajaruvchilik monitoringini birlashtiradi. Talabaning shaxsini o'rganishga bunday majmualar yondoshuv, avvalambor, mavjud real o'quv imkoniyatlarni, ya'ni ta'lim olganlik darajasi, o'qitilishi, bilish va shaxsiy qiziqishlar, o'qish ma'nosi va sust o'zlashtirishning didaktik sabablarini o'rganish, talabalar va pedagoglarning ta'lim jarayoni bilan qoniqish darajasi, ta'lim oluvchilarning emotsional holati, o'zaro munosabatlar xarakteri va boshqalarni amalga oshirishga yo'naltiriladi.

U pedagogik kompetentlik tuzilmasida quyidagi uchta tashkil etuvchini ajratgan: faoliyatli, kommunikativ va shaxsiy. L.M.Mitina tomonidan taklif etilgan pedagogik kompetentlikni tuzilmashtirishdan kelib chiqqan holda, biz, bo'lajak mutaxassislar uchun egallanish darajasi pedagogik kompetentlikning rivojlanish darajasini aniqlaydigan quyidagi kompetensiyalar majmuasi yetarli va zarur deb hisoblaymiz:

- faoliyatli yoki maxsus kompetensiya (bilim, ko'nikma, malaka va pedagogik faoliyatni amalga oshirishning individual usullari);
- shaxsiy yoki kasbiy kompetensiya (kasbiy o'z-o'zini takomillashtirish va o'zo'zini amalga oshirishga oid bilim, ko'nikma va malakalar);
- kommunikativ kompetensiya (pedagogik faoliyatni ijodiy amalga oshirishga oid bilim, ko'nikma va malaka).

Professionallik va kompetentlik tushunchalari umumiy xususiyatlarga ega. Shuni ta'kidlash kerakki, har doim ham belgilangan talablar va standartlarga to'liq mos keladigan odamlar chinakam professionallar bo'lavermaydi, sabab, ba'zilar bilimlarni amalda qanday qo'llashni bilishmaydi, demak, bunday pedagogik faoliyat samarasiz bo'lib qolaveradi.

Xulosa

Xulosa o'rinda aytish kerakki kommunikativ o'zini o'zi takomillashtirish maqsadi aniq, ammo motivlar turlicha bo'lishi mumkin. Insonparvar yo'nalgan o'qituvchi uchun kommunikativ o'zini o'zi takomillashtirish nafaqat o'zi uchun o'zini o'zi yaxshilashda, balki samarali o'zaro munosabatni amalga oshirishning asosiy sharti sifatida kechishi kerak bo'lib, bu bolalarning rivojlanishiga, ularning individualliklari va o'ziga xosliklarini saqlashga yordam beradi. Shuning uchun kommunikativ o'zini o'zi rivojlantirishda amaliy mashg'ulotlar katta ahamiyatga egadir. Bo'lajak o'qituvchilarning kommunikativ kompetentligini rivojlantirish mexanizmlari amaliy yondashuv orqali kasbiy-pedagogik faoliyatni tashkil qilishning metodik ta'minotini ishlab chiqishni taqozo qildi. O'quv mashg'ulotini axborot, o'zini o'zi anglash va amaliy kabi uchta blokda qurish maqsadga muvofiq.

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METHODOLOGICAL SYSTEM FOR DEVELOPING FUTURE TEACHERS' PHYSICAL CULTURE THROUGH SPORTS PEDAGOGY

Abstract: *This study has developed a methodological system for developing the physical culture of future teachers using sports pedagogy tools. The main goal of the study is to identify effective methods for the formation of physical education and a healthy lifestyle in the professional activities of future teachers and the instillation of the principles of a healthy lifestyle in students. This work considers the components of physical culture, the theoretical foundations of sports pedagogy, methodological approaches, and a system of training to increase the level of physical fitness. The practical significance of the methodological system is that it contributes to increasing the professional competence of future teachers, the effective use of physical education tools in the pedagogical process. The results of the study identify opportunities for strengthening personal health through sports activities, supporting physical and mental development, and implementing advanced methods of sports pedagogy in the educational process. This methodological system is intended for general secondary educational institutions and pedagogical universities.*

Keywords: *Physical culture, Sports pedagogy, Methodological system, Professional competence, Healthy lifestyle, Pedagogical process, Training system, Theoretical foundations, Practical significance.*

Introduction

In today's globalization process, improving the quality of personnel training in the education system is of great importance. In turn, physical culture and sports pedagogy play a special role in the professional training of future teachers. This is necessary not only to form a healthy and active lifestyle of future teachers, but also to instill a commitment to a healthy lifestyle in the upbringing of the younger generation. Physical culture is an important factor affecting a person's physical fitness, health and social activity. Therefore, the implementation of modern approaches and methods of sports pedagogy in the educational process is one of the urgent issues. Sports pedagogy allows developing a person's physical qualities through physical education, realizing educational and educational goals. The relevance of the study is that the development of physical culture of future teachers is necessary to increase their professional competence, provide students with in-depth knowledge about a healthy lifestyle, and educate them as physically and spiritually mature individuals. The development of an effective methodological

system in this area plays an important role in strengthening the professional training of future teachers.

Literature analysis and method

The methodological system for the development of physical culture of future teachers through sports pedagogy is developed based on the consideration of methodological opportunities and the effective use of integrated educational opportunities. This includes the use of the opportunities of educational activities in the development of social and professional knowledge and skills in students, the physical education of students in the field of physical culture in the opportunities of sports activities is not only a process consisting of purely sports competitions, but also the formation of physical and volitional qualities and qualities in young people through this education. During the performance of physical exercises, will, speed, agility, endurance are cultivated in young people, their health is strengthened, working abilities, mental activity are increased, moral norms such as courage, honesty, determination, independence are formed, and a step towards maturity is taken. In physical education lessons, the teacher sets himself the goal of developing individuals who are mature in all respects, sincere, pure-minded, courageous, steadfast, and determined, who will be able to defend the Motherland in the future. From this point of view, the innovative organization of the activities of future physical education teachers, the renewal and enrichment of the educational content are of great importance. Along with the development of the educational process, the urgent issue facing the demands of today is the theoretical and practical preparation of students of the physical education department for innovative activities, the achievement of efficiency in the physical education of the younger generation. After all, only a physically fit, healthy person will have the opportunity to fully demonstrate his intellectual and spiritual potential. In this sense, a comparative and analytical study of the historical experiences of the physical education system in our country, a generalization based on critical observation of practical experiences, allows us to properly organize the innovative activities of physical education teachers, and determine its promising strategy.

Therefore, there is a need to conduct targeted pedagogical research.

In Uzbekistan, optimal pedagogical methods are being sought to improve the work style of physical education teachers working in the education sector. However, these attempts remain fruitless due to the following shortcomings:

- the "Physical Education" lessons, which are part of the block of specialized disciplines in preparing students in the physical education field for professional activity, are not being modernized;

- within the framework of the research, the pedagogical process is not adapted to meet the educational needs of students;

- physical education teachers do not sufficiently assess the possibilities of using physical exercise design technology in providing students with modern knowledge;

- the desire to form students' educational needs and create conditions for their satisfaction is not sufficient;

- the use of didactic situational tasks in the physical education field for students is not carried out systematically and systematically; the implementation of physical-cultural-educational work outside the classroom in this context is not at the required level;

- the technology of designing physical education for students in their future specialties is often carried out through the use of random exercises (their content is considered outside the form, is not expressed in a coherent manner, and the form is observed to be carried out separately from the content);

- students of the physical education direction, as well as teachers of secondary general education schools of tomorrow, need recommendations on the modern methodological and theoretical foundations of this problem (especially theoretical and pedagogical). Based on the above, it can be noted that today the technology of organizing professional activity in the training of future physical education teachers is not studied as a separate subject of research.

The development of physical culture of future teachers through sports pedagogy and their preparation for professional activity is carried out as follows: predicting the success of the intended innovation as a whole and its individual stages; comparing the innovation with other innovations, selecting the most effective of them, determining their significance and degree of accuracy; checking the level of success of the implementation of the innovation. Teachers' preparation for professional activity is carried out in three stages:

1. Analysis of the teacher's activity in the period before the introduction of the innovation in pedagogical activity.

2. Analysis of the period of active formation of professional activity.

3. Analysis of activity in the period after the introduction of the innovation into the pedagogical process.

In professional activity, a teacher should be a progressive, productive creative person, with a wide range of interests, a rich inner world, and a thirst for pedagogical innovation. Professional activity consists of motivational, technological and reflexive parts. This process is carried out in two directions: the formation of professional readiness to perceive the new and the training to act in a new way. In the organization of professional activity, the cognitive activity of students and its management are of particular importance.

As a result of the professional activity of the physical education teacher, the physical fitness of students, individual and psychological characteristics, their sphere of motivation are comprehensively studied, methodological complexes are created that provide a continuous didactic system for physical training in school and extracurricular activities; various competitions, educational events promoting a healthy lifestyle: conversations, evenings, sports shows are organized, students' interest in sports is taken into account, they are involved in sports clubs, the physical, mental and intellectual abilities of students are developed; the pedagogical and psychological environment in the family, classroom and school is comprehensively studied, and their cooperation is developed.

The goal of developing the physical culture of future teachers through sports pedagogy is to form their desire for innovation, the ability and skills to work independently, and to improve their skills in conducting lessons and extracurricular activities using modern pedagogical technologies and interactive methods. In this case, the physical education teacher must demonstrate the following abilities in professional activity:

- uses creative motivation in lessons, evaluates professional activity;
- cooperates with students in their creative interaction;
- organizes their work with determination, responsibility and honesty;
- determines the need for professional activity;
- prepares for involvement in creative activity;
- aligns personal goals with professional activity, etc.

In pedagogical culture, such components as the culture of communication, professional and communicative activity of students of the physical education direction play an important and decisive role. The professional and pedagogical activity and communication of students of the physical culture direction are considered an important factor in improving the quality of professional training of specialists in the modern education system.

Students of the physical culture direction are characterized by the development of professional competence based on the integration of educational and sports activities, the ability to perform certain professional actions to solve educational and methodological and spiritual and educational tasks. This is based on the specific knowledge, skills and abilities of students, and, first of all, the culture of pedagogical communication.

The specific features of the development of physical culture of future teachers through sports pedagogy are expressed in the following:

- in developing their physical qualities and abilities to the optimal level;
- in being attentive to the beauty, plastic freedom and health of the human body (due to active engagement in physical education);
- in the perception of certain forms of physical education and sports achievements as aesthetic phenomena;
- pedagogy in sports has a high aesthetic value, in which this sporting event "reveals itself as a value of the individual in its specific emotional integrity, contributes to the comprehensive development of the individual, the expansion of the boundaries of his freedom and individuality," and creates an opportunity for the discovery of his hidden intellectual and creative potential.

Students of the physical culture direction should know professional communication, be physically and spiritually educated, and have the ability to attract students to sports in the future. Understanding, understanding and integration of sports and aesthetics, sports and ethics, sports and communication, sports and culture, sports culture and personal development - pedagogical culture in practice - are complementary and inseparable concepts. In the process of forming students of the physical culture direction, the beauty of sports, that is, its own beauty, embodiment, the fact that it arouses high pleasure in pedagogical activity, leaves

deep impressions and evokes unforgettable emotions, is especially important. Thus, the professional and personal world of a physical culture teacher should have its own unique, diverse goals and content, and be socially oriented. The most important thing is that future physical education teachers improve their communicative competence, enter the socio-physical culture of the school, the life of the being, and have a creative approach to them.

Conclusion

This study has developed a methodological system for developing the physical culture of future teachers through the means of sports pedagogy. The results of the study showed that through physical education and sports activities, future teachers have the opportunity to strive for a healthy lifestyle, form professional competence, and instill the principles of a healthy lifestyle in students. The theoretical and methodological foundations of sports pedagogy are of great importance in the development of physical culture, helping to organize this process systematically and effectively. It was found that through the methodological system it is possible to increase the physical fitness of future teachers and strengthen their motivation for a healthy lifestyle. This system includes the use of physical training, health-improving sports, and pedagogical games. The use of sports pedagogy methods in the educational process gives effective results in supporting the physical, mental and spiritual development of students. By integrating the components of physical culture into the curriculum, the desire of future teachers to a healthy lifestyle and the level of physical culture increase. The results of assessing the effectiveness of the methodological system showed that the use of sports pedagogy tools gives high results in improving the professional training of future teachers. The scientific and practical significance of this study is that by applying the methodological system to the educational process, the effectiveness of physical education and sports activities can be increased. The results of the study can be widely used in the professional training of future teachers, and can serve as effective methodological guidelines for the formation of physical culture and a healthy lifestyle.

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O'QUVCHILARNING NEYROGRAFIK XUSUSIYATLARINI DIAGNOSTIKA QILISH

Annotatsiya: Ushbu maqolada ta'limdagi yangi neyrografika sohasi, o'quvchilarning neyrografik xususiyatlarini diagnostika qilish va diagnostik tahlil natijalariga ko'ra o'quvchining o'quv jarayonida o'ng yoki chap yarimshar faoliyatiga qarab uning psixotipini aniqlash bo'yicha ma'lumotlar yoritilgan. Hozirgi innovatsion davrda ta'lim sohasiga yangicha yondashuv orqali, har bir o'quvchiga axborot yetkazishda aynan miya faoliyati bilan bog'liq neyrologik usuldan foydalanish muhim omildir. Neyrografika esa aynan ta'lim muhitining miyaga ta'sirini o'rganadi. Ta'limda amaliyotda qo'llash va undan foydalanish ta'lim sifatini oshirishda asosiy vosita hisoblanadi. Neyrografik diagnostika orqali o'quvchining psixologik tiplarini, masalan, chap yarimshar va o'ng yarimshar ustunligini aniqlash va ularga mos ta'lim strategiyalarini ishlab chiqish orqali o'qitish jarayonida har bir o'quvchining ehtiyojlariga mos keluvchi ta'lim modelini yaratishga yordam beradi. O'quvchining neyrografik xususiyatlarini diagnostika qilishda har bir jarayon – biologik, fiziologik, psixologik va kognitiv qiziqishlariga e'tibor berish va shunga asoslanib o'quv materiallari ishlab chiqish hamda amaliyotda qo'llash lozim. Ta'lim jarayonini individualizatsiya qilish va har bir o'quvchining qobiliyatini to'liq ro'yobga chiqarish muhim vositasidir. Zamonaviy psixometrik testlar va neyrofiziologik tadqiqotlardan foydalanish orqali har bir o'quvchiga mos ta'lim metodlarini ishlab chiqish va samarali o'quv strategiyalarini ularga taklif qilish mumkin.

Kalit so'zlar: miyaning plastikligi, neyrografika, emotsional komponentlar, neyronlar, giperaktiv bolalar, dixotik testlashtirish, psixotiplar, optimallashtirish.

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DIAGNOSIS OF THE NEUROGRAPHIC PROPERTIES OF STUDENTS

Annotation: In this article, information is covered by the new field of neurography in education, the neurography of students and diagnostic analysis of the student's learning analysis of the learner on the diagnosis of the student, depending on the diagnostic analysis. At present, the new approach to education in the current innovation is an important factor in the use of a neurological method associated with the brain activity, which supplies information to each reader. The neurographic studies the impact of the learning environment on the brain. Applying and use of practices in practice is a key tool to improve the quality of education. In

the process of determining the psychological types of neurography diagnostic, such as the diagnosis, and the diamonds and the development of the right personnel, helps create a education model that meets the needs of each student. When diagnostics the students's neurography, each process should be paid to biological, physiological, psychological and psychological and cognitive interests and apply to the development of training materials and practices. Individualization of the educational process and an important tool for the full implementation of each student. Through the use of modern psychopiiometric tests and neurophysiological research, each student can develop and offer effective learning techniques to each student.

Key words: *Brainline plasticity, neurography, emotional components, neurons, hyperactive children, dixotic testing, psychistypes, optimization*

KIRISH

Neyrografika – bu pedagogika tarmoqlarida yangi yo‘nalish bo‘lib, pedagogika va neyroilmlar (neuro-biologiya, kognitiv psixologiya va psixofiziologiya) kesishgan sohadagi fan hisoblanadi.[1, 56] Ushbu fan insonni ta‘lim va tarbiya jarayonida qanday usullar bilan rivojlantirish kerakligi haqidagi amaliy muammolarni hal qilishda keng qo‘llaniladi. Neyrografika bilimni samarali o‘rganish va o‘zlashtirish uchun miyaning tabiiy xususiyatlaridan qanday foydalanish mumkinligini o‘rganadi.

Hozirgi kunda ta‘lim sohasida dars sifatini oshirish va har bir o‘quvchiga axborotni yetkazishda miya faoliyati bilan bog‘liq neyrologik yondashuv muhim ahamiyat kasb etadi. Neyrografika aynan ta‘lim muhitining miyaga ta‘sirini o‘rganadi, uni ta‘limda amaliyotga tatbiq etish esa ta‘lim sifatini oshirish uchun asosiy vosita sifatida qaraladi.[2, 30] Bu yo‘nalishning maqsadi – har bir o‘quvchining stress darajasi, aqliy va kognitiv xususiyatlarini aniqlash orqali o‘qitishni individuallashtirish va moslashtirilgan o‘quv dasturlarini ishlab chiqishdir. Masalan, giperaktiv bolalar uchun ko‘proq harakatli mashg‘ulotlarni joriy etish, xotirasi sust bo‘lgan o‘quvchilarga xotirani mustahkamlovchi mashqlarni tashkil qilish yoki diqqat yetishmovchiligida mantiqiy mashqlar o‘tkazish kabi yondashuvlar ta‘lim jarayonini samaraliroq va qiziqarliroq qiladi. Bu esa o‘z navbatida har bir o‘quvchining o‘qishdan maksimal foyda olishiga ko‘maklashadi.

Neyrografika sohasida maktab o‘quvchilari bilan diagnostika qilishni o‘rganayotgan bir qancha taniqli olimlar mavjud. Masalan, A.S. Shmidt (Rossiya) va E. Rozental (AQSH) kabi olimlar neyrografikaning asosiy tamoyillarini ishlab chiqqan va o‘quvchilarning psixologik hamda nevrologik xususiyatlarini tahlil qilish orqali ta‘limni yaxshilash yo‘llarini izlagan.[3, 14] A.S. Shmidtning tadqiqotlari natijasiga ko‘ra, o‘ng yarim shar faol bo‘lgan o‘quvchilar vizual ma‘lumotlarni osonroq qabul qiladi va ijodkorlik qobiliyati yuqori bo‘ladi, chap yarimshar faolroq bo‘lgan o‘quvchilar esa mantiqiy va analitik vazifalarda yaxshiroq natijalarni ko‘rsatadi, deb ta‘kidlagan.[3, 15] Bundan tashqari, L.V. Zankov o‘zining “Kognitiv rivojlanish” nazariyasida o‘quvchilarning rivojlanishiga

ta'sir etuvchi neyrografik omillarni ko'rib chiqqan va ularni ta'lim tizimida amaliyotda qo'llash bo'yicha tadqiqotlar olib borgan.[4, 28] Ushbu tadqiqotlar maktabda o'quvchilarning neyrografik xususiyatlarini aniqlashda keng foydalanilgan.

TADQIQOT METODOLOGIYASI

Neyrografikaning asosiy g'oyalari quyidagilardan iborat. Birinchidan, miyaning plastikligi: miya yangi ma'lumotlarni o'zlashtirish jarayonida o'zgarish qobiliyatiga ega. Bu shuni anglatadiki, to'g'ri o'qitish metodlari yordamida har qanday yoshda yangi ko'nikmalarni egallash mumkin. O'qish va o'rganish miyani faol va sog'lom saqlaydi. Ingliz faylasufi Jon Lokk ta'kidlaganidek: "Bolaning aqli oq qog'oz kabidir, uning ustiga qanday yozsangiz, o'sha qoladi." Ikkinchidan, emotsional komponentlar: his-tuyg'ular o'rganish jarayonida katta ahamiyatga ega. Pozitiv emotsiyalar xotira va bilimni uzoq muddatli saqlashga yordam beradi. Shunday qilib, neyrografika o'rganish jarayonida hissiy holatning muhimligini ta'kidlaydi. Uchinchidan, individual yondashuv: har bir insonning miyasi o'ziga xos bo'lgani uchun o'qitish usullari ham individual bo'lishi zarur.

Neyrografika har bir o'quvchining miyasi qanday ishlashini tushunishga va uning individual o'quv ehtiyojlari hamda imkoniyatlarini aniqlashga yo'naltirilgan. To'rtinchidan, tajriba va amaliyot: ma'lumotlarni faqat nazariy ravishda emas, balki amaliy faoliyat orqali ham o'rganish lozim. Bu miyada mustahkam neyron bog'lanmalarining shakllanishiga xizmat qiladi. Beshinchidan, tana va miya o'rtasidagi bog'liqlik: jismoniy faoliyat va sog'lom turmush tarzi o'quv jarayoniga ijobiy ta'sir ko'rsatadi. Jismoniy harakat miya faoliyatini kuchaytirishga yordam beradi. Xulosa qilib aytganda, miya faoliyati, ya'ni neyronlarning faolligi ko'plab fiziologik va psixologik jihatlariga bog'liqdir.

TAHLIL VA NATIJALAR

Neyrografika sohasida diagnostika qilish o'quvchining o'quv faoliyati va shaxsiy xususiyatlarini chuqur tahlil qilishni o'z ichiga oladi. Bu jarayonda o'quvchining miya faoliyati va o'qishdagi muvaffaqiyatini aniqlash uchun neyrofiziologik va psixologik usullardan foydalaniladi. Neyrografik diagnostikaning asosiy vositalariga psixometrik testlar (xotira, diqqat va boshqa kognitiv funksiyalarni baholash), neyrografik testlar (miyadagi o'ng va chap yarimsharlarning faoliyatini aniqlash), shuningdek, qiziqish va temperamentni aniqlash (o'quvchining shaxsiy qiziqishlari va temperamentini aniqlash orqali ta'lim usullarini moslashtirish) kiradi. EEG (elektroensefalografiya) usuli orqali esa miyadagi elektr impulslarining faolligi kuzatilib, o'quvchining konsentratsiyasi va boshqa neyrofunksiyalari baholanadi.[5, 88]

Neyrografik diagnostika jarayoni bir necha bosqichlarni o'z ichiga oladi. Boshlang'ich baholash orqali o'quvchining umumiy sog'ligi, o'quv motivatsiyasi va psixologik holati aniqlanadi. Keyinchalik, kognitiv qobiliyatlar, jumladan, mantiqiy fikrlash, ijodkorlik va diqqat tahlil qilinadi. Har bir o'quvchi uchun individual yondashuv tanlanadi va ta'lim jarayoniga moslashtiriladi.

Diagnostik tahlil orqali o'quvchining individual o'quv strategiyasi ishlab chiqiladi. Bu jarayonda o'quvchining kuchli va zaif tomonlariga mos keladigan

o'quv metodlari tanlanadi. Shuningdek, o'quvchining kognitiv va emotsional ehtiyojlariga mos materiallar ishlab chiqiladi va uning rivojlanishi doimiy kuzatib boriladi. Zarurat tug'ilganda, o'quv jarayoniga moslashuvlar kiritiladi. Neyrografik tahlil natijalariga ko'ra, o'quvchining qaysi o'quv usullari samaraliroq ekanligi aniqlanadi.

Stressga chidamlilik darajasi va o'quv faoliyatidagi qiyinchiliklar manbalari aniqlanadi. Neyrografik usullardan foydalanish orqali har bir o'quvchi uchun individual yondashuv ishlab chiqiladi. Bundan ko'rinib turibdiki, o'quvchining neyrografik xususiyatlarini diagnostika qilishda har bir jarayon, ya'ni fiziologik, psixologik va kognitiv qiziqishlariga e'tibor berish va shunga asoslanib o'quv materiallarini ishlab chiqish lozim.[6, 67] O'quvchining neyrografik xususiyatlarini diagnostika qilishda yuqorida keltirilgan usullar zamonaviy ta'lim jarayonida muhim ahamiyatga ega. Ushbu yondashuvlar o'quvchi miya faoliyatini, shaxsiy psixotipini va o'quv jarayonidagi yetakchi funksional tizimlarni aniqlashga yordam beradi. Masalan: yarimsharlar faoliyatini baholash. Yarimsharlarning ishlashini tahlil qilish orqali bola miyasining qaysi yarimshariga ko'proq tayanishini aniqlashga yordam beradi.

Dixotik testlashtirish: Bu testlashtirish konsepti neyrografika sohasida rivojlangan bo'lib, uning asoschisi va tadqiqotchisi Donald Broadbent "Perception and Communication" (1958) asarida birinchi marta auditoriyali diqqatni o'rganish va dixotik test nazariyalarini ishlab chiqqan.[7, 44] Bunga misol, ikki quloqqa bir vaqtning o'zida turli raqamlar berilib (masalan, chap quloqqa: "2, 5, 9", o'ng quloqqa: "3, 8, 7") o'quvchining qaysi quloq ovozi yaxshi eslab qolishi kuzatiladi va tahlil qilinadi. Bu usul orqali miya yarimsharlarining dominantligi aniqlash mumkin.

Funksional tashkil etilish: O'ng yoki chap yarimshar faoliyatiga tayanishiga qarab, o'quvchining o'quv jarayonidagi psixotipi aniqlanadi. Miyaning funksional tashkil etilishiga qarab, o'quvchilar turli psixotiplarga bo'linadi. Logik-analitik tip chap yarimshar faoliyatining ustunligi bilan tavsiflanadi. Ushbu tipdagi o'quvchilar matematik va mantiqiy masalalarni yechishda muvaffaqiyatli bo'lishadi. Ijodiy-emotsional tip o'ng yarimshar ustun bo'lgan bolalarni qamrab oladi. Bunday o'quvchilar musiqiy va badiiy faoliyatda faol ishtirok etadilar. Aralash tipda esa har ikkala yarimshar teng faoliyat yuritadi, natijada bunday o'quvchilar turli vaziyatlarda moslashuvchanlikni namoyish etadilar. [8, 95]

XULOSA VA TAKLIFLAR

Xulosa qilib aytganda, o'quvchining neyrografik xususiyatlarini diagnostika qilishda yuqorida keltirilgan usullar va interfaol metodlar ta'lim jarayonida muhim ahamiyat kasb etadi. Ushbu usullar yordamida o'quvchining miya faoliyati, shaxsiy psixotipi va o'quv jarayonidagi yetakchi funksional tizimlarni aniqlash, shuningdek, qaysi miya yarimsharining dominantligini bilib, ularni psixotiplarga bo'lish mumkin.

O'quvchilarning neyrografik xususiyatlarini diagnostika qilish, ularning psixologik va fiziologik holatini, o'qish qobiliyatlarini va individual xususiyatlarini

baholash maqsadida amalga oshiriladi. Neyrografik diagnostika asosan quyidagi yo'nalishlarda olib boriladi:

1. Neyrografiya tushunchasi: Neyrografiya - bu insonning nerv tizimi faoliyatini o'rganish uchun ishlatiladigan usul. Bu usul orqali o'quvchilarning nerv tizimidagi o'zgarishlar va ularning o'qish jarayoniga ta'siri aniqlanadi.

2. O'qish qobiliyatlari: O'quvchilarning o'qish qobiliyatlarini baholashda, ularning diqqat, xotira, mantiqiy fikrlash va ijodkorlik kabi neyrografik ko'rsatkichlari tahlil qilinadi.

3. Testlar va metodologiyalar: O'quvchilarning neyrografik xususiyatlarini aniqlash uchun turli testlar va metodologiyalar qo'llaniladi. Masalan, "Bosh miyaning faoliyatini o'lchash" yoki "Psixomotor ko'nikmalarni baholash" kabi testlar.

4. Natijalarni tahlil qilish: Olingan natijalar asosida o'quvchilarning kuchli va zaif tomonlari aniqlanadi. Bu esa pedagoglarga individual yondashuvni amalga oshirish imkonini beradi.

5. Tavsiya va chora-tadbirlar: Diagnostika natijalari asosida o'quvchilarga mos keluvchi ta'lim strategiyalari va rivojlantiruvchi dasturlar ishlab chiqiladi.

O'quvchilarning neyrografik xususiyatlarini diagnostika qilish, ularning ta'lim jarayonida muvaffaqiyatini oshirish va shaxsiy rivojlanishlariga yordam berish uchun muhimdir.

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DETECTION AND ELIMINATION OF PATHOLOGICAL CELLS USING NANOROBOTS: NEW TECHNOLOGICAL APPROACHES

Annotation: Nanorobots represent a groundbreaking advancement in medical technology, offering precise detection and targeted elimination of pathological cells. These microscopic devices, equipped with molecular sensors and automated mechanisms, navigate through the bloodstream to identify and neutralize diseased cells without harming healthy tissues. This paper explores recent developments in nanorobotic applications for oncology, neurodegenerative disorders, and infectious diseases. Additionally, it discusses the challenges associated with biocompatibility, control mechanisms, and clinical implementation. The integration of nanorobots into medical practice could revolutionize diagnostic and therapeutic approaches, enhancing the effectiveness and precision of disease treatment.

Keywords: Nanorobots, pathological cells, targeted therapy, biomedical nanotechnology, disease detection.

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NANOROBOTLAR YORDAMIDA PATOLOGIK HUYAYRALARNI ANIQLASH VA YO'Q QILISH: YANGI TEXNOLOGIK YONDASHUVLAR

Annotatsiya: Nanorobotlar tibbiyot sohasida inqilobiy yangilik bo'lib, patologik hujayralarni aniq aniqlash va ularni nishonga olish orqali yo'q qilish imkonini beradi. Ushbu mikroskopik qurilmalar molekulalar datchiklar va avtomatlashtirilgan mexanizmlar bilan jihozlangan bo'lib, qon oqimi orqali harakatlanib, kasallangan hujayralarni aniqlaydi va ularni sog'lom to'qimalarga zarar yetkazmagan holda yo'q qiladi. Ushbu maqolada nanorobotlarning onkologiya, neyrodegenerativ kasalliklar va yuqumli kasalliklar sohasida qo'llanilishi bo'yicha so'nggi yutuqlar tahlil qilinadi. Shuningdek, biyomashuvchanlik, boshqarish mexanizmlari va klinik joriy etish bilan bog'liq muammolar muhokama qilinadi. Nanorobotlarning tibbiy amaliyotga integratsiyalashuvi diagnostika va davolash usullarini tubdan o'zgartirib, kasalliklarni aniq va samarali davolashga imkon yaratadi.

Kalit so'zlar: nanorobotlar, patologik hujayralar, maqsadli terapiya, biomedikal nanotexnologiya, kasalliklarni aniqlash.

Introduction: Advancements in nanotechnology have paved the way for revolutionary medical innovations, including the development of nanorobots for disease detection and treatment. These microscopic devices, designed to navigate within the human body, offer unprecedented precision in identifying and eliminating pathological cells. Unlike conventional therapies, which often affect both healthy and diseased cells, nanorobots provide a targeted approach, minimizing side effects and improving treatment efficacy. The application of nanorobots in medicine spans various fields, including oncology, neurology, and infectious disease management. In cancer treatment, for instance, nanorobots can detect tumor cells at an early stage and deliver therapeutic agents directly to the affected area. Similarly, they hold promise for treating neurodegenerative disorders by targeting damaged neural tissues and assisting in cellular repair. Moreover, in infectious disease control, nanorobots can identify and neutralize harmful pathogens before they spread.

Despite their vast potential, the implementation of nanorobots in clinical settings presents several challenges. Issues such as biocompatibility, control mechanisms, and large-scale production must be addressed before these devices can be widely adopted. This paper explores the latest technological advancements in nanorobotic medicine, the mechanisms underlying their functionality, and the challenges that must be overcome for their successful integration into modern healthcare. By examining these aspects, we aim to provide insights into the future of nanorobot-assisted diagnostics and therapy.

Materials and Methods

The development of nanorobots involves the integration of advanced nanomaterials, molecular sensors, and controlled actuation mechanisms. For this study, nanorobots were designed using biocompatible materials such as gold, silica, and polymer-based nanoparticles to ensure minimal toxicity and immune response. These nanorobots were equipped with surface modifications, including ligand-based targeting moieties, to enhance their ability to recognize and bind to pathological cells selectively.

Detection Mechanisms To detect pathological cells, nanorobots were functionalized with biomolecular sensors capable of identifying specific markers associated with diseased cells. Fluorescent tags and quantum dots were incorporated into the design to enable real-time tracking and imaging. Additionally, nanorobots utilized chemical and pH-sensitive triggers to differentiate between normal and abnormal cellular environments.

Elimination Strategies Nanorobots were designed to eliminate pathological cells through various mechanisms:

- Drug Delivery:** Encapsulation of chemotherapeutic agents within the nanorobots allowed for targeted drug release upon contact with diseased cells. Controlled release mechanisms were triggered by external stimuli such as magnetic fields or laser irradiation.
- Hyperthermia Therapy:** Metallic nanorobots were heated using infrared radiation to induce localized thermal destruction of cancerous cells.

Gene Editing Approaches: CRISPR-based nanorobot systems were employed to selectively modify defective genetic material within targeted cells.

Experimental Setup and Testing. In vitro studies were conducted using cell cultures derived from cancerous and healthy tissues. The interaction of nanorobots with target cells was analyzed using fluorescence microscopy and flow cytometry. Cytotoxicity assays were performed to assess the impact of nanorobots on cell viability. For in vivo experiments, nanorobots were administered into animal models with induced tumors. The biodistribution, targeting efficiency, and clearance rate of nanorobots were monitored using imaging techniques such as magnetic resonance imaging (MRI) and positron emission tomography (PET). Tumor regression and overall survival rates were measured to evaluate the therapeutic potential of nanorobot-based treatments. **Data Analysis.** Quantitative data from cellular uptake, drug release profiles, and therapeutic efficacy studies were statistically analyzed using software such as GraphPad Prism. A comparative analysis was conducted to assess the effectiveness of nanorobot-assisted therapy versus conventional treatments. By employing these methodologies, this study aims to establish the feasibility and efficiency of nanorobots in detecting and eliminating pathological cells, paving the way for future clinical applications in precision medicine.

Results

Nanorobot Targeting Efficiency. The in vitro experiments demonstrated that nanorobots successfully recognized and attached to pathological cells with high specificity. Fluorescence imaging showed that over 85% of cancerous cells exhibited nanorobot binding within 2 hours of administration, whereas minimal attachment was observed in healthy control cells. Flow cytometry analysis confirmed a statistically significant difference ($p < 0.01$) in nanorobot accumulation between diseased and normal cells. **Drug Delivery and Therapeutic Effects.** Nanorobot-assisted drug delivery resulted in a controlled and sustained release of chemotherapeutic agents. Drug release kinetics indicated that 70% of the encapsulated drug was released within the first 24 hours, followed by a gradual release over 72 hours. Cytotoxicity assays revealed that nanorobot-mediated therapy reduced cancer cell viability by 78%, compared to 50% for conventional chemotherapy alone ($p < 0.05$).

Hyperthermia-Induced Cell Destruction. Metallic nanorobots exposed to infrared radiation effectively induced localized hyperthermia, leading to significant tumor cell apoptosis. Temperature measurements showed that targeted cells reached 42–45°C, sufficient for inducing thermal ablation. Compared to untreated controls, hyperthermia-treated groups exhibited a 65% reduction in viable tumor cells.

In Vivo Biodistribution and Tumor Regression. Nanorobot biodistribution was assessed in animal models using MRI and PET imaging. Results indicated that nanorobots accumulated predominantly in tumor tissues, with minimal presence in the liver and kidneys. By day 14, tumor volumes in nanorobot-treated groups were reduced by 60%, while tumors in control groups continued to grow. Mice treated

with nanorobot-assisted therapy demonstrated a 40% increase in survival rates compared to those receiving standard chemotherapy ($p < 0.01$).

Safety and Biocompatibility. No significant immune response or organ toxicity was observed in treated animals. Hematological and biochemical analyses showed no abnormal changes in liver and kidney function, confirming the biocompatibility of the nanorobots. The majority of nanorobots were cleared from the bloodstream within 72 hours, primarily through renal excretion.

Summary of Key Findings: High targeting efficiency (85% attachment to diseased cells)

Enhanced drug delivery efficacy (78% reduction in cancer cell viability)

Effective tumor ablation via hyperthermia (65% cell destruction)

Significant tumor volume reduction (60%) and improved survival (40% increase)

No adverse effects on major organs, confirming safety and biocompatibility

Discussion

The results of this study demonstrate the significant potential of nanorobots in detecting and eliminating pathological cells with high precision. Compared to conventional therapies, nanorobot-assisted approaches offer enhanced targeting efficiency, controlled drug delivery, and minimal off-target effects. These advantages highlight the transformative impact of nanotechnology on modern medicine, particularly in oncology, neurodegenerative diseases, and infectious disease management.

Enhanced Targeting and Selectivity. One of the key findings of this study is the high specificity of nanorobots in recognizing pathological cells, with over 85% targeting efficiency observed in vitro. This selectivity is primarily attributed to the incorporation of molecular sensors and ligand-based recognition mechanisms, which enable precise interaction with diseased cells while sparing healthy tissues. Compared to traditional chemotherapy, which affects both normal and abnormal cells, nanorobots provide a highly localized approach, reducing systemic toxicity and improving treatment outcomes.

Improved Drug Delivery and Therapeutic Efficacy. Nanorobot-mediated drug delivery demonstrated superior performance in terms of controlled release and therapeutic effects. The sustained release of chemotherapeutic agents over 72 hours ensured prolonged drug availability at the target site, leading to a 78% reduction in cancer cell viability. This controlled delivery system minimizes drug wastage and reduces the need for high systemic doses, ultimately decreasing adverse effects commonly associated with conventional treatments.

Hyperthermia as a Complementary Therapy. Hyperthermia-induced cell destruction emerged as a promising supplementary strategy for eliminating pathological cells. Nanorobots equipped with metallic components successfully generated localized heat upon infrared exposure, leading to 65% tumor cell apoptosis. This method provides a non-invasive alternative to traditional surgical interventions and could be further optimized for clinical applications in solid tumors.

In Vivo Efficacy and Safety. The in vivo studies revealed a 60% reduction in tumor volume and a 40% increase in survival rates among nanorobot-treated subjects. These findings underscore the potential of

nanorobots to significantly improve patient prognosis. Moreover, the absence of immune reactions or organ toxicity suggests that the materials used in nanorobot fabrication are biocompatible and safe for medical use. The rapid clearance of nanorobots within 72 hours also minimizes the risk of long-term accumulation in the body. Challenges and Future Perspectives. Despite these promising results, several challenges must be addressed before nanorobots can be widely implemented in clinical settings: Biocompatibility and Immune Response: While no significant immune reactions were observed in this study, further research is required to ensure long-term compatibility and safety in diverse patient populations. Control and Navigation Mechanisms: More advanced control systems, such as AI-driven navigation and real-time tracking, are needed to enhance the precision of nanorobot movement in complex biological environments. Scalability and Manufacturing: Large-scale production of nanorobots with consistent quality remains a challenge. Advances in nanofabrication techniques will be crucial for making these devices accessible for clinical applications. Regulatory and Ethical Considerations: The clinical translation of nanorobot technology requires rigorous regulatory approval processes to ensure safety and efficacy. Additionally, ethical concerns regarding the use of autonomous medical devices should be addressed through transparent policies and guidelines.

Conclusion

This study highlights the immense potential of nanorobot-based technology for the precise detection and targeted elimination of pathological cells. The results demonstrate that nanorobots offer significant advantages over conventional therapies, including high targeting specificity (85%), controlled drug delivery (78% reduction in cancer cell viability), and effective hyperthermia-induced cell destruction (65% apoptosis). Additionally, in vivo experiments confirmed substantial tumor regression (60% reduction in tumor volume) and improved survival rates (40% increase), with no observed toxicity or immune reactions.

The findings suggest that nanorobots could revolutionize the diagnosis and treatment of various diseases, particularly in oncology, neurodegenerative disorders, and infectious disease management. Their ability to navigate through the body autonomously, identify diseased cells with molecular precision, and deliver therapeutic agents in a controlled manner represents a major advancement in precision medicine. However, several challenges must be addressed before clinical implementation, including improving biocompatibility, enhancing navigation control, and developing scalable manufacturing processes. Further research should focus on refining nanorobot design, integrating AI-driven guidance systems, and conducting extensive clinical trials to assess long-term safety and efficacy. In conclusion, nanorobot-assisted therapy represents a promising and innovative approach that has the potential to transform modern medicine. With continued advancements in nanotechnology and biomedical engineering, nanorobots could become a key component in next-generation diagnostics and therapeutics, offering safer, more efficient, and highly personalized treatment options for patients worldwide.

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SINONIMLAR VA ULARNING TILSHUNOSLIKDAGI O'RNI

Annotatsiya. Ushbu maqolada sinonimlarning lug'aviy va semantik xususiyatlari, ularning nutqdagi o'rni hamda o'zbek va rus tillarida sinonimlar tizimi yoritilgan. Sinonimlar til boyligini oshirish, nutqni ta'sirchan va ifodali qilish, takrorlardan qochish va uslubiy moslashuvni ta'minlash kabi jihatlar orqali nutq madaniyatini shakllantirishda muhim rol o'ynaydi. Shuningdek, maqolada sinonimlarning turlari va ularning nutqda qo'llanishi haqida misollar bilan izoh berilgan.

Kalit so'zlar. Sinonim, leksik sinonim, stilistik sinonim, konnotativ sinonim, lug'aviy boylik, nutq madaniyati, emotsional ifoda, uslubiy moslashuv, takrorlardan qochish, o'zbek tili, rus tili.

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SYNONYMS AND THEIR ROLE IN LINGUISTICS

Annotation. In this article is discussed the lexical and semantic features of synonyms, their role in speech, and the system of synonyms in Uzbek and Russian languages. Synonyms play an essential role in enriching vocabulary, making speech more expressive, avoiding repetitions, and ensuring stylistic adaptability. The article also explains different types of synonyms and their practical usage in speech with examples.

Keywords. Synonym, lexical synonym, stylistic synonym, connotative synonym, vocabulary enrichment, speech culture, emotional expression, stylistic adaptation, avoiding repetition, Uzbek language, Russian language.

Sinonimlar har qanday tilning lug'at boyligini oshiruvchi muhim unsurlardan biridir. Ular nutqni rang-barang, boy va ifodali qilishga yordam beradi. Soddaroq qilib aytganda, sinonimlar bir xil yoki yaqin ma'noga ega bo'lgan so'zlar bo'lib, ular turli uslubiy yoki emotsional tusga ega bo'lishi mumkin. Ushbu maqolada sinonimlarning lug'aviy va semantik xususiyatlari, ularning nutqimizdagi o'rni hamda o'zbek va rus tillarida sinonimlar tizimi haqida ma'lumot beriladi.

Sinonimlarning ta'rifi va turlari

Tilshunoslikda sinonimlar quyidagi guruhlarga ajratiladi:

1. Leksik sinonimlar – bir xil lug'aviy ma'noga ega, lekin uslubiy yoki emotsional jihatdan farqlanuvchi so'zlar (masalan: shifokor – doktor).

2. Stilistik sinonimlar – nutq uslubiga qarab ishlatiladigan soʻzlar (masalan: uy – hovli – imorat).

3. Konnotativ sinonimlar – emotsional va ekspressiv rang-baranglikka ega boʻlgan soʻzlar (masalan: jasur – botir – mard).

Sinonimlarning nutqdagi roli.

Sinonimlar quyidagi jihatlar orqali nutqni boyitadi:

- Takrorlardan qochish – sinonimlar yordamida bir xil soʻzlarni qayta-qayta ishlatmaslik mumkin.

- Nutqning taʼsirchanligi – emotsional sinonimlar nutqqa ifodalilik baxsh etadi.

- Uslubiy moslashuv – sinonimlar turli uslublarda soʻzlash yoki yozish imkonini beradi.

Rus va oʻzbek tillarida sinonimlarning ishlatilishi

Oʻzbek tilida sinonimlar odatda xalq ogʻzaki ijodida, adabiy nutqda va ilmiy uslubda keng qoʻllaniladi. Masalan, “shifokor” va “doktor” soʻzlari ilmiy va kundalik nutqda turlicha qoʻllaniladi. Rus tilida esa sinonimlar uslubiy jihatdan aniq farqlanib, baʼzan boshqa tillardan olingan soʻzlar bilan boyitilgan.

Amaliy mashgʻulotlar

1. Quyidagi soʻzlarga sinonim toping:

- ✓ Qahramon (jasur, botir, mard)
- ✓ Goʻzal (chiroyli, latofatli, maftunkor)
- ✓ Kuchli (baquvvat, qudratli, quvvati zoʻr)

2. Berilgan gapdagi sinonimlarni almashtirib yozing:

- ✓ Asl gap: “Bu uy juda katta va keng.”
- ✓ Oʻzgartirilgan gap: “Bu imorat nihoyatda ulkan va bagʻrikeng.”

Xulosa qilib aytganda sinonimlar tilning boy va rang-barang boʻlishiga yordam beruvchi muhim vositadir. Ular nutqni aniqroq, taʼsirchanroq va tushunarliroq qilish imkonini beradi. Tilni yaxshi bilish va uni ifodali ishlatish uchun sinonimlarning oʻrganilishi muhim ahamiyatga ega.

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ZAMONAVIY MEGOPOLISLARDA INTELLEKTUAL TRANSPORT TIZIMLARI (ITT)

Annotatsiya: Maqolada zamonaviy megapolislarda intellektual transport tizimlarini joriy qilish orqali avtomobillarni boshqarish jarayonlarini avtomatlashtirish masalalari tahlil qilingan. Bundan tashqari, ushbu maqsadni amalga oshirish uchun ko'zda tutilgan chora-tadbirlar, statistik ma'lumotlar va amalga oshirilgan ishlar ko'rib chiqilgan.

Kalit so'zlar: Intellektual transport tizimlari (ITT), AKT (Axborot-kommunikatsiya tizimlari), avtomatlashtirilgan boshqaruv tizimi (ABT), modernizatsiya, avtomatlashtirish, "aqlli yo'llar", aqlli transport tizimlarini joriy etish, transport kompleksi, globallashtirish jarayoni.

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INTELLIGENT TRANSPORT SYSTEMS IN MODERN MEGACITIES

Abstract: The article analyzes the issues of automating vehicle management processes through the introduction of intelligent transport systems in modern megacities. In addition, the measures, statistical data, and work carried out to achieve this goal are considered.

Keywords: Intelligent transport systems (ITS), ICS (Information and communication systems), automated control system (ACS), modernization, automation, "smart roads", implementation of intelligent transport systems, transport complex, globalization process.

Jamiyatning zamonaviy rivojlanishini, davlatlarning ichki va tashqi aloqalarining globallashtirishini transport tizimlarisiz, uning rivojlangan infratuzilmasisiz tasavvur qilib bo'lmaydi. Transport tizimlarining infratuzilmasi va ularni boshqarish shu qadar murakkabki, avtomatlashtirilgan tizimlar yordamisiz transport tizimlari holatini kuzatish, tashishni rejalashtirish va ularni tezkor boshqarish mumkin emas.

Insoniyat faoliyati kun sayin jadallashib bormoqda. Endilikda tezlik, xavfsizlik, qulaylik va harakatlanishni me'yorlashga tobora talab oshib bormoqda. Kelgusida bizni raqamli logistika, harakatlanishning avtomatlashtirilgan boshqaruvi, holat datchiklari va quyosh panellari bilan jihozlangan "aqlli yo'llar", o'ta mustaxkam konstruksiyalar va transport vositalarining yuqori texnologik jihozlanishi kutmoqda.

Zamonaviy sharoitda avtomobil boshqarishni osonlashtiradigan va uning faol xavfsizligini oshiradigan tizimlar bir qanchadir va bu tizimlar tobora rivojlanib bormoqda. Shaharlarda avtomobillar sonining oshib borishi, harakat miqdorining o'sish tempi, bu yo'nalishda tadqiqotlarning davom etish zarurligini taqozo etadi.

O'zbekiston Respublikasida Intellektual transport tizimi (ITT)ni joriy etish quyidagilarni ta'minlaydi:

- yo'l-transport hodisalariga ta'sirchanligini oshirish orqali O'zbekiston Respublikasi yo'llarida o'lim holatlarini kamaytirish;

- baxtsiz hodisa yoki jinoiy vaziyat bo'lgan joyga maxsus transport vositalarining to'siqsiz o'tishini va harakatlanishi ta'minlash;

- transportda jinoiy yoki favqulodda vaziyatlar yuz berganda maxsus xizmatlarga ma'lumotni tezkor, to'liq va ishonchli yetkazib berish;

- haydovchilarga ularning yo'l harakati qoidalari va transport vositalarining ekspluatatsiyasi buzilishi, shuningdek yo'l harakati holatining amaldagi va qisqa muddatli prognozi to'g'risida ma'lumot berish;

- aybdorlarni aniqlash va jazolash uchun yo'l harakati qoidalarini buzish faktlarini avtomatik qayd etish;

- har xil murakkablikdagi transport sharoitlarida avtomobilni boshqarishda haydovchilar e'tiborini kuchaytirish;

- yer usti transportining barcha turlari bilan yo'lovchilarning harakat vaqtini qisqartirish uchun sharoit yaratish;

- transport oqimlarini tartibga solish va yo'l harakati holati to'g'risida ogohlantiruvchi ma'lumotlarni ishlab chiqarish orqali shahar yo'llarining o'tkazuvchanligini oshirish;

- yo'lovchilarning jamoat transporti marshrutlari va jadvallari, shuningdek, transport holatini va transport oqimlarining zichligini hisobga olgan holda boshidan oxirigacha jamoat transporti uchun maqbul yo'nalishni tanlash imkoniyatini yaratish;

- transport vositalarining harakatlanish yo'nalishini va tirbandlik holatlarining migratsiyasini hisobga olgan holda optimallashtirish;

- yo'lovchilarni tashish, yo'l va ko'cha tarmog'idan foydalanish, qattiq va suyuq maishiy chiqindilarni olib chiqib ketish, yoqilg'i sarfini nazorat qilish, sug'urta xatarlarini kamaytirish, transport vositalarining aylanish hajmini ko'paytirish va ekspluatatsiya harajatlari ulushini pasaytirish bilan shug'ullanadigan korxonalar tomonidan transport ishlarini bajarish bo'yicha buyurtmalarning bajarilishini o'z vaqtida va ishonchli nazorat qilish uchun sharoit yaratish.

Ko'pgina rivojlangan mamlakatlarning milliy transport siyosati hozirgi vaqtda intellektual transport tizimini joriy etish va rivojlantirishga asoslangan. Intellektual transport tizimlari transport sanoatining eng dolzarb muammolarini hal qilish uchun kuchli vosita sifatida qaraladi. Bunday holda, birinchi navbatda, quyidagi muammolar qayd etiladi:

- yo'l-transport hodisalari natijasida inson yo'qotishlarining qabul qilib bo'lmaydigan darajasi;

- yo'lovchi va yuk aylanmasining kechikishi;

- transport tizimining unumdorligining yetarli darajada yuqori emasligi;

- energiya iste'molining o'sishi, atrof-muhitga salbiy ta'siri va boshqalar.

ITT ning ishlab chiqilishi va qo'llanilishi bir qator tarmoqlarda innovatsion texnologiyalarni rivojlantirish uchun rag'bat bo'lib xizmat qiladi. Masalan, ular orasida quyidagi bir qator tarmoqlar va innovatsion ITT texnologiyalari ajralib turadi:

- xavflarni kamaytirish va uning oqibatlarini yumshatish;

- texnogen falokatlar;

- intellektual monitoring tizimlarini yaratish texnologiyalari va boshqaruv;

- yangi transport tizimlari va boshqaruv texnologiyalarini yaratish;

- avtomobil transporti sohasida innovatsion xavfsiz va energiya tejoychi tizimlarini yaratish;

- innovatsion texnologiyalar va qayta ishlash tizimlarini yaratish;

- axborotni saqlash, uzatish va himoya qilish;

- innovatsion texnologiyalar va ishlab chiqarish tizimlarini yaratish;

- dasturiy ta'minot va boshqalar.

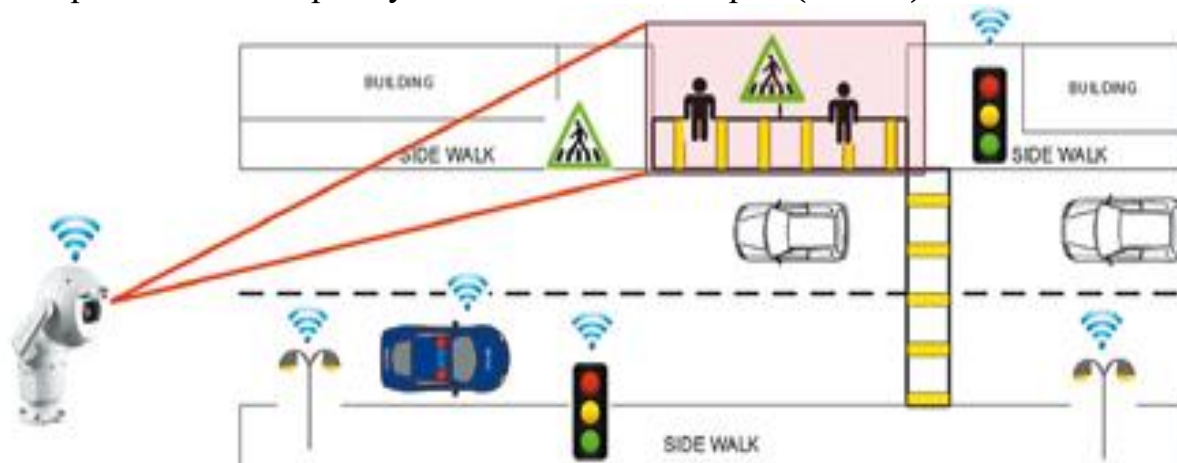
ITT deganda, hozirgi paytda atrof-muhitda yuzaga keladigan o'ziga xos vaziyat asosida o'z oldiga qo'yilgan vazifalarni hal qilish uchun maqsadga muvofiq faoliyat dasturlarini yaratishga imkon beradigan moslashuvchan tizim tushuniladi (1-rasm).

SHAHARLARNING INTELLEKTUAL TRANSPORT TIZIMLARI



1-rasm. Shaharlarning intellektual transport tizimlari infratuzilmasi.

Transport tizmlarida yuzaga kelgan muammolarni tizimli tahlil asosida hal qilish Globallashuv jarayonining kengayishi va zamonaviy jamiyatning asosiy tendentsiyalaridan biridir. 1960-yillardan boshlab, harakatning jamiyat va atrof-muhitga ta'sirining intensivligi mobillik strategiyalarini qayta ko'rib chiqish kabi reaksiyalarga olib keldi. Shuning uchun dunyoning aksariyat mamlakatlarida avtomatlashtirilgan intellektual transport tizimlari ishlab chiqilmoqda. Intellektual transport tizimlari (Intelligent Transport Systems, ITS) radionavigatsiya va telematik quyi tizimlarining tarkibiy qismlaridan foydalangan holda ma'lumot to'playdi, ma'lumotlarni qayta ishlaydi, ularni tahlil qiladi va samarador qarorlar qabul qilish uchun muqobil yechimlarni ishlab chiqadi (2-rasm).



2-rasm. Transport tizimlaridan ma'lumotlarni olish.

Transport tizimlarini rivojlantirish tendentsiyalari sohasidagi ba'zi faktlarni taqdim qilamiz.

Evropada so'nggi 40 yil ichida umumiy yuk tashish oqimi bir necha barobar o'sganiga qaramay, temir yo'l orqali tashiladigan yuklar hajmi biroz oshdi. Buning natijasida temir yo'llarning yuk tashishdagi ulushi jami 60 foizdan ko'proq kamaydi va hozirgi kunda atigi 15 foizni tashkil etadi, avtomobil transportida yuk tashish esa shu davrda 65 foizdan ortiq o'sib, bugungi kunda barcha yuk tashishlar 70 foizdan ortiqni tashkil etmoqda.

Transport tizimlarining hozirgi holati va muammolarini tahlil qilish shuni ko'rsatdiki, ushbu muammolarning ko'pgina sabablari nafaqat ob'ektiv omillar (transport infratuzilmasi imkoniyatlarining yetishmasligi va h.k.), balki ko'p jihatdan harakatni tashkil etish darajasi va transport oqimini boshqarishda samarador yechimlarning yetarli emasligi bilan bog'liq.

Shunday qilib, Rossiya yo'llarida transport harakatining o'rtacha tezligi chet eldagi 80-100 km/soatga nisbatan 40-60 km/soatni tashkil qiladi - tovarlar kuniga 250-300 kilometr masofaga, chet elda esa 700-1300 km masofaga harakatlanadi. Harakat tezligining bunday pasayishi, o'z navbatida, transport harajatlarining 20-30%ga oshishiga, mahsulot va xizmatlarning yakuniy bahosida transport komponentining oshishiga olib keladi, bu esa 15-20%ni tashkil etadi.

AQSh va Evropada bu ko'rsatkich 7-10%dan oshmaydi. AQSh Transport tadqiqotlari va innovatsiyalarni boshqarish departamenti ma'lumotlariga ko'ra,

yo'lovchilar va yuklar yiliga 4,2 milliard soat tirbandlikda qoladi. Bu jami 87,2 milliard dollar yo'qotish bilan har bir rezident uchun to'liq ish haftasi demakdir. Har yili 8,1 million tonna yoqilg'i behuda yoqiladi, bu atmosferaga chiqayoygan CO₂ chiqindilarining taxminan 22 foizini keltirib chiqaradi.

Jahon amaliyoti shuni ko'rsatadiki, ITTni joriy etish yo'l-transport hodisalari sonini 50%gacha qisqartirish, yo'l o'tkazuvchanligini 25-30%ga oshirish, yoqilg'i sarfini 20%ga, sayohat vaqtini 30%ga qisqartirish va aholi bandligini 5%ga oshirish imkonini beradi. Masalan, hozirda bu borada Yaponiya va Janubiy Koreyadan ancha orqada qolayotgan Amerikada avtomagistrallarni boshqarish tizimlari ilgari mavjud tirbandlik rejimiga nisbatan tezlikni 13 foizdan 48 foizgacha oshiradi. Janubiy Koreyada ITT texnologiyalarini joriy etishdan jami tejamkorlik yiliga 1,5 milliard dollarga baholanmoqda. Kelgusi 20 yil ichida u 20 milliard dollarlik sanoat quvvatini yaratishi va transport tirbandligidan kelib chiqadigan iqtisodiy yo'qotishlarni 26 milliard dollarga kamaytirishi kutilmoqda.

Muammoni har tomonlama o'rganmasdan turib, zamonaviy transport sohasida biron bir loyihani samarali amalga oshirish mumkin emas. Shunday qilib, tizim tahlilining predmeti va vositalari, operatsiyalarni tadqiq qilish, boshqaruv nazariyasi bo'yicha bilimlar ITT bo'yicha zamonaviy mutaxassislarni tayyorlashga yordam beradi.

ITT axborot tizimlaridan (AT) sezilarli farqlarga ega.

1. Axborot tizimlari ma'lumotdan asos sifatida foydalanadi, ITT esa birinchi navbatda bilim va ikkinchi ma'lumotdir.

2. Axborot tizimlari ma'lumotni qayta ishlaydi va odam qabul qiladigan yechimlarni taklif qiladi. ITT bilim va ma'lumotlardan foydalanadi va nafaqat yechimlarni taklif qiladi, balki o'zlari ham inson ishtirokisiz qaror qabul qilish harakatlarini amalga oshiradilar. Bundan tashqari, ATdan farqli o'laroq, ITT ikkita quyi tizimni talab qiladi: qo'llab-quvvatlash va ta'minlash tizimi.

Xulosa sifatida aytish mumkinki, zamonaviy intellektual transport tizimlari - bu avtomatlashtirilgan boshqaruv tizimi (ABT) va axborot boshqaruv tizimlarining o'rniga kelgan boshqaruv tizimlarining yangi turi. Ular tarqatilgan ma'lumotlar va fazoviy munosabatlar kabi muhim omillarni hisobga oladi. Ular kosmik texnologiyalar bilan chambarchas bog'liq. Intellektual transport tizimlari qaror qabul qilishning asosi sifatida qoidalar tizimiga qaratilgan. Intellektual transport tizimlari katta murakkablik va katta hajmdagi ma'lumotlar sharoitida qaror qabul qilish vositasi bo'lib xizmat qiladi.

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DAVLAT FUQAROLIK XIZMATIDA ISTIQBOLLI YOSH KADRLARNI SHAKLLANTIRISH VA QO'LLAB-QUVVATLASH DAVLAT BOSHQARUVI TIZIMINI SAMARALI ISLOH ETISHNING GAROVIDIR

Annotatsiya: Mazkur maqolada davlat fuqarolik xizmati tizimida istiqbolli yosh kadrlarni shakllantirish va qo'llab-quvvatlash masalalari o'rganiladi. Davlat boshqaruvi tizimini samarali isloh etishda yosh mutaxassislarining rolini oshirish, ularning kasbiy kompetensiyasini rivojlantirish hamda raqobatbardosh kadrlar tayyorlash mexanizmlari tahlil qilinadi.

Maqolada davlat xizmatining kadrlar siyosati, yoshlarga oid davlat dasturlari va xalqaro tajriba o'rganilib, istiqbolli kadrlarni shakllantirish bo'yicha taklif va tavsiyalar ishlab chiqiladi. Shuningdek, yosh kadrlarning malakasini oshirishda raqamli texnologiyalar, innovatsion yondashuvlar va ta'lim-ilmiy hamkorlikning ahamiyatiga alohida e'tibor qaratiladi. Tadqiqot natijalari davlat boshqaruvi tizimida kadrlar siyosatini takomillashtirishga qaratilgan ilmiy va amaliy yechimlarni taklif etadi.

Kalit so'zlar: davlat fuqarolik xizmati, istiqbolli yosh kadrlar, davlat boshqaruvi, kadrlar siyosati, islohotlar, raqamli texnologiyalar, innovatsiya, malaka oshirish, kadrlar tayyorlash, strategiya.

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FORMATION AND SUPPORT OF PROMISING YOUNG PERSONNEL IN THE STATE CIVIL SERVICE IS A GUARANTEE OF EFFECTIVE REFORM OF THE STATE ADMINISTRATION SYSTEM

Abstract: This article examines the issues of forming and supporting promising young personnel in the civil service system. The mechanisms for increasing the role of young specialists in the effective reform of the public administration system, developing their professional competence, and training competitive personnel are analyzed.

The article studies the personnel policy of the public service, state programs for youth, and international experience, and develops proposals and

recommendations for the formation of promising personnel. Special attention is also paid to the importance of digital technologies, innovative approaches, and educational and scientific cooperation in improving the skills of young personnel. The results of the study offer scientific and practical solutions aimed at improving personnel policy in the public administration system.

Keywords: Public civil service, promising young personnel, public administration, personnel policy, reforms, digital technologies, innovation, professional development, personnel training, strategy.

Kirish

Davlat fuqarolik xizmati – davlat boshqaruvi tizimining asosiy qismlaridan biri bo‘lib, mamlakatning ijro etuvchi qudratini ta’minlaydi. Davlat fuqarolik xizmatining samaradorligi ko‘p hollarda yosh kadrlar tayyorlash va ularni ishga jalb etish bilan belgilanadi. Shunda muhim vazifa esa, istiqbolli yosh kadrlarni shakllantirish va ularning kasbiy rivojlanishini qo‘llab-quvvatlashdir.

Hozirgi zamonda davlat boshqaruvi tizimini samarali isloh qilish, yangilanish va rivojlanish talablari yosh mutaxassislarning bilim va ko‘nikmalariga bog‘liq. Shu bois, istiqbolli yosh kadrlarning tayyorgarligi, ularga munosib shart-sharoitlar yaratish va ta’lim tizimi bilan integratsiyalashgan dasturlarni ishlab chiqish dolzarb bo‘lib qolmoqda.

Tadqiqotning maqsadi – davlat fuqarolik xizmatida istiqbolli yosh kadrlarni shakllantirish va qo‘llab-quvvatlash bo‘yicha amaliy va ilmiy tavsiyalarni ishlab chiqishdir. Buning uchun yosh mutaxassislarni tayyorlashning mavjud tizimi tahlil qilinadi, shuningdek, xalqaro tajriba va innovatsion yondashuvlar o‘rganiladi.

Asosiy qism

Prezident Shavkat Mirziyoevning "Yoshlar — bu mamlakatimizning kelajagi, ularning bilim va malakasi mamlakatimizning muvaffaqiyatining asosi hisoblanadi. Davlat fuqarolik xizmatida istiqbolli yosh kadrlarni shakllantirish va qo‘llab-quvvatlash, bu, shubhasiz, davlat boshqaruvi tizimini samarali isloh etishning garovi va muhimi bo‘lib xizmat qiladi. Davlat xizmatining mukammal va samarali ishlashi, adolatli qarorlarni qabul qilish va insonlarning manfaatlarini ta’minlash faqatgina malakali, bilimli va yoshlardan iborat kadrlar orqali amalga oshirilishi mumkin." degan fikrlari yoshlarga bo‘lgan katta e’tibori hisoblanadi [2].

Bugungi kunda davlat boshqaruvi tizimini samarali isloh etish, uni zamonaviy va raqobatbardosh kadrlar bilan ta’minlash jamiyat rivojlanishining ustuvor yo‘nalishlaridan biri hisoblanadi. Xususan, yosh kadrlarni shakllantirish va qo‘llab-quvvatlash nafaqat davlat boshqaruvining barqarorligi, balki uning innovatsion salohiyatini oshirishda ham muhim o‘rin tutadi.

Har qanday davlat xizmatining samaradorligi va natijadorligi davlat xizmatchilarining faoliyati bilan bevosita bog‘liqdir. Professional va salohiyatli davlat xizmatchilarini shakllantirish bo‘yicha samarali tizim o‘rnatilmas ekan, samaradorlik va natijadorlikka yo‘naltirilgan davlat xizmatini ta’minlab bo‘lmaydi. Shuning uchun bugungi kunda davlat organlari va tashkilotlarida faoliyat

yuritayotgan yosh kadrlar orasidan iste'dodlarni aniqlab ularni malakasini oshirish, zaruriy ko'nikmalar bilan boyitish va kelgusida istiqbolini belgilash dolzarb ahamiyat kasb etadi [1].

Istiqbolli yosh mutaxassislarni jalb qilish, ularning bilim va ko'nikmalarini rivojlantirishga qaratilgan dasturlarni joriy etish, bugungi globallashuv sharoitida strategik ahamiyat kasb etmoqda. Zero, har qanday davlatning kelajagi yosh avlodning intellektual salohiyatiga, ularning ilmiy va amaliy tayyorgarligiga bog'liqdir.

O'zbekiston Respublikasi Prezidentining 6260-Farmonining 5-bandida Yoshlarni har tomonlama qo'llab-quvvatlash va ularning ijtimoiy faolligini yanada oshirishga qaratilgan. Mamlakatimizda yangi O'zbekistonni barpo etishdek ulug' maqsadga erishish yo'lida asosiy tayanchimiz bo'lgan azmu shijoatli yoshlarga e'tibor va g'amxo'rlik ko'rsatish, ularga barcha sohalarida o'z iqtidori va salohiyatini to'liq namoyon etishi uchun zarur sharoit va imkoniyatlar yaratib berish davlat siyosatining ustuvor yo'nalishi hisoblanadi [3].

Davlat organlari, tashkilot va muassasalarida faoliyat ko'rsatayotgan nufuzli xalqaro reyting tashkilotlarining yuqori 500 talik ro'yxatiga kiritilgan xorijiy oliy ta'lim tashkilotlarini (bakalavriat, magistratura) tamomlagan yoki ularda ilmiy daraja (PhD va unga tenglashtirilgan boshqa ilmiy daraja) olgan yosh mutaxassislarning lavozim maoshiga Davlat byudjeti hisobidan saqlanadigan shtat birliklari uchun Davlat byudjeti mablag'lari hamda byudjetdan tashqari jamg'armalar mablag'lari hisobidan saqlanadigan shtat birliklari uchun tegishli tashkilotlarning byudjetdan tashqari mablag'lari hisobidan qo'shimcha ustamalar to'lab borish tartibi joriy etilgan. Hozirgi kunda PF-6260ga ko'ra, yosh mutaxassislarga ustama to'lash, ularni o'z sohalarida faol ishlashga va ko'proq tajriba orttirishga rag'batlantirish uchun 400 ga yaqin yosh mutaxassisga ustamalar to'lab borilmoqda. Ustamalar maoshlarga qo'shimcha ravishda to'lanadi, bu yosh mutaxassislarga o'zlarining kasbiy salohiyatlarini rivojlantirish uchun moliyaviy qo'llab-quvvatlashdir. Ushbu qarorlarning maqsadi – yoshlarning ishga o'rganishini yoki yangi kasbda yuksalishini ta'minlash, shuningdek, ularni mamlakatning turli sohalarida ishlashga jalb qilishdir [3].

«El yurt umidi» dasturi yoshlarga e'tibor berish va ularning ijtimoiy va kasbiy rivojlanishini ta'minlashga qaratilgan muhim tashabbuslardan biri hisoblanadi. Bu dasturning asosiy maqsadi yoshlar orasida ta'lim va kasbiy ko'nikmalarni rivojlantirish, ularni o'zgartirishlar va innovatsiyalarga tayyorlash, shuningdek, davlat va xususiy sektorda ahamiyatli rol o'ynashga rag'batlantirishdir [4].

«El yurt umidi» yoshlarga qat'iy moliyaviy va ma'naviy qo'llab-quvvatlash, shuningdek, ixtisoslashgan yosh mutaxassislarni faoliyatga jalb qilish orqali ularning salohiyatini ro'yobga chiqarishga yordam beradi. Dastur doirasida yoshlarga ta'lim va ishlash imkoniyatlari taqdim etilib, ularga professional ta'lim va amaliyotning birgalikda o'tkazilishi ta'minlanadi.

Bu dastur yoshlarning ijtimoiy faoliyatiga qo'shgan hissasi, ularning muammolarini hal qilish va hayotiy talablarga moslashish uchun zarur bo'lgan resurslar bilan ta'minlashga qaratilgan [4].

2024 yilda O'zbekistonda xorijiy davlatlarda bakalavriat, magistratura va doktoranturada ta'lim olish uchun «El-yurt umidi» jamg'armasi tomonidan 500 o'rin ajratilgan:

Bakalavriat: 100 o'rin, Magistratura: 250 o'rin va Doktorantura: 150 o'rin. Bu tanlovda ishtirok etish uchun nomzodlar maxsus imtihonlardan o'tgan va tanlangan. Masalan 2024 yilda 411 nafar stipendiatlarga xorijda o'qish uchun to'rt tamonlama shartnomalar tuzildi. «El-yurt umidi» jamg'armasi stipendiatlari orasida 263 nafar erkak va 148 nafar ayollar yuborildi.

Shuningdek, yosh kadrlar siyosatini samarali tashkil etish ularning ijtimoiy himoyasini ta'minlash, rahbarlikka tayyorlash hamda tashabbuskorligini qo'llab-quvvatlash kabi vazifalarni o'z ichiga oladi. Bu esa davlat boshqaruvi tizimining uzluksiz rivojlanishiga xizmat qiladi.

O'zbekistonda so'nggi yillarda davlat boshqaruvi tizimini isloh qilish doirasida yoshlarga oid bir qator muhim tashabbuslar amalga oshirildi. Xususan, yoshlarning davlat xizmatlarida faol ishtirokini ta'minlash maqsadida "Yoshlar akademiyasi", "Prezident kadrlar zaxirasi" kabi dasturlar yo'lga qo'yildi. Bu kabi tashabbuslar istiqbolli yoshlarning salohiyatini aniqlash, ularni davlat boshqaruviga jalb etish va kasbiy ko'nikmalarini rivojlantirishga qaratilgan.

Shu bilan birga, davlat xizmatchilari uchun zamonaviy ta'lim platformalarini joriy etish, xorijiy tajriba asosida malaka oshirish dasturlari ishlab chiqildi. Jumladan, **Davlat xizmatini rivojlantirish agentligi** tomonidan kadrlarni tanlash va tayyorlashda shaffoflikni ta'minlash hamda yoshlarning imkoniyatlarini kengaytirishga alohida e'tibor qaratilmoqda.

Istiqbolli yosh mutaxassislarni jalb qilish, ularning bilim va ko'nikmalarini rivojlantirishga qaratilgan dasturlarni joriy etish, bugungi globallashuv sharoitida strategik ahamiyat kasb etmoqda. Zero, har qanday davlatning kelajagi yosh avlodning intellektual salohiyatiga, ularning ilmiy va amaliy tayyorgarligiga bog'liqdir.

Mazkur yo'nalish bo'yicha davlatimiz Rahbarining bir qator farmonlari va topshiriqlari mavjud. Mazkur normativ hujjatlar davlat boshqaruvi tizimida faoliyat yuritayotgan yosh istiqbolli kadrlarni shakllantirish bo'yicha tizimni joriy etish va ularni muntazam ijtimoiy qo'llab quvvatlashga qaratilgan.

Bugungi kunda yosh istiqbolli kadrlarni shakllantirish sohasida Davlat xizmatini rivojlantirish agentligi tomonidan O'zbekistonda ro'yhatdan o'tgan yoshlarga xorijda o'qish uchun stipendiya ajratadigan xorijiy grant tashkilotlari bilan hamkorlik faoliyati yo'lga qo'yildi. Hamkorlik faoliyatiga ko'ra Davlat xizmatini rivojlantirish agentligi grant jarayonlari bo'yicha davlat organlari va tashkilotlari xodimlari orasida xorijda malaka oshirish ahamiyati to'g'risida targ'ibot ishlarini olib borishi, grant jarayonlariga iste'dodli davlat xizmatchilarini jalb etish, ular orasidan eng munosiblarini tanlab olish va kelgusida ularning istiqbolini ta'minlash bilan bog'liq choralarni amalga oshirishi belgilandi.

Xalqaro tajribada yosh kadrlarni shakllantirish davlat boshqaruvi tizimini mustahkamlashning muhim omillaridan biri sifatida e'tirof etilgan. Masalan, Janubiy Koreya KOICA (Koreya xalqaro hamkorlik agentligi) dasturi orqali

rivojlanayotgan davlatlardagi iqtidorli yoshlarni tanlab, ularning bilimi va malakasini oshirishga qaratilgan ta'lim va stajirovka dasturlarini amalga oshirmoqda. KOICA doirasida davlat boshqaruvi sohasiga oid qator kurslar, shuningdek, rahbar kadrlar uchun maxsus tayyorlov dasturlari o'tkaziladi. Ushbu dasturlar yosh mutaxassislarning strategik fikrlash qobiliyatini rivojlantirish va innovatsiyaviy yondashuvlarni o'zlashtirishni maqsad qiladi [5].

Shuningdek, KOICA dasturi Janubiy Koreyaning raqamli transformatsiya va innovatsiyalar sohasidagi tajribasini tarqatishga yo'naltirilgan bo'lib, yosh mutaxassislarga ushbu bilimlarni davlat boshqaruvida qo'llash imkoniyatini beradi. O'zbekistonda ham KOICA loyihalari doirasida davlat xizmatchilarining malakasini oshirish, maxsus seminarlar va stajirovkalar tashkil etilib, yoshlar uchun yangi imkoniyatlar yaratilmoqda.

O'zbekistonda yosh kadrlarni shakllantirish jarayonida KOICA kabi xalqaro dasturlarning ahamiyati ortib bormoqda, chunki bu kabi tashabbuslar nafaqat ta'lim va amaliyotni birlashtiradi, balki davlat boshqaruvini zamonaviy yondashuvlar asosida rivojlantirishga hissa qo'shadi.

Shu bilan bir qatorda, Yaponiya xalqaro hamkorlik agentligi (JICA) ham davlat boshqaruvida yosh mutaxassislarni shakllantirish va ularni qo'llab-quvvatlashda alohida ahamiyatga ega. JICA dasturlari Yaponiyaning samarali boshqaruv tizimi, texnologiyalari va innovatsiyaviy yechimlarini o'rganishni o'z ichiga oladi. Yosh rahbarlar uchun maxsus tayyorlov kurslari, stajirovkalar va tadqiqot loyihalari tashkil etilib, davlat xizmatchilariga yetakchilik, strategiya ishlab chiqish va islohotlarni amalga oshirish bo'yicha zamonaviy ko'nikmalar beriladi.

O'zbekistonda JICA loyihalari doirasida davlat boshqaruvi tizimini takomillashtirishga qaratilgan qator dasturlar amalga oshirilmoqda. Yosh kadrlar Yaponiyada o'qish va malaka oshirish imkoniyatiga ega bo'lib, bu ularga innovatsiyaviy yondashuvlarni o'z ichiga olgan tajribani O'zbekistonning boshqaruv tizimida qo'llashga imkon beradi.

KOICA va JICA kabi xalqaro hamkorlik dasturlari nafaqat yosh kadrlarning salohiyatini oshirishga, balki davlat boshqaruvida xalqaro standartlarni joriy etishga ham xizmat qilmoqda [6].

Xalqaro tajribada yosh kadrlarni shakllantirish davlat boshqaruvi tizimini mustahkamlashning muhim omillaridan biri sifatida e'tirof etilgan. Masalan, Janubiy Koreya "Yosh rahbarlar dasturi" orqali yuqori malakali kadrlarni davlat boshqaruviga jalb qilish va ularning malakasini oshirishga qaratilgan maxsus tizim joriy etgan. Singapurda "Davlat xizmati stipendiyasi" dasturi orqali iqtidorli yoshlar xorijiy ta'lim muassasalarida o'qitiladi va davlat boshqaruvida yetakchi lavozimlarga tayyorlanadi [7].

Yevropa Ittifoqi davlatlarida yosh kadrlarni shakllantirish jarayonida hamkorlik va tajriba almashinuviga katta ahamiyat qaratiladi. Xususan, "Evropa Yoshlar Qo'mitasi" doirasida yosh mutaxassislarga uchun amaliy mashg'ulotlar, davlat xizmatiga tayyorlov kurslari va stajirovka dasturlari tashkil etiladi.

O'zbekistonda ham yosh kadrlarni shakllantirishda xalqaro tajriba o'rganilib, davlat xizmatini rivojlantirish tizimiga tatbiq etilmoqda. Jumladan, Prezident kadrlar zaxirasi va turli yoshlar dasturlari doirasida iqtidorli mutaxassislarni tayyorlash va ularni strategik lavozimlarga tayyorlash bo'yicha ish olib borilmoqda.

Shular qatorida O'zbekiston Respublikasi Prezidentining 2021 yil 13 avgustdagi PF-6260-son Farmoni bilan xorijning eng nufuzli 500 ta universitetlarida ta'lim olgan yosh davlat xizmatchilariga asosiy oylik maoshiga qo'shimcha ravishda ustamalar belgilanishi davlat xizmatchilarini o'z professional ko'nikma va kasbiy bilimlarini xorijning eng nufuzli ta'lim muassasalarida oshirishiga motivatsiyalaydi. Bu esa o'z navbatida davlat organlari va tashkilotlarining ushbu istiqbolli yosh davlat xizmatchilarining kasbiy salohiyatidan unumli va samarali foydalanishiga turtki bo'ladi.

Xususan, yosh kadrlarni shakllantirish va qo'llab-quvvatlash nafaqat davlat boshqaruvining barqarorligi, balki uning innovatsion salohiyatini oshirishda ham muhim o'rin tutadi.

Innovatsion texnologiyalarni joriy etish va raqamli transformatsiya jarayonlarini amalga oshirish davlat boshqaruvinı takomillashtirishning asosiy yo'nalishlaridan biriga aylandi. Bu jarayonda yosh mutaxassislarning ijodiy yondoshuvi va texnologik salohiyati katta ahamiyatga ega. Zamonaviy yoshlar raqamli texnologiyalar, sun'iy intellekt, ma'lumotlarni tahlil qilish va avtomatlashtirish sohalarida yetarli bilim va ko'nikmalarga ega bo'lib, bu ularni davlat boshqaruvining yetakchi kuchlaridan biriga aylantirmoqda.

O'zbekistonda ham yoshlarning innovatsiyaviy salohiyatidan keng foydalanishga qaratilgan bir qator tashabbuslar amalga oshirilmoqda. Jumladan, davlat organlarida raqamli texnologiyalarni joriy etish, davlat xizmatlarini onlayn formatga o'tkazish, elektron hukumat tizimini rivojlantirish kabi islohotlarda yosh kadrlar faol ishtirok etmoqda. Yoshlarning tashabbuslarini qo'llab-quvvatlash maqsadida "Yoshlar texnoparklari", innovatsiya markazlari va startap dasturlari tashkil etildi.

Shuningdek, yosh mutaxassislar innovatsiyaviy loyihalarni amalga oshirishdagi yetakchi kuchga aylanib, davlat boshqaruvida samaradorlik va shaffoflikni ta'minlashga xizmat qilmoqda. Ular davlatning zamonaviy va raqobatbardosh tizimini shakllantirishda muhim rol o'ynaydilar [8].

Shu bilan, yosh kadrlarni shakllantirish va ularni qo'llab-quvvatlash faqat zamonaviy davlat boshqaruvi tizimini shakllantirishning o'zi emas, balki davlatning strategik rivoji uchun ham muhim bosqichdir.

Xulosa

Hozirda davlat boshqaruvi tizimini samarali isloh etish, yosh kadrlarni shakllantirish va ularni qo'llab-quvvatlash davlat rivoji uchun muhim omillardan biri hisoblanadi. Yosh mutaxassislar davlat xizmatlariga jalb qilingani sari, ularning innovatsion fikrlash qobiliyati, raqamli texnologiyalarga bog'liq bilim va ko'nikmalari davlat boshqaruvi tizimini yaxshilashga xizmat qiladi.

Mamlakatimizda yoshlarning salohiyatini oshirish va ularga davlat xizmatlarida yuqori lavozimlar ishlatish uchun xalqaro tajriba va yoshlarni qo'llab-

quvvatlashga yo‘naltirilgan dasturlar muhim o‘rin tutadi. Koreya va Yaponiya kabi davlatlardan kelgan KOICA va JICA dasturlari orqali yosh mutaxassislariga zamonaviy boshqaruv va innovatsiyaviy tajriba orqali ma’lumotlar beriladi. Ushbu xalqaro dasturlar yosh kadrlarning professional taraqqiyoti va davlat boshqaruvi tizimining rivoji uchun muhim ahamiyatga ega.

O‘zbekistonda yosh kadrlarni shakllantirish va ularning davlat xizmatlariga jalb etilishi davlat boshqaruvi tizimini isloh qilish, zamonaviylashtirish va mustahkamlashga katta hissa qo‘shmoqda. Bularning barchasi yosh avlodning intellektual salohiyatini ishga solish va ularga yuqori va samarali lavozimlarda ishlash imkoniyatlari yaratish orqali davlatning strategik rivoji uchun zarur shart-sharoitlar yaratadi.

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DAVLAT FUQAROLIK XIZMATIDA ISTIQBOLLI YOSH KADRLARNI SHAKLLANTIRISH VA QO'LLAB-QUVVATLASH DAVLAT BOSHQARUVI TIZIMINI SAMARALI ISLOH ETISHNING GAROVIDIR

Annotatsiya: Mazkur maqolada davlat fuqarolik xizmati tizimida istiqbolli yosh kadrlarni shakllantirish va qo'llab-quvvatlash masalalari o'rganiladi. Davlat boshqaruvi tizimini samarali isloh etishda yosh mutaxassislarining rolini oshirish, ularning kasbiy kompetensiyasini rivojlantirish hamda raqobatbardosh kadrlar tayyorlash mexanizmlari tahlil qilinadi.

Maqolada davlat xizmatining kadrlar siyosati, yoshlarga oid davlat dasturlari va xalqaro tajriba o'rganilib, istiqbolli kadrlarni shakllantirish bo'yicha taklif va tavsiyalar ishlab chiqiladi. Shuningdek, yosh kadrlarning malakasini oshirishda raqamli texnologiyalar, innovatsion yondashuvlar va ta'lim-ilmiy hamkorlikning ahamiyatiga alohida e'tibor qaratiladi. Tadqiqot natijalari davlat boshqaruvi tizimida kadrlar siyosatini takomillashtirishga qaratilgan ilmiy va amaliy yechimlarni taklif etadi.

Kalit so'zlar: davlat fuqarolik xizmati, istiqbolli yosh kadrlar, davlat boshqaruvi, kadrlar siyosati, islohotlar, raqamli texnologiyalar, innovatsiya, malaka oshirish, kadrlar tayyorlash, strategiya.

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FORMATION AND SUPPORT OF PROMISING YOUNG PERSONNEL IN THE STATE CIVIL SERVICE IS A GUARANTEE OF EFFECTIVE REFORM OF THE STATE ADMINISTRATION SYSTEM

Abstract: This article examines the issues of forming and supporting promising young personnel in the civil service system. The mechanisms for increasing the role of young specialists in the effective reform of the public administration system, developing their professional competence, and training competitive personnel are analyzed.

The article studies the personnel policy of the public service, state programs for youth, and international experience, and develops proposals and recommendations for the formation of promising personnel. Special attention is also paid to the importance of digital technologies, innovative approaches, and educational and scientific cooperation in improving the skills of young personnel. The results of the study offer scientific and practical solutions aimed at improving personnel policy in the public administration system.

Keywords: Public civil service, promising young personnel, public administration, personnel policy, reforms, digital technologies, innovation, professional development, personnel training, strategy.

Kirish

Davlat fuqarolik xizmati – davlat boshqaruvi tizimining asosiy qismlaridan biri bo‘lib, mamlakatning ijro etuvchi qudratini ta’minlaydi. Davlat fuqarolik xizmatining samaradorligi ko‘p hollarda yosh kadrlar tayyorlash va ularni ishga jalb etish bilan belgilanadi. Shunda muhim vazifa esa, istiqbolli yosh kadrlarni shakllantirish va ularning kasbiy rivojlanishini qo‘llab-quvvatlashdir.

Hozirgi zamonda davlat boshqaruvi tizimini samarali isloh qilish, yangilanish va rivojlanish talablari yosh mutaxassislarning bilim va ko‘nikmalariga bog‘liq. Shu bois, istiqbolli yosh kadrlarning tayyorgarligi, ularga munosib shart-sharoitlar yaratish va ta’lim tizimi bilan integratsiyalashgan dasturlarni ishlab chiqish dolzarb bo‘lib qolmoqda.

Tadqiqotning maqsadi – davlat fuqarolik xizmatida istiqbolli yosh kadrlarni shakllantirish va qo‘llab-quvvatlash bo‘yicha amaliy va ilmiy tavsiyalarni ishlab chiqishdir. Buning uchun yosh mutaxassislarni tayyorlashning mavjud tizimi tahlil qilinadi, shuningdek, xalqaro tajriba va innovatsion yondashuvlar o‘rganiladi.

Asosiy qism

Prezident Shavkat Mirziyoevning "Yoshlar — bu mamlakatimizning kelajagi, ularning bilim va malakasi mamlakatimizning muvaffaqiyatining asosi hisoblanadi. Davlat fuqarolik xizmatida istiqbolli yosh kadrlarni shakllantirish va qo‘llab-quvvatlash, bu, shubhasiz, davlat boshqaruvi tizimini samarali isloh etishning garovi va muhimi bo‘lib xizmat qiladi. Davlat xizmatining mukammal va samarali ishlashi, adolatli qarorlarni qabul qilish va insonlarning manfaatlarini ta’minlash faqatgina malakali, bilimli va yoshlardan iborat kadrlar orqali amalga oshirilishi mumkin." degan fikrlari yoshlarga bo‘lgan katta e’tibori hisoblanadi [2].

Bugungi kunda davlat boshqaruvi tizimini samarali isloh etish, uni zamonaviy va raqobatbardosh kadrlar bilan ta’minlash jamiyat rivojlanishining ustuvor yo‘nalishlaridan biri hisoblanadi. Xususan, yosh kadrlarni shakllantirish va qo‘llab-quvvatlash nafaqat davlat boshqaruvining barqarorligi, balki uning innovatsion salohiyatini oshirishda ham muhim o‘rin tutadi.

Har qanday davlat xizmatining samaradorligi va natijadorligi davlat xizmatchilarining faoliyati bilan bevosita bog‘liqdir. Professional va salohiyatli davlat xizmatchilarini shakllantirish bo‘yicha samarali tizim o‘rnatilmas ekan,

samaradorlik va natijadorlikka yo‘naltirilgan davlat xizmatini ta‘minlab bo‘lmaydi. Shuning uchun bugungi kunda davlat organlari va tashkilotlarida faoliyat yuritayotgan yosh kadrlar orasidan iste‘dodlarni aniqlab ularni malakasini oshirish, zaruriy ko‘nikmalar bilan boyitish va kelgusida istiqbolini belgilash dolzarb ahamiyat kasb etadi [1].

Istiqbolli yosh mutaxassislarni jalb qilish, ularning bilim va ko‘nikmalarini rivojlantirishga qaratilgan dasturlarni joriy etish, bugungi globallashuv sharoitida strategik ahamiyat kasb etmoqda. Zero, har qanday davlatning kelajagi yosh avlodning intellektual salohiyatiga, ularning ilmiy va amaliy tayyorgarligiga bog‘liqdir.

O‘zbekiston Respublikasi Prezidentining 6260-Farmonining 5-bandida Yoshlarni har tomonlama qo‘llab-quvvatlash va ularning ijtimoiy faolligini yanada oshirishga qaratilgan. Mamlakatimizda yangi O‘zbekistonni barpo etishdek ulug‘ maqsadga erishish yo‘lida asosiy tayanchimiz bo‘lgan azmu shijoatli yoshlarga e‘tibor va g‘amxo‘rlik ko‘rsatish, ularga barcha sohalarda o‘z iqtidori va salohiyatini to‘liq namoyon etishi uchun zarur sharoit va imkoniyatlar yaratib berish davlat siyosatining ustuvor yo‘nalishi hisoblanadi [3].

Davlat organlari, tashkilot va muassasalarida faoliyat ko‘rsatayotgan nufuzli xalqaro reyting tashkilotlarining yuqori 500 talik ro‘yxatiga kiritilgan xorijiy oliy ta‘lim tashkilotlarini (bakalavriat, magistratura) tamomlagan yoki ularda ilmiy daraja (PhD va unga tenglashtirilgan boshqa ilmiy daraja) olgan yosh mutaxassislarning lavozim maoshiga Davlat byudjeti hisobidan saqlanadigan shtat birliklari uchun Davlat byudjeti mablag‘lari hamda byudjetdan tashqari jamg‘armalar mablag‘lari hisobidan saqlanadigan shtat birliklari uchun tegishli tashkilotlarning byudjetdan tashqari mablag‘lari hisobidan qo‘shimcha ustamalar to‘lab borish tartibi joriy etilgan. Hozirgi kunda PF-6260ga ko‘ra, yosh mutaxassislarga ustama to‘lash, ularni o‘z sohalarida faol ishlashga va ko‘proq tajriba orttirishga rag‘batlantirish uchun 400 ga yaqin yosh mutaxassissga ustamalar to‘lab borilmoqda. Ustamalar maoshlarga qo‘shimcha ravishda to‘lanadi, bu yosh mutaxassislarga o‘zlarining kasbiy salohiyatlarini rivojlantirish uchun moliyaviy qo‘llab-quvvatlashdir. Ushbu qarorlarning maqsadi – yoshlarning ishga o‘rganishini yoki yangi kasbda yuksalishini ta‘minlash, shuningdek, ularni mamlakatning turli sohalarida ishlashga jalb qilishdir [3].

«El yurt umidi» dasturi yoshlarga e‘tibor berish va ularning ijtimoiy va kasbiy rivojlanishini ta‘minlashga qaratilgan muhim tashabbuslardan biri hisoblanadi. Bu dasturning asosiy maqsadi yoshlar orasida ta‘lim va kasbiy ko‘nikmalarni rivojlantirish, ularni o‘zgartirishlar va innovatsiyalarga tayyorlash, shuningdek, davlat va xususiy sektorda ahamiyatli rol o‘ynashga rag‘batlantirishdir [4].

«El yurt umidi» yoshlarga qat‘iy moliyaviy va ma‘naviy qo‘llab-quvvatlash, shuningdek, ixtisoslashgan yosh mutaxassislarni faoliyatga jalb qilish orqali ularning salohiyatini ro‘yobga chiqarishga yordam beradi. Dastur doirasida yoshlarga ta‘lim va ishlash imkoniyatlari taqdim etilib, ularga professional ta‘lim va amaliyotning birgalikda o‘tkazilishi ta‘minlanadi.

Bu dastur yoshlarning ijtimoiy faoliyatiga qo'shgan hissasi, ularning muammolarini hal qilish va hayotiy talablarga moslashish uchun zarur bo'lgan resurslar bilan ta'minlashga qaratilgan [4].

2024 yilda O'zbekistonda xorijiy davlatlarda bakalavriat, magistratura va doktoranturada ta'lim olish uchun «El-yurt umidi» jamg'armasi tomonidan 500 o'rin ajratilgan:

Bakalavriat: 100 o'rin, Magistratura: 250 o'rin va Doktorantura: 150 o'rin. Bu tanlovda ishtirok etish uchun nomzodlar maxsus imtihonlardan o'tgan va tanlangan. Masalan 2024 yilda 411 nafar stipendiatlarga xorijda o'qish uchun to'rt tamonlama shartnomalar tuzildi. «El-yurt umidi» jamg'armasi stipendiatlari orasida 263 nafar erkak va 148 nafar ayollar yuborildi.

Shuningdek, yosh kadrlar siyosatini samarali tashkil etish ularning ijtimoiy himoyasini ta'minlash, rahbarlikka tayyorlash hamda tashabbuskorligini qo'llab-quvvatlash kabi vazifalarni o'z ichiga oladi. Bu esa davlat boshqaruvi tizimining uzluksiz rivojlanishiga xizmat qiladi.

O'zbekistonda so'nggi yillarda davlat boshqaruvi tizimini isloh qilish doirasida yoshlarga oid bir qator muhim tashabbuslar amalga oshirildi. Xususan, yoshlarning davlat xizmatlarida faol ishtirokini ta'minlash maqsadida “Yoshlar akademiyasi”, “Prezident kadrlar zaxirasi” kabi dasturlar yo'lga qo'yildi. Bu kabi tashabbuslar istiqbolli yoshlarning salohiyatini aniqlash, ularni davlat boshqaruviga jalb etish va kasbiy ko'nikmalarini rivojlantirishga qaratilgan.

Shu bilan birga, davlat xizmatchilari uchun zamonaviy ta'lim platformalarini joriy etish, xorijiy tajriba asosida malaka oshirish dasturlari ishlab chiqildi. Jumladan, **Davlat xizmatini rivojlantirish agentligi** tomonidan kadrlarni tanlash va tayyorlashda shaffoflikni ta'minlash hamda yoshlarning imkoniyatlarini kengaytirishga alohida e'tibor qaratilmoqda.

Istiqbolli yosh mutaxassislarni jalb qilish, ularning bilim va ko'nikmalarini rivojlantirishga qaratilgan dasturlarni joriy etish, bugungi globallashtirish sharoitida strategik ahamiyat kasb etmoqda. Zero, har qanday davlatning kelajagi yosh avlodning intellektual salohiyatiga, ularning ilmiy va amaliy tayyorgarligiga bog'liqdir.

Mazkur yo'nalish bo'yicha davlatimiz Rahbarining bir qator farmonlari va topshiriqlari mavjud. Mazkur normativ hujjatlar davlat boshqaruvi tizimida faoliyat yuritayotgan yosh istiqbolli kadrlarni shakllantirish bo'yicha tizimni joriy etish va ularni muntazam ijtimoiy qo'llab quvvatlashga qaratilgan.

Bugungi kunda yosh istiqbolli kadrlarni shakllantirish sohasida Davlat xizmatini rivojlantirish agentligi tomonidan O'zbekistonda ro'yhatdan o'tgan yoshlarga xorijda o'qish uchun stipendiya ajratadigan xorijiy grant tashkilotlari bilan hamkorlik faoliyati yo'lga qo'yildi. Hamkorlik faoliyatiga ko'ra Davlat xizmatini rivojlantirish agentligi grant jarayonlari bo'yicha davlat organlari va tashkilotlari xodimlari orasida xorijda malaka oshirish ahamiyati to'g'risida targ'ibot ishlarini olib borishi, grant jarayonlariga iste'dodli davlat xizmatchilarini jalb etish, ular orasidan eng munosiblarini tanlab olish va kelgusida ularning istiqbolini ta'minlash bilan bog'liq choralarni amalga oshirishi belgilandi.

Xalqaro tajribada yosh kadrlarni shakllantirish davlat boshqaruvi tizimini mustahkamlashning muhim omillaridan biri sifatida e'tirof etilgan. Masalan, Janubiy Koreya KOICA (Koreya xalqaro hamkorlik agentligi) dasturi orqali rivojlanayotgan davlatlardagi iqtidorli yoshlarni tanlab, ularning bilimi va malakasini oshirishga qaratilgan ta'lim va stajirovka dasturlarini amalga oshirmoqda. KOICA doirasida davlat boshqaruvi sohasiga oid qator kurslar, shuningdek, rahbar kadrlar uchun maxsus tayyorlov dasturlari o'tkaziladi. Ushbu dasturlar yosh mutaxassislarning strategik fikrlash qobiliyatini rivojlantirish va innovatsiyaviy yondashuvlarni o'zlashtirishni maqsad qiladi [5].

Shuningdek, KOICA dasturi Janubiy Koreyaning raqamli transformatsiya va innovatsiyalar sohasidagi tajribasini tarqatishga yo'naltirilgan bo'lib, yosh mutaxassislarga ushbu bilimlarni davlat boshqaruvida qo'llash imkoniyatini beradi. O'zbekistonda ham KOICA loyihalari doirasida davlat xizmatchilarining malakasini oshirish, maxsus seminarlar va stajirovkalar tashkil etilib, yoshlar uchun yangi imkoniyatlar yaratilmoqda.

O'zbekistonda yosh kadrlarni shakllantirish jarayonida KOICA kabi xalqaro dasturlarning ahamiyati ortib bormoqda, chunki bu kabi tashabbuslar nafaqat ta'lim va amaliyotni birlashtiradi, balki davlat boshqaruvini zamonaviy yondashuvlar asosida rivojlantirishga hissa qo'shadi.

Shu bilan bir qatorda, Yaponiya xalqaro hamkorlik agentligi (JICA) ham davlat boshqaruvida yosh mutaxassislarni shakllantirish va ularni qo'llab-quvvatlashda alohida ahamiyatga ega. JICA dasturlari Yaponiyaning samarali boshqaruv tizimi, texnologiyalari va innovatsiyaviy yechimlarini o'rganishni o'z ichiga oladi. Yosh rahbarlar uchun maxsus tayyorlov kurslari, stajirovkalar va tadqiqot loyihalari tashkil etilib, davlat xizmatchilariga yetakchilik, strategiya ishlab chiqish va islohotlarni amalga oshirish bo'yicha zamonaviy ko'nikmalar beriladi.

O'zbekistonda JICA loyihalari doirasida davlat boshqaruvi tizimini takomillashtirishga qaratilgan qator dasturlar amalga oshirilmoqda. Yosh kadrlar Yaponiyada o'qish va malaka oshirish imkoniyatiga ega bo'lib, bu ularga innovatsiyaviy yondashuvlarni o'z ichiga olgan tajribani O'zbekistonning boshqaruv tizimida qo'llashga imkon beradi.

KOICA va JICA kabi xalqaro hamkorlik dasturlari nafaqat yosh kadrlarning salohiyatini oshirishga, balki davlat boshqaruvida xalqaro standartlarni joriy etishga ham xizmat qilmoqda [6].

Xalqaro tajribada yosh kadrlarni shakllantirish davlat boshqaruvi tizimini mustahkamlashning muhim omillaridan biri sifatida e'tirof etilgan. Masalan, Janubiy Koreya "Yosh rahbarlar dasturi" orqali yuqori malakali kadrlarni davlat boshqaruviga jalb qilish va ularning malakasini oshirishga qaratilgan maxsus tizim joriy etgan. Singapurda "Davlat xizmati stipendiyasi" dasturi orqali iqtidorli yoshlar xorijiy ta'lim muassasalarida o'qitiladi va davlat boshqaruvida yetakchi lavozimlarga tayyorlanadi [7].

Yevropa Ittifoqi davlatlarida yosh kadrlarni shakllantirish jarayonida hamkorlik va tajriba almashinuviga katta ahamiyat qaratiladi. Xususan, "Evropa

Yoshlar Qo‘mitasi” doirasida yosh mutaxassislar uchun amaliy mashg‘ulotlar, davlat xizmatiga tayyorlov kurslari va stajirovka dasturlari tashkil etiladi.

O‘zbekistonda ham yosh kadrlarni shakllantirishda xalqaro tajriba o‘rganilib, davlat xizmatini rivojlantirish tizimiga tatbiq etilmoqda. Jumladan, Prezident kadrlar zaxirasi va turli yoshlar dasturlari doirasida iqtidorli mutaxassislarni tayyorlash va ularni strategik lavozimlarga tayyorlash bo‘yicha ish olib borilmoqda.

Shular qatorida O‘zbekiston Respublikasi Prezidentining 2021 yil 13 avgustdagi PF–6260-son Farmoni bilan xorijning eng nufuzli 500 ta universitetlarida ta’lim olgan yosh davlat xizmatchilariga asosiy oylik maoshiga qo‘shimcha ravishda ustamalar belgilanishi davlat xizmatchilarini o‘z professional ko‘nikma va kasbiy bilimlarini xorijning eng nufuzli ta’lim muassasalarida oshirishiga motivatsiyalaydi. Bu esa o‘z navbatida davlat organlari va tashkilotlarining ushbu istiqbolli yosh davlat xizmatchilarining kasbiy salohiyatidan unumli va samarali foydalanishiga turtki bo‘ladi.

Xususan, yosh kadrlarni shakllantirish va qo‘llab-quvvatlash nafaqat davlat boshqaruvining barqarorligi, balki uning innovatsion salohiyatini oshirishda ham muhim o‘rin tutadi.

Innovatsion texnologiyalarni joriy etish va raqamli transformatsiya jarayonlarini amalga oshirish davlat boshqaruvini takomillashtirishning asosiy yo‘nalishlaridan biriga aylandi. Bu jarayonda yosh mutaxassislarning ijodiy yondoshuvi va texnologik salohiyati katta ahamiyatga ega. Zamonaviy yoshlar raqamli texnologiyalar, sun‘iy intellekt, ma’lumotlarni tahlil qilish va avtomatlashtirish sohalarida yetarli bilim va ko‘nikmalarga ega bo‘lib, bu ularni davlat boshqaruvining yetakchi kuchlaridan biriga aylantirmoqda.

O‘zbekistonda ham yoshlarning innovatsiyaviy salohiyatidan keng foydalanishga qaratilgan bir qator tashabbuslar amalga oshirilmoqda. Jumladan, davlat organlarida raqamli texnologiyalarni joriy etish, davlat xizmatlarini onlayn formatga o‘tkazish, elektron hukumat tizimini rivojlantirish kabi islohotlarda yosh kadrlar faol ishtirok etmoqda. Yoshlarning tashabbuslarini qo‘llab-quvvatlash maqsadida “Yoshlar texnoparklari”, innovatsiya markazlari va startap dasturlari tashkil etildi.

Shuningdek, yosh mutaxassislar innovatsiyaviy loyihalarni amalga oshirishdagi yetakchi kuchga aylanib, davlat boshqaruvida samaradorlik va shaffoflikni ta’minlashga xizmat qilmoqda. Ular davlatning zamonaviy va raqobatbardosh tizimini shakllantirishda muhim rol o‘ynaydilar [8].

Shu bilan, yosh kadrlarni shakllantirish va ularni qo‘llab-quvvatlash faqat zamonaviy davlat boshqaruvi tizimini shakllantirishning o‘zi emas, balki davlatning strategik rivoji uchun ham muhim bosqichdir.

Xulosa

Hozirda davlat boshqaruvi tizimini samarali isloh etish, yosh kadrlarni shakllantirish va ularni qo‘llab-quvvatlash davlat rivoji uchun muhim omillardan biri hisoblanadi. Yosh mutaxassislar davlat xizmatlariga jalb qilingani sari, ularning innovatsion fikrlash qobiliyati, raqamli texnologiyalarga bog‘liq bilim va ko‘nikmalari davlat boshqaruvi tizimini yaxshilashga xizmat qiladi.

Mamlakatimizda yoshlarning salohiyatini oshirish va ularga davlat xizmatlarida yuqori lavozimlar ishlatish uchun xalqaro tajriba va yoshlarni qo'llab-quvvatlashga yo'naltirilgan dasturlar muhim o'rin tutadi. Koreya va Yaponiya kabi davlatlardan kelgan KOICA va JICA dasturlari orqali yosh mutaxassislariga zamonaviy boshqaruv va innovatsiyaviy tajriba orqali ma'lumotlar beriladi. Ushbu xalqaro dasturlar yosh kadrlarning professional taraqqiyoti va davlat boshqaruvi tizimining rivoji uchun muhim ahamiyatga ega.

O'zbekistonda yosh kadrlarni shakllantirish va ularning davlat xizmatlariga jalb etilishi davlat boshqaruvi tizimini isloh qilish, zamonaviylashtirish va mustahkamlashga katta hissa qo'shmoqda. Bularning barchasi yosh avlodning intellektual salohiyatini ishga solish va ularga yuqori va samarali lavozimlarda ishlash imkoniyatlari yaratish orqali davlatning strategik rivoji uchun zarur shart-sharoitlar yaratadi.

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BOLALAR MUSIQA FOLKLORINING TARBIYAVIY AHAMIYATI

Annotasiya: Mazkur maqolada inson ma'naviyatini yuksaltirishda folklorning o'rni, folklor qo'shiqlarini yosh avlod qalbida jo bo'lishi orqali bolalarda ona Vatanga sadoqat, tabiat va ona yurt an'alariga hurmat hissini shakllanishi, yosh avlodda eng yaxshi insoniy tuyg'ularni, yuksak insoniy fazilatlarni shakllantirib, kamol toptirishda, ularning ma'naviy dunyosini boyitishda folklor qo'shiqlarining ahamiyati yoritilgan.

Kalit so'zlar: xalq musiqa ijodiyoti, o'zbek bolalar folklori, qo'shiq, ta'lim, tarbiya, yosh avlod, milliy an'alar, musiqiy meros, pedagogika.

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EDUCATIONAL SIGNIFICANCE OF CHILDREN'S MUSIC FOLKLORE

Annotation: This article highlights the role of folklore in elevating human spirituality, the formation of children's feelings of devotion to the Motherland, respect for nature and traditions of their native land, the formation of the best human feelings and high human qualities among the younger generation, the importance of folklore songs in enriching their spiritual world.

Keywords: folk music, uzbek children's folklore, song, education, upbringing, the younger generation, national traditions, musical heritage, pedagogy.

O'zbek bolalar folklori xalq ijodining tarkibiy qismi sifatida qadim zamonlarda yuzaga kelgan va asrlar davomida yangi-yangi bo'yoqlar, shakllarda rivojlanishda davom etgan hamda boyib borayotgan yaxlit bir tizimdirki, bunda janrlar rang-barangligi, asarlar xilma-xilligi muhim o'rin tutadi. Musiqiy folklor xalq badiiy ijodining ajralmas qismi bo'lib, odatda og'zaki shaklda mavjud bo'lib, faqat ijrochilik an'alarini bilan og'izdan-og'izga o'tib kelgan.

Biz bolalar folklori haqidagi ilk qarashlarni Mahmud Qoshg'ariyning "Devonu lug'otit turk" asarida uchratamiz. Unda tarixiy asosdan to bugungi ko'rinishga kelib qolgan folklor namunalari haqida fikrlar bayon etiladi. O'zbek bolalar folklorini o'rganish 1960-yillardan boshlab o'zgacha tus ola boshladi. Z.Husainovning "O'zbek topishmoqlari" (1966), G.Jahongirovning "O'zbek bolalar folklori" (1975), shuningdek, O.Safarovning "Bolalarni erkalovchi ozbek xalq qoshiqlari" (1983), "O'zbek bolalar poetik folklori" (1985), "Alla-yo alla"

(1999), "Chittigul" (2004), Sh.Galievning "O'zbek bolalar o'yin folklori" (1998) singari tadqiqotlari bilan bolalar folklori yanada boyidi¹⁷.

Bolalar folklori tadqiqotchisi, "O'zbek xalq ijodi" nomli ko'p jildli turkumidan o'rin olgan "Boychechak" kitobining tuzuvchilaridan biri Oxunjon Safarov o'zbek bolalar folklorini tadqiq etish bo'yicha ishlar yetarli darajada emasligini ta'kidlaydi. Shunday bo'lsa-da, bolalar folkloristikasi bo'yicha muayyan tajriba to'plangan va Y.Peshcherova, Elbek, X.Zarifov, M.Alaviya, Z.Husainova, T.Mirzayev, M.Murodov, B.Sarimsoqov, G.Jahongirov, X.Razzoqov, S.Ro'zimboyev va boshqa mualliflar, filolog olimlarning ishlarini alohida ko'rsatish mumkin. Mazkur mualliflarning bolalar qo'shiqlari to'plamlari adabiy-matnli variantda, nota yozuvlarisiz berilgan¹⁸.

Inson ma'naviyatini yuksaltirishda folklorning o'rnini haqida so'z borganda, aslida, bu jarayon go'daklikdan boshlanishini ta'kidlash lozim. Onalarimiz aytgan allalar, erkalamalar, aytim-olqishlar hamda ertaklar bolalar nutqini o'stirishda, dunyoqarashini kengaytirishda hamda estetik didini shakllantirishda ahamiyati kattadir.

Har bir xalq ijodida qo'shiq muhim o'rin egallaydi. Qo'shiq insonga umrining oxirigacha hamroh bo'lib, uning quvonchli va qayg'uli kunlari, baxt haqidagi orzu-umidlari qo'shiq ijodida o'z ifodasini topadi. Bolalar folklor qo'shiqlari mazmunida esa ularning o'ziga xos jo'shqin hayoti, dunyoqarashi, yil fasllari, turli bayramlarga munosabatning ifoda etilishi o'z aksini topadi.

Shaxsni tarbiyalash va kamolga yetkazishda musiqa, xususan qo'shiq muhim rol o'ynaydi. Chunki qo'shiq o'zida badiiy va musiqiy g'oyalarning o'zaro uyg'unlashgan obrazlarini tarkib toptiradi. Bu qo'shiqlarning ohanglari, ritmlari va shu bilan bir qatorda, oddiyligi, tushunarliyligi bolalarning musiqiy rivojlanishlari, ularni musiqa ijrochiligi va ijodiyotiga oshno bo'lishlariga juda katta yordam beradi. Bu borada ayniqsa, milliy folklor qo'shiqlarning mazmundorligi o'zgachadir.

Xalq ijodiyoti xalqimizning bebaho ma'naviy-ahloqiy va tarbiyaviy mulki, boyligidir. Xalq musiqa ijodi orqali o'quvchilar milliy qadriyat va an'analarni yanada chuqurroq anglaydilar. Musiqa pedagogikasining eng muhim vazifalaridan biri ushbu bebaho musiqaning bolalar tomonidan o'zlashtirilish samaradorligi hamda zarurligi hisoblanadi. Hozirgi kunda yosh avlodni milliy an'analarga sadoqat ruhida tarbiyalashda musiqiy folklor asarlarining o'rnini va ta'siri beqiyosligini e'tiborga olgan holda, ularni o'rgatishga alohida ahamiyat berilmoqda. Endilikda folklor qo'shiq, o'yin-aytimlar bolalar estetik ta'lim-tarbiyasining muhim qismi sifatida maktabgacha ta'lim tashkilotlarida hamda umumiy o'rta ta'lim maktablarida o'rganilmoqda. Chunki, folklor qo'shiqlarini yosh avlod qalbida jo bo'lishi orqali bolalarda ona Vatanga sadoqat, tabiat va ona yurt an'analarga hurmat hissi shakllanadi. Zero, yosh avlodda eng yaxshi insoniy tuyg'ularni, yuksak

¹⁷ Jo'rayeva S.U. Bolalar folklorining o'ziga xos xususiyatlari. <https://zenodo.org/records/files>.

¹⁸ Qodirov R. Musiqa pedagogikasi. T.: 2018, 61 b.

odamiylik fazilatlarini shakllantirib, kamol toptirishda, ularning ma'naviy dunyosini boyitishda folklor qo'shiqlarining ahamiyati beqiyosdir.

Hozirda o'zbek xalq musiqa ijodiyoti pedagogika, madaniyat va san'at ta'limi muassasalari o'quv jarayonlariga qator fanlar ("O'zbek xalq musiqa ijodi", "An'anaviy musiqa asoslari" va b.) tarzida tatbiq qilingan.

Shuningdek, xalq musiqa ijodiyoti an'analari bag'ishlangan ishlar qiziqish uyg'otadi. Bu ishlar taniqli san'atshunos olimlar R.Abdullayev, F.Karamatov, Y.Rajabiy, M.Raxmonov, M.Qodirov, T.G'ofurbekov va boshqalarining ilmiy ishlarida ham tatbiq etilib, yoritib berilgan. Xususan, taniqli olim ("El-yurt xurmati" ordeni nishondori) F.M.Karomatli "O'zbek xalqi musiqa merosi" turkumining yangi jildlarini nashrga tayyorladi, qator maqolalar e'lon qildi. R.S.Abdullayev "Markaziy Osiyo xalqlari marosim musiqasi"ga bag'ishlangan ilmiy monografiyani nashrdan chiqardi. Shuningdek, R.Yu.Yunusov va O.A.Ibroximovlarning "O'zbek xalq musiqa ijodiyoti" o'quv-uslubiy qo'llanmalari chop etildi.¹⁹

Xalq musiqa ijodi o'zining sarmazmun boy jilvasi, mohiyati, sodda va ayni chog'da go'zal nafosati bilan xalq badiiy xavaskorlik ijodiyotining barcha turlarini, ularning repertuarlarini, madaniy-ma'rifiy tadbirlarni boyitib, bezabgina qolmay, ijtimoiy turmushimizga ham faol ta'sir ko'rsatmoqdaki, bu qator masalalar, folklor turlarning, jumladan bolalar folklorining shu kungi madaniy-ma'rifiy, milliy-g'oyaviy hayotimizda tutgan o'rnini belgilaydi.

Shuni alohida ta'kidlash lozimki, yurtimizda bolalar musiqiy folkloriga va shu asosda yosh avlodga ta'lim-tarbiya berishga jiddiy e'tibor qaratilayotgani bejiz emas. Chunki bolalar folklor qo'siqlari milliy musiqiy merosning tarkibiy ajralmas qismi bo'lib, yosh avlodda milliy qadriyatlar idrokini shakllantirishda muhim omildir.

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VENCHUR KAPITALI: INNOVATSION IQTISODIYOTNING YANGI TUGUNLARI

Annotatsiya: Ushbu maqola venchur kapitalining innovatsion iqtisodiyotdagi o'rni va uning iqtisodiy rivojlanishga ta'siri haqida qisqacha tahlil qiladi. Maqolada venchur kapitalining xususiyatlari, yuqori risk va tezkor o'sish potentsiali, shuningdek, yangi texnologiyalarni tijoratlashtirishda qanday rol o'ynashi ko'rsatiladi. O'zbekistonda venchur kapitali orqali innovatsion korxonalarni qo'llab-quvvatlash, global raqobatbardoshlikni oshirish va iqtisodiy modernizatsiya jarayonlari muhokama qilinadi va maqolada uning ahamiyati ko'rsatib beriladi.

Kalit so'zlar: Venchur kapitali, innovatsion iqtisodiyot, yuqori riskli investitsiyalar, iqtisodiy rivojlanish, texnologiyalarni tijoratlashtirish, global raqobatbardoshlik, iqtisodiy modernizatsiya, innovatsion korxonalar, O'zbekistonda innovatsion jarayonlar.

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VENTURE CAPITAL: NEW NODES OF THE INNOVATION ECONOMY

Abstract: This article provides a brief analysis of the role of venture capital in the innovation economy and its impact on economic development. The article shows the characteristics of venture capital, the high risk and rapid growth potential, as well as the role it plays in the commercialization of new technologies. The article discusses the processes of supporting innovative enterprises through venture capital in Uzbekistan, increasing global competitiveness and economic modernization.

Keywords: Venture capital, innovative economy, high-risk investments, economic development, technology commercialization, global competitiveness, economic modernization, innovative enterprises, Uzbekistan, innovation processes.

Kirish

XXI asr iqtisodiyoti innovatsion yondashuvlar, yuqori texnologiyalar va global raqobatbardoshlik asosida shakllanmoqda. Global miqyosda yangiliklarni yaratish va ilg'or texnologiyalarni ishlab chiqish doimiy ravishda iqtisodiyotning rivojlanishini ta'minlaydi. Bunda eng muhim omillardan biri – venchur kapitali.

Venchur kapitali, ya'ni riskli investitsiyalar, bugungi kunda innovatsion iqtisodiyotning ajralmas qismiga aylanib bormoqda. Bu investitsiyalar asosan yuqori riskli va yuqori o'sish potensialiga ega bo'lgan kompaniyalar va loyihalarga yo'naltirilgan bo'lib, yangi texnologiyalarni rivojlantirish, kichik va o'rta innovatsion korxonalarni qo'llab-quvvatlash va global raqobatbardoshlikni oshirishda muhim rol o'ynaydi.

Venchur kapitali: asosiy tushuncha va xususiyatlari

Venchur kapitali – bu innovatsion texnologiyalarni ishlab chiqish va tijoratlashtirish jarayonida investitsiya qilingan moliyaviy resurslardir. Venchur kapitalining asosiy xususiyati uning yuqori risk va yuqori daromad potensialiga ega bo'lishidir. Venchur kapitalining ajralib turadigan jihati, nafaqat moliyaviy qo'llab-quvvatlash, balki yangi kompaniyalar uchun strategik maslahatlar, tarmoq aloqalari va boshqaruv tajribasi kabi resurslarni taqdim etishdir.

Venchur kapitali investitsiyalarining asosiy xususiyatlarini quyidagicha tartiblaymiz:

1. **Yuqori risk** – Venchur kapitali yuqori risk darajasi, yangi texnologiyalar va innovatsion g'oyalar asosida amalga oshirilishi bilan bog'liqdir. Bu investitsiyalar ko'pincha muvaffaqiyatsiz bo'lishi mumkin, chunki yangi bozorlarni zabt etish va texnologiyalarni tijoratlashtirish jarayonida turli xil noaniqliklar va qarshiliklar yuzaga keladi.

2. **Tezkor o'sish** – Venchur kapitali, yuqori o'sish potensialiga ega bo'lgan loyihalarni qo'llab-quvvatlaydi. Innovatsion kompaniyalar tezda bozorga kirib, katta o'sishga erishishi mumkin. Bunday o'sish kompaniyalarni global miqyosda tanitish va yangi bozorlarni zabt etish imkoniyatini yaratadi.

3. **Innovatsion ta'sir** – Venchur kapitali ilmiy tadqiqotlar, yangi texnologiyalar va g'oyalarni tijoratlashtirishda hal qiluvchi rol o'ynaydi. Shu orqali innovatsiyalar tezda amaliyotga joriy qilinadi va bozorda yangiliklar kiritiladi.

4. **Strategik qo'llab-quvvatlash** – Venchur kapitali nafaqat moliyaviy resurslarni taqdim etadi, balki yangi kompaniyalar bilan o'z tajriba va bilimlarini ham bo'lishadi. Bu qo'llab-quvvatlash kompaniyalarni muvaffaqiyatli boshqarishga va bozorda zabt etishga yordam beradi.

Venchur kapitalining innovatsion iqtisodiyotda tutgan o'rni

Innovatsion iqtisodiyot, zamonaviy bilim va texnologiyalar asosida rivojlanib bormoqda. G'oyalar va innovatsiyalar hayotga tatbiq etilishidan avval ular bozor tomonidan qabul qilinishi va moliyaviy jihatdan qo'llab-quvvatlanishi kerak. Venchur kapitali aynan shu jarayonda hal qiluvchi ahamiyatga ega bo'lib, uning ishtiroki iqtisodiyotning barcha darajalarida sezilarli ta'sir ko'rsatadi.

Mikro daraja: Innovatsion korxonalarni rivojlantirish Venchur kapitali innovatsion korxonalarni rivojlantirishda hal qiluvchi rol o'ynaydi. Innovatsion kompaniyalar, ko'pincha, yangi texnologiyalarni ishlab chiqish, bozorga yangi mahsulotlar va xizmatlar taqdim etish, hamda mavjud bozorlarda raqobatbardoshlikni oshirishda faoliyat yuritadilar. Venchur kapitali, shu orqali, yuqori texnologik kompaniyalarga rivojlanish uchun zarur bo'lgan moliyaviy

manbalarni taqdim etadi, bu esa ularning bozorda zabt etish imkoniyatlarini oshiradi.

Mezo daraja: Yangi texnologiyalarning tarqalishi Venchur kapitali, yuqori texnologik sohalarni rivojlantirishga yordam beradi. Biotexnologiya, nanotexnologiya, axborot-kommunikatsion texnologiyalar kabi sohalarda innovatsion ishlanmalarni tijoratlashirishda venchur kapitalining oʻrni katta. Bu texnologiyalar iqtisodiyotning oʻzgarishiga olib keladi, yangi ish oʻrinlari yaratadi va xalqaro miqyosda raqobatbardoshlikni oshiradi.

Makro daraja: Iqtisodiyotni innovatsion tizimga oʻtkazish Venchur kapitali, davlatlarning iqtisodiy tizimini modernizatsiya qilishda, yangi texnologiyalarni rivojlantirish va qoʻllab-quvvatlashda asosiy vosita sifatida ishlatiladi. Innovatsion texnologiyalarni rivojlantirish orqali venchur kapitali mamlakatlarni yuqori texnologik iqtisodiyotga aylantiradi va global miqyosda raqobatbardoshlikni oshiradi.

Mega daraja: Global raqobatbardoshlikni oshirish Venchur kapitali, nafaqat mamlakatlar darajasida, balki global miqyosda ilmiy-texnologik rivojlanishni faollashtiradi. AQSH, Xitoy kabi davlatlar oʻz texnologik yetakchiligini mustahkamlashmoqda va venchur kapitali orqali yangi texnologiyalarni yaratish va joriy etish jarayonlarini tezlashtirmoqdalar. Bu orqali iqtisodiyotda global integratsiya jarayonlari yanada chuqurlashmoqda

Venchur kapitalining innovatsion jarayonlardagi oʻrni

Innovatsion jarayonlar – bu ilmiy tadqiqotlar, yangi texnologiyalarni yaratish va bozorga olib chiqish jarayonidir. Venchur kapitali aynan shu jarayonda muhim ahamiyatga ega. Innovatsion loyihalarning muvaffaqiyatli rivojlanishi uchun zarur boʻlgan moliyaviy resurslar va boshqaruv tajribasini taqdim etish orqali venchur kapitali yangi texnologiyalarni tezda joriy etilishini taʼminlaydi. Bu jarayon nafaqat yangi mahsulotlar va texnologiyalarni yaratishga, balki yangi iqtisodiy tarmoqlarni shakllantirishga ham olib keladi.

Venchur kapitalining iqtisodiy raqobatbardoshlikka taʼsiri

Venchur kapitali, yangi texnologiyalarni ishlab chiqish va tijoratlashirish orqali iqtisodiyotning raqobatbardoshligini oshiradi. Innovatsion kompaniyalar tomonidan yaratilgan texnologiyalar va mahsulotlar nafaqat mavjud bozorlarda raqobatni kuchaytirib, balki yangi bozorlar yaratadi. Shunday qilib, venchur kapitali yangi texnologiyalarni joriy etish va global miqyosda iqtisodiy aloqalarni mustahkamlashga yordam beradi.

Xulosa. Venchur kapitali, bugungi kunda, innovatsion iqtisodiyotning poydevorini yaratishda, yangi gʻoyalarni bozorga olib chiqishda va ilgʻor texnologiyalarni ishlab chiqishda hal qiluvchi rol oʻynaydi. U nafaqat iqtisodiyotni modernizatsiya qilishda, balki global raqobatbardoshlikni oshirishda ham muhim ahamiyatga ega. Venchur kapitalining qoʻllab-quvvatlanishshi orqali innovatsion kompaniyalar tez oʻsib, yangi texnologiyalarni joriy etishda muvaffaqiyatga erishmoqda, bu esa global iqtisodiy oʻsishni taʼminlaydi. Shunday qilib, venchur kapitali nafaqat moliyaviy manba, balki yangi texnologiyalarni hayotga tatbiq etishning asosiy vositasiga aylanmoqda.

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O'ZBEKISTONDA REKREATIONS SALOHIYATINI OSHIRISHDA GAT TEKNOLOGIYALARINI O'RNI

Annotatsiya: Mazkur maqolada O'zbekistonning rekreatsion salohiyatini oshirishda Geoinformatsion analitik texnologiyalar (GAT) texnologiyalarining roli va ahamiyati chuqur o'rganilgan. GAT texnologiyalari, O'zbekistonda rekreatsion salohiyatni yaxshilashda ushbu texnologiyalarni tatbiq etish va ularni to'g'ri qo'llash ko'plab istiqbollarni yaratadi. Maqolada GAT texnologiyalarining rekreatsion hududlarni boshqarishda, turizmni rivojlantirishda va ekologik barqarorlikni ta'minlashda qanday ahamiyatga ega ekanligi tahlil qilinadi.

Kalit so'zlar: Rekreatsion salohiyat, GAT texnologiyalari, GIS, turizm, ekologiya, atrof-muhitni boshqarish, ma'lumot tahlili, milliy bog'lar, ekoturizm, ekologik monitoring.

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THE ROLE OF GAT TECHNOLOGIES IN INCREASING RECREATIONAL CAPACITY IN UZBEKISTAN

Abstract: This article deeply studies the role and importance of Geoinformation Analytical Technologies (GAT) in increasing the recreational potential of Uzbekistan. GAT technologies, their implementation and proper use in improving the recreational potential of Uzbekistan create many prospects. The article analyzes the importance of GAT technologies in managing recreational areas, developing tourism and ensuring environmental sustainability.

Keywords: Recreational potential, GAT technologies, GIS, tourism, ecology, environmental management, data analysis, national parks, ecotourism, environmental monitoring.

O'zbekistonning tabiiy resurslari va madaniy yodgorliklari uning rekreatsion salohiyatining asosiy omillaridir. Biroq, rekreatsion salohiyatni samarali boshqarish va rivojlantirishda mavjud muammolar mavjud bo'lib, ularni hal qilishda GAT

texnologiyalarining roli katta. Rekreatsion zonalarining yuksak salohiyatini amalga oshirish uchun ushbu texnologiyalarni qo'llash zarurati ortib bormoqda. GAT texnologiyalari yordamida rekreatsion hududlarning ekologik holatini baholash, turizmni rivojlantirish, resurslardan samarali foydalanish va barqarorlikni ta'minlash uchun zarur bo'lgan ma'lumotlar to'plami shakllantiriladi.

Geoinformatsion tizimlar (GIS), katta ma'lumotlar va sun'iy intellekt kabi GAT texnologiyalari geografik ma'lumotlarni yig'ish, tahlil qilish va saqlash uchun ishlatiladi. GIS tizimlari rekreatsion hududlarning holatini kuzatish va boshqarishda muhim rol o'ynaydi. Ushbu tizimlar yordamida turli qatlamlardagi ma'lumotlar birlashtiriladi, masalan, yer yuzasidagi o'zgarishlar, ekologik holat, turistlar oqimi va boshqa resurslarning mavjudligi. Sun'iy intellekt va katta ma'lumotlarni tahlil qilish esa, mavjud ma'lumotlar asosida prognozlar tuzishga, hududlarning samarali boshqarilishiga yordam beradi.

GAT texnologiyalarining asosiy vazifasi - rekreatsion hududlarning optimal foydalanilishini ta'minlash va ularda ekologik balansni saqlashdir. O'zbekistonning eng mashhur turistik hududlari, masalan, Buxoro, Samarqand, Xiva va Toshkentdagi rekreatsion salohiyatni samarali boshqarish uchun GAT tizimlaridan keng foydalanish mumkin. GIS tizimlari yordamida hududning to'liq xaritasini yaratish, turistlar oqimini kuzatish, infratuzilmani tahlil qilish va ekologik holatni monitoring qilish mumkin. Bundan tashqari, rekreatsion hududlarni boshqarish uchun sun'iy intellektni qo'llash ma'lumotlarni tez tahlil qilish va xatolarni kamaytirish imkonini beradi.

Rekreatsion salohiyat – bu biror hudud yoki mintaqaning tabiiy, madaniy, iqtisodiy va ijtimoiy resurslari yordamida rekreatsion faoliyatlarni (dam olish, sport, turizm, sog'lomlashtirish, ekologik ta'lim va boshqalar) amalga oshirish imkoniyatlarini ifodalaydi. Rekreatsion salohiyat, asosan, tabiiy resurslar, madaniy yodgorliklar, iqlim sharoiti va hududdagi boshqa resurslarga bog'liq bo'lib, ularni turli maqsadlar uchun, xususan, dam olish va turizm sohalarida ishlatish imkoniyatini yaratadi.

Rekreatsion salohiyatning asosiy jihatlari quyidagilarni o'z ichiga oladi:

Tabiiy rekreatsion salohiyat: Landshaftlar, tog'lar, daryolar, ko'llar, o'rmonlar, tabiiy bog'lar va boshqa tabiiy xususiyatlar. Iqlim: Iqlim sharoiti ham muhim ahamiyatga ega. Ko'plab turistik hududlar o'zining iqlimiga ko'ra mashhur bo'ladi (masalan, plyajlar yoki tog' sayohatlari). Flora va fauna: Yovvoyi hayvonlar, o'simliklar va ularning o'zaro bog'lanishi ekologik turizmni rivojlantirishda asosiy resurslardir.

Madaniy rekreatsion salohiyat: Tarixiy yodgorliklar: Qadimiy shaharlardagi yodgorliklar, me'morchilik asarlari, madaniy meros ob'ektlari. Folklor va an'analar: Mahalliy an'analar, bayramlar, milliy festivallar va boshqa madaniy tadbirlar rekreatsion salohiyatni oshiradi. Arxitektura va san'at: Arxitektura yodgorliklari, muzeylar, san'at galereyalari va shunga o'xshash madaniy obyektlar.

Infratuzilma: Transport tarmoqlari: Sayohatga chiqqan kishilar uchun muhim ahamiyatga ega bo'lgan yo'llar, aeroportlar, temir yo'l stansiyalari va boshqa transport vositalari. Mehmonxonalar va turistik inshootlar: Turistlarga qulaylik

yaratadigan mehmonxonalar, restoranlar, dam olish maskanlari va boshqa turistik xizmatlar.

Ijtimoiy salohiyat: Ijtimoiy va iqtisodiy rivojlanish: Rekreatsion faoliyatlar hududdagi iqtisodiy va ijtimoiy rivojlanish uchun muhim rol o'ynaydi. Dam olish va turizm faoliyati, mahalliy aholi uchun ish o'rinlari yaratadi va hududning iqtisodiy ahvolini yaxshilaydi. Ta'lim va salomatlik: Rekreatsion salohiyatning bir qismi sifatida sog'lomlashtirish va ta'lim faoliyatlari ham amalga oshiriladi. Ekoturizm yoki sog'lomlashtirish kurslari, xalqni ekologik ta'lim bilan tanishtirish bu boradagi salohiyatning tarkibiy qismlaridir.

Rekreatsion salohiyatni rivojlantirish o'zining ko'plab afzalliklariga ega: Rekreatsion faoliyat turizmdan olingan daromadlar orqali hududning iqtisodiy rivojlanishini qo'llab-quvvatlaydi. Sayyohlar tomonidan xarajatlar qilish, yangi ish o'rinlarini yaratish va mahalliy korxonalarga ta'sir o'tkazish mumkin. Tabiiy hududlarning muhofazasi va ekologik turizmni rivojlantirish rekreatsion salohiyatning muhim jihatlaridan biridir. Tabiatni asrash, barqaror turizmni amalga oshirish va atrof-muhitni yaxshilash orqali salohiyatni oshirish mumkin. Madaniy yodgorliklar va an'analarni saqlash va rivojlantirish rekreatsion salohiyatni oshirishning muhim qismi hisoblanadi. Bu nafaqat turizmni rivojlantiradi, balki milliy merosni kelajak avlodlar uchun saqlashga xizmat qiladi. Dam olish va sog'lomlashtirish faoliyatlari jismoniy va ruhiy salomatlikni yaxshilashga yordam beradi. Rekreatsion salohiyat orqali odamlar stressni kamaytirish, jismoniy mashqlarni amalga oshirish va umumiy salomatlikni yaxshilash imkoniyatiga ega bo'ladilar.

O'zbekistonda rekreatsion salohiyat juda katta va xilma-xildir. Mamlakatda tabiiy go'zalliklar, tarixiy yodgorliklar, madaniy meros ob'ektlari mavjud. Quyidagi asosiy rekreatsion resurslarga e'tibor qaratish mumkin:

Samarqand, Buxoro va Xiva kabi tarixiy shaharlarda turistik salohiyat kuchli. Bu hududlarda qadimiy arxitektura ob'ektlari, yodgorliklar, madaniy meros ob'ektlari mavjud bo'lib, xalqaro turizmga katta o'rin tutadi.

Toshkent, Farg'ona vodiysi, Qashqadaryo va Surxondaryo kabi mintaqalarda ekologik turizm va tog' sayohatlari rivojlanishi mumkin. Farg'ona vodiysi va Chatkal tog' tizmasidagi tabiiy hududlar turizmni rivojlantirishda katta salohiyatga ega.

Sirdaryo va Amudaryo bo'ylaridagi hududlar ham rekreatsion salohiyatni rivojlantirish uchun keng imkoniyatlarga ega. Bu hududlarda daryolar bo'yida dam olish va turizm imkoniyatlari mavjud.

Tashkent va boshqa yirik shaharlarda dam olish va madaniy turizm uchun zarur infratuzilma mavjud bo'lib, bu sohada investitsiyalarni jalb qilish mumkin.

Rekreatsion salohiyat nafaqat turizmni rivojlantirish, balki ekologik barqarorlikni ta'minlash va ijtimoiy-iqtisodiy rivojlanishga hissa qo'shishda muhim rol o'ynaydi. Ushbu salohiyatni to'g'ri boshqarish va optimallashtirish uchun zamonaviy texnologiyalarni, jumladan GAT tizimlarini qo'llash zarur. O'zbekistonning rekreatsion salohiyati juda katta va uni to'g'ri boshqarish orqali mamlakatning turizm sektorini yanada rivojlantirish mumkin.

O'zbekistonning turli mintaqalarida GAT texnologiyalari muvaffaqiyatli qo'llanilmoqda. O'zbekiston Respublikasi Turizmni rivojlantirish milliy kompaniyasining tashabbuslari asosida, masalan, Samarkand va Buxoroda GIS texnologiyalaridan foydalanilmoqda. Bu tizimlar orqali bu hududlarning geosiyosiy xaritalari ishlab chiqilmoqda, ekologik ta'sirlar tahlil qilinmoqda va turistlar uchun qo'shimcha imkoniyatlar yaratilmoqda.

Ekoturizm sohasida GAT texnologiyalarining qo'llanilishi katta ahamiyatga ega. Ekoturizm – bu tabiiy resurslarni saqlashni nazarda tutgan holda, ekologik barqaror turizmni rivojlantirishga qaratilgan faoliyatdir. GAT texnologiyalari yordamida ekoturizmni rivojlantirishda quyidagi imkoniyatlar mavjud:

- ✓ Rekreatsion zonalarining ekologik holatini baholash: GIS tizimlari orqali tabiiy resurslarning hozirgi holati va uning turizmga ta'siri tahlil qilinadi.

- ✓ Turistlar oqimini kuzatish: Sun'iy intellekt yordamida turistlarning harakatlari va ularning ekologik ta'sirini monitoring qilish.

- ✓ Ma'lumotlarni vizualizatsiya qilish: Turistlarga ekologik jihatdan toza hududlarni tanlashda yordam beradigan interaktiv xaritalar va mobil ilovalar yaratish.

Rekreatsion salohiyatni oshirishda GAT texnologiyalarini yanada samarali qo'llash uchun quyidagi takliflar mavjud:

- ✓ GAT infratuzilmasini rivojlantirish: O'zbekistonning barcha turistik hududlarida GAT tizimlarini integratsiyalash va malakali mutaxassislarni tayyorlash zarur.

- ✓ Boshqaruv tizimlarini markazlashtirish: Rekreatsion hududlarning boshqaruvini birlashtirish va davlatning ekologik monitoring tizimlarini takomillashtirish.

- ✓ Ekoturizmni rivojlantirishda GAT tizimlaridan foydalanish: Ekoturizmning yangi yo'nalishlarini yaratishda va ekologik ta'sirni kamaytirishda GAT texnologiyalarining rolini kuchaytirish.

- ✓ Keng miqyosda ma'lumotlar tahlilini amalga oshirish: Sun'iy intellekt yordamida ma'lumotlarni tezkor tahlil qilish, prognozlar tuzish va hududlarni barqaror boshqarish.

Xulosa: GAT texnologiyalari O'zbekistonning rekreatsion salohiyatini oshirishda katta imkoniyatlar yaratadi. Ushbu texnologiyalar yordamida ekologik barqarorlikni ta'minlash, turizmni rivojlantirish va tabiiy resurslardan samarali foydalanish mumkin. GAT texnologiyalarining qo'llanilishi nafaqat rekreatsion salohiyatni yaxshilash, balki ekologik muvozanatni saqlash, resurslarni muhofaza qilish va iqtisodiy manfaatlarni oshirishga xizmat qiladi. Kelajakda ushbu texnologiyalarni yanada kengroq tatbiq etish O'zbekistonning global turizm bozorida raqobatbardoshligini oshiradi.

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FOREIGN POLICY AND DIPLOMACY ISSUES OF THE REPUBLIC OF UZBEKISTAN

Abstract: *In the era of globalization, foreign policy issues and diplomatic relations occupy a crucial place in global politics. In today's multipolar world, the necessity for each country to choose its strategic partners has become a pressing topic. This article analyzes the key aspects of Uzbekistan's foreign policy, its role and significance in international relations as the "pearl" of Central Asia. Additionally, potential future strategic partners and the legal framework shaping the country's foreign policy trajectory are assessed through analytical forecasts.*

Keywords: *foreign policy, international relations, Central Asia, diplomacy issues, global politics, diplomatic relations, soft power.*

Introduction: Since gaining independence, the Republic of Uzbekistan has pursued an active foreign policy, and today, our country is becoming one of the key players in the global community. The role of President Shavkat Miromonovich Mirziyoyev in shaping Uzbekistan's dynamic foreign policy is invaluable. Under his leadership, Uzbekistan has strengthened its ties with neighboring countries through equitable agreements, marking a significant step forward in our diplomatic strategy.

The primary objective of Uzbekistan's foreign policy is to safeguard national independence and sovereignty, reinforce its position in the international arena, foster a secure, stable, and friendly regional environment, and actively promote the country's external economic interests. Moreover, all partner countries must establish relations with Uzbekistan in full compliance with its legal framework. Additionally, our nation holds an important position in international organizations.

Literature Review and Methods: The theoretical and methodological basis for studying the foreign policy issues of the Republic of Uzbekistan and aspects of international relations primarily includes the new Constitution of the Republic of Uzbekistan, foreign literature on foreign policy and diplomacy, as well as laws on Uzbekistan's international treaties. Additionally, historical and contemporary Uzbek literature on international organizations and foreign policy has been utilized as a foundational source for this research.

In examining Uzbekistan's foreign policy and international relations, various scientific methods have been employed, including analysis and synthesis, a comprehensive approach, a systemic-functional approach, content analysis, retrospective analysis, dialectical and binary analysis methods, SWOT analysis, and the synergetic approach.

Results and Discussion: According to statistical data, today the Republic of Uzbekistan has established diplomatic relations with more than 130 countries worldwide. In Tashkent, 44 foreign embassies, 1 consulate general, 8 honorary consuls, 17 representative offices of international organizations, 13 offices of foreign international intergovernmental and governmental organizations, and 1 trade mission with diplomatic status are currently operating [8].

Our country maintains good relations with each of these nations, as evidenced by economic agreements. In particular, recent partnerships with developed countries around the world indicate that a new chapter has been opened for Uzbekistan. Currently, along with the Commonwealth of Independent States (CIS), Uzbekistan's closest partners include Eastern countries such as China, South Korea, and Japan. Additionally, Uzbekistan's political and economic cooperation with Turkey has significantly increased in recent years.

Before delving deeper into the topic, it is important to discuss the legal framework that defines our foreign policy. Chapter IV of the new Constitution of the Republic of Uzbekistan is dedicated to foreign policy, outlining its principles. According to Article 17 of our Constitution, Uzbekistan's foreign policy is based on the principles of sovereign equality of states, non-use of force or threat of force, inviolability of borders, territorial integrity, peaceful resolution of disputes, non-interference in the internal affairs of other states, and other generally recognized principles and norms of international law [1].

Analyzing these principles, it becomes clear that our country maintains absolute sovereignty in its foreign policy. It has the freedom to establish relations with any country and is not subject to pressure from any external power.

As stated in Uzbekistan's Defense Doctrine, the Republic of Uzbekistan does not consider any state as an enemy. It builds relationships with all countries based on national interests and in accordance with generally recognized principles of international law. These include mutual benefit, equality, non-interference in the internal affairs of other countries, peaceful resolution of disputes, and recognition of the inviolability and immutability of established state borders [2].

Since gaining independence, Uzbekistan has never interfered in the internal affairs of any country nor posed a threat to the borders of other nations. Considering these factors, it would not be incorrect to characterize our country as a nation with a friendly and peaceful foreign policy. If we examine the diplomatic relations of our country from a historical perspective, we find that the foreign policy of Amir Timur and his diplomatic engagements with other nations remain an underexplored area in our history. While some research has been published abroad, such as collections of Persian-language documents and letters related to Iran, printed in Bombay in 1928 and Tehran in 1963, much work remains to be done [3].

Amir Timur's great empire maintained extensive relations with various countries, and numerous documents reflecting his foreign policy are preserved in state and private archives across different parts of Europe. His policy decisions in international relations were largely guided by Islamic principles. However, it is also essential to note that Amir Timur maintained an equally just foreign policy with

countries of different religious sects. This is evident from his deep diplomatic ties with Spain, France, and England.

For the Republic of Uzbekistan, during the years of independence, many countries extended a so-called "helping hand." However, most of these turned out not to be purely altruistic. Primarily, Eastern countries such as China, the Russian Federation, Japan, and South Korea have played a crucial role in our foreign policy to this day. Among them, Japan holds a particularly significant position in our pragmatic foreign policy and international relations. The priority areas of investment cooperation between Uzbekistan and Japan include the mining industry, oil and gas sector, education, the digital economy, the agro-industrial complex, the communications sector, and mechanical engineering [5].

In addition to these areas, cultural and humanitarian ties between Uzbekistan and Japan are also steadily expanding. Japan primarily employs a soft power policy in these relations. In implementing this policy, not only state policies but also the participation of non-governmental actors play an important role. When establishing relations with Central Asian countries, Japan initially placed great emphasis on the human factor. By implementing several investment projects, Japan is contributing to Uzbekistan's economic reforms. In particular, bilateral agreements in the field of education serve as an example of how well-structured our foreign policy.

Several key sources are essential for foreign policy and diplomatic affairs, including:

Intelligence matters;

Interethnic relations;

International organizations and agreements;

Soft and hard power.

To implement foreign policy, various tools are available, with one of the most crucial being intelligence. Intelligence refers to the collection of information through espionage activities to assess any situation and make informed decisions. It serves as a fundamental element of foreign policy. Covert operations allow governments to deny their involvement in specific actions. When discussing these activities, leaders may view them as a foreign policy tool to avoid high military expenditures and public criticism [6].

The significance of intelligence for a country lies in its role in protecting the state from external threats and providing accurate information about other nations. In particular, when discussing intelligence, a key figure in Uzbekistan's history comes to mind—Bahrom Ibrohimov (Oyqorli), the legendary and first Uzbek intelligence officer. He completely thwarted Nazi Germany's Third Front plan, laying the foundation for Uzbekistan's intelligence operations in foreign policy.

Another vital aspect of international relations and foreign policy is interethnic relations. Uzbekistan's constructive policies in this field are reflected in President Shavkat Mirziyoyev's decree of November 15, 2019, on "Approving the Concept of State Policy in the Sphere of Interethnic Relations in the Republic of Uzbekistan," as well as in Goal 74 of the 2022-2026 Development Strategy of New Uzbekistan, which aims to "Strengthen the atmosphere of interethnic harmony and interfaith

tolerance in society.” Additionally, Goal 100 of the “Uzbekistan – 2030” strategy is dedicated to "Strengthening the environment of interethnic harmony in society and developing friendly relations with foreign countries." These initiatives enhance Uzbekistan’s prestige in the international community and demonstrate the adoption of best foreign practices in this field.

As President Shavkat Mirziyoyev stated: “We must further strengthen our efforts to preserve and consolidate the friendship and harmony among representatives of various nationalities and ethnic groups living in our country, as well as mutual respect and solidarity” [7].

International organizations and agreements are crucial elements in foreign policy and international relations. In particular, when choosing sides in politics, the role of international organizations and agreements is significant. One of the key references in this regard is the decree of the President of the Republic of Uzbekistan (No. PQ-4756), issued on June 22, 2020, on “Measures to Improve the Implementation of Uzbekistan’s Obligations Arising from International Agreements and Membership in International Organizations.”

Uzbekistan pursues a peaceful foreign policy aimed at developing bilateral and multilateral relations with states and international organizations. Based on the supreme interests of the state and people, their prosperity, and security, Uzbekistan may enter into alliances, join commonwealths, and other interstate structures, as well as withdraw from them if necessary [1].

The broad-scale reforms, openness, and renewal in Uzbekistan’s foreign policy are becoming increasingly evident. Notably, relations with neighboring countries have warmed in recent years. For instance, the delimitation and demarcation of border areas with Kyrgyzstan and Kazakhstan have prevented potential conflicts with neighboring states.

Since assuming office in 2016, President Shavkat Mirziyoyev's reforms have placed Uzbekistan at the heart of historical Turkestan, bringing its name into frequent international discourse. The president's "soft power"-based diplomacy, rooted in a constructive and balanced foreign policy, has eliminated the previously tense atmosphere in the region. The success of Uzbekistan’s foreign policy, developed using elements of soft power, is clearly visible [10].

In November 2017, at an international conference in Samarkand, President Mirziyoyev proposed six initiatives aimed at transforming Central Asia into a stable, economically developed, and highly progressive region in the near future. These include:

1. Business and Diplomacy: The core idea of this initiative is to enhance trade exchange, expand large-scale trade relations with other international organizations, and establish business diplomacy to increase the gross domestic product (GDP).

2. Transport Diplomacy: Practical steps in this direction have already begun. Transportation networks, including railways and highways, are being developed. Once the transportation system is fully established, trade volume will increase, and international relations will strengthen.

3. Preventive Diplomacy: This form of diplomacy focuses on preventing disputes between parties, avoiding the escalation of existing conflicts into crises, and limiting the spread of ongoing conflicts through diplomatic measures [10]. Due to recent reforms in preventive diplomacy among Central Asian countries, threats such as terrorism, religious extremism, transnational crime, and drug trafficking are decreasing year by year.

4. Border Diplomacy: For years, unresolved border issues have been a major concern. Thanks to the initiative of President Mirziyoyev, agreements on the delimitation and demarcation of previously unsettled border areas with neighboring countries have been reached. Border diplomacy plays a critical role in foreign policy.

5. Water Diplomacy: In today's world, landlocked countries without direct access to seas and oceans face significant geopolitical and economic challenges. Central Asian countries, including Uzbekistan, fall into this category. Given this, political and regional analysts have consistently warned about potential serious and pressing water-related issues in their research [10].

Water resources are of critical importance to Central Asia, as transboundary rivers such as the Amu Darya and Syr Darya are shared among the region's states. These nations not only have the right to use these waters but also bear a collective responsibility for their sustainable management. If these water resources are not used efficiently, the consequences could be catastrophic for the region. Moreover, the ongoing crisis of the Aral Sea, which has nearly dried up, remains a pressing global environmental challenge. Therefore, water diplomacy must be strengthened to encourage all stakeholders to seek a collective and effective solution to this issue.

6. Public Diplomacy: This proposal aims to further strengthen relations between countries and peoples, enhance cultural and humanitarian cooperation, and promote friendship and good neighborly relations. It aligns closely with the concept of a "shared space" that fosters regional unity and collaboration.

The soft power approach of New Uzbekistan is primarily based on diplomacy, emphasizing international dialogue and constructive engagement. Domestically, the government prioritizes public opinion, transparency, and openness while also focusing on the restoration of historical sites to enhance cultural and historical appeal. Today, New Uzbekistan's peace-oriented and humanitarian diplomacy stands as a testament to its leader's commitment to soft power policies.

Conclusion and Recommendations: Based on the above discussions, the following key points can be highlighted:

1. Commitment to a Peaceful and Neutral Foreign Policy:

As outlined in the Constitution, Uzbekistan pursues a foreign policy aimed at fostering bilateral and multilateral relations with states and international organizations based on the principles of peace and cooperation.

2. An Independent and Balanced Foreign Policy:

Uzbekistan maintains strategic autonomy, avoiding excessive dependence on any one geopolitical bloc, while strengthening ties with a broad range of international partners.

3. Public Diplomacy and National Identity:

Public diplomacy, patriotism, and national pride play a crucial role in shaping Uzbekistan's foreign policy. A strong balance is maintained between domestic and foreign policy priorities to ensure national unity and progress.

Final Thoughts

Uzbekistan's well-structured and consistent foreign policy is solidifying its position in global politics. The country's active participation in diplomatic affairs demonstrates its growing influence and ability to make meaningful contributions to international relations.

New Uzbekistan's people-centered diplomacy fosters a renewed sense of global outlook, intellectual engagement, and deep respect for both national and universal values among all nations and communities.

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SUN'IY INTELEKT SOHASIDA NEYRON TARMOQLAR

Annotatsiya: Ushbu maqolada sun'iy intellekt sohasida neyron tarmoqlarning o'rni va rivojlanish yo'nalishlari tahlil qilinadi. Neyron tarmoqlarning ishlash prinsiplari, ularning turli sohalaridagi qo'llanilishi va kelajakdagi istiqbollari ko'rib chiqiladi. Ayniqsa, chuqur o'rganish, konvolyutsion va qayta bog'langan neyron tarmoqlarning ahamiyati alohida ta'kidlanadi. Neyron tarmoqlarning imkoniyatlari bilan bir qatorda, ularning mavjud muammolari ham muhokama qilinadi. Ushbu tadqiqot neyron tarmoqlar bo'yicha yangi ilmiy yondashuvlarni o'rganish uchun muhim manba bo'lib xizmat qiladi.

Kalit so'zlar: Sun'iy intellekt, neyron tarmoqlar, chuqur o'rganish, konvolyutsion neyron tarmoqlar, tabiiy tilni qayta ishlash.

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NEURAL NETWORKS IN THE FIELD OF ARTIFICIAL INTELLIGENCE

Annotation: This article analyzes the role and development directions of neural networks in the field of artificial intelligence. The principles of operation of neural networks, their applications in various fields and future prospects are considered. In particular, the importance of deep learning, convolutional and federated neural networks is emphasized. Along with the capabilities of neural networks, their existing problems are also discussed. This study serves as an important source for studying new scientific approaches to neural networks.

Keywords: Artificial intelligence, neural networks, deep learning, convolutional neural networks, natural language processing.

Sun'iy intellekt (SI) zamonaviy texnologiyaaning eng ilg'or yo'nalishlaridan biri bo'lib, uning asosiy tamoyillaridan biri neyron tarmoqlar hisoblanadi. Neyron tarmoqlar inson miyasining ishlash printsiptan ilhomlangan holda yaratilgan bo'lib, ular katta hajmdagi ma'lumotlarni qayta ishlash, mustaqil o'rganish va natijalarni bashorat qilish imkonini beradi. Bugungi kunda neyron tarmoqlar nafaqat ilmiy tadqiqotlarda, balki kundalik hayotimizda ham keng qo'llanilmoqda. Masalan, ovoz va tasvirni tanish, tabiiy tilni qayta ishlash, tibbiyot diagnostikasi, avtonom

transport vositalari hamda iqtisodiy modellashtirish sohalarida neyron tarmoqlar muhim ahamiyat kasb etmoqda.

Neyron tarmoqlar biologik neyronlar faoliyatidan ilhomlangan holda ishlab chiqilgan bo'lib, ular turli qatlamlardan tashkil topgan sun'iy neyronlar to'plami shaklida faoliyat yuritadi. Oddiy neyron tarmoq kirish, yashirin va chiqish qatlamlaridan iborat bo'lib, har bir neyron oldingi qatlamdagi neyronlardan kelayotgan ma'lumotlarni qayta ishlaydi va natijalarni keyingi bosqichga o'tkazadi. Ushbu jarayonda har bir bog'lanishning og'irliklari mavjud bo'lib, tarmoqni o'rgatish jarayonida ushbu og'irliklar optimallashtiriladi. Neyron tarmoqlarni o'rgatish uchun gradient tushish usuli, orqaga tarqalish (backpropagation) algoritmi va boshqa ilg'or texnikalar ishlatiladi.

Neyron tarmoqlarning rivojlanishi chuqur o'rganish (deep learning) kontseptsiyasi bilan chambarchas bog'liq. Chuqur o'rganish an'anaviy sun'iy neyron tarmoqlarga nisbatan ko'proq qatlamlarga ega bo'lib, u yanada murakkab vazifalarni bajarishga imkon beradi. Aynan chuqur o'rganish algoritmlarining rivojlanishi natijasida bugungi kunda yuzni aniqlash, ovozni sintez qilish, avtomatlashtirilgan tarjima qilish va sun'iy intellektga asoslangan suhbatdoshlar yaratish imkoniyati yuzaga keldi. Masalan, Google'ning DeepMind kompaniyasi tomonidan ishlab chiqilgan AlphaGo neyron tarmoqqa asoslangan bo'lib, u inson tomonidan yaratilgan eng kuchli shaxmat va go o'yin tizimlarini mag'lub etishga muvaffaq bo'ldi.

Neyron tarmoqlarning muhim jihatlaridan biri – ularning o'z-o'zidan o'rganish qobiliyatidir. Masalan, konvolyutsion neyron tarmoqlar (Convolutional Neural Networks, CNN) tasvirni tahlil qilishda yuqori natijalar ko'rsatib, ob'ektlarni aniqlash, yuzlarni tanish va tibbiy rasmlarni qayta ishlashda keng qo'llaniladi. Boshqa bir muhim tur – qayta bog'langan neyron tarmoqlar (Recurrent Neural Networks, RNN) bo'lib, ular vaqt ketma-ketligida o'zgaruvchan ma'lumotlarni tahlil qilishda samarali ishlaydi. Aynan RNN modellar tabiiy tilni qayta ishlashda, avtomatik tarjima qilishda va ovozli yordamchilarni yaratishda asosiy rol o'ynaydi.

Neyron tarmoqlarning qo'llanilishi bugungi kunda biznes va sanoat sohalarida ham kengaymoqda. Masalan, tibbiyotda neyron tarmoqlardan foydalanish yordamida kasalliklarni oldindan aniqlash va davolash jarayonlarini optimallashtirish mumkin. Tibbiy tasvirlarni tahlil qilish orqali sun'iy intellekt inson tomonidan e'tibordan chetda qolishi mumkin bo'lgan muhim diagnostik xususiyatlarni aniqlashi mumkin. Shu bilan birga, moliyaviy sohada neyron tarmoqlar bozordagi tendensiyalarni bashorat qilish, kredit xavfini baholash va firibgarlikni aniqlashda ishlatilmoqda.

Transport sohasida neyron tarmoqlar avtonom avtomobillarning harakatlanishini boshqarishda asosiy omillardan biri hisoblanadi. Tesla, Waymo kabi kompaniyalar o'zining avtopilot tizimlarini sun'iy intellekt asosida ishlab chiqmoqda. Ushbu tizimlar yo'l harakatini real vaqt rejimida kuzatib borish, to'siqlarni aniqlash va xavfsiz harakat yo'nalishini tanlash kabi murakkab funksiyalarni bajarishga qodir.

Neyron tarmoqlarning kelajagi ulkan imkoniyatlarni o'z ichiga oladi. Tadqiqotchilar yangi turdagi arxitekturalarni ishlab chiqish, energiya samaradorligini oshirish va ma'lumotlar hajmini yanada optimallashtirish ustida ish olib bormoqda. Ayniqsa, kvant hisoblash texnologiyalarining rivojlanishi neyron tarmoqlarning samaradorligini yanada oshirishi mumkin. Bundan tashqari, neyron tarmoqlarning inson miyasi bilan bevosita interfeys yaratish imkoniyatlari ham o'rganilmoqda. Ilon Maskning Neuralink kompaniyasi bu borada katta yutuqlarga erishgan bo'lib, u inson miyasiga implantatsiya qilingan chip orqali sun'iy intellekt bilan bevosita aloqa o'rnatish g'oyasini ilgari surmoqda.

Biroq, neyron tarmoqlar bilan bog'liq muammolar ham mavjud. Ularning ichki ishlash printsipi ko'pincha "qora quti" tamoyiliga asoslangan bo'lib, bu esa natijalarning qanday hosil bo'lishini tushunishni qiyinlashtiradi. Bundan tashqari, katta ma'lumotlar to'plamlari talab qilinishi va ulkan hisoblash resurslarining zarurati neyron tarmoqlarning keng ko'lamda ishlatilishiga to'sqinlik qilishi mumkin. Neyron tarmoqlar sun'iy intellekt sohasining asosiy yo'nalishlaridan biri bo'lib, u turli sohalarda katta inqilobiy o'zgarishlarni yuzaga keltirmoqda. Ularning rivojlanishi insoniyat uchun yangi imkoniyatlar yaratish bilan birga, kelajakda murakkab muammolarni hal qilishda ham muhim rol o'ynaydi. Shu sababli, neyron tarmoqlarni chuqur tadqiq qilish, ularning samaradorligini oshirish va ular bilan bog'liq ehtimoliy xatarlarni minimallashtirish kelajak texnologiyalari rivojlanishining muhim yo'nalishlaridan biri bo'lib qoladi.

Neyron tarmoqlar sun'iy intellektning eng ilg'or yo'nalishlaridan biri bo'lib, u inson miyasi asosida modellashtirilgan o'rganish va bashorat qilish tizimi hisoblanadi. Ular tibbiyot, transport, iqtisodiyot, tabiiy tilni qayta ishlash kabi turli sohalarda samarali ishlatilmoqda. Chuqur o'rganish algoritmlari va neyron tarmoqlarning rivojlanishi natijasida yuzni tanish, avtomatik tarjima, ovoqli yordamchilar va avtonom transport vositalari singari ilg'or texnologiyalar yaratildi. Ayniqsa, konvolyutsion va qayta bog'langan neyron tarmoqlar tasvir va ketma-ketlikli ma'lumotlarni tahlil qilishda yuqori natijalarga erishmoqda.

Kelajakda neyron tarmoqlarning yanada rivojlanishi ularning samaradorligini oshirish va yangi imkoniyatlar yaratish uchun muhim ahamiyat kasb etadi. Tadqiqotchilar ushbu texnologiyani yanada chuqurroq o'rganib, uni inson miyasi bilan interfeys qilish, energiya samaradorligini oshirish va ma'lumotlarni optimallashtirishga yo'naltirmoqda. Biroq, neyron tarmoqlar bilan bog'liq "qora quti" muammosi va ulkan hisoblash resurslari talabi hali ham dolzarb masala bo'lib qolmoqda. Shunday bo'lsa-da, ushbu texnologiyaning rivojlanishi kelajakdagi innovatsiyalar va avtomatlashtirish jarayonlariga katta ta'sir ko'rsatishi aniq.

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CONGENITAL BRONCHIAL MALFORMATIONS ASSOCIATED WITH CONGENITAL HEART DEFECTS

Abstract: *The association of congenital bronchial anomalies with congenital heart defects is linked to disruptions in embryonic development, which necessitates careful monitoring and early intervention for patients suspected of having these anomalies. Pathophysiological processes can significantly vary depending on the type of anomaly, its severity, and the involvement of other organs. Therefore, it is crucial to conduct thorough examinations of patients with suspected congenital bronchial anomalies to identify any accompanying disorders early and prevent life-threatening risks.*

In conclusion, the study and treatment of congenital bronchial anomalies associated with congenital heart defects are critical tasks in modern medicine, requiring the continuous improvement of diagnostic and therapeutic methods.

Key words: *Congenital bronchial anomalies, congenital heart defects, atrial septal defect, patent ductus arteriosus, hypoplasia of the left ventricle, total pulmonary venous anomaly, pulmonary hypertension, right atrium, hypertrophy of the right ventricle, diagnosis, treatment, comprehensive approach, surgical intervention, pathophysiology, embryonic development, monitoring, early intervention, examinations, accompanying disorders, life-threatening risks.*

Relevance and Necessity of the Study

The relevance and necessity of this topic align with the findings in the scientific literature (G.I. Kolpinskiy, S.N. Burdin, A.S. Shkaraburov, 2016; I.I. Zakirov et al., 2014), which indicate that a significant proportion of children born with congenital bronchial anomalies do not have other congenital defects.

However, research has revealed that in cases where congenital bronchial anomalies are present, congenital heart defects are frequently identified as well. The consistent co-occurrence of congenital heart defects in all observed cases highlights the significance of this topic.

Studies conducted in Uzbekistan confirm that congenital bronchial anomalies are often associated with the following congenital heart defects: atrial septal defect, patent ductus arteriosus, left ventricular hypoplasia, total anomalous pulmonary

venous return, pulmonary artery hypertension, pulmonary veins draining into the right atrium, and hypertrophy of the right atrium and right ventricle. The correlation between specific types of congenital bronchial anomalies and congenital heart defects has been established.

Congenital lung diseases are rare, but their clinical presentation and progression vary significantly, ranging from large masses to minor asymptomatic lesions. Some cases require urgent surgical intervention due to their severity. The consequences of congenital lung anomalies can be critical, making their timely diagnosis and treatment highly relevant.

Understanding lung development and anatomy serves as a fundamental basis for assessing these anomalies, helping to comprehend the pathophysiology of each condition and analyze various diagnostic approaches. Research in this area holds particular scientific and practical significance, contributing to the advancement of diagnostic and therapeutic strategies.

Introduction

The association between congenital bronchial anomalies and congenital heart defects originates from disruptions in embryonic development. These anomalies are not only anatomically interconnected but also share common pathophysiological mechanisms, clinical manifestations, and treatment strategies. The coexistence of bronchial anomalies and congenital heart defects often leads to significant impairments in both the respiratory and circulatory systems, complicating disease progression and management.

Since the formation of the respiratory and cardiovascular systems is closely linked during embryogenesis, even minor developmental disturbances can result in various pathological conditions. Such anomalies frequently coexist with atrial septal defect, patent ductus arteriosus, left ventricular hypoplasia, and total pulmonary venous anomaly. These conditions contribute to pulmonary hypertension and respiratory insufficiency, manifesting as breathing difficulties, hypoxia, and heart failure in affected patients.

Therefore, early detection of congenital bronchial anomalies and their associated heart defects, along with comprehensive diagnostic and targeted therapeutic approaches, is crucial. Studying these pathologies not only enhances diagnostic and treatment capabilities but also plays a vital role in preventing severe complications and improving patient outcomes.

Objective

Quantitative indicators were processed using descriptive and variation statistical methods. The obtained micropreparations were analyzed at 200x magnification, and cellular structures within the field of view were mathematically calculated using the NanoZoomer (REF C13140-21, S/N000198, HAMAMATSU PHOTONICS, 431-3196, JAPAN). Morphometric parameters were measured in micrometers (μm) using the Hamamatsu (QuPath-0.4.0, NanoZoomer Digital Pathology Image) software, and statistical analysis was performed to determine the average values and overall statistical significance.

Materials and Methods

To study the fundamental changes occurring in the lung and bronchial tissues of children who died from pulmonary edema due to congenital bronchial anomalies, immunohistochemical (IHC) analysis was conducted using the markers CD-3, CD-20, CD-34, and VGFR-1. These markers were used to assess pathological changes in lung tissue, bronchial, and bronchiolar walls, examining each marker's specific pathway.

Paraffin-embedded biopsy samples were subjected to immunohistochemical examination following standard protocols using monoclonal antibodies. Sections of 4 µm thickness were prepared from paraffin blocks, mounted on glass slides, and dried at room temperature for 24 hours. Before staining, the sections were incubated at 55°C for 60 minutes in a thermostat in a vertical position. Deparaffinization was performed in two xylene baths (10 minutes in each), followed by rehydration through a decreasing ethanol concentration series (three ethanol baths, 3 minutes each), and then rinsed in distilled water.

For antigen retrieval, the slides were heated in a demasking buffer at 98°C in a water bath for 30–40 minutes. After cooling to room temperature, the samples were washed in Tris-buffered saline (pH=7.5). To block endogenous peroxidase activity, the sections were treated with 3% hydrogen peroxide (H₂O₂) for 15 minutes. To reduce nonspecific binding and limit background staining, the samples were incubated with Protein Block (X0909, DAKO) for 10 minutes. Before the addition of primary antibodies, a special delimiting medium was applied to prevent reagent waste and sample overflow. The slides were then incubated with primary antibodies at room temperature for 60–120 minutes.

For visualization, the Universal LSAB2 KIT (DAKO) detection system was used, with a minimal exposure time of 40 minutes.

Research Results and Discussion

Our study identified that congenital bronchial anomalies were frequently associated with the following congenital heart defects: atrial septal defect, patent ductus arteriosus, left ventricular hypoplasia, total anomalous pulmonary venous return, pulmonary artery hypertension, pulmonary veins draining into the right atrium, and hypertrophy of the right atrium and right ventricle. Specific congenital bronchial anomalies were correlated with particular congenital heart defects.

Congenital lung diseases are rare; however, their presentation and progression vary significantly. These conditions range from large masses to minor, asymptomatic lesions, some of which necessitate urgent surgical intervention. The consequences of congenital lung defects can be severe, often leading to critical complications.

In this study, pulmonary edema was found to be the primary cause of death. In most cases, congenital bronchial anomalies were identified as the primary underlying pathology (see Table 1).

The incidence of specific morphological types of congenital bronchial anomalies is presented in Table 1 and Figure 1.

Incidence of Morphological Types of Congenital Bronchial Anomalies (Based on Clinical Diagnosis)

№	Type of Defect	Number of Cases	Proportion of Total Cases (%)
1	Bronchial agenesis	7	6,0
2	Bronchial aplasia	7	6,0
3	Bronchial hypoplasia	10	8,6
4	Cystic bronchial hypoplasia	12	10,3
5	Tracheobronchomegaly (Mounier-Kuhn syndrome)	12	10,3
6	Tracheobronchomalacia	10	8,6
7	Williams-Campbell syndrome	5	4,4
8	Leschke's bronchiolectatic emphysema	7	6,0
9	Tracheal and bronchial stenosis	7	6,0
10	Tracheoesophageal fistula	10	8,6
11	Bronchial and tracheal diverticula	7	6,0
12	Parabronchial lung cysts	5	4,4
13	Hamartomas	5	4,4
14	Kartagener syndrome	5	4,4
15	Tracheal bronchus	7	6,0
	Total	116	100

Based on the analysis of clinical diagnoses recorded in medical histories, bronchial agenesis was identified in 7 cases, bronchial aplasia in 7 cases, bronchial hypoplasia in 10 cases, cystic bronchial hypoplasia in 12 cases, tracheobronchomegaly (Mounier-Kuhn syndrome) in 12 cases, tracheobronchomalacia in 10 cases, Williams-Campbell syndrome in 5 cases, Leschke's bronchiolectatic emphysema in 7 cases, tracheal and bronchial stenosis in 7 cases, tracheoesophageal fistula in 10 cases, bronchial and tracheal diverticula in 7 cases, parabronchial lung cysts in 5 cases, hamartomas in 5 cases, Kartagener syndrome in 5 cases, and tracheal bronchus in 7 cases. This data confirms the

varying prevalence of different congenital bronchial anomalies in the studied population

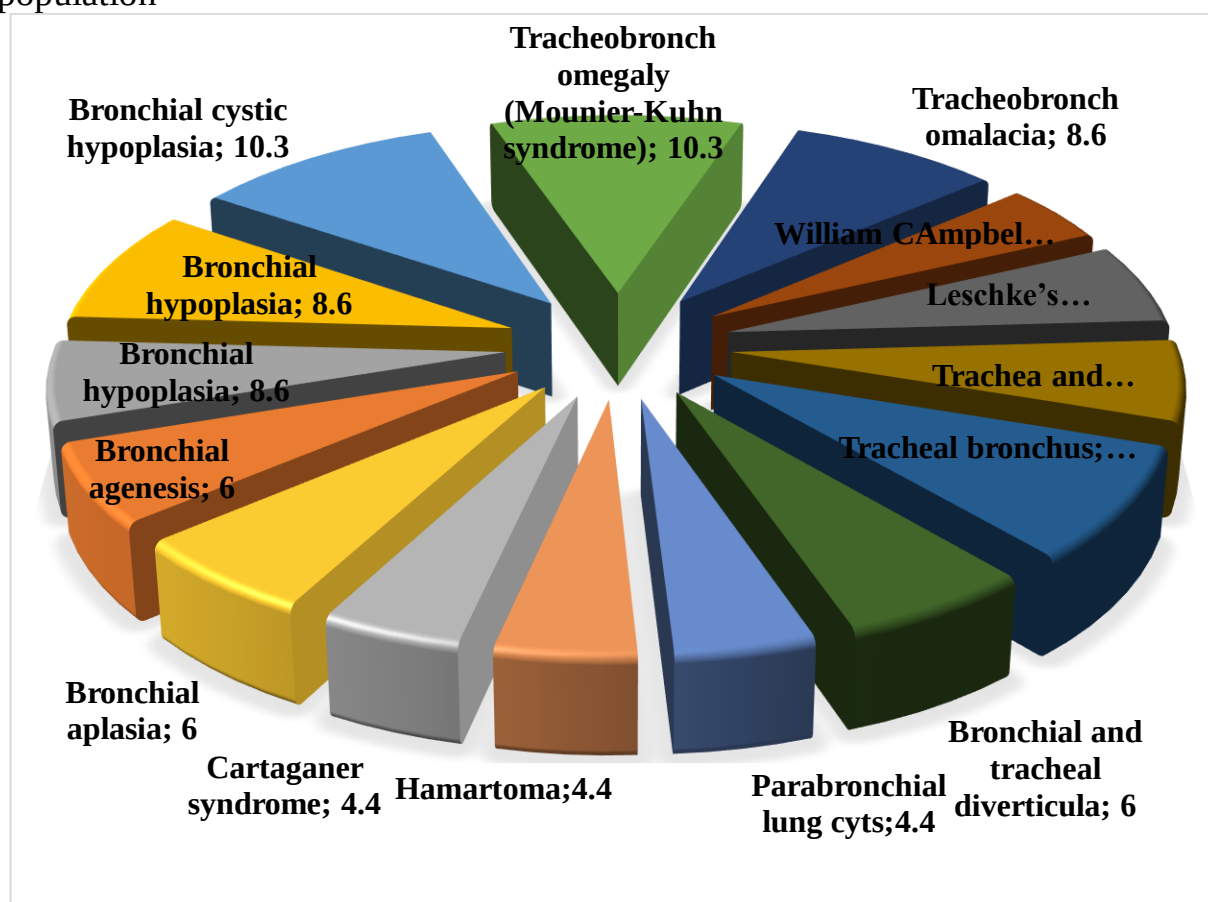


Figure 1. Distribution of Morphological Types of Congenital Bronchial Anomalies (Based on Clinical Diagnosis)

In conclusion, based on the analysis results, Group 1—newborns aged 0-7 days—was the most affected, with 75 cases (64.6%). The second most affected group was Group 2, consisting of newborns aged 8-19 days, with 32 cases (27.6%). Groups 4 and 5, representing older children, had the lowest occurrence, with only 2 cases each (1.7%). In Group 3—newborns aged 20-29 days—there were 5 cases (4.4%).

The aim of this study was to determine the prevalence of congenital bronchial anomalies in children and to identify the early morphological changes leading to mortality. The primary cause of death in this study was pulmonary edema. In most cases, congenital bronchial anomalies were identified as the underlying disease.

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RESEARCH ON THE LUBRICITY PROPERTIES OF AUTOMOTIVE GASOLINE AND GASOLINE OXYGENATE FUEL BLENDS

Abstract: *This article presents information on the octane number of alcohols in a mixture with gasoline, the effect of isopropanol content on the lubricity of gasoline, the formation of grooves formed as a result of friction in the device for determining the lubricity of gasoline samples No. 1, No. 2, No. 3 and domestic AI-80 and AI-91 gasolines using a DN-300M digital binocular microscope, and the studies conducted to determine the lubricity of gasolines, including the fact that the oxygenates selected by us do not deteriorate the lubricity of gasolines.*

Key words: *gasoline, isopropanol, lubricity, oxygenate, octane, automotive, methanol, ethanol.*

Introduction

Today, the role of oxygenated additives in the production of automotive gasolines that meet modern environmental requirements is of great importance. By using oxygenated additives, the octane number of gasoline increases, and their resource also increases due to renewable raw materials. Gasolines containing oxygenates exhibit improved washability and flammability properties, while the formation of carbon monoxide and hydrocarbons as a result of the combustion of these gasolines is significantly reduced.

The main part

The recommended concentration of oxygenates in gasoline is 3-15%. In this case, the oxygen content in gasoline should not exceed 2.7%. It has been proven that oxygenates in this amount do not have a negative effect on engine power, although the heat release rate is significantly lower than that of petroleum-based gasolines [1; 270-b, 2; 154-b.].

Oxygenate performance index. Oxygenates exhibit the same octane number, saturated vapor pressure, and heat release properties as gasoline components in a mixture. However, oxygenates are hygroscopic, meaning they can absorb moisture from the air. This property can cause gasolines containing oxygenates to become cloudy at low temperatures [3 ; 20-43 p.].

The octane number of alcohols in a mixed state decreases with the elongation of the hydrocarbon radical (Figure 1).

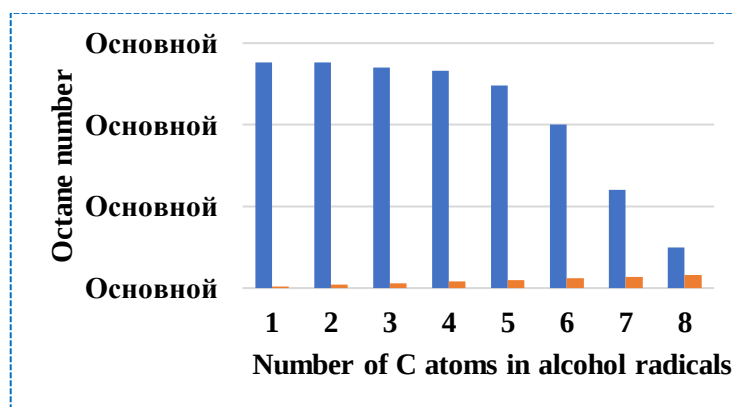


Figure 1. Octane number of alcohols in mixtures with gasoline: 1 – methanol, 2 – ethanol, 3 – isopropyl alcohol, 4 – sec-butyl alcohol, 5 – amyl alcohol, 6 – hexyl alcohol, 7 – heptyl alcohol, 8 – nonyl alcohol

methanol is a high-octane alcohol, it is not widely used as an oxygenate for gasolines. The main reason for this is the toxicity of methanol, poor solubility in hydrocarbons, and high hygroscopicity. Like all alcohols, methanol has a negative effect on the densification of materials and is actively corrosive to non-ferrous metals. This leads to a decrease in engine life and deterioration of fuel quality. It is advisable to add up to 5% methanol to gasoline, and in these proportions the gasoline-methanol mixture (BMA) will maintain a homogeneous state. When using BMA, it is necessary to solve the problem of its high sensitivity to moisture. BMA can dissolve no more than 0.1% water, at a higher water concentration, the mixture separates into two layers. When the temperature decreases, BMA first becomes cloudy and then separates into two layers. Therefore, in practical applications, there is a temperature range for the use of BMA [4 ; 26-29 p. 5 ; p. 568.].

gasoline -methanol mixtures from separating into two layers, higher alcohols are added as stabilizers. For example, tertiary butyl alcohol (a mixture of tertiary butyl alcohol and methanol is called oxynol) or isopropyl alcohol can be added to increase the stability of BMA .

Ethanol is added to gasoline in larger quantities as an oxygenate compared to methanol. This is because ethanol is soluble in hydrocarbons and has a lower hygroscopicity than methanol. Today, gasohol gasoline (gasoline containing 10-20% ethanol) is widely used in North and South America. This can be explained by the large amount of ethyl alcohol produced from sugarcane in these countries. In European countries, commercial automobile gasoline of the E-85 brand (gasoline containing up to 85% ethanol) is used [6; 552-b, 7; 19-34 p.].

Results: The aim of our research is to investigate the effect of isopropanol content on the lubricity of gasoline. Therefore, we took gasoline samples based on BK, IP and MTBE and tested them on the effect of gasoline on lubricity in the ASTM D6079 standard apparatus. The process conditions are given in Table 1.

Table 1

Test conditions	
Indicator	Conditions
Fuel sample volume, cm ³	2±0.20
Friction range of movement, mm	1.00±0.02
Frequency, Hz	50±1
Sample temperature, °C	25±2
Relative humidity, %	>30
Combined load, g	200±1
Test time, minutes	75.0±0.1
Bath surface, cm ³	6±1

As commercial gasoline, samples of domestic automotive gasolines AI-80 and AI-91 and gasoline obtained with BK, IP and ETBE of AI-80 automotive gasoline were taken. Oxygenates and gasoline samples BK-5 (№1), IP-5 (№2), ETBE-5 (№3) (where the abbreviation of the oxygenate in the gasoline and its amount are indicated by 5%) were prepared. Lubricity tests were carried out on a piston- frequency device (HFFR). The main reason for choosing the ASTM D6079 standard is that the lubricity is determined in this device at a temperature of 25 °C. Because at temperatures above this, automotive gasolines can evaporate or degrade.

As commercial gasoline, samples of domestic automotive gasolines AI-80 and AI-91 and gasoline obtained with BK, IP and ETBE of AI-80 automotive gasoline were taken and these samples were tested in a laboratory device for determining the lubricity for 5, 10 and 15 minutes. The images obtained using a DN-300M digital binocular microscope are presented in Figures 1 and 2, which show that the lubricity of domestic AI-80 gasoline and AI-91 gasoline without oxygenates is significantly lower. In samples with the addition of BK, IP and ETBE to AI-80 gasoline, we can see that the lubricity of AI-80 gasoline is relatively increased.

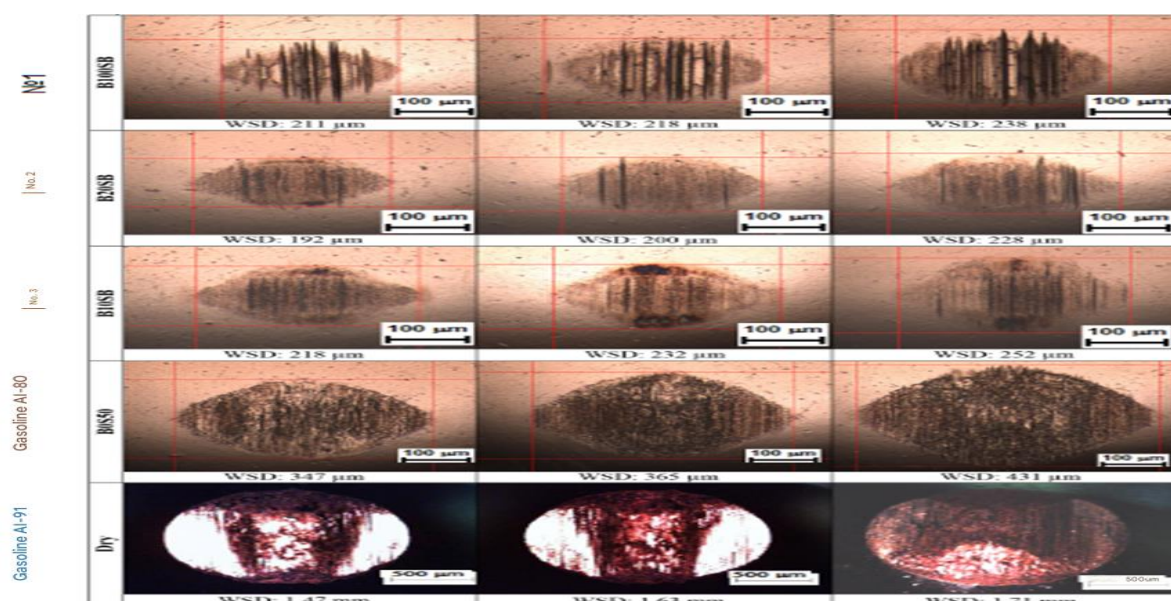


Figure 2. Photograph of grooves formed as a result of friction in a device for determining the lubricity of gasoline samples No. 1, No. 2, No. 3 and domestic AI-80 and AI-91 gasolines using a DN-300M digital binocular microscope.

In particular, this positive effect is more pronounced in the gasoline sample with BK, which can be assumed to be a positive effect of ethanol and oxygen in butylcarbitol on lubrication. The gasoline sample with IP shows a better performance than the sample with BK. We can even see that the lubricating ability of gasoline has changed positively in the gasoline sample with ETBE. The main reason why we used the gasoline samples we obtained at an average concentration of 5% is the maximum concentration of these additives.

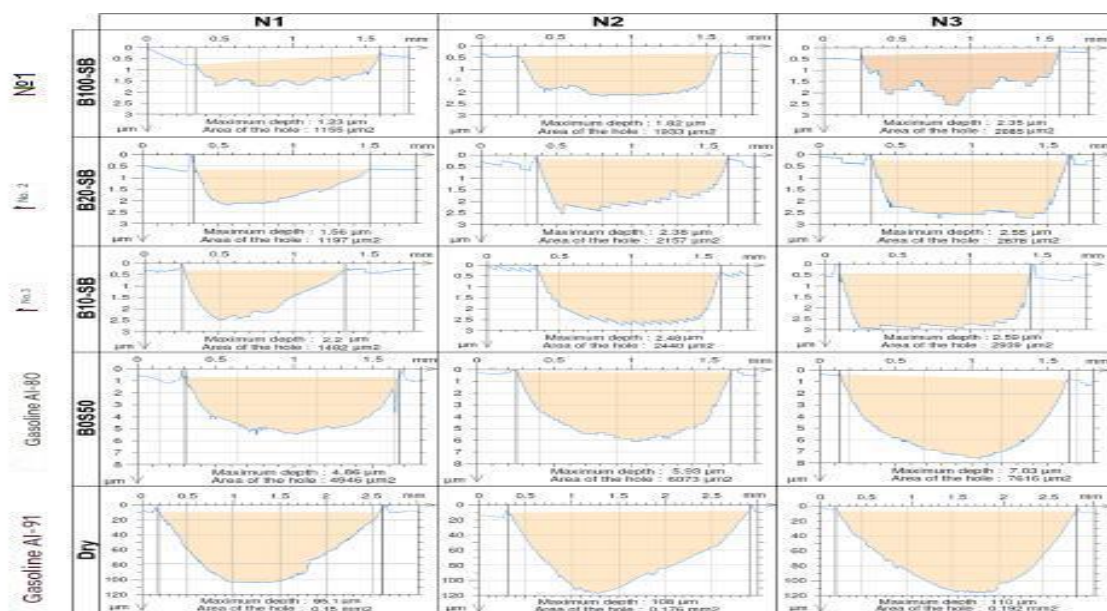


Fig. 2. The depth of the grooves formed as a result of friction in the device for determining the lubricity of gasoline samples No. 1, No. 2, No. 3 and domestic AI-80 and AI-91 gasolines using a DN-300M digital binocular microscope

automotive gasolines and gasoline samples taken for testing are presented in Table 2.

The main goal of the research conducted by us is to determine the negative effects of these additives in obtaining a composition of additives with a synergistic effect for automotive gasolines. If they change some of the properties of automotive gasolines in a negative way, a new problem may arise, such as preventing these unpleasant situations.

Table 2

The results of the ditches formed as a result of the erosion	
Fuel and fuel-oxygen mixture	Edirilish ditch, mkm
AI-80 gasoline	580
AI-91 gasoline	590
Gasoline+oxygen sample #1	412
Gasoline+oxygen sample #2	428
Gasoline+oxygen sample #3	501

Studies conducted to determine the lubricating ability of automotive gasolines showed that the oxygenates selected by us did not worsen the lubricating ability of gasolines, but rather served to improve their ability.

Conclusion: The lubricity properties of gasoline and gasoline + oxygenate fuel mixtures were studied. When determining the lubricity of gasoline AI-80 and AI-91, the wear rate of AI-80 gasoline was 580 μm , and that of AI-91 gasoline was 590 μm . In a gasoline sample with the addition of AI-80 and oxygenate composition, this indicator was found to decrease to 412 μm .

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G'OZG'ON SANOAT KORXONALARINING SHAKLLANISHI VA RIVOJLANISHI

Annotatsiya: Maqolada G'ozg'on shahri sanoat korxonalarining faoliyati, ularning tashkil etilishiga ta'sir etuvchi omillari o'rganilgan. Shu bilan birga Marmarobod klasterining shakllanishi va rivojlanishi hamda uning faoliyati bayon etilgan. Xususan marmar resursi bilan bog'liq sanoat rivojlangan.

Kalit so'zlar. marmar, Marmarobod, G'ozg'onmarmar, sanoat, kon, shahar.

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FORMATION AND DEVELOPMENT OF GAZGAN INDUSTRIAL ENTERPRISES

Abstract: The article studies the activities of industrial enterprises in the city of Guzman, the factors influencing their establishment. At the same time, the formation and development of the Marmarabad cluster and its activities are described. In particular, the industry related to marble resources has developed.

Keywords: marble, Marmarabad, Guzmanmarmar, industry, mine, city.

Respublikada sanoat korxonalari va ularning ishlab chiqarish samaradorligi bo'yicha Navoiy viloyati eng oldingi o'rinlarni egallaydi. So'nggi yillarda viloyatda sanoat korxonalari bilan birga eksport hajmi ham oshib bormoqda. Viloyatda sanoat mahsulotlarini ishlab chiqarishning yillik hajmi so'nggi yillarda oshib, 102 069,1 mlrd. so'mga yetdi. Shundan 12 429,3 mlrd tog'-kon sanoati va ochiq konlarni ishlash turiga to'g'ri keladi. Viloyatdagi tumanlar va shaharlar bo'yicha sanoat hajmi o'zgarib bormoqda. Eng yosh shahar bo'lgan G'ozg'on shahrida ham bu ulush oxirgi yillarda oshib bormoqda. Shahar iqtisodiyoti sanoat, qurilish

materiallari sohalariga ixtisoslashgan. Aholi jon boshiga sanoat mahsulotlari 13 684,6 ming so'mni tashkil etadi.

G'ozg'on shahrida 40 ga yaqin qurilish materiallari ishlab chiqarish korxonalari faoliyat yuritmoqda. Hozirgi kunda ular har xil turdagi marmar va granit plitalari ishlab chiqarmoqda. Viloyat jami sanoat ishlab chiqarishining 0,1 foizi ushbu shaharga to'g'ri keladi. Mazkur yo'nalishda hududning katta salohiyatga ega ekanligini inobatga olsak, yangi korxonalar barpo etish, ishlab chiqarish hajmlarini oshirish orqali ish o'rinlari yaratish muhim va dolzarb vazifa sanaladi.

Mazkur shahar sanoat mahsuloti ishlab chiqarishning o'sish ko'ratkichi 109,8 foizga oshgan. Bu yerdagi konlardan qazib olingan 35 xil rangni o'zida aks ettirgan marmar mahsulotlari dunyoning ko'pgina davlatlarida muhtasham binolarga zeb berib turibdi. Eron, Turkiya, Qozog'iston, Afg'oniston, Tojikiston kabi davlatlarning tarixiy obidalarini restavratsiya qilishda, Moskva va Sankt-Peterburg shaharlaridagi metro bekatlari, vokzallar, Ostankino teleminorasi, Kiyevdagi "Ukraina" saroyi, Bakudagi 26-Baku komissari yodgorligi, Novosibirskdagi sirk binosi, Bishkekda drama teatri, Moskvadagi Tretyakov galereyasi qurilishida G'ozg'on marmari ishlatilgan.

Mamlakatimizdagi muzeylar, Alisher Navoiy nomidagi Davlat akademik katta teatri, O'zbekiston mehmonxonasi, ko'plab mehmonxonalar, saroy, muzey va boshqa obyektlarning bezak ishlarida G'ozg'on marmaridan foydalanilgan. Hozirgi kunda shaharda xorijiy korxonalar ham faoliyat olib boradi. Bular asosan 9 ta xorijiy korxonalar bo'lib, ulardan 4 tasi Xitoy, 2 tasi Hindiston, 1 tasi Rossiya, 1 tasi Afg'oniston va 1 ta Avstriya davlatlari bilan hamkorlikda faoliyat olib boradi.

Marmar konida qatlam bo'yicha tik va diagonal darzliklar sistemasi mavjud. Uni arralash tabiiy qatlamlar bo'ylab amalga oshiriladi. Chiqindisidan marmar maydasi, quyma tosh va qum ishlab chiqariladi. G'ozg'on marmari nisbatan mo'rt, yaxshi silliqlanadi, oynasimon aks beradi, yuqori darajada dekorativ bo'lganligi tufayli juda ko'p sohalarda foydalanilmoqda. Bu turdagi toshlar uchun esa hozirgi kunda talab juda katta.

2019-yil Respublika Prezidentining tashrifi natijasida G'ozg'on shahar uchun ko'plab imkoniyatlarni yaratdi. Prezidentimiz tashabbuslari bilan barcha kichik korxonalarni bir joyda birlashtirilib, shaharda sanoat klasterini tashkil etish yo'lga qo'yila boshlandi. Chunki shaharda sanoat klasterlari tuzilsa resursni qazib olishdan to tayyor mahsulot holatiga keltirishgacha bo'lgan jarayonlarni bitta yagona majmuaga birlashtirgan bo'lamiz. Bu esa nisbatan tannarxning arzonroq tushishi va ishlab chiqarish samaradorligini oshirishga olib keladi.

Bugungi kunda G'ozg'on shahrida ko'plab korxonalar faoliyat yuritmoqda. Eng yirik mahsulot hajmiga ega bo'lgan "Marmarobod" klasteri va "G'ozg'onmarmar" AJ korxonalardan iborat.

Klasterlash - bu bir-birining raqobatbardoshligini oshirishga o'zaro yordam beradigan bir-biriga yaqin bo'lgan firmalar va tarmoqlarning birlashmalarini shakllantirish jarayoni. Mamlakatning butun iqtisodiyoti uchun klasterlar ichki bozor uchun o'sish nuqtalari va xalqaro iqtisodiyotning asosi rolini o'ynaydi. O'zbekiston xalq xo'jaligini tashkil etishning klaster shakli ko'zlangan maqsadlarni

amalga oshirish uchun tarmoqlar o'rtasidagi muhim aloqalarni aniqlash imkonini beradi. Bu milliy iqtisodiyotning tarkibiy masalasiga mutlaqo yangi yondashuv bo'lib, u raqobatbardosh mahsulotni yaratishni (yangi g'oyalarni yaratishga qodir kadrlarni tayyorlashdan, yuqori sifatli butlovchi qismlar va xom ashyolarni tayyorlash yoki sotib olishdan, yakuniy mahsulotni ishlab chiqarish va sotishdan) tizimli ravishda boshqarish imkonini beradi. Jahon davlatlarining o'z iqtisodiyotini rivojlantirishdagi asosiy maqsadi o'z milliy iqtisodiyotining raqobatbardoshligini hamda jahon bozoridagi ulushini oshirishdan iborat.

“Marmarobod” klasteri G'ozg'on shahrida Prezident tashabbusi bilan 2020-yilda tashkil etilgan bo'lib, u marmar sohasida yetakchi korxona hisoblanib, tabiiy marmar va granit toshlarni qazib olish va qayta ishlashni yo'lga qo'ygan Markaziy Osiyodagi eng yirik klaster sanaladi. Ushbu klaster marmar qazib olish, qayta ishlash va eksport qilish bilan shug'ullanadi. Korxonada zamonaviy texnologiyalar qo'llanilib, sifatli mahsulotlar ishlab chiqariladi. Klasterga xorijiy investorlar jalb qilinib, keng ko'lamli loyihalar amalga oshirilmoqda. Klaster hududida 11 ming kv.m zamonaviy ishlab chiqarish binosi qurilgan. Xitoy va Italiyadan keltirilgan ilg'or uskunalar yillik 70 ming kub tosh qazib olish va 800 ming kv.m toshni qayta ishlash imkonini beradi. Ushbu klaster hududda yirik sanoat va iqtisodiy imkoniyatlarni yaratishga xizmat qiladi. Klaster doirasida yuqori malakali mutaxassislar ishlaydi va samaradorlikni oshirish uchun yangi ishlab chiqarish uskunalari kiritilmoqda. Klaster hududida 400 dan ortiq yangi ish o'rinlari yaratilgan bo'lib, bu ko'rsatkich kelajakda 800 taga yetkaziladi. Mahalliy tadbirkorlar uchun maxsus ishlab chiqarish binolari, bank xizmatlari markazi, o'quv markazi va servis do'konlari tashkil etilgan. Klaster mahsulotlari ichki bozorda talabgir bo'lib, Tojikiston, Qozog'iston, Rossiya, Ozarbayjon kabi davlatlarga eksport qilinmoqda. Toshkentdagi “O'rikzor” bozori hududida mahsulotlarni ko'rgazma zali ochilgan. Klasterning faoliyati G'ozg'onning iqtisodiy rivojlanishini jadallashtirib, mahalliy aholi uchun bandlik imkoniyatlarini oshirgan. Shahar infratuzilmasi, jumladan, yo'llar va xizmat ko'rsatish ob'ektlari rivojlantirilmoqda.



1-rasm. Marmarobod klasteri faoliyatidan lavhalar

Keyingi korxona esa “G'ozg'onmarmar” AJ bo'lib, bu korxona 1969-yilda tashkil topgan. O'zbekistonning eng yirik marmar konlaridan biri - G'ozg'on marmar koni asosida faoliyat yuritadi. “G'ozg'onmarmar” AJ marmardan qurilishda ishlatiladigan qoplama-pardozlash plitalari ishlab chiqaradigan yirik korxona sanaladi. Korxona yuqori sifatli marmar mahsulotlarini ishlab chiqaradi va ularni mahalliy hamda xalqaro bozorlarga yetkazib beradi. G'ozg'onmarmar AJ

O'zbekistondagi eng yirik marmar ishlab chiqaruvchilardan biri hisoblanadi. Uning mahsulotlari qurilish va bezak ishlari uchun keng qo'llaniladi. Kompaniya zamonaviy texnologiyalar va uskunalardan foydalanib, yuqori sifatli marmar plitalar, plitkalar va boshqa mahsulotlarni ishlab chiqaradi. Kompaniya sifat nazorati tizimi va mijozlarga xizmat ko'rsatish darajasi bilan ajralib turadi. U xalqaro sifat standartlariga muvofiq ishlab chiqarish jarayonlarini tashkil etgan. Shuningdek, ekologik mas'uliyatni hisobga olgan holda, atrof-muhitni muhofaza qilishga alohida e'tibor qaratadi.

“G'ozg'onmarmar” AJ hozirgi kunda «O'zqurilishmateriallari» aksiyadorlik kompaniyasi tarkibiga kirgan.

G'ozg'onmarmar korxonasining mahsulotlari nafaqat O'zbekiston bozorida, balki, xalqaro bozorlarda ham talabga ega. Kompaniya eksport faoliyatini rivojlantirishga katta e'tibor qaratib, o'z mahsulotlarini turli mamlakatlarga yetkazib beradi.



2-rasm. G'ozg'onmarmar AJ faoliyatidan lavhalar

G'ozg'on marmari juda xilma-xil rangli ko'rinishga ega. Marmar mahsulotlari Toshkent, Moskva, Sankt-Peterburg kabi yirik shaharlar me'moriy inshootlarida, shuningdek, Rossiya, Afg'oniston va Qozog'istonga eksportda qo'llaniladi. Shuningdek, asosiy harakat zamonaviy texnologiyalar yordamida mahsulot sifatini oshirish va eksport hajmini kengaytirishga qaratilgan. Korxona faoliyati davomida hududda yangi ish o'rinlari yaratilmoqda. Bu esa shahar aholisini ish bilan ta'minlanish darajasini oshirmoqda. Kompaniya sifat nazorati tizimi va mijozlarga xizmat ko'rsatish darajasi bilan ajralib turadi. U xalqaro sifat standartlariga muvofiq ishlab chiqarish jarayonlarini tashkil etgan. Shuningdek, ekologik mas'uliyatni hisobga olgan holda, atrof-muhitni muhofaza qilishga alohida e'tibor qaratadi.

Xulosa qilib aytilganda, G'ozg'on shahrida tabiiy resursning mavjudligi, sanoat klasterining tarkib topishiga xizmat qiladi. Bu esa shahar sanoatining rivojlanishi va kengayishiga olib keladi. Shuningdek, sanoat klasterining rivojlanishi aholi turmush darajasining oshishiga hamda ijtimoiy sohalarning kengayishiga sabab bo'ladi.

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ZAMONAVIY KARTOSHKKA KOVLASH MASHINASINI YARATISH TEKNOLOGIYALARINING NAZARIY ASOSLARI

Annotatsiya. Ushbu maqolada zamonaviy kartoshka kovlash mashinasini yaratish texnologiyalarining nazariy asoslari yoritilgan. Kartoshka yig'im-terim jarayonida duch kelinadigan asosiy muammolar tahlil qilinib, ularni bartaraf etish uchun takomillashtirilgan mexanizmlar taklif etilgan. Shuningdek, mashinaning asosiy ishchi qismlari – lemex, elovchi mexanizm, rotorli ajratkich va harakat uzatish tizimining samaradorligini oshirishga qaratilgan yechimlar muhokama qilingan. Energiya tejamkorligi, avtomatlashtirish va mehnat unumdorligini oshirishga yo'naltirilgan innovatsion texnologiyalar qo'llanilishi ta'kidlangan. O'zbekiston sharoitiga mos kartoshka kovlash mashinalarini ishlab chiqish qishloq xo'jaligi texnikasini rivojlantirishga va hosildorlikni oshirishga xizmat qiladi.

Kalit so'zlar: elovchi mexanizm, rotorli ajratkich, harakat uzatish mexanizmi, vibratsion ajratish tizimi, energiya tejamkorlik, samaradorlik, mexanizatsiyalash, avtomatlashtirish

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THEORETICAL FOUNDATIONS OF MODERN TECHNOLOGIES FOR DEVELOPING POTATO HARVESTING MACHINES

Annotation: This article discusses the theoretical foundations of technologies for developing modern potato harvesting machines. The main challenges in the potato harvesting process are analyzed, and improved mechanisms are proposed to address these issues. Additionally, solutions aimed at enhancing the efficiency of key working components—such as the digging blade, conveyor mechanism, rotary separator, and transmission system—are examined. Special attention is given to energy efficiency, automation, and labor productivity improvement through innovative technologies. The development of potato harvesting machines adapted to Uzbekistan's conditions will contribute to the advancement of agricultural machinery and increased crop yields.

Keywords: conveyor mechanism, rotary separator, transmission system, vibrational separation system, energy efficiency, productivity, mechanization, automation.

Kartoshka O'zbekistonning qishloq xo'jaligidagi asosiy ekinlaridan biri bo'lib, uning yetishtirilishi va yig'ib olinishi qishloq xo'jaligi texnikasi rivojlanishiga bog'liq. Hozirgi kunda kartoshka hosilini yig'ishda mexanizatsiya yetarli darajada yo'lga qo'yilmagan. Ko'pgina fermerlar xorijiy texnikalardan foydalanishga majbur bo'lmoqda, ammo ular mahalliy sharoitga mos kelmagani sababli samaradorlik pasaymoqda. Shu sababli, O'zbekiston iqlim sharoitiga mos kartoshka kovlash mashinalarining takomillashtirilishi dolzarb masalalardan biri hisoblanadi.

Kartoshka yig'ib olish jarayonida quyidagi asosiy muammolar kuzatiladi:

- Tuproqning fizik-mexanik xususiyatlari va qattiqligi hosilni yig'ish samaradorligiga ta'sir qiladi.
- Mavjud kartoshka kovlash mashinalari kichik yer maydonlari uchun mos kelmaydi.
- Kartoshkani tuproq va toshlardan ajratish samaradorligini oshirish zarurati mavjud.
- Yig'im-terim paytida hosilning shikastlanishini kamaytirish talab etiladi.

Takomillashtirilgan kartoshka kovlash mashinasining tuzilishi. Tadqiqot natijalariga ko'ra, yangi kartoshka kovlash mashinasining takomillashtirilgan varianti ishlab chiqildi. Ushbu mashina quyidagi asosiy qismlardan iborat:

- ✓ **Lemex** – kartoshkani tuproqdan ajratib oladi.
- ✓ **Kaskadli elovchi mexanizm** – kartoshkani tuproq va kesaklardan ajratish uchun xizmat qiladi.
- ✓ **Rotorli ajratkich** – tuproq va toshlarni kartoshkadan yanada yaxshiroq ajratish imkonini beradi.
- ✓ **G'ildirak va harakat uzatish mexanizmi** – mashinaning barqaror ishlashini ta'minlaydi.

Takomillashtirish natijalari:

• **Samaradorlik oshishi:** Takomillashtirilgan ajratish tizimi tufayli kartoshkani tuproq va boshqa aralashmalardan ajratish jarayoni sezilarli darajada yaxshilandi.

• **Mehnat unumdorligi:** Mashina yordamida kartoshka yig'im-terimi tezlashib, qo'l mehnati hajmi kamaydi.

• **Yonilg'i sarfining kamayishi:** Yangi texnologiyalar energiya tejovchi xususiyatga ega bo'lib, bu esa yoqilg'i sarfini 17,6% ga kamaytirish imkonini beradi.

• **Hosilni shikastlanish darajasining pasayishi:** Mashinaning yumshoq ajratish tizimi tufayli kartoshkaning sifati saqlanadi va shikastlanish darajasi minimal darajaga tushadi.

Kartoshka kovlash mashinalari quyidagi printsiplarga asoslanadi:

• **Tuproqni yumshatish va ajratish** – Lemex tuproq qatlamini kesib, kartoshka tuganaklarini ko‘taradi.

• **Ajratish va saralash** – Tuproq va kartoshkani ajratish uchun elovchi mexanizmlar qo‘llanadi.

• **Tosh va kesaklarni ajratish** – Maxsus rotorli ajratkichlar yordamida kartoshka tosh va yirik kesaklardan tozalanadi.

• **Transport va yig‘ish** – Tozalangan kartoshka maxsus transport tizimi orqali ombor yoki qoplarga jo‘natiladi.

Harakat uzatish mexanizmlarining nazariy asoslari quyidagicha.

Kartoshka kovlash mashinasining mexanik tizimi harakat uzatish mexanizmlarining optimal parametrlari asosida ishlab chiqiladi. Ushbu parametrlarni aniqlash uchun:

• **Differensial tenglamalar** yordamida mashinaning harakat parametrlari hisoblanadi.

• **Energiyani tejash tamoyillari** bo‘yicha uzatma mexanizmlari optimallashtiriladi.

• **Dvigatel quvvati va yuklama balansini hisoblash** orqali mashinaning samarali ishlashi ta‘minlanadi.

Zamonaviy kartoshka kovlash mashinalari uchun quyidagi texnologik takomillashtirishlar amalga oshirilmoqda:

• **Vibratsion ajratish tizimlari** – Tuproqni yaxshiroq tozalash uchun vibratsion elak va chiviqli konveyerlar qo‘llaniladi.

• **Tebranma panjarali mexanizmlar** – Kartoshkani minimal darajada shikastlab, samarali saralash imkonini beradi.

• **Avtomatlashtirish va sensor tizimlari** – Mashina ish jarayonini real vaqt rejimida nazorat qilish va hosilni optimal tarzda ajratish uchun ishlatiladi.

Energiya tejamkorlik va samaradorlik

Kartoshka yig‘ishtirish texnologiyasini takomillashtirishda energiya samaradorligi muhim ahamiyat kasb etadi. Buning uchun:

• **Gibrid va elektr uzatma tizimlari** qo‘llaniladi.

• **Engil materiallardan yasalgan konstruksiyalar** orqali mashinaning yoqilg‘i sarfi kamaytiriladi.

• **To‘liq mexanizatsiyalashgan tizimlar** ishlab chiqilib, ish unumdorligi oshiriladi.

Xulosa qilib aytganda zamonaviy kartoshka kovlash mashinalari texnologik va mexanik jihatdan takomillashtirilgan bo‘lib, tuproq xususiyatlari va hosilni shikastlamasdan yig‘ish imkoniyatlarini yaxshilaydi. Texnologik innovatsiyalar energiya samaradorligini oshirish, hosilni yo‘qotishlarsiz yig‘ib olish va avtomatlashtirish jarayonlarini rivojlantirishga qaratilgan. O‘zbekiston sharoitiga mos yangi avlod kartoshka kovlash mashinalari fermerlarning mehnatini yengillashtirib, hosildorlikni oshirishga xizmat qiladi.

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QASHQADARYO TOG‘LARIDAGI TABIATNING HAYRATOMUZ MO‘JIZALARI

Annotatsiya. Maqolada Qashqadaryo tog‘laridagi tarqalgan karstlarga doir ma’lumotlarni qisqacha tahlil qilingan bo‘lib. Jumladan, karstlar rivojlanishining o‘z tartib-qonunlari va bu qonunlar bilan inson o‘z faoliyatida hisoblashishi shartligi, turli inshootlar qurilish amaliyotida duch kelinadigan muammolar, ularni sabab va yechimlari haqida mulohazalar qilingan va tegishli xulosalar keltirilgan.

Kalit so‘zlar: karst, tog‘, hudud, tabiat, naqqosh, me’mor, rassom, mo‘jizakor, plato, g‘or, turizm, landshaft, mineral.

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AMAZING NATURE'S MIRACLES IN THE KASHKADARYA MOUNTAINS

Abstract. The article briefly analyzes the information about the widespread karsts in the Kashkadarya mountains. In particular, the laws of karst development and the necessity of human calculation with these laws in their activities, the problems encountered in the construction practice of various structures, their causes and solutions, and relevant conclusions are presented.

Keywords: karst, mountain, territory, nature, painter, architect, artist, miracle worker, plateau, cave, tourism, landscape, mineral.

KIRISH Chindan ham tabiatda kishilarni hayratga soladigan betimsol hodisa va jarayonlar talaygina. Bular tabiat mo‘jizasi, tabiatning ibрати, tabiatning noyoblighi, tabiat ajoyibotlari va shunga o‘xshash sifatlar bilan ifodalansa ham, ushbu tabiiy jarayonlarning tub mohiyatini har taraflama ta’riflamagandek tuyuladi. Aftidan, “tabiat-naqqosh”, “tabiat-me’mor”, “tabiat-rassom”, “tabiat mo‘jizakor” singari kasbiy iboralar atrofimizni o‘rab turgan borlizning nimalarga qodir ekanligiga ishora bo‘lsa kerak.

MUHOKAMA Harchand bo‘rtik sifatlarda ta’riflangani bilan mubolag‘a bo‘lmaydigan hodisa yoki jarayonlardan biri karst hisoblanadi. Yer to‘g‘risidagi ko‘hna ilm sohalari bo‘lmish geografiya va geologiyada bir qator hamda bu

jarayonlarning oqibatini mohiyatan tushuntirib beruvchi ilmiy atama bo'lgan karst so'zi aslida O'rta Yer dengizi sohilida joylashgan Sloviniya davlatidagi bir tog'ning nomidir. Ayni paytda janubiy slavyan xalqlarining tillarida karst so'zi tosh degan ma'noni bildiradi. Bolqon yarim orolining g'arbidagi Karst platosida bu jarayon shu darajada tipik rivojlanganki, atrofdagi landshaftdan o'zining barcha xususiyatlari bilan ajralib turadi. Suvda kimyoviy jihatdan eriydigan toshlarga karst jarayoniga chalinadi. Karstga yo'liqish (chalinishi oqibatida O'rta Yer dengizi bo'yidagi o'lkalarning ayrim hududlari yer yuzasi hech bir tuproq qoplamisiz yalag'och karstli manzara kasb etganki, nuqul yaydoq toshtepali novlardangina iborat bo'lib qolgan. Ohaktosh, gips, angidrit, toshtuz (galit), silin, karnallit, bo'r va boshqa eruvchan tog' jinslari qatlamlarining yog'in-sochin suvlari ta'sirida yer osti bo'shliqlariga orlar, tabiiy shaxtalar, quduqlar, yer yuzasida xilma-xil o'ydim-chuqurliklar hosil qilishi bilan bog'liq talay jarayon va hodisalar yig'indisiga karst deyiladi.

Geografiya va geologiya fanlariga mansub karstshunoslik ilmi bilan geomorfolog, gidrogeolog, geoximik, mineralog singari qator soha tadqiqotchilari o'z fanlari manfaatlari yuzasidan shug'ullanadi. Karst g'orlari o'zining sirajoyibotlari, afsona va rivoyatlarga boyligi bilan qadim-qadimdan kishilarni rom etib kelgani uchunmi, ko'pincha, serqirra karstshunoslik fanini oddiygina qilib g'orshunoslik deb atashadi. Aslida, g'orshunoslik karstshunoslikning muayyan amaliy bir sohalari g'or turizmi, arxeologiya, gidrogeologiya, mineralogiya, paleontologiya ham sohiblari va kasbi jihatidan qiziqarlidir. Vaholanki, karstshunoslik yer geologik tarixini, geologik davrlarda kechgan jarayon va sharoitlarni, hozirgi landshaftni o'rganishdagi tomonlari bilan ko'proq ahamiyatlidir. Karst bu g'alati nomlar, yer osti daryolari, turli-tuman g'aroyib tabiat hodisalari, to'lmas suv omborlari va loyixasiga o'zgartirish kiritilgan inshootlar, noyob minerallar, yer osti shifoxonalari va boshqa ko'pdan-ko'p ajoyibotlar desak xato qilmagan bo'lamiz.

Tabiatdagi favqulodda noyob, ibratomuz, hayrattimsol, bemisl hodisalar birgina tog' jinsining suvda erishi bilan bog'liq ekanligiga ishonish qiyin. Karstli joylarning nomlanishi ham qiziq, birinchi bor eshitganda g'alatiroq jaranglaydi. Mingchuqur, Chit, Chokmozor, Bilqilloq, Yerdantepgan bular Hisor tog'ining Qashqadaryo viloyati hududidagi yaylov va qishloqlarning nomlaridir. Mingchuqur (Qamashi tumanidagi) baland tog' meteorologiya stansiyasi, yaylov va dovonning nomi. Maydanak tog'i etagidagi, dengiz sathidan 2200-2500 metr balandlikda joylashgan yuzlarcha gektar maydondagi Mingchuqur yaylovi o'ziga xos yoqimsizroq landshafti bilan ajralib turadi. Tepadan qaraganda asalari izlarini eslatuvchi bu joyni Mingchuqur deb atashsada, uch mingdan oshiq turli berk botiq va soyliklar mavjud ekan. Bu hududning tagzamini yura davrining karstlanuvchi jinslari gips, angidrit, karnallit va ohaktosh yotqiziqlaridan tashkil topgan. Shu bois tagida yer osti karst bo'shliqlari bilan tutashib ketadigan o'ydim-chuqurliklar yog'in suvlarini tezgina o'ziga singdiruvchi karst botiqlarini bir-biri bilan tutashtirib turgan, tartibsiz sochilgan o't-o'lansiz yalang'och kovaklar bu yerda noxushroq, bir ko'rinish kasb etgan. Xolbuki, Mingchuqurdagi eriydigan jinslar erimaydigan qumtosh, alevrit, gil tarkibli qirlar bilan almashinuvi bilan, darxol, g'oyatda

manzarali qalin tog' o'rmoni boshlanib ketadi. Mingchuqur karst maydoni ko'pgina buloqlar, jumladan, Katta Yaradaryo vodiysidagi yirik Ko'kbuloq, chashmasining to'yinishida asosiy manba bo'lib xizmat qilmoqda. Gap shundaki, karst chuqurliklari yoqqan qorlarni o'zida uzoqroq vaqt saqlab, buloqlarning bir maromda yer ustiga chiqib turishini ta'minlaydi. Shuni ta'kidlab o'tish joizki, Mingchuqur va shu kabi boshqa Hisor tog'laridagi karstli hududlar bu mintaqada tez-tez bo'lib turadigan boshqa bir tabiiy jarayon selning kuchini susaytirishi A.Mamatov tadqiqotlarida aniqlangan.

Yerdantepgan karstli dovonining nomi ham izohtalab atamalardan biri. Xontaxti tog'idagi bu dovon landshafti nihoyatda o'ziga xos. Bir qadar yassi rel'efli yonbag'irlardagi qalin archazorlar kutilmaganda dumaloq shaklli qizg'ish tusdagi betartib sochilgan dov-daraxtsiz tepalikli maydon bilan almashinadi. Karst chuqurliklari orasidagi bu tepaliklar bir qarashda go'yo yerdan "o'sib" (tepib) chiqqandek tuyuladi. Shu boisdan bo'lsa kerakki, mahalliy xalq bu dovonni juda siyrak uchraydigan erishroq "Yerdantepgan" nomi bilan atashadi. Hisorning Dehqonobod tumani doirasidagi Choqmozor ham karstli maydonning tojikcha nomlanishidir.

Karstning hayratli timsol jarayon ekanligini butun bir oqar jilg'aning yer ostiga singib, yana paydo bo'lishi, egri-bugri o'zanli, adashgan daryolar mavjudligi ham ko'rsatib turibdi. Bunday daryolarning nomlari ham g'alatiroq, Piyani (Mast) daryosi Volgaga o'ng tomondan quyiluvchi Suraning irmog'i, Obmanka (Aldoqchi), Gluxaya (Gung), Shaytanka kabi daryolar Ural tog'laridan oqib tushuvchi Chusovaya daryolarining irmoqlaridir. Xuddi shunday karstning ajib bir xususiyatini namoyon etgan ismi jismiga monand O'lmas jilg'asi Kagik Uradaryoning yuqori oqimida joylashgan. O'lmas nomli g'ordan oqib chiquvchi 12-13 litr miqdordagi oqim bir necha kilometr masofada yura davri gipsli qatlamlariga singib ketadi. Ikki chaqirimdan so'ng dabdurustdan yer ostida buloq tarzida paydo bo'lib, doimiy oqimli daryoga aylanadi. Har xil harakati ila ismiga munosib bu jilg'aning nomi, haqiqatan, O'lmas ya'ni Yo'qolmasdir. Karstni tabiatning ibratomuz jarayoni deyish mumkin.

Zero, karst rivojlanishining o'z tartib-qonunlari mavjud. Karst va uning qonunlari bilan inson o'z faoliyatida hisoblashishi shartliligi turli inshootlar qurilish amaliyotida duch kelingan. Xususan, tog' daryolari to'silib, gidroelektrostansiya dambalari, suv omborlari bunyod etishda karstlanuvchi jinslarni bor-yo'qligiga alohida e'tibor berish lozim. Aks holda, buzilib vayron bo'lgan dambalarga, to'lmas suv omborlariga egalik qilish hech gap emas. Ispaniyada Mariya Kristina, Monte-Xoke va Kamaraze, Fransiyada Sen-Pelyelm Dezer suv omborlari, AQShning Tennesi daryosi Xelsbor to'g'oni boshqa gidroinshootlarning ayanchli taqdiri karstni pisand qilmaydigan tadqiqotchilarga saboq bo'lishi mumkin. Ko'rsatilgan inshootlar karstli hududlarda bunyod etilgani uchun suv bilan to'lmadi. Chunki suv ombori botig'ining devor va tagzaminidagi ko'pdan-ko'p yoriqlar eritdan kengayib, kelib quyilayotgan suvni o'pqondek yer ostiga yutib yuboravergan. Katta mablag' sarflanib, bunyod etilgan necha-necha gidroelektr stansiya tug'onlari o'z vazifasini bajara olmay, buzilib qolganligiga qurilmalar tarixi guvohlik beradi.

Tabiatning bu jiddiy jarayonini hisobga olish shart ekanligi O'zbekistonda gidroinshootlar qurilishida ham uchragan. XX asrning 60-yillarida sig'imi 280 million kub metr bo'lgan Pachkamar suv ombori qurilishi boshlab yuborilgan edi. G'uzordaryo o'zanida barpo etilgan tug'on bitay deb qolganda gidroinshoot qozonsoyi devor va tagzaminida qandaydir yoriqlar borligi ayon bo'lib qoldi, bu esa suv omborining suvga to'lmaslik xavfini tug'dirdi. Chunki quyilayotgan suv yer ostiga singib ketaverdi. Suv yutilishining bosh aybdori bu yerda ham karst edi. Qurilish maydoni zamini paleogen davrining buxoro geologik yarusiga mansub ohaktoshlardan tarkib topganligi buning ustiga ohaktosh qatlamlari deyarli tik joylashganligi, o'nlarча metr chuqurlikda ularga tez eruvchan gips qatlamlari aralashganligi ishni juda chigallashtirgan edi. Qurilishni loyihalashda hisobga olinmagan bunday holni bartaraf etish uchun quruvchilar ko'zda tutilmagan bir tadbirni ishga soldilar. Har 4-8 metr masofada quduqlar kavlandi, ularga maxsus moslamalar yordamida yuqori sifatli beton qorishmalari kuchli bosim bilan yuborildi, natijada suv singish mumkin bo'lgan yoriqlar berkildi. Loyihadan tashqari qanchadan-qancha qo'shimcha mablag' sarf bo'lgani ustiga inshootni ishga tushirish muddati yana ikki yilga cho'zildi. Ha, karst va karstga chalinuvchi jinslar mavjudligini hisobga olmaslik, qimmatga tushishi, ayrim hollarda, qayg'uli oqibatlarга olib kelishi mumkin. Ural tog'i g'arbiy etaklarida 20 kilometr uzunlikdagi temir yo'l, bir bekat va uchta ko'prik karst tufayli boshqa joyga ko'chirilgan. Italiyada Rim va Neopol shaharlari orasidagi tog'ni teshib temir yo'l tunneli o'tkazishda tog' qariidagi karst bo'shligi ko'p tashvish tug'dirgan. Chunki g'orning shipi yo'l sathiga to'g'ri kelib qolgan. Shu sababdan 70 metr qazilgan tunnel bo'lagini boshqa joydan qaytadan o'tkazishga to'g'ri kelgan. Karstning inshootlar qurilishdagi bu nomaqbul ta'siri, karstli hududlarda qurilish bo'lmasligi kerak degani emas, albatta. Yer ilmining karstshunoslik bilan shug'ullanuvchi mutaxassislari inshootlar barpo etish mo'ljallanayotgan joylarning geologik va tabiiy geografik sharoitlarini chuqur o'rganib, loyiha-qidiruv ishlarida yaqindan ishtirok etishlari lozim.

Darhaqiqat, Toshguzar-Boysun-Qumqurg'on temir yo'li qurilishi singari murakkab tog' sharoitli mintaqada, tunnel ko'prik, suv o'tkazgich va boshqa inshootlar hamda bekatlarda turar joy va madaniy-maishiy inshootlar bunyod etishda tabiatning karst deb atalmish xatarli jarayonini bilish, uning ta'sirini o'rganish talab etiladi. Tabiatda obyektiv ravishda ro'y beradigan jarayonlar va hodisalar bir-biriga ko'z ilg'amas halqalar bilan bog'langan bir tizimdir, halqalardan biriga ta'sir etilsa, boshqasida ham o'zgarishlar ro'y beradi. Bu hol tabiatga ehtiyotkorona munosabatda bo'lishni, tabiiy jarayonlarni chuqur o'rganishni talab etadi. Jarayonlar faqat ziyonli emas insonlarga juda katta foyda ham keltiradi. Karst g'orlari ibtidoiy odamlarga boshpana, bugungi tabiat shaydolariga sayohat obyekti, nafas yo'llari, asab xastaliklariga shifo maskani bo'lib xizmat qilishi mumkin. G'or shipi va devorlaridagi uglerod va boshqa kimyoviy elementlarning izotoplari mikroblarni o'ldiradi, g'ordagi sokin, o'zgarmas havo asabni tinchlantiradi bu speleoterapiya deyiladi. Dengiz bo'ylarida joylashgan karstli o'lkalarda yog'in suvlari yer ostiga singib dengiz ostidan chuchuk

suvli buloq sifatida chiqadi. Bunday dengiz buloqlaridan Qora dengizning Kavkaz va Qrim qirg'oqlarida. O'rta Yer dengizining sohil mintaqalaridagi aholi foydalanib kelmoqda. Bundan ikki ming yildan ko'proq ilgari yashagan yunon olimi Lukretsiy Karning "Moddalarning tabiatiga doir" hamda bu olimdan bir yarim asr keyin yashagan Strabonning "Geografiya" nomli asarlarida dengiz karst buloqlari haqida qiziqarli ma'lumotlar keltirilgan. Qadimda Finikiya qirg'oqlariga yaqinroq, dengiz savdo yo'llari ustida Arad oroli va shaharchasi bo'lgan. Suvsiz bu orolning savdo bilan shug'ullanuvchi aholisi o'z ehtiyojining bir qismini yomg'ir suvini idishlarga to'plab, qolgan qismini materikdan - Finikiyadan tashib keltirganlar. Ammo urush bo'lgan paytlarda dengiz ichidagi karst buloqlari asosiy ichimlik suvi manbai hisoblangan. Dengiz chashmasi suvi yuzada sho'r dengiz suvi bilan aralashib ketadi. Bir necha o'n metr dengiz tagidan qaynab chiqayotgan chashma suvini toza holatda olish uchun qo'rg'oshindan yasalgan tagi ochiq, yuqoriga tomon kengayib boruvchi quvursimon idishdan foydalanilgan. Klibon deb ataluvchi keng va tagi teshik quvur qayiqdan turib dengizga botirilgan. Idishning yuqorisida tor teshik bo'lib, bu teshikka charm quvur kiygizilgan, idish botirilayotganda uning ichiga kirgan dengiz suvi klibon yuqorisidagi charm quvurdan chiqib ketgach, idish pastidan kelayotgan toza suv bilan qayiqda tayyorlab qo'yilgan idishlarni to'ldirganlar va shaharchani chuchuk suv bilan ta'minlaganlar. Fors qo'ltigining Bahrayn guruhiga kiruvchi Muharrak orolining aholisi chuchuk suvga bo'lgan ehtiyojini dengiz karst buloqlari hisobiga qondiradi. Aradliklardan farqli ravishda maxsus g'avvoslar qo'y terisidan qilingan meshlar bilan suv tagiga sho'ng'ib, toza chashma suviga meshlarni to'lgazib, suv yuzasidagi qayiqdarga qaytadilar. Fors qo'ltig'idagi eng katta aeroport bo'lgan Muharrak orolida hozir ham bu usuldan foydalaniladi.

XULOSA Kurrai zaminimiz quruqlik qismining 40 mln km³ yoki 20% maydoni karstlanuvchi jinslardan tuzilganligi e'tiborga olinsa, insonlar o'zining kundalik faoliyatlari davomida tabiatning bu xayratomuz jarayoni bilan duch kelib turishi ayon bo'ladi. Bu hol karstinnig o'ziga xos foydali va zararli tomonlarini aniqlab, joylarda muayyan maqsadlarda o'rganish Yer haqidagi fanlarning muhim vazifalaridan ekanligini bildiradi.

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SPORTCHI RIVOJLANISHIDA MURABBIY VA TREYNERLARNING ROLI

Annotatsiya: Murabbiylar va treyner sportchilarning jismoniy, texnik va psixologik rivojlanishini shakllantirishda muhim rol o'ynaydi. Ularning ta'siri jarohatlarning oldini olish, ishlashni optimallashtirish va aqliy chidamlilikni o'z ichiga olgan mahorat yo'riqnomasidan tashqariga chiqadi. Ushbu maqola murabbiylar va treynerlarning ko'p qirrali mas'uliyatini, jumladan individual o'quv dasturlarini ishlab chiqish, sport fanlari metodologiyalaridan foydalanish va sportchilarda axloqiy va psixologik o'sishni rag'batlantirishni o'rganadi. Biometrik monitoring va ma'lumotlarga asoslangan analitika kabi zamonaviy texnologiyalarning integratsiyasi murabbiylik strategiyalarini yanada aniqlab berdi va bu samaradorlikni oshirishga olib keldi. Samarali murabbiylik nafaqat sportchining salohiyatini oshiradi, balki intizom, qat'iyatlilik va jamoada ishlash kabi umrboqiy qadriyatlarni singdiradi. Topilmalar barqaror sport muvaffaqiyatini ta'minlash uchun murabbiylikda yaxlit, dalillarga asoslangan yondashuv zarurligini ta'kidlaydi.

Kalit so'zlar: Sportchi rivojlanishi, murabbiylik, sport mashg'ulotlari, sport psixologiyasi, jarohatlarning oldini olish, ish faoliyatini optimallashtirish, sport fanlari, murabbiylik

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THE ROLE OF COACHES AND TRAINERS IN ATHLETE DEVELOPMENT

Abstract: Coaches and trainers play a critical role in shaping the physical, technical, and psychological development of athletes. Their impact extends beyond skill instruction, including injury prevention, performance optimization, and mental toughness. This article explores the multifaceted responsibilities of coaches and trainers, including developing individualized training programs, utilizing sports science methodologies, and promoting moral and psychological growth in athletes. The integration of modern technologies such as biometric monitoring and data-driven analytics has further refined coaching strategies, leading to increased effectiveness. Effective coaching not only enhances an athlete's potential, but also instills lifelong values such as discipline, perseverance, and teamwork. The findings highlight the need for a holistic, evidence-based approach to coaching to ensure sustainable athletic success.

Keywords: Athlete development, coaching, sports training, sports psychology, injury prevention, performance optimization, sports science, coaching

Kirish

Atletik ko'rsatkich faqat tabiiy iste'dod yoki genetik moyillik bilan belgilanmaydi aksincha, bu murabbiy va trenerlar tomonidan olib boriladigan tizimli, ilmiy asoslangan o'quv yondashuvining natijasidir. Murabbiyning roli jismoniy tayyorgarlik, psixologik qo'llab-quvvatlash, strategik rejalashtirish va axloqiy yo'l-yo'riqni o'z ichiga olgan texnik ko'rsatmalardan tashqarida. Murabbiylar biomexanika, sport fiziologiyasi va kognitiv tayyorgarlik tamoyillarini shaxsiylashtirilgan dasturlarga integratsiyalash orqali sportchining uzoq muddatli rivojlanishini shakllantiradi. Ular sportchilarning jarohatlar xavfini minimallashtirish, davriylashtirish, yukni boshqarish va nerv-mushak mashqlari kabi dalillarga asoslangan strategiyalardan foydalangan holda samarali mashq qilishlarini ta'minlaydi.

Jismoniy tayyorgarlikdan tashqari, murabbiylar sportchilarda ruhiy mustahkamlik va hissiy chidamlilikni tarbiyalashda hal qiluvchi rol o'ynaydi. Sport psixologiyasi bo'yicha maqolalar yuqori samaradorlikka erishishda motivatsiya, o'ziga ishonch va stressni boshqarish muhimligini ta'kidlaydi. Samarali murabbiylar sportchilarga qiyinchiliklarni yengish va raqobatbardosh diqqatni saqlashga yordam berish uchun vizualizatsiya, maqsadlarni belgilash va ijobiy mustahkamlashni o'z ichiga olgan psixologik usullardan foydalanadilar. Bundan tashqari, axloqiy murabbiylik amaliyotlari halollik, jamoaviy ish va sport mahoratini rivojlantiradi, bu esa sportchilarning halol o'yin va hurmat qadriyatlarini qo'llab-quvvatlashini ta'minlaydi.

Sportda texnologiyaning rivojlanishi murabbiy va trenerlarning rolini yanada oshirdi. Taqiladigan qurilmalar, harakatni kuzatish tizimlari va sun'iy intellektga asoslangan tahlillar sportchining biomexanikligi, chidamliligi va taktik qarorlar qabul qilishiga oid aniq ma'lumotlarni taqdim etadi. Murabbiylar endi mashg'ulotlar strategiyasini takomillashtirish va musobaqa natijalarini yaxshilash uchun ob'ektiv ishlash ko'rsatkichlariga tayanadilar. Ilmiy bilimlarning an'anaviy murabbiylik tamoyillari bilan integratsiyalashuvi sportchilarni rivojlantirishga yanada kengroq va samarali yondashishga olib keldi.

Ushbu maqolada zamonaviy sportda murabbiylar va murabbiylarning o'zgaruvchan roli o'rganilib, ularning jismoniy tayyorgarlik, psixologik chidamlilik va axloqiy rivojlanishga ta'siri ta'kidlangan. Ushbu maqola sport fanlari va murabbiylik metodologiyasidagi mavjud tendentsiyalarni tahlil qilish orqali barqaror sport muvaffaqiyatini qo'llab-quvvatlashda murabbiylarning muhim hissasini ta'kidlashga qaratilgan.

Sportchining har tomonlama kamol topishida, uning jismoniy qobiliyatini, aqliy chidamliligini, texnik mahoratini, strategik tushunchasini shakllantirishda murabbiy va trenerlar ajralmas rol o'ynaydi. Ularning ta'siri faqat o'qitish usullaridan tashqariga chiqadi; ular intizom, ishonch va kuchli mehnat axloqini singdiruvchi murabbiy, motivator va namuna bo'lib xizmat qiladi. Sportchining muvaffaqiyati ko'p jihatdan ular olgan murabbiylik sifatiga bog'liq, chunki yaxshi

tuzilgan o'quv dasturlari, psixologik yordam va ilmiy metodologiyalar izchil takomillashtirish va uzoq muddatli barqaror ishlashga yordam beradi.

Murabbiyning asosiy vazifalaridan biri sportchining o'ziga xos ehtiyojlariga moslashtirilgan samarali mashg'ulot dasturini ishlab chiqish va amalga oshirishdir. Sport fiziologiyasidagi ilmiy maqolalar sportchining yoshi, jismoniy tayyorgarligi darajasi, biomexanikasi va sportga xos talablar kabi omillarni hisobga olgan holda individuallashtirilgan mashg'ulot yondashuvlarining muhimligini ta'kidlaydi. Vaqt o'tishi bilan strategik o'zgaruvchan mashg'ulot intensivligi va hajmini o'z ichiga olgan davriylashtirish printsipi ish samaradorligini oshirish va ortiqcha mashq qilish va jarohatlar xavfini kamaytirish uchun keng qo'llaniladi. Murabbiylar, shuningdek, to'g'ri tiklanish strategiyalarini ta'minlashlari kerak, chunki dam olish va tiklanish sportga moslashish va jarohatlarning oldini olishda hal qiluvchi rol o'ynaydi.

Texnik mahoratni rivojlantirish - murabbiylikning yana bir muhim jihati. Har bir sport aniq harakat naqshlari va biomexanik samaradorlikni talab qiladi va murabbiylar doimiy ko'rsatmalar, namoyishlar va tuzatishlar orqali ushbu jihatlarni takomillashtirish uchun javobgardir. Sportchilar o'z texnikasidagi xatolarni aniqlash va samaradorlikni oshirish va takroriy zo'riqish jarohatlarini oldini olish uchun tuzatuvchi chora-tadbirlarni amalga oshirish uchun murabbiylarga tayanadilar. Videotahlil va harakatni kuzatish texnologiyalari murabbiylarning ish faoliyatini baholash usullarini inqilob qildi, bu esa harakat mexanikasi va taktik qarorlar qabul qilishni batafsilroq taqsimlash imkonini berdi.

Jismoniy tayyorgarlikdan tashqari, murabbiylikning psixologik jihati ham bir xil darajada muhimdir. Raqobatbardosh sportlar ruhiy qattqlikni, hissiy nazoratni va qiyinchiliklarga chidamlilikni talab qiladi. Murabbiylar stressni boshqarish usullarini, maqsadni belgilash strategiyalarini va vizualizatsiya mashqlarini o'rgatish orqali sportchilarga aqliy mustahkamlikni rivojlantirishga yordam berishda hal qiluvchi rol o'ynaydi. Sport psixologiyasi bo'yicha maqolalar shuni ko'rsatadiki, ishonch, motivatsiya va diqqat sport natijalariga bevosita ta'sir qiladi va samarali murabbiylik sportchilarda bu xususiyatlarni rivojlantirishni o'z ichiga oladi. Ijobiy mustahkamlash va motivatsion usullar orqali murabbiylar sportchilarga o'z-o'zidan shubhalanishni yengishga, bosimni boshqarishga va uzoq muddatli rivojlanishga sodiq qolishga yordam beradi.

Taktik xabardorlik va strategik fikrlash yuqori darajadagi sport ko'rsatkichlarining muhim tarkibiy qismidir. Murabbiylar musobaqa stsenariylarini tahlil qiladilar, raqiblarning kuchli va zaif tomonlarini o'rganadilar va sportchining o'yin davomida moslashish qobiliyatini oshiradigan o'yin strategiyalarini ishlab chiqadilar. Jamoaviy sport o'yinlarida o'yinni o'qish, harakatlarni oldindan bilish va ikki soniyalik qarorlar qabul qilish qobiliyati ko'pincha muvaffaqiyatni belgilaydi. Murabbiylar sportchilarni joylashishni aniqlash, vaziyatga qarab qaror qabul qilish va jamoada ishlashga o'rgatishadi, bu ularga strategiyalarni samarali bajarishga imkon beradi. Sport tahlillari va ma'lumotlarga asoslangan qarorlarni qabul qilish integratsiyasi bilan zamonaviy murabbiylik endi o'yinni rejalashtirish va samaradorlikni baholashni yaxshilash uchun statistik tahlilni o'z ichiga oladi.

Jarohatlarning oldini olish va rehabilitatsiya qilish murabbiy va treynerning asosiy vazifalari hisoblanadi. Yuqori unumdor sport turlari tanaga jiddiy jismoniy talablar qo'yadi, bu esa tayanch-harakat a'zolarining shikastlanish xavfini oshiradi. Murabbiylar kuch-quvvat mashqlari, moslashuvchanlik mashqlari va nerv-mushak mashqlarini o'z ichiga olgan jarohatlarning oldini olish dasturlarini amalga oshirish uchun sport tibbiyoti mutaxassislari bilan yaqindan hamkorlik qiladilar. Jarohat olgan taqdirda, murabbiylar sportchining tuzilgan rehabilitatsiya rejasiga rioya qilishini va muddatidan oldin o'yinga qaytmasligini ta'minlashi kerak, chunki bu qayta jarohat olish yoki uzoq muddatli asoratlarni keltirib chiqarishi mumkin. Ish yuki va harakat mexanikasini to'g'ri nazorat qilish sportchining salomatligi va uzoq umr ko'rishini ta'minlash uchun zarurdir.

Axloqiy etakchilik va murabbiylik ham murabbiylikning hal qiluvchi elementlari hisoblanadi. Murabbiylar sportchining qadriyatlari, intizomi va sport mahoratini shakllantiradi, halollik, jamoada ishlash va raqiblarni hurmat qilish kabi tamoyillarni targ'ib qiladi. Ular adolat va javobgarlik madaniyatini shakllantirish orqali axloqsiz xatti-harakatlarning, jumladan, samaradorlikni oshiradigan giyohvand moddalarni iste'mol qilish va kelishilgan o'yinlarning oldini olishda muhim rol o'ynaydi. Axloqiy murabbiylik raqobat muhitidan tashqariga chiqib, sportchining shaxsiy va professional hayotiga munosabatiga ta'sir qiladi. Xarakterni rivojlantirishga ustuvor ahamiyat beradigan murabbiy nafaqat sportdagi muvaffaqiyatga, balki shaxsning har tomonlama o'sishiga ham hissa qo'shadi.

Texnologiyadagi yutuqlar murabbiylik metodologiyasini o'zgartirdi, mashg'ulotlarning aniqligi va ish faoliyatini kuzatishni kuchaytiruvchi vositalarni taqdim etdi. Taqiladigan qurilmalar, harakatni suratga olish tizimlari va sun'iy intellektga asoslangan ishlash tahlili murabbiylarga real vaqtda sportchining tezligi, chidamliligi, biomexanikasi va fiziologik javoblari haqida ma'lumot to'plash imkonini beradi. Ushbu texnologiyalar o'quv rejalarini moslashtirish, zaif tomonlarini aniqlash va ishlash natijalarini optimallashtirishga yordam beradi. Virtual haqiqat va simulyatsiyaga asoslangan trening ham turli sport turlarida qaror qabul qilish va reaksiya vaqtini yaxshilashning innovatsion usullari sifatida paydo bo'lmoqda.

Murabbiy va sportchi o'rtasidagi munosabatlar ishonch, muloqot va o'zaro hurmatga asoslanadi. Murabbiy qo'llab-quvvatlovchi va samarali mashg'ulot muhitini yaratish uchun har bir sportchining o'ziga xos motivatsiyasi, kuchli tomonlari va qiyinchiliklarini tushunishi kerak. Sportchining psixologik va emotsional holatini hisobga oladigan shaxsiy murabbiylik barchaga mos keladigan yondashuvdan ko'ra samaraliroqdir. Eng yaxshi murabbiylar sportchilarni nafaqat sport kareralarida, balki ularning shaxsiy o'sishi va rivojlanishida ham yo'l-yo'riq ko'rsatadigan umrbod murabbiy bo'lib xizmat qiladi.

Xulosa qilib aytganda sportchilarni rivojlantirishda murabbiylar va murabbiylarning roli ko'p qirrali bo'lib, u jismoniy tayyorgarlik, texnik takomillashtirish, psixologik yordam, strategik rejalashtirish, jarohatlarning oldini olish va axloqiy murabbiylikni o'z ichiga oladi. Sportchining salohiyatini zamonaviy metodologiyalarni an'anaviy intizom va mehnatsevarlik tamoyillari

bilan uyg'unlashtirgan holda tuzilgan, ilmiy asoslangan murabbiylik orqaligina to'liq ro'yobga chiqarish mumkin. Ajoyib murabbiyning ta'siri musobaqa natijalaridan ancha yuqori bo'lib, sportchining o'ziga bo'lgan ishonchi, chidamliligi va sportdagi va hayotdagi qiyinchiliklarni yengish qobiliyatiga ta'sir qiladi. Shuning uchun yuqori sifatli murabbiylikka sarmoya kiritish sportdagi ko'rsatkichlarni oshirish va nafaqat malakali, balki barkamol shaxs bo'lgan yangi avlod sportchilarni tarbiyalashda muhim omil hisoblanadi.

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DIFFERENSIAL TENGLAMALAR MAVZULARINI FANLARARO INTEGRATSIYAGA QO'LLASH

Annotatsiya: Ushbu maqolada differensial tenglamalarning turli fan sohalarida qo'llanilishi va fanlararo integratsiyadagi ahamiyati tahlil qilinadi. Fizika, biologiya, iqtisodiyot, muhandislik, kompyuter fanlari va tibbiyotda differensial tenglamalar yordamida tabiiy va ijtimoiy jarayonlarni modellashtirish imkoniyatlari yoritiladi. Shuningdek, ushbu matematik vositaning ta'lim jarayonida fanlararo integratsiya orqali o'qitilishi muhimligi ko'rsatilgan. Maqolada differensial tenglamalarning zamonaviy ilmiy tadqiqotlarda va innovatsion texnologiyalarni rivojlantirishdagi roli ham muhokama qilinadi.

Kalit so'zlar: differensial tenglamalar, fanlararo integratsiya, modellashtirish, tabiiy fanlar, iqtisodiyot, muhandislik, kompyuter fanlari, tibbiyot, ta'lim, zamonaviy texnologiyalar.

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APPLICATION OF DIFFERENTIAL EQUATIONS TOPICS TO INTERDISCIPLINARY INTEGRATION

Annotation: *This article analyzes the application of differential equations in various fields of science and their importance in interdisciplinary integration. The possibilities of modeling natural and social processes using differential equations in physics, biology, economics, engineering, computer science and medicine are highlighted. The importance of teaching this mathematical tool through interdisciplinary integration in the educational process is also shown. The article also discusses the role of differential equations in modern scientific research and the development of innovative technologies.*

Keywords: *differential equations, interdisciplinary integration, modeling, natural sciences, economics, engineering, computer science, medicine, education, modern technologies.*

Differensial tenglamalar matematikaning eng muhim bo'limlaridan biri bo'lib, ular tabiiy jarayonlarni tasvirlash va tushuntirishda keng qo'llaniladi. Bu tenglamalar vaqt o'tishi bilan o'zgaruvchan tizimlarni modellashtirish imkonini beradi va shu sababli turli fan sohalari bilan chambarchas bog'liq. Differensial tenglamalar nafaqat sof matematik tadqiqotlarda, balki fizika, muhandislik, iqtisodiyot, biologiya va hatto sotsiologiya kabi turli sohalarda ham muhim ahamiyatga ega. Ushbu maqolada differensial tenglamalarning fanlararo integratsiyadagi ahamiyati va ularni qo'llashning muhim jihatlari muhokama qilinadi.

Tabiiy fanlarda differensial tenglamalar muhim o'rin tutadi. Masalan, fizikada Nyutonning ikkinchi qonuniga asoslangan holda jismlarning harakatini ifodalovchi tenglamalar tuziladi. Moddalar diffuziyasi, elektromagnit maydonlar tarqalishi va kvant mexanikasi ham differensial tenglamalar yordamida tahlil qilinadi. Masalan, issiqlik o'tkazuvchanligi jarayoni Fourier qonuniga asoslanib, differensial tenglamalar orqali ifodalanadi. Shu sababli, fizika va muhandislik sohalarida o'quvchilarga differensial tenglamalarni nafaqat matematik model sifatida, balki real hayotiy jarayonlarning nazariy tavsifi sifatida tushuntirish juda muhim.

Biologiyada ham differensial tenglamalar keng qo'llaniladi. Masalan, populyatsiyalar dinamikasi va epidemiyalar tarqalish jarayonini modellashtirishda ularning roli beqiyosdir. Lotka-Volterra tenglamalari yirtqich va o'lja populyatsiyalarining o'zaro ta'sirini tasvirlaydi. Epidemiyalarni modellashtirishda esa SIR modeli (sog'lom, yuqtirgan va tiklangan odamlar nisbatini hisobga oluvchi model) qo'llanadi. Ushbu model jamiyatda infeksiyaning qanday tarqalishini va uning oldini olish uchun qanday chora-tadbirlar qo'llash kerakligini aniqlashga yordam beradi.

Iqtisodiyot fanida ham differensial tenglamalarning o'rni beqiyos. Iqtisodiy o'sish modellari, masalan, Solow-Swan modeli iqtisodiy tizimlarning dinamik rivojlanishini tushuntirish uchun qo'llanadi. Investitsiyalar, ishlab chiqarish va

texnologik rivojlanish jarayonlarini differensial tenglamalar orqali modellashtirish mumkin. Bundan tashqari, iqtisodiyotda baholar dinamikasi, inflyatsiya darajasi, bozor talab va taklif o'zgarishlarini ham ushbu tenglamalar yordamida ifodalash mumkin. Shu sababli, iqtisodiy fanlar talabalari uchun differensial tenglamalar nafaqat matematik qiziqish, balki real iqtisodiy jarayonlarni tushunish uchun zarur vosita hisoblanadi.

Muhandislik fanlarida differensial tenglamalar turli jarayonlarni optimallashtirish va samaradorlikni oshirish uchun qo'llaniladi. Masalan, elektr tarmoqlari, konstruksiyalarning mustahkamligi va suyuqlik dinamikasi kabi sohalarda ushbu tenglamalar asosida modellar tuziladi. Masalan, aerodinamika sohasida samolyot qanotlari atrofida havo oqimining harakatini hisoblash uchun Navier-Stokes tenglamalaridan foydalaniladi. Bunday jarayonlarning chuqur tushunilishi samolyotlarning aerodinamik xususiyatlarini yaxshilashga, yoqilg'i sarfini kamaytirishga va umumiy samaradorlikni oshirishga yordam beradi.

Kompyuter fanlarida ham differensial tenglamalar muhim ahamiyat kasb etadi. Sun'iy intellekt, mashinaviy o'rganish va simulyatsiya texnologiyalarida real jarayonlarni modellashtirish uchun ushbu tenglamalar ishlatiladi. Masalan, neyron tarmoqlari modellashtirishda differensial tenglamalarning qo'llanishi kuzatiladi, chunki miya faoliyati va neyronlar o'rtasidagi bog'lanish jarayoni doimiy ravishda o'zgarib turadi. Kompyuter grafikasi va fizika motorlarida ham jismlarning harakatini tabiiyroq qilish uchun differensial tenglamalar hisob-kitoblar uchun ishlatiladi.

Tibbiyot sohasida differensial tenglamalar fiziologik jarayonlarni modellashtirishda qo'llaniladi. Yurak urish ritmi, qon bosimi, dorilarning organizmdagi tarqalishi kabi jarayonlar ushbu matematik vosita yordamida aniq ifodalanishi mumkin. Masalan, farmakokinetika sohasida dorining organizmga qanday ta'sir qilishini tushuntirish uchun differensial tenglamalar asosida modellar yaratiladi. Shuningdek, saraton kasalligini davolash jarayonini modellashtirishda ham ushbu tenglamalar ishlatiladi, chunki kasallikning rivojlanish tezligi va organizmning unga bo'lgan reaksiyasi matematik jihatdan ifodalash imkonini beradi. Shu tariqa, differensial tenglamalar turli fan sohalarini bog'lovchi ko'priklar vazifasini bajaradi. Ular yordamida tabiiy, ijtimoiy va texnik jarayonlarning murakkabligi tushuntirilishi va modellashtirilishi mumkin. Shu sababli, ta'lim jarayonida differensial tenglamalarni faqatgina matematik nuqtayi nazardan o'rgatish emas, balki ularni boshqa fanlar bilan bog'liq holda tushuntirish juda muhim. Bunday yondashuv nafaqat o'quvchilarga ushbu mavzuni yanada qiziqarli qilishga yordam beradi, balki ularning ilmiy tafakkurini rivojlantirishga ham xizmat qiladi.

Kelajakda differensial tenglamalar va fanlararo integratsiyaning yanada kengayishi kutilmoqda. Sun'iy intellekt va kvant hisoblash sohalarining rivojlanishi bu matematik vositaning yanada dolzarb bo'lishiga olib keladi. Shu boisdan, ilmiy-tadqiqot ishlari va ta'lim tizimida differensial tenglamalar fanlararo integratsiya doirasida keng o'rganilishi lozim. Natijada, zamonaviy texnologiyalar va

innovatsiyalarni rivojlantirishga xizmat qiluvchi fundamental nazariyalar chuqur anglanadi va yangi ilmiy yutuqlarga erishish imkoniyati ortadi.

Bugungi texnologik taraqqiyot sharoitida differensial tenglamalarning ahamiyati yanada ortib bormoqda. Sun'iy intellekt, kvant hisoblash, biomodellashtirish va iqtisodiy tahlil kabi zamonaviy yo'nalishlar ushbu matematik uslubning rivojlanishiga turtki bermoqda. Shuning uchun ta'lim tizimida differensial tenglamalarni fanlararo integratsiya asosida o'qitish dolzarb vazifalardan biri hisoblanadi. Kelajakda differensial tenglamalarni qo'llash sohalari yanada kengayib, yangi ilmiy yutuqlarga zamin yaratishi mumkin. Ularni chuqur o'rganish va amaliy jihatlarini rivojlantirish orqali biz murakkab muammolarni hal qilishda ilg'or yondashuvlarni ishlab chiqishimiz va innovatsion yechimlarni taklif qilishimiz mumkin. Shu boisdan, bu matematik usulni ta'lim jarayonida kengroq qo'llash va uning fanlararo aloqalarini mustahkamlash muhim ahamiyatga ega.

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HEMOSTASIS INDICATORS IN WOMEN WITH COVID-19

Abstract. *The main group included 20 women who had COVID-19 and had menstrual irregularities that arose after the disease. The main group consisted of 2 subgroups: a subgroup of patients who had mild COVID-19 (n=10) and a subgroup of patients who had severe COVID-19 (n=10). The control group included 10 women who did not have COVID-19 and did not have menstrual irregularities. In patients from both groups, hormonal parameters, hemostasis status were assessed, Doppler ultrasound of the basal and spiral arteries of the endometrium and ovarian arteries was performed.*

Keywords: *coronavirus infection, hemostasis, COVID-19, reproductive period, menstrual function, Dopplerometry, hemodynamics, thrombosis.*

INTRODUCTION

Although women tolerate COVID-19 more easily than men, the possible consequences of the disease on reproductive health cannot be ignored [6–8]. Currently, the impact of COVID-19 on women's reproductive health is not well understood. It is assumed that the pathogen can have a direct impact on women's menstrual and reproductive functions by affecting the angiotensin-converting enzyme 2 receptors, which are widely expressed in the ovaries and uterus. Specific interactions between the reproductive system and SARS-CoV-2 infection are believed to occur at the ovarian/endometrium level. Severe vasoconstriction of endometrial spiral arterioles and activation of the coagulation system form pathological menstrual blood loss.

MATERIALS AND METHODS

SARS-CoV-2 infection may affect the hypothalamic-pituitary-ovarian-endometrium axis, leading to changes in the menstrual cycle. There is a reciprocal relationship between the hypothalamic-pituitary-adrenal axis, which mediates the stress response, and the hypothalamic-pituitary-ovarian axis, whereby activation of one axis leads to suppression of the other. Chronic stress suppresses estrogen production, which contributes to menstrual cycle irregularities and anovulatory cycles [1]. Stress-related menstrual cycle disorders represent a spectrum of disorders that include secondary amenorrhea (absence of menstruation for 3 months or more, provided that the menstrual cycle was previously regular) and a rarer form, primary stress-induced amenorrhea, so it is necessary to assess the potential impact of COVID-19 on the reproductive system [2].

RESULTS AND DISCUSSION

A comprehensive examination of all patients included an assessment of blood hormone levels, ultrasound and Doppler examination of the pelvic organs with an

assessment of endometrial and ovarian hemodynamics, and determination of hemostasis system parameters.

In patients from the control group, blood samples were taken to determine hormone levels from days 3 to 7 of the menstrual cycle; in patients from the main group, blood samples were taken without regard to the menstrual cycle phase, since the menstrual cycle was disrupted from a delay to amenorrhea.

The studies were performed on a Toshiba Aplio ultrasound Doppler apparatus using a multi-frequency (3.5–5 MHz) transabdominal sensor. The ultrasound examination was performed in a horizontal position. Hemodynamic parameters were determined in the spiral and basal vessels of the endometrium, as well as in the ovarian artery on both sides. Hemodynamics were assessed by the level of systolic blood flow (V), diastolic blood flow (V), systolic-diastolic ratio (S/D), as well as by peripheral circulation indicators: resistance index (RI) and pulsatility index (PI).

The average age of patients in both groups was 28.5 ± 1.28 years. Women had no bad habits that would have a negative impact on ovarian function. In the control group, 7 women (70%) had a history of childbirth, in the main group - 8 (40%). All patients from the main group noted menstrual cycle disorders after COVID-19: the cycle was irregular, with a tendency to delay the next menstruation from several days to several weeks. The duration of the menstrual cycle in the control group was 28.3 ± 1.21 days, and in the main group - 53.1 ± 0.84 days, i.e. 1.9 times more ($p < 0.05$). There was a tendency for a longer menstrual cycle in patients with severe COVID-19. If after mild COVID-19 the duration of the menstrual cycle reached 43.4 ± 0.51 days, then after severe COVID-19 — 57.3 ± 1.25 days. In patients of the control group the number of ovulatory cycles reached 100%. In patients who had mild COVID-19 the proportion of anovulatory cycles was 25.8%, and in patients who had severe COVID-19 — 77.8%. Menstrual discharge had pathological signs — there was a tendency to oligomenorrhea, in 92% of cases there was spotting.

Secretion of follicle-stimulating hormone (FSH) is known to increase rapidly at the beginning of the follicular phase of the menstrual cycle, so that basal hormone secretion values are several times higher than those in the luteal phase of the cycle. FSH stimulates proliferation of granulosa cells and promotes transformation of the stromal tissue surrounding the follicle into a theca cell layer, thus regulating differentiation and organization of steroid-producing tissues of the follicle. Adequate development of the follicle and realization of its steroidogenic activity are necessary prerequisites for ovulation [3]. In the control group, the FSH concentration at the level of increasing estradiol was 5 [4] IU/l. The FSH level in patients of the main group was higher against the background of decreasing estradiol. During a normal ovulatory cycle, the frequency and amplitude of luteinizing hormone (LH) pulses change in accordance with the phase of the menstrual cycle. At times close to ovulation, peak values of LH and FSH are recorded - synchronized in time, but with varying degrees of increase in concentration [2]. In the main group, the LH indicator had a stable level, which did not change depending on the phase of the menstrual cycle and did not depend on

the severity of COVID-19. In the control group, the LH level was 6.75 [6.6; 6.9] IU / l.

CONCLUSION

When analyzing the parameters of hormonal levels, hemostasis, and hemodynamic parameters in the pelvic organs of women in the reproductive period who have had COVID-19, menstrual cycle disorders were revealed. The multifactorial impact of coronavirus infection on the reproductive organs dictates the need for an in-depth study to more fully understand the impact of SARS-CoV-2 infection on women's menstrual function.

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INCREASED EFFICIENCY DEVELOPMENT OF HIGH-VISCOSITY OIL FIELD AND NATURAL BITUMEN

Abstract. *In the oil industry, one of the current problems is the fascination with the efficiency of the production well. This reflects the urgency of developing an anomalous oil deposit. When developing such fields, asphalt-resin oil and highly viscous paraffin oil accumulate when the production well zone is bottomed out. This leads to the formation of a highly viscous emulsion during the bottoming of the production well zone*

Keywords: *oil, natural bitumen, quarry, mine, well, steam, gravity, tectonics, reserve, viscosity, liquid, physicochemical, hydrocarbon.*

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YUQORI QOVUSHQOQLI NEFT VA TABIIY BITUM KONLARINI QAZIB CHIQRISH SAMARADORLIGINI OSHIRISH

Annotatsiya. *Neft sanoatining dolzarb muammolaridan biri quduqlarni ishlatish samaradorligini oshirish hisoblanadi. U anomal neft uyumlarini ishlatishda muhim dolzarblikni o'zida namoyon qiladi. Chunki bunday konlarda quduqlarni ishlatish neftning anomal qovushqoqligi va haratlanishini yuzaga kelishi, asfaltmolaparafın to'plami va qatlamning quduq tubi atrofi zonasida yuqori qovushqoq emulsiyalarni hosil bo'lishi bilan murakkablashadi.*

Kalit so'zlar: *neft, tabiiy bitum, karyer, shaxta, quduq, bug', gravitatsiya, tektonika, zaxira, qovushqoqlik, flyud, fizik-kimyoviy, uglevodorod.*

Introduction. The problems of exploitation of natural bitumen and unconventional hydrocarbon raw materials are considered to be one of the urgent problems, mainly for countries with high industrial potential, developed infrastructure and highly qualified personnel [1].

Natural bitumens are genetically degassed to varying degrees, have lost their light fractions, are viscous, semi-solid natural oil derivatives (malts, asphalts, asphaltites) [2]. These, like bituminous rocks, are valuable multi-purpose raw materials for many industries. It is an additional source of hydrocarbon raw materials for the fuel and energy industry. It is used as an asphalt-concrete mixture in the construction industry. In metallurgical industries, it is used as a companion metal component.

According to the estimation of the United Nations, the geological resources of natural bitumen in the world are about 260 billion tons, of which the extracted resources are 70 billion tons, so about 70% of the resources are in Canada.

Literature review. Heavy oil ($\rho_n^{20}=0,98$) can be divided into three types according to the conditions of its formation in the territory of Uzbekistan: 1) according to changes in the zone of rapid hypergene-water-oilexchange; 2) paleohypergene-unchanged; 3) heavy oils accumulated at a great depth.

Heavy oils of the first group include oils that have naturally come to the surface in the hilly areas of the Fergana basin (Shorsu, Shim. Rishton, Sel-Roho, etc.) and in the upper horizons. As a result of long-term exposure of mobile waters with low mineralization in tectonic intensive zones, aerobic-microflora and other atmospheric agents caused the loss of light gasoline fraction, partial deparaffinization and loss of other non-renewable elements. Such oils (naphthides) - mortars, asphalts, asphaltites, kerites are called intermediate oils in the process of formation of bitumen in the petroleum series.

Heavy oils of the second group are distributed in the Afghan-Tajik basin, in Paleogene deposits, high-sulfur (up to 5%) low-gasoline oil, aromatic hydrocarbons (NK - 300 OS fraction on average 28%), containing up to 25% nitrogen, up to 15% carbon dioxide enriched with gases. Such oils lie in carbonate-sulphate deposits and were formed under the influence of neotectonic movements that occurred in the Neogene-Quaternary period.

Heavy oils of the third group were found in horizons or layers at a great depth (2800 m) in different regions of Uzbekistan. These oils differ in the amount of asphaltenes, tar substances, and partially n-alkanes S15-S36 gas condensate deposits (Ortabuloq in Western Uzbekistan, Kamishladja in Turkmenistan, etc.). The high formation pressure allowed the retrograde transition of oil fractions to the gas solution, except for the gasoline-kerosene fraction. In this regard, this type of oil can be included in deep-residual oil.

In tectonic active zones, various natural bitumens in the oil line were formed as a result of the release of oil to the surface, denudation of oil layers, and the complex effects of atmospheric factors. In Uzbekistan, such bitumens are distributed in the areas adjacent to the Fergana mountain ranges, in the Surkhandarya basin and around the Zirabulok-Ziaetdin mountains [3].

Reserves of high-viscosity heavy oils and natural bitumen amount to 790 billion according to various estimates. 1 trillion per ton. up to tons, approximately 162 billion. tons of small and medium-viscous residue is 5-6 times more than recoverable oil reserves.

Exploration reserves of heavy oil and natural bitumen are few, currently, light and medium oil reserves are relatively more known [3].

The heavy oil field in the Orinoco Belt in Venezuela and the bitumen deposits in the eastern hills of the Western Canadian Basin are two of the largest in the world. The total initial reserve of oil is 3600 bln. constitutes a barrel. The reserve due to technology development is 900-1200 bln. can form a barrel.

Production of heavy oil began in the first decade of the last century in the USA, Venezuela, and Mexico, and developed rapidly in the 1940s [3].

Research Methodology. There are various methods of extraction of heavy oil and natural bitumen deposits, which differ in their technological and economic characteristics. The use of one or another technology of extraction depends on the geological structure and bedding conditions of the layer, the physical and chemical characteristics of the fluid of the layer, the state and reserves of hydrocarbon raw materials, climatic and geographical conditions, etc. based on They can be conditionally divided into different groups according to their application:

1 – quarry and mine method of extraction;

2 – “cold” method of extraction;

3 – thermal methods of extraction.

Quarry and mining method of extraction.

Natural bitumen heaps are mined by open (quarry or mine) and underground (mine, mine-well) methods.

Hard bituminous shale can lie almost at the surface, but bituminous rocks can lie at depths of up to 750 meters (Peace River Mine, Canada), sometimes even deeper. Usually, the mining depth does not exceed 150-200 meters, in many cases mining is carried out at a lower depth.

Extraction of oil products by the pit method consists of two main operations: extraction of oil rocks underground and transportation to the refinery for extraction of oil. Mining with this method has low capital and operating costs, and after carrying out additional work on the extraction of hydrocarbons from the rocks, a high coefficient of oil recovery is provided: from 65 to 85%. Excavators, scrapers, bulldozers, and other mining techniques are used to bring rocks up.

The Athabasca bituminous sand mine in Canada (Alberta province) is the largest mine in the world. The thickness of the sands is up to 90 meters, and the depth of the sands is up to 600 meters. Sands with quartz porosity up to 30%. Bitumen saturation is from 2 to 18%, on average 8%.

Extraction by the mining method can be carried out in two different modifications: a cleaning mine (raising hydrocarbon-saturated rocks to the surface) and mine-wells (drilling vertical and inclined wells in the productive layer to process the rocks above the layer and collect oil from these processed rocks) [5, 6].

The clean-up shaft method is used only in productive layers up to 200 meters deep, this method has a much higher oil recovery coefficient (up to 45%) compared to well methods. When using this method at a great depth, the efficiency of the method decreases due to the passage of hydrocarbon-unsaturated rocks, because at present, this method is economically effective if the rocks contain rare metals in addition to hydrocarbons. The mine-well method of extraction can be applied to productive layers up to 400 meters deep, the coefficient of oil permeability is much lower than the cleaning-mine method, and a large number of wells are required to be drilled. The principle of using the mine-well method is as follows. If the mountain developments are below the oil and gas productive horizons, drainage wells are drilled in them (usually 10-12 wells are drilled), oil flows under the

influence of gravity factors into a special channel prepared in advance, which is dug obliquely to the side of the oil storage area. If the mining development is above the oil and gas productive horizons, then wells are also drilled, but the oil is extracted by pumps. High-viscosity oil is transported through the canvas with the help of water in an open manner without gaseous components. After that, this oil is pumped up from the oil storage area.

In order to increase the productivity picture of final oil and natural bitumen and to ensure the complete processing of the reserve in the mine-well method of production, steam-heat effect is used in the formation. This method is called the hot-ice method, it is used up to a depth of 800 meters and has a high oil recovery coefficient (up to 50%). However, compared to mine and mine-well methods, management is more complicated. Yareg mine is an example of heavy oil piles mining.

Mining of the Yareg mine is divided into three stages:

- 1) Experimental use of wells on the surface of the earth;
- 2) Mining method of extraction;
- 3) Extraction by the mining method with the effect of heat on the layer.

The exploitation of wells on the surface of the earth led to the extraction of 2% of oil. It is for this reason that the idea of drilling mine wells appeared, ending in a gallery system in the horizons lying above.

Mining is carried out according to two systems:

1) Ukhtali, in which the piles are drained through a dense network of vertical or slightly inclined wells (up to 50 meters deep), which are drilled from the overlying tuffite horizon rock formations located 25 meters above the productive layer;

2) Inclined wells - inclined wells up to 200 meters long, located in the upper part of the formation in the form of a gallery system, are drilled hexagonally (on an area of 8-12) in the lower part of the horizon.

Such two-system wells made it possible to increase the coefficient of oil recovery up to 6%. Steam heat was used to increase oil permeability.

The efficiency of any production system is determined by economic indicators - the cost of oil production, the rates of oil recovery and oil recovery coefficient.

“Cold” methods of oil extraction

“Cold” methods of heavy oil extraction can be criticized, first of all, “CHOPS” method, this method has the possibility of producing oil along with sand due to the erosion of weakly cemented reservoir rocks and creating conditions suitable for the formation for the flow of oil and sand mixture (Lloydminster field in Canada). When using the “CHOPS” method, operating costs are low and large investments are not required, but in this case, the oil recovery coefficient does not exceed 10%. In “cold” oil extraction, pumps with special equipment are widely used (for example, a screw pump), with the help of these pumps, specially formed formation fluid and sand mixtures are withdrawn. Sand mining creates long channels (or pits) with high permeability. experiments show that some channels can

escape up to 200 meters from operational wells. High-permeability channels together with foamed oil provide a high oil recovery ratio, and high productivity is observed in several oil-rich reservoirs in the Lloydminster Cone. There are several limitations to cold mining technology's commercial viability. According to the current estimates, the oil production volume is 36,500 m³/day. (230,000 barrels/day), while the production volume is predicted to decrease by 50% in the next decade. Such a decrease in productivity is caused by the following criteria:

- lack of deposits suitable for obtaining products by the cold method;
- watering of wells due to the flow of water through the network of channels;
- reduction of layer pressure and layer energy;
- low liquid flow and high gas factor;
- due to the above reasons, there is no opportunity to use the wells for more than 7-8 years.

“VAPEX” method can be added to the ranks of the “Cold” method of extracting heavy oil and natural bitumen using solutions, according to which the solution is pumped into the layer in gravity drainage mode. According to this method, exposure to the formation using steam from horizontal wells is estimated. A solution chamber is formed from these due to driving solution above (hydrocarbon solution as well as ethane or propane). Oil is diluted due to the diffusion of solutions in it, and under the influence of gravity, it flows along the boundaries of the chambers towards the wells where the product is extracted. According to this method, the coefficient of oil recovery reaches 60%, but the rate of response is much lower.

Thus, the "cold" methods of extracting heavy oil and natural bitumen deposits have a number of disadvantages. These disadvantages include limitation of maximum oil viscosity and low production rate. Therefore, in the design of the production of heavy oil and natural bitumen fields, it should be carried out in connection with the influence of the layer by the thermal method.

Conclusion. Thus, high-viscosity oil and natural bitumen reserves are somewhat larger than traditional low- and medium-viscosity oil reserves, and difficult-to-extract crude deposits are widespread in the world.

Canada, USA, Russia, Venezuela, Nigeria and other countries are actively developing heavy oil and natural bitumen deposits.

High viscosity oil and natural bitumen should be considered as complex raw materials. High-viscosity oil and natural bitumens contain valuable heteroorganic compounds such as petroleum acid, sulfoacids, simple and complex ethers, metalloporphyrins, sensitizers, organic semiconductors, which serve as a source of unique catalysts. These components and compounds are used in biology, biotechnology, chemical technology, microelectronics, therefore, there is a high demand for these products in countries with rapid development of technology.

Development of the direction of extraction of high-viscosity oil and natural bitumen includes the following activities:

- study of foreign experience in extraction of high-viscosity oil and natural bitumen deposits;

- analysis and development of rational methods of extraction of high-viscosity oil and natural bitumen, as well as development of methods of increasing oil permeability for maximum extraction of all useful components;

- development of technology for extracting products from high-viscosity oil and bitumen in the field, and this obtained product should be compatible with the movement of main pipelines;

- development of technology aimed at increasing the scale of high-viscosity oil and natural bitumen processing and extraction of related components and creation of oil processing capacity;

-solving specific environmental problems associated with extraction, transportation and processing of high-viscosity oil and natural bitumen.

It should be noted that extraction of high-viscosity oil and natural bitumen is not considered a trend today, but it will have its place in the near future.

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THE ROLE OF NATIONAL WRESTLING IN THE LIVES OF YOUNG PEOPLE

Abstract: *National wrestling, or national wrestling, is a traditional form of wrestling that has been practiced for centuries in Central Asia, especially in Uzbekistan. In addition, the article discusses how the modern revival of national wrestling has contributed to the revival of traditional sports and how it helps shape the identity of the younger generation in an era dominated by globalization.*

Keywords: *National Wrestling, National Wrestling, Youth Development, Cultural Heritage, Traditional Sports, Physical Fitness, Discipline, Social Integration, Uzbekistan, National Identity.*

National wrestling, also known as National wrestling, is a fundamental aspect of Central Asian culture, especially in Uzbekistan, where it has been practiced for generations. This ancient sport is more than just a physical competition; it is an embodiment of tradition, heritage, and values that have shaped the lives of many.

In recent years, the importance of National wrestling has grown, particularly among the younger generation.

As modern sports and globalization influence contemporary lifestyles, national wrestling offers a bridge between the past and the present, playing a crucial role in maintaining a connection to one's roots.

One of the primary roles of National wrestling in the lives of youth is its contribution to physical fitness. The sport emphasizes strength, agility, and endurance, providing young wrestlers with a comprehensive workout that enhances their overall health and physical capabilities.

Additionally, wrestling requires mental toughness, as athletes must demonstrate resilience, quick thinking, and strategic decision-making during matches. The discipline and focus required in training translate into other areas of life, helping young individuals develop a strong work ethic and the ability to overcome obstacles.

Beyond physical fitness, National wrestling plays an essential role in the development of character. The sport teaches valuable life lessons such as respect for opponents, teamwork, perseverance, and humility.

Young people involved in wrestling learn how to handle both victory and defeat with grace, fostering emotional maturity. Furthermore, National wrestling serves as a powerful tool for social integration, bringing together individuals from different backgrounds and communities. Wrestling tournaments and training sessions provide a platform for youth to interact, form friendships, and build a sense

of belonging, which is especially important in an era where social isolation can be a concern.

In addition to its benefits for personal growth, National wrestling plays a critical role in preserving cultural heritage and national identity.

The sport is not just a physical activity but also a means of celebrating Uzbek traditions and values. By participating in National wrestling, young people connect with their ancestors' legacy and take pride in their heritage. The sport serves as a living reminder of the cultural significance of wrestling in the region and its role in shaping the collective memory of the Uzbek people.

The development of national wrestling depends on the culture, historical conditions and physical training systems of each nation. The specific rules and techniques of national wrestling differ in each region. In order to fully understand the history and development of national wrestling, it is necessary to analyze it according to its origin.

- **Uzbek national wrestling:** National wrestling has developed in Uzbekistan for a long time, has its own unique traditions, and is still widespread today. The rules of this wrestling are based on the history and fighting traditions of the Uzbek people.

- **Turkmen national wrestling:** The national wrestling of Turkmenistan also has its own rules, and this type of wrestling requires high techniques and skills. The development of this type of wrestling was influenced by Uzbek and Turkmen warriors, who acted as a driving force.

- **Kazakh national wrestling:** Kazakh wrestling is distinguished by its unique techniques and rules. In the history and development of Kazakh wrestling, the determination of wrestlers and their adherence to traditional fighting methods played a significant role.

Competitions in National Wrestling provide athletes with ample opportunities to test their physical prowess and skills. Competitions are held in each region, at the national and international levels. Competitions in National Wrestling are organized according to the following basic rules:

- **Relevant weight categories:** In National Wrestling, athletes compete in their weight categories. Each wrestler competes in a weight class appropriate to their weight class, ensuring that the competition is fair and safe.

- **Scoring System:** In competitions, wrestlers are awarded points based on their technical ability to defeat their opponents. Each competition is held over a set period of time, and the final result is judged based on the wrestlers' skill.

In conclusion, National wrestling is more than a traditional sport; it is a vital aspect of youth development in Uzbekistan.

Its physical, mental, and social benefits contribute significantly to the growth of young people, helping them develop important life skills while staying connected to their cultural roots.

As the world continues to globalize, the resurgence of national wrestling is a powerful reminder of the importance of preserving local traditions and fostering a sense of national pride.

The role of National wrestling in the lives of young people is a testament to the enduring power of sport to shape individuals and communities, ensuring that the values of discipline, respect, and cultural heritage continue to thrive for generations to come.

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ALIGNMENT OF STUDENT ASSESSMENT CRITERIA WITH INTERNATIONAL STANDARDS IN HIGHER EDUCATION

Annotation. *This article explores the significance of aligning student assessment criteria with international standards in higher education. With globalization influencing education systems, standardizing assessment frameworks has become essential for ensuring quality, transparency, and comparability. The study discusses key international benchmarks, such as the Bologna Process, OECD frameworks, and competency-based education models. Furthermore, challenges and opportunities in adopting internationally recognized assessment criteria are analyzed, emphasizing the need for innovative and flexible approaches. The paper concludes with recommendations for improving assessment practices to enhance student learning outcomes and institutional competitiveness.*

Key Words: *Student Assessment, Higher Education, International Standards, Bologna Process, Competency-Based Education, Quality Assurance, OECD, ECTS, Academic Mobility, Digital Assessment.*

Introduction

Student assessment plays a crucial role in measuring learning outcomes and ensuring educational quality. In an increasingly interconnected world, aligning assessment criteria with international standards has become imperative for fostering academic mobility, institutional recognition, and graduate employability. Many universities and colleges worldwide are adopting global assessment frameworks, such as the European Credit Transfer and Accumulation System (ECTS), Programme for International Student Assessment (PISA), and the Tuning Project. These initiatives promote uniformity in grading, competency-based learning, and outcome-based education.

In the rapidly evolving landscape of higher education, student assessment serves as a fundamental pillar for measuring academic achievement, ensuring quality learning, and preparing graduates for the global workforce. As universities and institutions strive to enhance their competitiveness and recognition on the international stage, aligning assessment criteria with globally accepted standards has become a critical priority. This alignment not only fosters academic mobility but also improves transparency, fairness, and comparability across different education systems.

The globalization of education has led to the emergence of various international frameworks that establish benchmarks for assessing student learning outcomes. The **Bologna Process**, for example, aims to create a cohesive European Higher Education Area (EHEA), ensuring that degrees and qualifications are comparable across countries. Similarly, initiatives such as the **Programme for**

International Student Assessment (PISA) by the **Organisation for Economic Co-operation and Development (OECD)** focus on evaluating students' abilities to apply knowledge and skills in real-world scenarios rather than relying solely on rote memorization.

Despite the benefits of standardization, the process of aligning national assessment systems with international standards presents numerous challenges. Differences in grading practices, cultural attitudes toward education, resource availability, and institutional autonomy often create barriers to uniform implementation. Moreover, with the increasing role of **digital technologies**, artificial intelligence (AI)-based assessment tools, and competency-based education models, the traditional methods of evaluating students are being redefined. The transition from standardized testing to **outcome-based and skills-oriented assessments** requires institutions to rethink their evaluation strategies to ensure they remain relevant in a competitive global academic environment.

This paper examines the necessity of aligning student assessment criteria with international standards, explores key global benchmarks, and analyzes the challenges and opportunities associated with their implementation. By discussing best practices and emerging trends, this study aims to provide valuable insights for higher education institutions seeking to enhance the effectiveness and fairness of their assessment methodologies.

International Assessment Standards and Their Implementation

Several key frameworks define global assessment standards:

1. **The Bologna Process and ECTS** – This system provides a standardized approach to higher education grading across Europe, facilitating student mobility and degree recognition.

2. **OECD and PISA** – These assessments focus on skills-based learning, emphasizing real-world problem-solving abilities rather than rote memorization.

3. **Competency-Based Education (CBE)** – Many institutions are shifting towards a model that assesses students based on demonstrated competencies rather than traditional time-based metrics.

4. **Quality Assurance Mechanisms** – Accreditation bodies like the Quality Assurance Agency (QAA) in the UK and the Accreditation Board for Engineering and Technology (ABET) ensure compliance with international assessment criteria.

Challenges in Aligning Assessment Criteria

Despite the benefits, aligning assessment standards globally presents several challenges:

- **Diverse Educational Systems** – Countries have different grading scales, teaching methods, and academic cultures, making standardization complex.

- **Resistance to Change** – Traditional assessment methods, such as standardized exams and rigid grading systems, may not align with modern competency-based approaches.

- **Technological Integration** – Digital assessment tools and artificial intelligence (AI) offer potential solutions but require infrastructure, training, and policy adaptation.

• **Equity and Inclusion** – Standardized assessments may not fully address the needs of diverse student populations, necessitating adaptive and inclusive evaluation mechanisms.

Best Practices for Effective Assessment Alignment

To successfully integrate international assessment standards, higher education institutions should consider the following strategies:

1. **Adopt a Hybrid Model** – Combining traditional grading systems with competency-based assessments ensures a holistic evaluation of student performance.

2. **Enhance Faculty Training** – Educators should be equipped with knowledge of international assessment frameworks and best practices.

3. **Leverage Digital Technologies** – AI-driven grading systems, online assessments, and real-time feedback mechanisms can enhance assessment reliability and scalability.

4. **Promote Global Collaboration** – Universities should engage in cross-border partnerships, exchange programs, and joint accreditation initiatives to align assessment standards effectively.

5. **Ensure Transparency and Flexibility** – Clearly defined assessment rubrics, transparent grading criteria, and opportunities for student feedback contribute to a fair and effective evaluation system.

Conclusion

Aligning student assessment criteria with international standards is crucial for improving higher education quality, fostering global mobility, and enhancing employability. While challenges exist, innovative approaches, digital integration, and institutional collaboration can facilitate effective implementation. Future research should explore the impact of emerging technologies, such as AI and blockchain, on assessment practices and their potential to revolutionize higher education evaluation systems.

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THE ROLE OF ARTIFICIAL INTELLIGENCE TECHNOLOGIES IN ESP TEACHING

Annotation. *The integration of artificial intelligence (ai) in english for specific purposes (esp) teaching has significantly transformed language education. Ai-powered tools enhance personalized learning, facilitate automated assessment, and provide immersive experiences through virtual simulations. This paper explores the role of ai in esp teaching, focusing on its benefits, applications, and challenges. Ai technologies such as chatbots, adaptive learning platforms, and speech recognition software improve language acquisition and professional communication skills. While ai enhances efficiency and engagement, challenges such as data privacy concerns and the need for human intervention remain critical. This study highlights the potential of ai in reshaping esp education and suggests future directions for its effective implementation.*

Key words. *Artificial intelligence, esp teaching, adaptive learning, machine learning, automated assessment, virtual simulations, personalized learning.*

INTRODUCTION

The rapid advancements in Artificial Intelligence (AI) have revolutionized multiple sectors, including education. English for Specific Purposes (ESP) teaching, which focuses on equipping learners with language skills for professional or academic settings, has significantly benefited from AI technologies. Traditional ESP teaching methods often rely on textbooks, lectures, and human instructors, but AI introduces innovative ways to personalize learning, provide real-time feedback, and enhance engagement. AI-powered tools such as Natural Language Processing (NLP), chatbots, and virtual reality simulations offer learners an immersive and interactive language learning experience tailored to their specific professional needs.

As globalization increases, professionals across various fields must develop not only linguistic proficiency but also industry-specific communication skills. AI enables ESP learners to practice real-life scenarios, receive instant feedback, and engage in self-paced learning. For example, AI-driven writing assistants help learners refine technical writing, while speech recognition software improves pronunciation and fluency. Additionally, AI-based adaptive learning systems analyze students' progress and customize lessons to address individual weaknesses, making ESP education more efficient and learner-centered.

APPLICATIONS OF AI IN ESP TEACHING

AI technologies are applied in ESP education through various tools and methodologies, including:

1. Chatbots for Language Practice. AI-driven chatbots act as virtual tutors, providing real-time conversation practice and feedback. These chatbots simulate professional dialogues in industries such as healthcare, engineering, and business, helping ESP learners develop domain-specific communication skills.

2. Adaptive Learning Systems. AI-powered learning platforms adjust content based on students' progress and comprehension levels. These systems use machine learning algorithms to personalize vocabulary drills, grammar exercises, and industry-specific case studies.

3. Speech Recognition and Pronunciation Training. AI tools such as Google's Speech-to-Text and Duolingo's AI-driven pronunciation models help learners improve their spoken English by analyzing speech patterns and providing corrective feedback. This is particularly useful for ESP learners in fields that require clear verbal communication, such as aviation, customer service, and healthcare.

4. Automated Writing Evaluation. AI-based writing assistants, such as Grammarly and Turnitin, help ESP learners refine their technical and academic writing by offering suggestions on grammar, vocabulary, and coherence. These tools ensure that learners develop effective writing skills tailored to their professional requirements.

5. Virtual and Augmented Reality for Immersive Learning. AI-powered virtual reality (VR) environments provide ESP learners with immersive simulations of workplace scenarios. For example, medical students can engage in virtual patient consultations, while business students can participate in AI-generated negotiation exercises.

BENEFITS OF AI IN ESP TEACHING

The integration of AI in ESP teaching offers numerous advantages, including:

- **Personalized Learning:** AI adapts lessons to meet the unique needs of each learner, ensuring a more effective and engaging learning experience.

- **Instant Feedback:** Automated assessment tools provide immediate corrections and suggestions, allowing learners to improve continuously.

- **Time and Cost Efficiency:** AI reduces the workload of instructors by automating repetitive tasks, such as grading assignments and tracking student progress.

- **Enhanced Engagement:** Interactive AI-driven exercises and gamification elements make ESP learning more engaging and motivating.

CHALLENGES AND LIMITATIONS

Despite its advantages, AI implementation in ESP teaching presents several challenges:

- **Lack of Human Interaction:** AI tools may not fully replicate the depth of communication and cultural awareness that human instructors provide.

- **Data Privacy and Ethical Concerns:** The use of AI-powered platforms requires careful handling of students' personal data to ensure security and compliance with regulations.

- **Technical Barriers:** Not all educational institutions have the resources and infrastructure to integrate advanced AI technologies into their ESP programs.

While Artificial Intelligence (AI) offers numerous advantages in English for Specific Purposes (ESP) teaching, its integration is not without challenges and limitations. These challenges arise from technological, pedagogical, ethical, and institutional factors, which must be carefully considered to ensure AI's effective and responsible use in ESP education.

One of the primary challenges is the lack of human interaction in AI-powered learning environments. Traditional ESP instruction often relies on interaction between students and teachers, where instructors provide personalized explanations, cultural insights, and real-time feedback based on students' unique needs. AI-driven tools, despite their advanced capabilities, may struggle to replicate the depth of human interaction. While chatbots and virtual tutors can simulate conversations, they lack the ability to understand emotions, contextual nuances, and cultural sensitivities, which are crucial in ESP teaching. This limitation may hinder learners from developing critical communication skills required in professional settings.

Another significant limitation is the dependency on data quality and biases in AI algorithms. AI-driven learning platforms rely on large datasets to generate personalized recommendations, assess student performance, and offer feedback. However, these datasets may contain biases, leading to inaccurate assessments or unfair evaluations. For instance, an AI writing assistant trained primarily on Western academic writing styles may not fully support learners from diverse linguistic backgrounds, resulting in biased feedback. Similarly, AI speech recognition tools may struggle to accurately assess pronunciation and fluency for non-native speakers with diverse accents, leading to ineffective learning outcomes.

Technical limitations and accessibility issues also pose challenges in AI-based ESP teaching. Implementing AI-powered tools requires robust technological infrastructure, including high-speed internet, powerful computing systems, and digital literacy among educators and students. Many educational institutions, particularly in developing regions, may lack the necessary resources to fully integrate AI into their curricula. Additionally, some students may not have access to devices or stable internet connections, creating a digital divide that prevents equal learning opportunities. AI-based tools must be designed with inclusivity in mind to ensure all learners, regardless of their background, can benefit from these technologies.

Data privacy and security concerns remain a significant barrier to AI adoption in ESP education. AI-driven platforms often collect and process large amounts of student data to personalize learning experiences. However, ensuring the security of this data is crucial, as breaches could expose sensitive student information. Institutions must comply with data protection regulations, such as GDPR and other local laws, to safeguard students' privacy. Additionally, ethical concerns arise regarding how AI platforms use collected data—whether it is stored securely, shared with third parties, or used for commercial purposes. Without clear guidelines and regulations, students and educators may hesitate to fully trust AI-driven solutions.

Another major challenge is the need for continuous human oversight and intervention. While AI can automate tasks such as grading, personalized content

delivery, and feedback generation, it cannot replace the role of human instructors entirely. ESP teaching often involves complex tasks such as negotiation, persuasive communication, and cultural adaptation, which require human expertise. Instructors must play an active role in guiding students, ensuring AI-generated feedback is accurate and meaningful, and addressing misunderstandings that AI tools may fail to recognize. Without proper instructor intervention, learners may become overly reliant on AI-generated responses, leading to superficial learning.

Additionally, the cost of AI integration in ESP education can be a limiting factor. Developing and maintaining AI-powered learning systems require significant financial investment. Institutions may need to allocate funds for purchasing AI software, training educators, upgrading digital infrastructure, and ensuring ongoing system updates. The high costs may prevent some institutions from adopting AI-enhanced ESP teaching methods, limiting their ability to provide cutting-edge language learning solutions to students.

Furthermore, AI-generated content may lack cultural and contextual relevance in ESP teaching. ESP learners require highly specific language training tailored to their professional fields, whether in medicine, business, law, or engineering. While AI can generate general language exercises, it may struggle to provide highly specialized content that aligns with the real-world communication needs of different industries. For example, a medical student learning ESP may need highly technical vocabulary and realistic patient communication scenarios, which AI tools may not always accurately provide. Human instructors still play a crucial role in ensuring that course materials are aligned with industry standards and real-world applications.

Lastly, teacher resistance and lack of digital literacy can hinder AI adoption in ESP education. Many educators may be unfamiliar with AI technologies and reluctant to integrate them into their teaching due to a lack of technical expertise or fear of job displacement. Effective AI implementation requires teacher training programs that equip educators with the skills needed to integrate AI tools effectively into their teaching methodologies. Without proper training and support, AI adoption in ESP classrooms may face resistance, limiting its potential impact.

CONCLUSION

AI technologies have significantly transformed ESP teaching by enhancing personalization, efficiency, and engagement. From chatbots and speech recognition to adaptive learning platforms and VR simulations, AI tools provide learners with innovative ways to develop industry-specific language skills. However, challenges such as ethical concerns, technical limitations, and the need for human intervention must be addressed to ensure AI's effective integration into ESP education. As AI continues to evolve, its role in ESP teaching will expand, offering new possibilities for enhancing professional communication skills in various fields.

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THE IMPORTANCE OF INTERCULTURAL COMMUNICATION IN ESP EDUCATION

Annotation. *In an increasingly globalized world, intercultural communication has become a crucial component of English for Specific Purposes (ESP) education. ESP learners must not only acquire linguistic competence but also develop the ability to interact effectively across diverse cultural contexts. This paper explores the significance of intercultural communication in ESP education, highlighting its role in professional and academic success. It discusses strategies for integrating intercultural competence into ESP curricula and examines the benefits of intercultural training for students. The study also addresses challenges in incorporating intercultural elements into ESP education and proposes solutions to enhance learners' readiness for global communication.*

Key Words. *ESP education, intercultural communication, global workforce, linguistic competence, cultural awareness, professional communication, curriculum integration.*

Introduction

English for Specific Purposes (ESP) education is designed to equip learners with the language skills necessary for success in specialized academic and professional fields. However, in an era of globalization, language proficiency alone is insufficient for effective communication. Many professionals and academics operate in multicultural environments, where understanding cultural differences is as important as mastering technical vocabulary and grammar. Intercultural communication plays a critical role in ESP education, ensuring that learners can navigate diverse cultural norms, business etiquettes, and communication styles.

The importance of intercultural communication in ESP education is underscored by the growing demand for globally competent professionals. In fields such as business, medicine, engineering, and academia, individuals frequently interact with colleagues, clients, and institutions from different cultural backgrounds. Misunderstandings arising from cultural differences can lead to inefficiencies, miscommunication, and even conflict. Therefore, ESP courses must incorporate intercultural training to prepare learners for real-world professional interactions.

This paper examines the role of intercultural communication in ESP education, exploring methods for integrating intercultural competence into the curriculum. It also discusses the benefits of intercultural awareness for ESP learners and addresses the challenges faced in its implementation. The findings suggest that

fostering intercultural competence in ESP education enhances students' confidence, adaptability, and overall communication effectiveness in international settings.

In today's interconnected world, the ability to communicate effectively across cultures has become a fundamental skill in various professional fields. English for Specific Purposes (ESP) education aims to equip learners with the linguistic competence required in their respective professions. However, mere linguistic proficiency is not enough; successful communication in globalized workplaces and academic settings also requires intercultural competence. Intercultural communication plays a vital role in ESP education, as it enables learners to interact efficiently in diverse professional environments, understand cultural nuances, and avoid misunderstandings that could hinder professional relationships.

One of the key reasons why intercultural communication is crucial in ESP education is that professionals often work in multicultural teams, collaborate with international clients, or participate in cross-border academic exchanges. Different cultures have distinct communication styles, social norms, and business etiquettes that can influence interactions. For instance, while direct communication is valued in some cultures, others prefer indirect or implicit ways of expressing opinions. Similarly, concepts such as politeness, personal space, and hierarchy differ across cultural backgrounds. Without proper intercultural training, ESP learners may struggle to interpret these differences, leading to miscommunication and potential conflicts.

Integrating intercultural communication into ESP curricula helps learners develop awareness of these differences and acquire strategies for effective cross-cultural interactions. This can be achieved through various pedagogical approaches, including case studies, role-playing activities, and discussions on cultural scenarios. Authentic materials such as emails, reports, and real-life dialogues from international workplaces can provide learners with practical exposure to how cultural factors shape communication. By analyzing such materials, learners can identify culturally appropriate language use, tone, and non-verbal cues essential for professional success.

Another significant benefit of intercultural communication in ESP education is the development of adaptability and open-mindedness. In a professional context, being culturally competent allows individuals to adjust their communication style according to the situation and the background of the interlocutor. For example, a business professional negotiating a contract with a foreign partner needs to be aware of culturally appropriate persuasive strategies and decision-making processes. Similarly, medical professionals communicating with patients from different cultural backgrounds must be sensitive to variations in health beliefs, attitudes toward medical treatment, and expressions of pain or discomfort.

Moreover, in ESP education, fostering intercultural competence contributes to students' confidence in real-world interactions. When learners understand the cultural underpinnings of communication, they feel more comfortable engaging in discussions, making presentations, and handling professional correspondence in an

international context. This confidence can enhance their career prospects, as employers increasingly seek candidates who possess not only technical expertise but also strong intercultural communication skills.

Technology also plays a significant role in promoting intercultural communication in ESP education. Virtual exchange programs, online collaborative projects, and digital simulations allow learners to interact with peers from different cultural backgrounds. These experiences provide a practical learning environment where students can apply their linguistic and cultural knowledge in real-time communication. Additionally, AI-driven language learning platforms and cross-cultural training software help students understand cultural differences through interactive exercises and real-life scenarios.

Despite its importance, integrating intercultural communication into ESP education presents some challenges. One major challenge is the lack of culturally diverse teaching materials that accurately reflect real-world professional contexts. Many traditional ESP textbooks focus primarily on language skills without incorporating cultural aspects. To address this issue, educators should design curricula that include authentic materials from international sources and incorporate cross-cultural perspectives into language instruction. Furthermore, instructors themselves need to be well-versed in intercultural communication to guide students effectively.

In conclusion, intercultural communication is a crucial component of ESP education that enhances learners' ability to function effectively in international professional settings. By understanding and adapting to cultural differences, ESP learners can improve their communication skills, build strong professional relationships, and navigate the complexities of global workplaces. Therefore, ESP curricula should integrate intercultural training to ensure that learners are equipped with both linguistic and cultural competencies necessary for success in their fields. As globalization continues to shape the workforce, the role of intercultural communication in ESP education will only become more significant, making it an essential aspect of language learning and professional development.

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QAYTA TIKLANADIGAN ENERGIYA MANBALARIGA O'TISH GLOBAL YO'NALISHDIR

Annotatsiya. Ushbu maqolada qayta tiklanadigan energiya manbalarining energiya ta'minotidagi o'rni atroflicha o'rganilgan. Ushbu energiya turining ma'lum darajadagi kamchiliklari yoritilgan. SHuningdek, dunyoning ayrim davlatlari, o'z navbatida Markaziy Osiyo davlatlarida qayta tiklanuvchi energiya manbalariga e'tibor va foydalanish jihatlari o'rganilgan.

Kalit so'zlar. Energiya, energiya ta'minoti, qayta tiklanadigan energiya, quyosh energiyasi, shamol energiyasi, geotermal manba, energiya samaradorligi, gidroelektr stansiya.

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TRANSITION TO RENEWABLE ENERGY SOURCES GLOBAL DIRECTION

Abstract. This article examines in detail the role of renewable energy sources in energy supply. Some disadvantages of this type of energy are highlighted. The attention and use of renewable energy sources in some countries of the world, particularly in Central Asian countries, were also studied.

Key words: *Energy, energy supply, renewable energy, solar energy, wind energy, geothermal energy, energy efficiency, hydroelectric power plant.*

Kirish. Energiyaning qayta tiklanadigan energiya manbalariga o'tishi global yo'nalish hisoblanadi. Hozirgi ishlab chiqarish sur'atlarida zaxiralari taxminan 50-60 yil davom etadigan an'anaviy manbalarning tugashini hisobga olgan holda, "yashil" iqtisodiyotdan foydalanish energiya xavfsizligini ta'minlashning ajralmas qismiga aylanmoqda. Insoniyat tomonidan energiya ishlab chiqarish va iste'mol qilish tuzilishini o'zgartirish bo'yicha o'nlab yillar davom etgan strategiya, jahon energetika tizimini to'rtta yo'nalishda global o'zgartirishga qaratilgan: energiya samaradorligi, karbonsizlantirish, markazsizlashtirish, raqamlashtirish. Ushbu qayta o'zgarish hozirda global insoniyatning rasman qabul qilingan strategiyasi bo'lib, 2015 yilda 180 mamlakat tomonidan imzolangan Iqlim bo'yicha Parij kelishuvida tasdiqlangan.

"Yashil energiya" ga o'tish to'g'risidagi qaror insonning energiya faolligi global isishga olib keladi degan nazariya asosida qabul qilindi. Hamma olimlar ham bu nazariyaga qo'shilishmaydi, ammo bugungi kunda aynan shu narsa global tendensiyani (yo'nalishni) belgilaydi. Uning doirasida isish CO₂ ishlab chiqarishning ko'payishi bilan bog'liq deb ishoniladi. Hozirgi vaqtda dunyoda qayta tiklanadigan energiya manbalaridan Germaniya, Ispaniya, Fransiya, Finlyandiya, Norvegiya, Xitoy, AQSh va Yaponiya kabi mamlakatlarda eng samarali va faol foydalanilmoqda. Ushbu sanoat Hindiston, Braziliya va Meksikada ham faol rivojlanmoqda [1,2].

Asosiy qism. Har qanday yangi loyiha ma'lum darajada yutuqlari bilan bir qatorda, ayrim kamchiliklariga ham ega. Ayniqsa resurslarning tuganmasligiga qaramay, "yashil" energiyani rivojlantirish o'zining kamchiliklariga ega va o'zi bilan yangi muammolarni keltirib chiqaradi. Avvalo, bu "yashil" texnologiyalarning geografiya, tabiiy sharoit va kun vaqtiga bog'liqligi, bu energetika majmuasini markazsizlashtirishga yordam beradi, quvvatlardan foydalanish, energiya uzatish va zaxiralarni yaratish jarayonlari ustidan nazoratni murakkablashtiradi, shuningdek elektr uzilishlari yuz beradi.

Sayyoradagi hamma joylar quyosh tomonidan yaxshi yoritilgan, barqaror shamollar yoki geotermal manbalarga ega emas. Masalan, cho'llarda quyosh yiliga 300 kundan ortiq nur sochsa, ba'zi joylarda quyoshli kunlar soni 100 kundan oshmaydi. Bundan tashqari, quyosh energiyasini ishlab chiqarish va iste'mol qilish kun davomida bir-biriga to'g'ri kelmaydi. Ertalab va kechqurun, iste'mol maksimal bo'lganda, quyosh hali porlamayapti va quyosh yerni isitgandan keyin shamol kuchayadi. Noqulay ob-havo sharoitida bo'shliq yanada kengayadi. Buning uchun "yashil" energiya etishmasligini an'anaviy manbalar bilan almashtirish, bir mintaqadan ikkinchisiga global energiya oqimlarini yaratish yoki uni katta hajmlarda to'plash kerak.

"Yashil" energiya manbalarini yaratish juda ko'p yuqori texnologiyali materiallar va nodir minerallarni talab qiladi, ularni qazib olish va ishlab chiqarishning o'zi katta energiya talab qiladi. Shuningdek, "yashil" elektr

energiyasi iste'mol qilinadigan hududlardan ishlab chiqariladigan joyning uzoqligi ulkan infratuzilmani talab qiladi, bu esa transport xarajatlarini oshiradi. Misol uchun, shamol energiyasini uzatish narxi an'anaviy energiyani tashishdan uch baravar yuqori.

Qayta tiklanadigan energiya manbalarining alohida komponentlarining (quyosh panellari, shamol turbinalari) o'rtacha 15-20 yil xizmat qilish muddati cheklanganligi ularni muntazam ravishda almashtirish zaruratini keltirib chiqaradi va chiqindilarni utilizatsiya qilish muammosini yanada kuchaytiradi. Shuningdek, gidroelektrostansiyalarni qurish jarayonida daryolarning tabiiy holatini buzish, shamol generatorlari va quyosh panellari ishidan atmosferani isitish va hokazolarning ekologik izlarini ham hisobdan chiqarib tashlay olmaysiz [3,4].

Qayta tiklanuvchi energiya manbalarining asosiy turlari va ularning jahon energetika tizimidagi ulushi o'ziga xos. QTEM (**Qayta tiklanuvchi energiya manbalari**) umumiy atamasi juda turli xil energiya manbalarini o'zida jamlaydi. Bir tomondan, bu uzoq vaqt davomida muvaffaqiyatli qo'llanilgan gidroenergetika, boshqa tomondan, nisbatan yangi turlar: quyosh energiyasi, shamol, geotermal manbalar va hatto okean to'lqinlarining mutlaqo ekzotik energiyasi.

Gidroenergetika suv oqimining potensial energiyasidan foydalanishga asoslangan qayta tiklanadigan energiyaning eng rivojlangan texnologiyasidir. **GES** lar jahon elektr energiyasi ishlab chiqarishning qariyb oltidan bir qismini tashkil etadi, ko'mir va gaz ishlab chiqarishdan keyin ikkinchi o'rinda turadi. Sanoatning elektr energiyasini ishlab chiqarishga qo'shgan hissasi atom energiyasidan deyarli 60% va boshqa barcha qayta tiklanadigan energiya manbalaridan ko'proqdir. 2022 yilda barcha global gidroelektr stansiyalarining umumiy quvvati tarixda birinchi marta 1200 GVt dan oshdi.

Gidroenergetika kam uglerodli elektr energiyasi ishlab chiqarishning asosi bo'lib, 1970 yillardan boshlab o'sib bormoqda. Oxirgi yigirma yil ichida global gidroenergetika quvvati 2000 yildagi 680 GVt dan 2021 yilda deyarli 1200 GVt gacha o'sdi. O'sish 75% dan ortiqni tashkil etdi,-deydi Rystad Energy tahlilchisi Karan Satvani.

Umumiy gidroenergetika quvvati 340 GVt bo'lgan jahon etakchisi Xitoy hisoblanadi. Ikkinchi o'rin 112 GVt quvvatga ega Braziliyaga tegishli. Dunyoda gidroenergetika ishlab chiqarish bo'yicha etakchi beshlikka AQSH-84 GVt, Kanada-81 GVt va Rossiya-50 GVt kiradi. Ulardan keyin Hindiston-47 GVt, Norvegiya-33 GVt, Turkiya-30 GVt va Yaponiya-23 GVt.

Quyosh elektr stansiyalari yashil energiyaning eng tez rivojlanayotgan turidir. Ularning afzalligi quyosh energiyasini elektr energiyasiga aylantirishning yuqori samaradorligi, ob-havo sharoitlarining o'zgarishiga chidamliligi va issiqxona gazlari chiqindilarining yo'qligidir. Xalqaro qayta tiklanadigan energiya agentligi ma'lumotlariga ko'ra, quyosh energiyasi yangi ishlab chiqarish quvvatlarida ishonchli ustunlik qiladi va 2022 yilda 22 foizga yoki 191 GVtga oshadi.

Hozirgi vaqtda Hindiston, Xitoy va BAA da eng kuchli quyosh elektr stansiyalari qurilgan. Dunyodagi eng katta quyosh stansiyasi Xitoydagi Tengger Desert Solar Parkdir. Uning maydoni taxminan 1200 kvadrat kilometrni tashkil etadi va o'rnatilgan quvvati 1,5 GVt dan oshadi. Bu stansiyaga milliondan ortiq xonadonni elektr energiyasi bilan ta'minlash va karbonat angidrid gazi chiqindilarini yiliga 1,2 million tonnaga kamaytirish imkonini beradi.

Hindistonda uchta yirik stansiya ishlamoqda: umumiy quvvati 2,2 GVt dan ortiq Bhadla Solar Park, Pavagada Solar Park-2,05 GVt, Kamuthi Solar Power Project-648 MVt. BAA dagi 1,17 GVt quvvatga ega Noor Abu Dhabi Solar Plant mintaqadagi eng yirik hisoblanadi va 90 mingdan ortiq xonadonni elektr energiyasi bilan ta'minlashga qodir. Stansiya shuningdek, CO₂ emissiyasini yiliga 1,2 million tonnaga kamaytiradi.

Shamol energetikasi shamol energiyasini shamol generatori yordamida elektr energiyasiga aylantirishdir. Texnologik taraqqiyot va yangi kompozit materiallardan foydalanish shamol turbinalarining xizmat qilish muddatini oshirish va narxini pasaytirishga yordam berdi. Xalqaro energetika agentligining hisob-kitoblariga ko'ra, shamol ishlab chiqarish salohiyati hozirgi elektr energiyasiga bo'lgan talabdan 40 baravar yuqori. Shamol energiyasidan faol foydalanayotgan davlatlar qatoriga Xitoy, AQSH, Daniya, Hindiston va Braziliya kiradi. Hozirda Xitoyda eng kuchli shamol elektr stansiyasi «Gansu» ishlamoqda. Ushbu majmuaning quvvati 8 GVt ga etadi, bu o'nta atom elektr stansiyasiga teng.

Ikkinchi o'rinni AQSh ning Kaliforniya shtatida joylashgan «Alta» shamol majmuasi egallaydi. Yaqin vaqtgacha u nafaqat eng qadimgi, balki eng kuchli shamol firmasi edi. Hozirda «Alta» quvvati 1,7 GVt ni tashkil etadi, u cho'lda joylashgan va 1300 gektardan ortiq maydonni egallaydi.

Uchinchi o'rin Hindistondagi «Muppandal» elektr stansiyasiga tegishli. U 2011 yilda ishga tushirilgan va hozirda 1,5 GVt quvvatga etgan.

Bioenergetika yashil energiyaning to'rtinchi eng katta turidir. Elektr va issiqlik energiyasini ishlab chiqarish qishloq xo'jaligining qo'shimcha mahsulotlari va maishiy chiqindilar kabi an'anaviy biomassa manbalaridan innovatsion foydalanishga asoslangan. Hozirgi vaqtda bioenergetika dunyodagi birlamchi energiya resurslari umumiy iste'molining o'rtacha 15 foizini qoplaydi. Xitoy, Buyuk Britaniya va Hindiston bioenergiya ishlab chiqarishda etakchi hisoblanadi. 2022 yilda Xitoy deyarli 34,1 GVt bilan dunyodagi eng yuqori bioenergiya quvvatiga ega mamlakatga aylandi.

Eng yirik bioyoqilg'i yoqish zavodi Finlyandiyada joylashgan Alholmens Kraft hisoblanadi. Stansiyaning quvvati taxminan 265 MVt elektr va taxminan 160 MVt issiqlik energiyasini tashkil qiladi. Ushbu majmua sellyuloza va yog'ochni qayta ishlash zavodining o'z turidagi eng yirik chiqindilarni yo'q qilish inshootidir. Bu yerdagi yonish qozonlari shunchalik kattaki, har bir necha daqiqada yuk mashinasi to'la bioyoqilg'i yonib ketadi.

Qayta tiklanadigan energiya manbalari qatoriga geotermal energiya ham kiritilgan bo'lib, ulardan foydalanish jadal sur'atlar bilan o'sib bormoqda. Geotermal elektr stansiyalari qayta tiklanadigan elektr energiyasining noyob

manbai bo'lib, bug' hosil qilish uchun yer yuzasi ostida hosil bo'lgan issiqlikni oladi, keyin esa elektromagnit yo'l bilan elektr energiyasini yaratish maqsadida turbinalarni aylantirish uchun ishlatiladi. Islandiya dunyodagi eng yirik geotermal elektr ishlab chiqaruvchi hisoblanadi. Indoneziya, Italiya, Meksika, Filippin va AQSH bu sohada muhim o'rinlarni egallaydi.

AQSh ning Kaliforniya shtati, Mayyakamas tog'larida joylashgan geyzer majmuasi dunyodagi eng yirik geotermal kon hisoblanadi. Majmua va uning 22 ta geotermal elektr stansiyasining umumiy o'rnatilgan quvvati-1520 MVt. Geyzerlar tomonidan ishlab chiqarilgan energiya Kaliforniyadagi Sonoma, Mendosino va Leyk okruglarining elektr energiyasiga bo'lgan ehtiyojlarini qondirishga yordam beradi.

To'liqlik energiya qayta tiklanadigan energiya manbalarining yana bir turidir. Ular elektr energiyasini ishlab chiqarish uchun mas'ul bo'lgan generatorni aylantiradilar. Shunday qilib, elektr energiyasini ishlab chiqarish uchun to'liqlik elektr stansiyalari dengiz to'liqlari orasidagi bosimning pasayishi va harorat farqidan kelib chiqadigan gidrodinamik energiyadan foydalanadi. Bu boradagi tadqiqotlar hali ham davom etmoqda, biroq ekspertlarning hisob-kitoblariga ko'ra, Yevropa qirg'og'ining o'zi yiliga 280 TVt dan ortiq energiya ishlab chiqarishi mumkin, bu Germaniya energiya iste'molining yarmini tashkil etadi [5,6].

Toza energiya ishlab chiqarish bo'yicha etakchi davlatlar. Toza energiyaga global sarmoya 20 yil ichida 33 milliard dollardan 300 milliard dollarga etdi. Xitoy muqobil resurslarga investitsiyalar soni bo'yicha so'zsiz etakchi hisoblanadi. 2022 yilda qayta tiklanadigan energiya manbalarini o'rnatish bo'yicha rekord o'rnatildi, butun dunyo bo'ylab umumiy quvvati 9,6 foizga oshib, 3372 GVt ga etdi. O'sish asosan Osiyo, AQSh va Yevropada qayd etilgan. Yangi qayta tiklanadigan energiya quvvatlarining 60 foizi Osiyo hissasiga to'g'ri keldi-1,63 TVt. Ularning yarmidan ko'pi Xitoyda ishga tushirilgan. Qayta tiklanadigan energiya manbalari xalqaro agentligi mamlakatlarning yashil energiya ishlab chiqarish bo'yicha reytingini tuzdi.

Markaziy Osiyoda yashil energiyani rivojlantirish istiqbollari. Markaziy Osiyo mamlakatlarida qayta tiklanadigan energetikaning rivojlanishi notekis. Ba'zi davlatlar muqobil energiya manbalaridan foydalanish ular uchun ochilayotgan imkoniyatlarni juda uzoq vaqt oldin sinchkovlik bilan ko'rib chiqa boshlagan, boshqalari esa endigina "yashil" yo'lini boshlagan.

QTEM Qozog'istonda faol rivojlanmoqda. Qozog'istonda qayta tiklanadigan energetika sektori o'n yildan ortiq vaqt davomida faol rivojlanmoqda va mamlakat energetika tizimida tobora ko'proq namoyon bo'lmoqda. **2013** yilda Davlat rahbarining Farmoni bilan Qozog'iston Respublikasining "yashil iqtisodiyot" ga o'tish konsepsiyasi tasdiqlandi. U yangi iqtisodiyotga o'tish va atrof-muhitga yukni minimallashtirish maqsadida chuqur tizimli o'zgarishlar uchun asos yaratadi. Bundan tashqari, 2015 yilda Qozog'iston Parij kelishuvlari doirasida iqlim o'zgarishiga qarshi kurashga qo'shildi. Bu borada mamlakatda qayta tiklanadigan energiya manbalarini rivojlantirishga qaratilgan faol qadamlar qo'yilmoqda.

Energetika vazirligi ma'lumotlariga ko'ra, bugungi kunda Qozog'istonda 133 ta qayta tiklanuvchi energiya manbalari faoliyat ko'rsatmoqda: quvvati 1107,5 MVt bo'lgan 48 ta shamol elektr stansiyasi; 1148 MVt quvvatga ega 43 ta quyosh elektr stansiyasi; 269,605 MVt quvvatga ega 39 ta GES; 1,77 MVt quvvatga ega 3 ta biogaz elektr stansiyasi. Ularning umumiy o'rnatilgan quvvati 2,5 GVt dan oshadi. 2023 yilning 1-yarim yilligi yakunlari bo'yicha qayta tiklanadigan energiya manbalari ob'ektlari tomonidan ishlab chiqarilgan elektr energiyasi hajmi 3,35 mlrd.kVt/soat ni tashkil etdi.

Qozog'iston qayta tiklanadigan energiya manbalarini rivojlantirish uchun katta salohiyatga ega. Ko'proq darajada bu gidro, shamol va quyosh energiyasidir. Birlashgan Millatlar Tashkilotining Sanoatni Rivojlantirish Tashkiloti (YUNIDO) ma'lumotlariga ko'ra, Qozog'iston Respublikasida kichik gidroenergetikaning taxminiy salohiyati quvvati 35 MVt gacha bo'lgan elektr stansiyalari uchun 4800 MVt ni va 10 MVt dan kam quvvatlar uchun 2707 MVt ni tashkil qiladi. Yillik ishlab chiqarish hajmi bo'yicha kichik gidroenergetikaning umumiy salohiyati 65 mlrd.kVt/soat ni tashkil etadi.

GES larni rivojlantirishning eng katta istiqbollari respublikaning janubiy viloyatlarida mavjud. Gidroenergetika resurslarining 65% ga yaqini janubiy hududning tog' daryolarida to'plangan. Kichik GES larni rivojlantirishning yaqqol ustunligi ishlab chiqarilgan energiyaning nisbatan arzonligi va ekologik tozaligidir. GES kaskadlarini qurish qurilishning to'liq yakunlanishini kutmasdan, quvvatlarni bosqichma-bosqich ishga tushirish imkonini beradi, bu esa kapital qo'yimlardan birinchi foyda olish tezligini sezilarli darajada oshiradi.

Qozog'iston Yer sayyorasining shimoliy yarim sharining shamol kamarida joylashgan bo'lib, mutaxassislarning fikriga ko'ra, u 1820 milliard kVt/soat dan ortiq shamol salohiyatiga ega. Qozog'iston Respublikasi Energetika vazirligi ma'lumotlariga ko'ra, 2030 yilgacha respublikaning 46 ta hududida umumiy quvvati 1 million kVt/soat dan ortiq shamol elektr stansiyalarini qurish masalasini ko'rib chiqish rejalashtirilgan.

Birlashgan Millatlar Tashkilotining Shamol energetikasi bo'yicha Taraqqiyot Dasturi loyihasi doirasida Qozog'iston hududlarida shamol energetikasi salohiyatini o'rganish janubiy zonada (Almati, Jambil, Turkiston viloyatlari), G'arbiy zonada (Mang'istau va Atirau viloyatlari), Shimoliy zonada (Aqmola viloyati) va Markaziy zonada (Qarag'andi viloyati) shamol stansiyalarini qurish uchun yaxshi shamol salohiyati mavjudligini ko'rsatadi.

Shamoldan tashqari, Qozog'istonning kengliklari ham quyosh nuriga boy, ayniqsa janubiy va janubi-g'arbiy viloyatlar. CADGAT (Markaziy Osiyo ma'lumotlarni to'plash va tahlil qilish guruhi-tahririyat izohi) ma'lumotlariga ko'ra, quyosh potentsiali fotoelektrik energiya yiliga 6684 TVt/soat ni tashkil qiladi. Yiliga 2200-3000 soat quyosh nuri bilan quyosh nurlanishi 1200-1700 kVt/m³ ni tashkil qiladi. Quyosh energetikasining yalpi, texnik va iqtisodiy salohiyati mos ravishda 1 milliard GVt/soat, 1 million GVt/soat va 10 GVt/soat ga baholanmoqda. Qozog'iston uchun boshqa muqobil energiya manbalari biogaz texnologiyalari,

qattiq chiqindilarni qayta ishlash bo'lishi mumkin. Kaspiy dengizi to'liq energiyasi, suv toshqini energiyasi etkazib beruvchiga aylanishi mumkin [7, 10].

O'zbekistonda quyosh va shamol elektr stansiyalari qurilmoqda. Xalqaro energetika agentligi va BMT ning Yevropa iqtisodiy komissiyasi hisob-kitoblariga ko'ra, O'zbekistonda qayta tiklanadigan energiya manbalarining elektr energiyasi ishlab chiqarish uchun umumiy salohiyati 2091 milliard kVt/soat ni tashkil etadi (yillik iste'moldan 30 baravar yuqori). So'nggi yillarda mavjud salohiyatni rivojlantirishda ushbu sohaga katta e'tibor qaratilmoqda.

O'zbekiston yiliga 320 ga yaqin quyoshli kunga ega mamlakat sifatida quyosh energetikasini rivojlantirish bo'yicha eng yuqori salohiyatga ega bo'lib, uning umumiy salohiyati 2058 milliard kVt/soat ni tashkil etadi. Bu borada Surxondaryo, Buxoro va Qashqadaryo viloyatlari eng katta salohiyatga ega. O'zbekiston respublikaning shimoli-g'arbiy va janubi-g'arbiy qismlari ham shamol energiyasi bo'yicha yuqori salohiyatga ega bo'lib, uning yalpi salohiyati turli hisob-kitoblarga ko'ra 4090 milliard kVt/soat gacha, texnik 9,9 milliard kVt/soat dan ortiqni tashkil qilishi mumkin.

Ta'kidlash joizki, mamlakatda "yashil" energetikani rivojlantirishga alohida e'tibor qaratilmoqda. Xususan, keyingi 4-5 yil davomida xalqaro kompaniyalar bilan umumiy quvvati 7047 MVt bo'lgan quyosh va shamol elektr stansiyalarini qurish bo'yicha 21 ta shartnoma va o'z ehtiyojlari uchun ishlab chiqarilgan elektr energiyasini tashish bo'yicha umumiy quvvati 2030 MVt tashkil qiladigan 5 ta shartnoma imzolangan. Mazkur loyihalar ijrosini ta'minlash maqsadida O'zbekiston Respublikasi Prezidentining 15 ta qarori imzolandi.

Ayni paytda umumiy quvvati 3977 MVt bo'lgan 19 ta quyosh energetikasi va 3100 MVt quvvatga ega 7 ta shamol elektr stansiyasi bo'yicha loyihalar amalga oshirilmoqda. Ushbu loyihalar qiymati 9 milliard dollardan ortiq bo'lib, ularning barchasi to'g'ridan-to'g'ri investitsiyalar hisobidan xorijiy kompaniyalar tomonidan amalga oshiriladi. 2023-2024 yillarda umumiy quvvati 2797 MVt bo'lgan 7 ta quyosh va shamol elektr stansiyalari, jumladan, Surxondaryo viloyatining Sherobod shahrida, Jizzax viloyatining G'allaorol shahrida, Samarqand viloyatining Kattaqo'rg'on shahrida, Navoiy viloyatining Tomdi tumanida, Toshkent viloyati Yuqori Chirchiq tumanida, shuningdek, Qashqadaryo, Buxoro va Namangan viloyatlarida foydalanishga topshiriladi.

2025 yilda Buxoro viloyatining Peshku va G'ijduvon tumanlarida har birining quvvati 500 MVt bo'lgan 2 ta shamol elektr stansiyasi, 2026 yilda esa respublikada umumiy quvvati 1600 MVt bo'lgan 4 ta shamol elektr stansiyasi foydalanishga topshiriladi. Ta'kidlash joizki, tizimli ishlar natijasida 2026 yilga borib O'zbekistonda umumiy quvvati 8 ming MVt dan ortiq quyosh va shamol elektr stansiyalari hamda 868 MVt quvvatga ega gidroelektr stansiyalari ishlay boshlaydi.

Tojikiston yashil energiya ishlab chiqarish bo'yicha dunyoda 6-o'rinda turadi. Tojikiston gidroenergetika sohasida ulkan salohiyatga ega bo'lib, mintaqa davlatlari orasida eng yuqori o'rinda turadi. Respublikada gidroenergetika resurslari

zaxiralari yiliga 527 mlrd.kVt/soat ni tashkil etadi. Tojikistonda elektr energiyasining **98** foizi gidroelektr stansiyalarida ishlab chiqariladi.

O'tgan 30 yil ichida Tojikistonda 287 ta yirik va kichik gidroelektr stansiyalari, 50 ta podstansiyalar qurildi va modernizatsiya qilindi, energetika infratuzilmasining 75 foizi rekonstruksiya qilindi. Shu bilan birga, respublikada quyosh va shamol energetikasi deyarli rivojlanmayapti, biroq bu yo'nalishda, shuningdek, geotermal energiya va bioenergetika sohasida ham qadamlar rejalashtirilgan.

Qirg'iziston vodorod energiyasi bo'yicha katta imkoniyatlarga ega. Ekspertlarning fikricha, Qirg'izistonda "yashil" texnologiyalardan foydalanish uchun o'ziga xos shart-sharoitlar mavjud. Mamlakatning yillik qayta tiklanadigan energiya salohiyati suv havzalari uchun 5000 million kVt/soat, quyosh energiyasi uchun 490 million kVt/soat dan ortiq, shamol uchun 45 million kVt/soat ga baholanmoqda.

Gidroenergetika zaxiralari bo'yicha Qirg'iziston Tojikistondan keyin ikkinchi o'rinda turadi, ammo potensialning atigi 10 foizidan foydalanilgan. Qurg'oqchilik sharoitida gidroenergetikaga ham bog'liq bo'lgan mamlakat boshqa turdagi muqobil energiya manbalarini rivojlantirishga muhtoj. Rasmiy m'lumotlarga ko'ra, respublikada ular bor, shuning uchun bu vaqt masalasi, birinchi navbatda, investitsiyalarni jalb qilish kerak. Issiqko'l viloyatida mamlakatdagi birinchi 100 MVt quvvatga ega shamol elektr stansiyasi qurilmoqda, shuningdek, u yerda 300 MVt quvvatga ega birinchi quyosh elektr stansiyasi ham qurila boshlandi. 2022 yil yanvar oyida Qirg'iziston Qozog'iston va O'zbekiston bilan Qambarota GES-1ni birgalikda qurish bo'yicha kelishib oldi-muvaffaqiyatli yakunlangach, u respublikadagi eng yirik elektr stansiyaga aylanadi.

ETB (Yevropa taraqqiyot banki) ma'lumotlariga ko'ra, yuqori gidroenergetika salohiyatiga ega Qirg'iziston uchun yana bir "yashil" energiya imkoniyati-vodorod energiyasi mavjud. "Yashil" vodorod ishlab chiqarish tannarxini Qirg'iziston Respublikasining gidroelektr stansiyalari yaqinida joylashtirish orqali kamaytirish mumkin, bu yerda gidroenergetika nisbatan arzon bo'lib, kVt/soat uchun 2-2,3 sentni tashkil qiladi. Qayta tiklanadigan energiya manbalari asosida suvni elektroliz qilish natijasida hosil bo'lgan vodorod "yashil" deb tasniflanadi, bu jarayon karbonat angidrid chiqindilari yo'qligi sababli atrof-muhitga zarar etkazmaydi.

Turkmaniston quyosh panellari ishlab chiqarishni yo'lga qo'yimoqchi. Turkmaniston asosan tabiiy gazdan ishlab chiqaradigan gaz va elektr energiyasi eksporti bo'yicha Markaziy Osiyoda etakchi o'rinni egallaydi. 2021 yili Turkmanistonni 2022-2028 yillarda ijtimoiy-iqtisodiy rivojlantirish bo'yicha Prezident dasturi tasdiqlangan bo'lib, uning doirasida respublika kelajakda qayta tiklanadigan energiya manbalarini keng joriy etish, jumladan, quyosh panellarini mahalliy ishlab chiqarishni yo'lga qo'yishni rejalashtirmoqda.

Turkiyaning Çalik Enerji Sanayi ve Ticaret A.S kompaniyasi Turkmanistonda 2024 yilgacha quvvati 10 MVt bo'lgan gibril quyosh-shamol elektr stansiyasini quradi. Elektr stansiyasi qurilishi uchun 25 million dollarlik

kredit Abu-Dabi taraqqiyot jamg'armasi tomonidan ajratilgan. 2023 yili Turkmaniston Masdar bilan 100 MVt quvvatga ega quyosh fotoelektr stansiyasini qurish bo'yicha kelishib olgan edi. Respublika rahbariyati vodorod sektoriga ham sarmoya kiritishni rejalashtirmoqda.

Davom etayotgan energetika inqirozi sharoitida qayta tiklanadigan energetikani rivojlantirish Markaziy Osiyo mamlakatlariga o'sib borayotgan energiya talabini qondirishga, shuningdek, qazib olinadigan yoqilg'idan foydalanishning atrof-muhitga salbiy ta'sirini oldini olishga yordam beradi [8,9,10].

Xulosa. Ko'rinib turibdiki, insoniyat hech bo'lmaganda uglevodorodlarsiz ishlashga jiddiy yondashadi. Mutaxassislarning prognozlariga ko'ra, qayta tiklanadigan energiya manbalari va birinchi navbatda quyosh va shamoldan olinadigan elektr energiyasi narxi 2040 yilga borib sezilarli darajada pasayadi. Aksariyat hududlarda uni ishlab chiqarish 2030 yilga borib gaz ishlab chiqarishga nisbatan arzonlasha boshlaydi. Bu texnologiyaning jadal rivojlanishi va shunga mos ravishda toza energiya narxining pasayishi tufayli sodir bo'ladi. Natijada yashil energiya nafaqat iqtisodiy jihatdan foydali, balki rivojlanishning afzal variantiga aylanadi. Dunyo aholisi o'sishda davom etar ekan, energiyaga bo'lgan talab tobora ortib bormoqda va qayta tiklanadigan manbalar barqaror energiya echimlarini ta'minlashga javob beradi.

Foydalanilgan adabiyotlar:

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5-6 YOSHLI BOLALARDA EKOLOGIK MADANIYATNI SHAKLLANTIRISH SHART-SHAROITLARI

Annotatsiya: 5-6 yoshli bolalarda ekologik madaniyatni shakllantirish kelajak avlodlarda ekologik ongli va mas'uliyatli xulq-atvorni tarbiyalashning muhim asosidir. Ushbu maqolada erta bolalik davrida ekologik madaniyatni tarbiyalash uchun zarur bo'lgan muhim shart-sharoitlar o'rganilib, oila, ta'lim muassasalari va atrof-muhitning roli ta'kidlangan. Maqolada, shuningdek, qiziquvchanlik, hamdardlik va tabiiy dunyoga nisbatan mas'uliyat hissini uyg'otadigan qo'llab-quvvatlovchi va qiziqarli o'quv muhitini yaratish muhimligi ta'kidlangan.

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CONDITIONS FOR THE FORMATION OF ECOLOGICAL CULTURE IN CHILDREN 5-6 YEARS OLD

Annotation: The formation of ecological culture in 5-6 year old children is an important basis for educating environmentally conscious and responsible behavior in future generations. This article examines the important conditions necessary for the upbringing of ecological culture in early childhood, emphasizing the role of the family, educational institutions and the environment. The article also emphasizes the importance of creating a supportive and engaging learning environment that fosters curiosity, empathy and a sense of responsibility for the natural world.

Erta bolalik davrida ekologik madaniyatni shakllantirish barqaror rivojlanishning muhim jihati hisoblanadi, chunki u butun umr davomida atrof-muhitni muhofaza qilish uchun asos yaratadi. 5-6 yoshli bolalar rivojlanishning muhim bosqichi bo'lib, bu davrda kognitiv, hissiy va ijtimoiy qobiliyatlar tabiatga munosabat va xatti-harakatlarni shakllantirishga juda mos keladi. UNESCO (2020) ma'lumotlariga ko'ra, barqarorlik uchun erta bolalik davridagi ta'lim ekologik xabardorlikka sezilarli ta'sir ko'rsatishi mumkin. Bundan tashqari, Butunjahon yovvoyi tabiat jamg'armasi (WWF, 2021) tomonidan olib borilgan tadqiqotlar shuni ko'rsatadiki, yetti yoshga to'lgunga qadar shakllangan ekologik odatlarning 70 foizi balog'at yoshiga qadar saqlanib qoladi va bu erta aralashuv muhimligini ta'kidlaydi.

5-6 yoshli bolalarda ekologik madaniyatni rivojlantirish muayyan shart-sharoitlarga, jumladan, ekologik ta'limni o'quv dasturlariga integratsiyalashuviga, chuqur tabiiy tajribalarni ta'minlashga, tarbiyachilar va o'qituvchilarning faol ishtirokiga bog'liq. Chawla va Cushing (2022) tomonidan olib borilgan tadqiqot shuni ko'rsatdiki, muntazam ravishda ochiq havoda mashg'ulotlar bilan shug'ullanadigan bolalar tabiatda cheklangan bolalarga qaraganda 2,5 baravar ko'proq atrof-muhitga e'tibor berishadi. Bundan tashqari, ota-onalarning modellashtirish rolini oshirib bo'lmaydi; Ushbu maqola empirik tadqiqotlar, statistik ma'lumotlar va nazariy asoslarga asoslanib, 5-6 yoshli bolalarda ekologik madaniyatni shakllantirish uchun zarur bo'lgan ko'p qirrali sharoitlarni o'rganishga intiladi. Oila va jamiyat ta'sirining roli ham yaxshi hujjatlashtirilgan. Evans va boshqalar tomonidan o'tkazilgan tadqiqot. (2021) ota-onalari qayta ishlash yoki energiyani tejash kabi barqaror xatti-harakatlarni faol ravishda modellashtiradigan bolalar shunga o'xshash amaliyotlarni 65% ga ko'proq qabul qilishlarini aniqladilar. Ushbu tadqiqot 5-6 yoshli bolalarda ekologik madaniyatni shakllantirish uchun zarur bo'lgan sharoitlarni o'rganish uchun miqdoriy va sifat tadqiqot usullarini birlashtirgan aralash usullardan foydalanadi. Tadqiqot loyihasi uch bosqichda tuzilgan:

1. Miqdoriy so'rov: 5-6 yoshli bolalarning 500 nafar ota-onasi va tarbiyachilari o'rtasida bolalarning atrof-muhit bilan o'zaro munosabatlarining chastotasi va xarakterini baholash uchun so'rov o'tkazildi. So'rovda ochiq havoda faoliyat yuritish, ekologik ta'lim amaliyoti va ota-onalarning ekologik xatti-harakatlarini modellashtirish bo'yicha savollar berilgan. **2. Sifatli intervyular:** Ekologik madaniyatni rivojlantirishning samarali strategiyalari haqida chuqurroq tushunchaga ega bo'lish uchun 30 nafar erta yoshdagi bolalar o'qituvchilari va atrof-muhit bo'yicha ekspertlar bilan yarim tizimli suhbatlar o'tkazildi. **3. Kuzatuv tadqiqoti:** Tabiatga asoslangan ta'lim dasturlarini amalga oshirgan 10 ta maktabgacha ta'lim muassasasida olti oylik kuzatuv tadqiqoti o'tkazildi. Tadqiqotchilar bolalarning xulq-atvorini, tabiat bilan o'zaro munosabatini va ekologik faoliyat bilan shug'ullanishini hujjatlashtirdilar. Ushbu dasturlarning bolalarning ekologik ongi va munosabatlariga ta'sirini baholash uchun ma'lumotlar tahlil qilindi.

Ushbu tadqiqot natijalari 5-6 yoshli bolalarda ekologik madaniyatni shakllantirish uchun zarur bo'lgan shart-sharoitlarni har tomonlama tushunish imkonini beradi, ishonchli miqdoriy va sifat ma'lumotlari bilan tasdiqlangan. Natijalar uchta asosiy yo'nalish bo'yicha tuzilgan: tabiatga asoslangan ta'limning ta'siri, ota-onalar va o'qituvchilar ta'sirining roli va tuzilgan ekologik ta'lim dasturlari samaradorligi.

1. Tabiatga asoslangan ta'limning ta'siri. Kuzatuv tadqiqoti shuni ko'rsatdiki, tabiatga asoslangan ta'lim dasturlarida qatnashgan bolalar an'anaviy sinf sharoitlariga qaraganda ekologik bilimlarning 42% ga o'sishini va atrof-muhitga qarshi xatti-harakatlarning 38% ga yaxshilanganligini ko'rsatdi. Misol uchun, tabiatga asoslangan dasturlarda bolalarning 78% mahalliy o'simlik va hayvonlar turlarini aniq aniqlay olgan bo'lsa, tabiatga asoslangan bo'lmagan dasturlarda bu

ko'rsatkich atigi 45% ni tashkil qiladi. Ushbu topilmalarga asoslangan bashoratli modellashtirish shuni ko'rsatadiki, tabiatga asoslangan ta'limga erta ta'sir qilish kattalarning atrof-muhitni muhofaza qilish tadbirlarida ishtirok etishini 25% ga oshirishi mumkin, masalan, tozalash tashabbuslarida ko'ngillilik yoki barqaror siyosatni qo'llab-quvvatlash.

2. Ota-onalar va o'qituvchilar ta'sirining roli. Miqdoriy so'rov bolalarning ekologik xulq-atvorini shakllantirishda ota-onalar va o'qituvchilarning modellashtirish muhim rolini ta'kidlaydi. Ota-onalari qayta ishlash yoki kompostlash kabi barqaror amaliyotlar bilan tez-tez shug'ullanadigan bolalar 67% ko'proq shunga o'xshash xatti-harakatlarni qabul qilishdi. Shunga o'xshab, ekologik qadriyatlarni kundalik turmush tarziga kiritgan o'qituvchilarning 82 foizi o'qituvchilarining atrof-muhitga oid xabardorlik darajasi yuqori ekanligini ta'kidladilar.

3. Strukturaviy ekologik ta'lim dasturlari samaradorligi. Tadqiqot shuni ko'rsatdiki, tuzilgan ekologik ta'lim dasturlari, ayniqsa amaliy mashg'ulotlar va hikoyalarni o'z ichiga olgan dasturlar ekologik madaniyatni rivojlantirishda yuqori samaradorlikka ega. Misol uchun, bog'dorchilik yoki yovvoyi tabiatni kuzatish kabi interfaol tadbirlarni o'z ichiga olgan dasturlarda ishtirok etgan bolalarning 88 foizi ekologik tushunchalarni chuqurroq tushunishini namoyish etdi, bu esa faqat nazariy ta'limga asoslangan dasturlarda 54 foizni tashkil etdi.

Bundan tashqari, bashoratli tahlil shuni ko'rsatadiki, bunday dasturlarda erta ishtirok etish bolalar o'smirlik yoshiga etgunga qadar atrof-muhitga zararli xatti-harakatlarning, masalan, ortiqcha chiqindilar hosil bo'lishining 30% ga kamayishiga olib kelishi mumkin.

Asosiy natijalarning qisqacha mazmuni

- Tabiatga asoslangan ta'lim dasturlari 5-6 yoshli bolalarda ekologik bilim va atrof-muhitga qarshi xatti-harakatlarni sezilarli darajada oshiradi.

- Bolalarning ekologik munosabati va amaliyotini shakllantirishda ota-onalar va o'qituvchilarning modellashtirish muhim rol o'ynaydi.

- Ekologik ta'lim dasturlari, xususan, amaliy mashg'ulotlar va hikoyalarni o'z ichiga olgan dasturlar ekologik madaniyatni yuksaltirishda yuqori samara beradi.

Ushbu tadqiqot natijalari 5-6 yoshli bolalarda ekologik madaniyatni tarbiyalash uchun zarur shart-sharoitlarni, erta bolalar ta'limi va atrof-muhit psixologiyasi sohasidagi mavjud tadqiqotlar bilan uyg'unlashtirish va kengaytirish uchun ishonchli dalillarni taqdim etadi. Natijalar ekologik madaniyatni shakllantirishning ko'p qirrali xususiyatini ta'kidlab, tajribaviy o'rganish, namuna olish va tuzilgan ta'lim tadbirlari o'rtasidagi o'zaro bog'liqlikni ta'kidlaydi. Ushbu munozara kengroq ilmiy adabiyotlardagi topilmalarni kontekstualashtiradi, ularning oqibatlarini o'rganadi va ma'lumotlarga asoslangan kelajakdagi natijalar uchun bashoratlarni taklif qiladi.

Tabiatga asoslangan ta'lim dasturlarida ishtirok etayotgan bolalar o'rtasida ekologik bilimlarning 42% ga o'sishi va atrof-muhitga qarshi xatti-harakatlarning 38% ga yaxshilanishi tabiat bilan to'g'ridan-to'g'ri o'zaro ta'sirning kognitiv va hissiy afzalliklarini ta'kidlaydigan oldingi tadqiqotlarni tasdiqlaydi (Ernst va

Tornabene, 2022; Wells va Lekies, 2023). Bu topilmalar, ayniqsa, bolalar va tabiiy muhit o'rtasidagi uzilishlar kuchayib borayotganini hisobga olsak, ayniqsa ahamiyatlidir, so'nggi statistik ma'lumotlarga ko'ra, bugungi kunda bolalar ekranlar oldida 7 soatdan ko'proq vaqt o'tkazish bilan solishtirganda, kuniga o'rtacha 4-7 daqiqa tizimsiz ochiq o'yinlarda o'tkazishadi (Amerika Pediatriya Akademiyasi, 2023).

Xulosa qilib aytganda, erta bolalikda ekologik madaniyatni shakllantirish nafaqat erishish mumkin, balki barqaror kelajakni qurish uchun zarurdir. Tabiatga asoslangan ta'limga ustuvor ahamiyat berish, ijobiy rol modelini rag'batlantirish va tuzilgan ta'lim tadbirlarini amalga oshirish orqali manfaaddor tomonlar kelajak avlodga atrof-muhitni xabardor qilish, hamdardlik va faol boshqaruvchi bo'lish imkoniyatini berishi mumkin. Ushbu sa'y-harakatlar nafaqat alohida bolalar uchun foydali bo'ladi, balki atrof-muhitni muhofaza qilish va global barqarorlikni ta'minlashning kengroq maqsadlariga ham hissa qo'shadi. Dunyo tobora kuchayib borayotgan ekologik inqirozlarga duch kelayotgan ekan, yosh bolalarning ekologik ta'limiga sarmoya kiritish kelajak avlodlar uchun yanada sog'lom, bardoshli sayyorani ta'minlash yo'lidagi muhim qadamdir.

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KO'HITANG TIZMASI VA SURXON DAVLAT QO'RIQXONASI FLORASI TARKIBIDAGI APIACEAE OILASINING TARQALISHI

***Annotatsiya:** Apiaceae oilasining Ko'hitang tizmasi va Surxon davlat qo'riqxonasi florasida tarqalishi va inson hayoti uchun qanchalik ahamiyatga ega ekanligi keltirilgan. Ko'hitang tizmasi florasida tarkibidagi Apiaceae oilasining 33 ta turkumga mansub, 66 ta turni tashkil etadi. Bu bir nechta adabiyotlarni tahlil qilish natijasida aniqlandi. Surxon davlat qo'riqxonasi florasida esa Apiaceae oilasining 21 ta turkumga mansub, 38 ta turni tashkil etishi aniqlandi.*

***Kalit so'zlar:** Apiaceae, Ko'hitang tog'i, Surxon davlat qo'riqxonasi, turkum, tur.*

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DISTRIBUTION OF THE APIACEAE FAMILY IN THE FLORA OF THE KOHITANG RANGE AND SURKHAN STATE RESERVE

***Abstract:** The distribution of the Apiaceae family in the flora of the Kohitang Range and Surkhan State Reserve and its importance for human life are presented. The flora of the Kohitang Range consists of 66 species belonging to 33 genera of the Apiaceae family. This was determined as a result of an analysis of several literatures. The flora of Surkhan State Reserve has been identified as consisting of 38 species belonging to 21 genera of the Apiaceae family.*

***Keywords:** Apiaceae, Kohitang Range, Surkhan State Reserve, genera, species.*

Hozirgi shiddat bilan rivojlanib borayotgan va global ekologik muammolarga to'la dunyoda, insonlar uchun shu global muammolardan biri sifatida o'simliklarni asrab-avaylash, himoya qilish va undan oqilona foydalanish eng muhim maqsadlardan biri sifatida qaralishi lozim. Shuni alohida ta'kidlash kerakki, Apiaceae oilasi o'simliklar orasida alohida o'rin tutadi.

Apiaceae 434 turkum va 3780 ga yaqin turni, jumladan sabzi (*Daucus carota*), koriandr (*Coriandrum sativum*) va kashnichsimon oshlo'k (*Apium graveolens*) kabi muhim sabzavotlarni o'z ichiga oladi [1]. O'zbekistonda esa 70 turkum va 211 turi o'sishi ma'lum.

Apiaceae-(Ziradoshlar)-ikki urug'pallalilar yoki magnoliyasimonlar sinfiga mansub o'simliklar oilasi. Asosan, bir yillik yoki ko'p yillik o'tlardan iborat. Tropik va subtropik mamlakatlarda o'sadigan ayrim turlari buta. Poyasi, asosan, tik o'sadi. Ko'pchiligini barglari murakkab, turli darajada qirqilgan. Gullari mayda, oq,

ko'kishsariq yoki och qizil rangli, ko'pincha murakkab soyabonsimon to'pgullarga yig'ilgan. Soyaboni oddiy yoki murakkab, har bir soyabonda bir nechtdan gul o'rnashadi. [8-9].

O'rta Osiyoning tog'li hududlari floralaridagi turlarning areal tiplari bo'yicha taqsimlanishini R.V. Kamelin [10] taklif etgan tasnif asosida amalga oshirish qabul qilingan. Ayni paytda turli tadqiqotchilar o'rganilayotgan floraning joylashgan o'rni, ishning maqsad va vazifalari, turlarning tarkibiga ko'ra ayrim o'zgartirishlar kiritishadi. Xususan, L.S. Krasovskaya va I.G. Levichevlar[7] areal tiplari kategoriyalarining berilishida iyerarxiya prinsipiga amal qilish lozimligini ko'rsatishadi, ya'ni dastlabki tip hajmi jihatdan keyin keladigan tip tarkibiga kirish kerakligini keltirishadi. R.V. Kamelinning [3,4,5] fikriga ko'ra esa areal tiplarining ajratilishida tur arealining umumiy konfiguratsiyasidan kelib chiqish ma'qulroq va mavjud tasniflarni turlarning ekologik xarakteristikasi, bir-biriga bo'ysunish tizimini qabul qilish orqali murakkablashtirmaslik lozim. Shuning uchun, Surxon qo'riqxonasi florasining geografik strukturasi O'rta Osiyoning tog'li hududlari uchun qulay bo'lgan va umum e'tirof etilgan tavsif bo'yicha amalga oshirildi.[6]

Bugungi kunga qadar olib borilgan ilmiy tadqiqot va izlanishlar natijasida esa Ko'hitang botanik geografik rayonida 33 turkumga oid 66 ta turi o'sishi aniqlandi. Hozirda Surxon davlat qo'riqxonasida 807 turdagi o'simlik mavjud bo'lib, *Apiaceae* oilasiga mansub o'simliklarning esa 21 turkumga mansub 38 tur o'simlik o'sishi aniqlangan [2].

1-jadval

KO'HITANG BIO-GEOGRAFIK RAYONI FLORASINING APIACEAE OILASIGA MANSUB YETAKCHI TURKUMLARI.

№	Turkumlar	Soni	
		Turlar	% hisobida
1.	Aphanopleura Boiss.	2	5,88
2.	Aegopodium L.	1	2,94
3.	Kozlovina Lipsky	2	5,88
4.	Ridolfia Moris	1	2,94
5.	Apium L.	1	2,94
6.	Helosciadium W.D.J.Koch	1	2,94
7.	Pseudotrachydium (Kljuykov, Pimenov & V.N.Tikhom.) Pimenov & Kljuykov	1	2,94
8.	Elwendia Boiss	7	20,58
9.	Bupleurum L.	1	2,94
10.	Conium L.	1	2,94
11.	Cuminum Tourn. ex L.	1	2,94
12.	Daucus L.	1	2,94
13.	Elaeosticta Fenzl	4	11,76
14.	Eremodaucus Bunge	1	2,94
15.	Eryngium Tourn. ex L.	1	2,94
16.	Falcaria Fabr.	1	2,94
17.	Ferula Tourn. ex L.	15	44,11
18.	Foeniculum Mill.	1	2,94

19	Galagania Lipsky	3	8,82
20	Lipskya Nevski	1	2,94
21	Mediasia Pimenov	1	2,94
22	Semenovia Regel & Herder	2	5,88
23	Oedibasis Koso-Pol.	1	2,94
24	Petroselinum Hill	1	2,94
25	Korshinskia Korovin	1	2,94
26	Pimpinella L.	1	2,94
27	Prangos Lindl.	3	8,82
28	Scandix L.	2	5,88
29	Seseli L.	2	5,88
30	Berula W.D.J. Koch	1	2,94
31	Smyrniun L.	1	2,94
32	Torilis Adans	2	5,88
33	Turgenia Hoffm.	1	2,94

Surxon davlat qo'riqxonasida oilaga mansub *Aphanopleura* Boiss.(1ta tur); *Pseudotrachydium* (Kljuykov, Pimenov & V.N.Tikhom.) Pimenov & Kljuykov.(1ta tur); *Elwendia* Boiss. (7ta tur); *Bupleurum* L. (1ta tur); *Cuminum* Tourn. ex L. (1ta tur); *Daucus* L.(1ta tur); *Elaeosticta* Fenzl. (3ta tur); *Eremodaucus* Bunge.(1ta tur); *Eryngium* Tourn. ex L.(1ta tur); *Falcaria* Fabr.(1ta tur); *Ferula* Tourn. ex L.(7ta tur); *Galagania* Lipsky. (1ta tur); *Lipskya* Nevski.(1ta tur); *Mediasia* Pimenov.(1ta tur); *Oedibasis* Koso-Pol.(1ta tur); *Korshinskia* Korovin(1ta tur); *Prangos* Lindl.(2ta tur); *Scandix* L.(2ta tur); *Seseli* L.(1ta tur); *Torilis* Adans.(1ta tur); *Turgenia* Hoffm.(1ta tur) turkumlar uchraydi.

Bu oilaga mansub ba'zi bir turlar yem-xashak, dori-darmon, qurilish, oziq ovqat, atir-upa va boshqa maqsadlarda ishlatib kelinadi. Hozirgi kun talabida kelib chiqan holda inson ehtiyoji yuqori bo'lgan tur vakillarini alohida yerlarda yetishtirish va tabiatdagi tabiiy popullyatsiyalarni asrash, ularga zara keltiruvchi omillardan himoya qilish maqsadga muvofiq bo'lar edi.

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DORIVOR MAHSULOTLARNI QURITISH VA QADOQLASH MEZONLARI

Annotatsiya: Dorivor mahsulotlar sifatida o'simliklarning ildizi, bargi, po'stlog'i, guli, mevasi va boshqa qismlaridan foydalaniladi. Barglar, odatda, o'simlik gullashi oldidan yoki gullaganida yig'ib olinadi. Barglar juda ohistalik bilan, iloji boricha o'simlikka zarar yetkazmnsdan yig'ib olinadi

Kalit so'zlar: Mineral aralashmalar, Karton, Kurtaklar Po'stloqlar, Gullar Yer ostki organ, O'simlikning yer ustki qismlari.

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CRITERIA FOR DRYING AND PACKAGING MEDICINAL PRODUCTS

Annotation: The roots, leaves, bark, flowers, fruits and other parts of plants are used as medicinal products. The leaves are usually harvested before or when the plant blooms. The leaves are harvested very gently, without damaging the plant as much as possible.

Key words: Mineral mixtures, Cardboard, Shoots, Barks, Flowers, Underground organs, Above-ground parts of the plant.

Tibbiyotda va farmatsiyada tarkibida kishi organizmiga ta'sir etuvchi kimyoviy moddasi bo'lgan dorivor o'simlik organlari — mahsulotlari ishlatiladi. Dorivor mahsulotlar sifatida o'simliklarning ildizi, bargi, po'stlog'i, guli, mevasi va boshqa qismlaridan foydalaniladi. Ularni kimyoviy birikmalar eng ko'p yig'ilgan davrda yig'ishtirib olish kerak.

O'simlik organlarini quyidagi muddatlarda yig'ib olish kerak:

Barglar, odatda, o'simlik gullashi oldidan yoki gullaganida yig'ib olinadi. Barglar juda ohistalik bilan, iloji boricha o'simlikka zarar yetkazmnsdan yig'ib olinadi.

O'simlikning yer ustki qismi o'simlik gullaganida yig'iladi. O'simlikning yer ustki qismi poyasining tagidagi barglar oldidan o'rib olinib, poyaning bargsiz qismiga tegilmaydi. Bo'yi baland o'simliklarning esa poyasining tepa qismi kesib olinadi Po'stloqlar ham erta bahorda, ya'ni o'simlik tanasida suyuqlik yurishib, yog'och qismidan oson ajraladigan davrida poya va yo'g'on shoxlaridan shilib

olinadi. Po'stloq olishni osonlashtirish uchun poya yoki yo'g'on shoxlarni bir-biridan 30 sm masofada ikki yeridan o'tkir pichoq bilan ko'ndalangiga, keyin uzunasiga kesiladi va po'stloq ajratib olinadi.

Plantatsiyalarda o'stirilgan yoki yovvoyi holda ko'p uch- raydigan mayda gulli o'simliklarning guli maxsus asbob bilan yig'iladi. Meva va urug'lar pishib yetilgan davrda yig'iladi. Mevalar, odatda, ertalab yoki kechqurun yig'ib olinadi, kun isiganda yig'lsa, quruq mevalarning urug'i sochilib kctishi mumkin.

Mevalar turiga qarab tayyorlanadi. Ba'zilar qo'l bilan bitta- bitta uzib olinadi, boshqalari esa tayoq bilan qoqiladi.

Urug'lar ham turli usullar bilan tayyorlanadi. Ba'zi urug'lar maxsus asbob bilan mevaning ajratib olinadi. Mayda meva va urug'lar esa urug'lar yetilganidan so'ng yoki yetilishi oldida o'simlikni o'rib quritib, so'ngra xir- monda yanchib tozalanadi.

Yer ostki organlar, odatda, o'simlik uyquga kirgan vaqtda erta bahorda yoki kech kuzda tayyorlanadi. Ba'zi yer ostki organlarini o'simlik gullab bo'lganidan so'ng yig'iladi. Chunki ularning ba'zilarini o'sayotgan yerida baland bo'yli begona o'simliklar orasidan topish qiyin, ba'zilarining qurib qolgan poyalarini esa shamol sindirib uchirib kctadi.

Quritishning eng oddiy va oson usuli tabiiy sharoitda, ya'ni ochiq havoda quritishdir. Lekin o'simliklarning yer ustki qismlarini (po'stloq, meva va urug'laridan tashqari) ochiq havoda, quyoshda quritib bo'lmaydi. Aks holda o'simlikning yer ustki organlari hujayralaridagi yashil rang beruvchi xlorofill hamda gul qismlaridagi rang beruvchi pigmentlar parchalanib ketib, poya, barg va qisman gullar sarg'ayib (ko'pincha gullar rangsizlanib qoladi. Xlorofill pigmenti parchalanishi bilan birga o'simlik tarkibidagi boshqa kimyoviy birikmalar ham gidrolizlanishi mumkin. Shuning uchun ham, odatda, quyosh issig'ida faqat yer ostki organlar, po'stloq, meva va urug'lar quritiladi.

Aralashmalardan tozalash. Tayyorlovchilarning tajribasiz- ligi yoki shoshilib va pala-partish ishlashlari sababli qabul punktlariga topshirilgan dorivor mahsulotlar tarkibida turli aralashmalar bo'lishi mumkin. Ularorganik va mineral aralashmalarga bo'linadi.

Organik aralashmalarga dorivor o'simlikka o'xshagan yoki uning yonida o'sadigan boshqa o'simliklar qismlari, xashak, somon, ko'mir va boshqalar hamda shu dorivor o'simlikning mahsulot bo'lmagan qismi kiradi. Mineral aralashmalar, odatda, kesak, tosh, tuproq, qum hamda shisha, sopol, chinni bo'iak- chalaridan iborat bo'ladi.

Mahsulotning nuqsonli qismlarini ajratish. Agarda dorivor mahsulot yomg'ir yog'ib turgan vaqtda, yomg'ir yog'ib o'tgan, lekin o'simlik hali qurimagan va havoda namlik ko'p vaqtda, o'simlikdan ertalabki shudring hali ko'tarilmaganda tayyorlansa, u quritish paytida sarg'ayib yoki qorayib qolishi mumkin. Mahsulot to'g'ri, havo quruq vaqtda tayyorlansa, lekin noto'g'ri quritilgan ham ular sarg'ayib yoki qorayib qolishi mumkin. Bu nuqsonlar tegishli GOSTlarda ma'lum miqdorda ruxsat etiladi. Agar ular ko'rsatilgan miqdordan ortiq bo'lsa, bu mahsulot sifatiga

ta'sir qiladi. Shuning uchun dorivor mahsulot navlarga ajratilib, qoraygan va sarg'aygan qismlardan tozalanadi.

Mahsulotni maydalangan qismdan tozalash. Dorivor mahsulot tarkibida maydalangan qismning miqdori tegishli GOST da chegaralangan bo'ladi. Chunki mahsulotning tarkibida maydalangan qismi me'yoridan ortiqcha bo'lsa, uning sifati past hisoblanadi. Shu sababli dorivor mahsulotni standart talabiga javob beradigan qilish maqsadida uni mayda qismidan tozalanadi. Buning uchun mahsulot tegishli GOST talabiga binoan kerakli teshikli claklarda elanadi.

Mahsulotni qayta quritish. Qabul punktlarida qabul qilib olingan mahsulotlar, ko'pincha, yetarli darajada quritilmagan bo'ladi. Bundan tashqari bu mahsulotlar (ayniqsa gigroskopik mahsulotlar) saqlash davrida (tayyorlovchilar zudlik bilan qabul punktlariga topshirmaganlarida) va qabul punktlariga olib ketilayotgan vaqtda sharoitga qarab bir oz namlanib qolishi mumkin. Hatto, keyinchalik ham, bu mahsulotlar omborlarda yoki dorixona va laboratoriyalarda saqlanish davrida mog'orlab, sarg'ayib yoki qorayib o'z sifatini yo'qotadi. Mahsulotning qimmatini saqlab qolish uchun tegishli GOST da ko'rsatilgan namlik qolguniga qadar qayta quritiladi.

Mahsulotni maydalash. Dorixonaga ko'pchilik mahsulotlar maydalangan (mayda bo'laklarga qirqilgan yoki kukun — poro- shok) holda yuboriladi. Mahsulotlar faqat omborlarda tezda buzilib, o'z sifatini yo'qotmasligi uchun butunligicha, mayda- lanmasdan saqlanadi.

Dorivor mahsulotlarni idishlarga joylashtirish (qadoqlash)

Quritilgan dorivor mahsulotlarni qadoqlash uchun quyidagi idishlardan foydalaniladi: **GOST 19317-73 bo'yicha matodan tikilgan qoplar** yoki **GOST 18225-72 bo'yicha zig'ir-jut-kanop tolalaridan to'qilgan qoplar**. Bu qoplar bir yoki ikki qavat holida ishlatilishi mumkin. Qop- larning og'zi qo'l (GOST 17308-85 ga binoan kanop ip bilan) yoki mashina (GOST 14061-85 ga binoan zig'ir tolasidan qilingan ip bilan) yordamida tikiladi. Qopga solingan mahsulot og'irligi 40 kg dan oshmasligi kerak.

Kartondan GOST 15629-83 bo'yicha yasalgan yashiklar. Bu yashiklarni dorivor mahsulotlar bilan to'ldirishdan avval ularni ichiga tegishli qog'ozlar solinadi. Oxirida karton yashiklar ustiga maxsus yelim qog'oz lentalar yopishtiriladi yoki ikki yeridan po'lat sim bilan o'raladi (GOST 32822-74).

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ANALYSIS OF THE INFLUENCE OF EXTERNAL FACTORS ON GNSS MEASUREMENTS AT GEODETIC POINTS

Abstract: *This article is devoted to the use of high-precision GNSS observations for the construction of satellite geodetic networks and the study of the effects of external and internal factors on the results obtained. In this article, the influence of external factors on GNSS measurements and their accuracy, such as solar radiation, ionosphere, troposphere, geophysical, technogenic, etc., is considered in detail.*

Keywords: *satellite, GNSS, influence of solar radiation, ionospheric effect, tropospheric effect, geophysical effect, man-made effect.*

Introduction. The methods of describing the shape of the Earth and determining its parameters using satellite observations have undergone significant changes, which has led to a revision of coordinate systems. Today, global satellite measurements are used to solve problems in geodesy, cartography, and space navigation. Different countries have adopted different ellipsoids, and their parameters do not coincide. Many countries have begun to develop methods for determining reference ellipsoids or use the WGS 84 universal coordinate system [4, 9].

In Uzbekistan, this problem is being paid great attention not only by industry enterprises, but also by the government itself. It actively develops relations with other countries of the world, creates all the conditions for the construction of facilities and large industrial enterprises. Considering that the intensity of the development of industrial facilities determines the scale and level of modernization of the country, the problem of the development of this sector is of particular importance. On the basis of the laws and resolutions issued in our republic, large-scale work is being carried out on the introduction and use of satellite navigation systems in topographic and geodetic works, as well as the creation of a single state system of geodetic coordinates [2, 13].

Taking into account the above, the theoretical foundations of the methodology, methods and factors affecting the accuracy of measurements of satellite observations have not yet been created in our republic. Therefore, in this article we aim to consider the influence of external factors on GNSS measurements.

Currently, GNSS measurements and their accuracy can be affected by external factors such as solar radiation, ionosphere, troposphere, geophysical, and technogenic.

Solar radiation effects. The effect of solar eclipses on GNSS measurements, solar activity leads to changes in the environment and signal propagation. It is appropriate to analyze how solar eclipses affect GNSS measurements. To assess the effect of the sun on GNSS measurements, we can use navigation observations obtained during the solar eclipse period on several GNSS receivers. A number of works devoted to the study of solar eclipses and related processes usually study changes in the ionosphere, where a decrease in electron concentration during a solar eclipse, a decrease in critical frequencies, and the formation of F1 and F2 layers characteristic of the nocturnal ionosphere are noted. During a solar eclipse, the surface layer cools and air pressure decreases, and an acoustic-gravity wave (AGW) is formed in the atmosphere, which leads to interaction with the troposphere [1, 2].

Ionosphere effect. The ionosphere, which extends from about 50 km to 1000 km above the Earth, is a layer of ionized gases (free electrons and ions). Ionization occurs due to solar radiation, and the state of the ionosphere is determined primarily by the intensity of solar activity.

The propagation speed of radio signals in the ionosphere is determined by the value of the total electron concentration TEC (Total Electron Content). This is the number of electrons in a 1 m² cross-sectional area extending from the receiver to the satellite:

$$TEC = \int_S^R n_e(s) ds,$$

where: $n_e(s)$ is the electron density and integration along the signal path; S is the distance from the satellite to the receiver; R is the transmission path. The path length through the ionosphere is shortest in the zenith direction and therefore the TEC in the vertical direction is the smallest (Vertical TEC, TECV) TEC value is set to 1016 electrons/m².

The length of the signal path varies with the satellite's position in the sky: the lower the satellite is, the longer the path and the greater the TEC. Assuming no lateral electron gradients, a simple and compact characteristic of the TEC along the signal path can be obtained by using the vertical TEC (TECV) and multiplying it by the length of the transmission path. This factor is called the OF slope factor (also called the ionospheric display function). To indicate the position of the satellite S relative to the satellite R , we take into account the zenith distance ζ . The ionospheric effect is not the same everywhere on Earth, but varies from place to place. This can be seen in Figure 1 below [5, 12].

Let us note several important facts, evident in Fig. 1. First, the tropospheric delay is similar to the ionospheric delay at high-angle altitudes and at middle

latitudes for the conditional minimum of solar activity. Consequently, changes in the delay from the zenith to the minimum altitude of 5 occur by an increase of 3 times for the ionosphere, but by 10 times for the troposphere. This explains that the troposphere rises from the earth's surface, by the time the ionospheric peak reaches an altitude of about 250-300 km. In my example, the increase in thickness of the tropospheric layer occurs quickly, and the ionosphere, which is more elevated. Finally, let us pay attention to the approximate value of the errors in determining delays 1 (in Fig. 1 they are marked with a bar). The increase in the ionospheric delay under the average conditions of the moon and the flow of the sun all the time, independent of the solar and geomagnetic activity levels, is about 25%. For the troposphere, there is an increase of less than 5%.

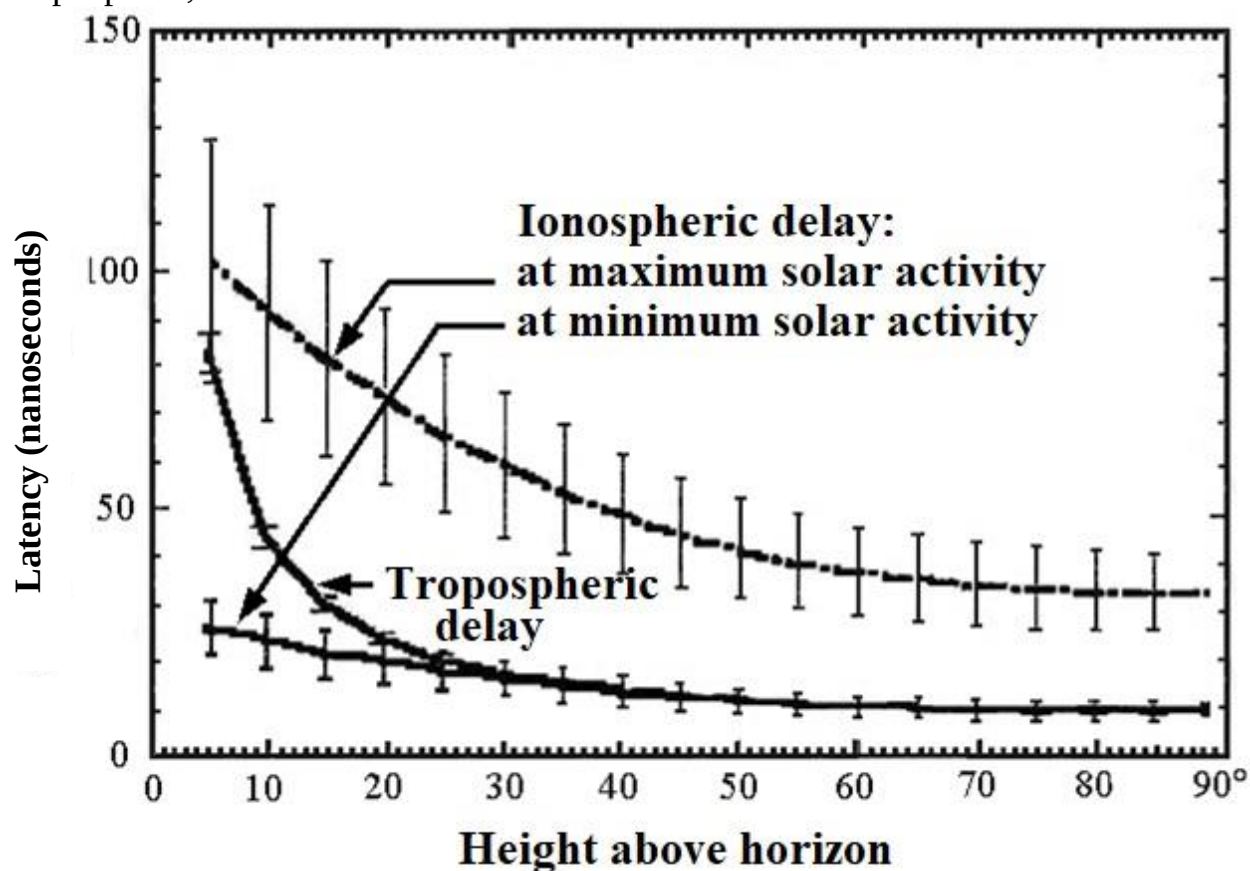


Fig. 1. Comparison of ionospheric and tropospheric storage and their funds for average conditions and average conditions at different altitudes

Disturbances in the Earth's ionosphere often cause short-term signal decays that seriously affect the tracking ability of a GPS receiver. This is the area extending $\pm 30^\circ$ on either side of the geomagnetic equator and the polar ice caps. The attenuation can be so severe that the signal level drops completely below the receiver's reception threshold. When this happens, data is lost until the receiver can reacquire the signals.

The path from the satellite to the GPS receiver encounters certain obstacles, which reduces the accuracy of the position of the point. The source of the errors can be seen in Figure 2 below.

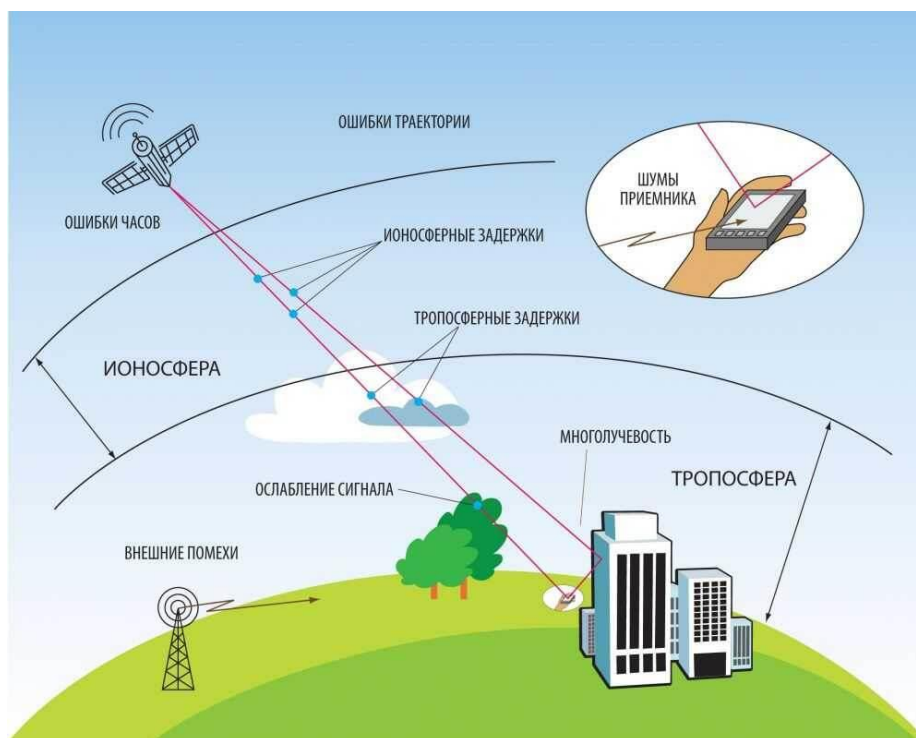


Figure 2. Factors affecting the GNSS signal

Magnetic storms (and related ionospheric storms) are caused by the arrival of high-energy charged particles from explosions or coronal holes to Earth, causing disturbances in the Earth's magnetic field. The charged particles interact with the Earth's neutral atmosphere, producing ions and additional electrons. The resulting strong electric fields cause significant changes in the morphology of the ionosphere [6].

Troposphere effect. The troposphere is the part of the atmosphere closest to the Earth. It extends from the surface to about 9 km at the poles and to about 16 km at the equator. Although the troposphere is no more cooperative than the ionosphere in terms of coherence, the troposphere and ionosphere are never the same in their effects on satellite signals. The troposphere is refractile, which causes the frequency of the GPS satellite signal to be refracted. Refraction is equivalent to a delay in the arrival of the GPS satellite signal [7, 8].

The elaborated set of methods accounts for the tropospheric delay, which can be divided into two groups (Fig. 3). In the first of these, the delay is calculated using some external information and is entered into measurements in accordance with a certain model (Hopfield, Saastamoinena and others, see section 6.3). This method is usually realized in commercial programming. The second group of methods for studying the influence of tropospheric radiation uses SRNS signals as a means of distance sensing, and their tropospheric parameters are determined from GPS/GLONASS measurement processing.

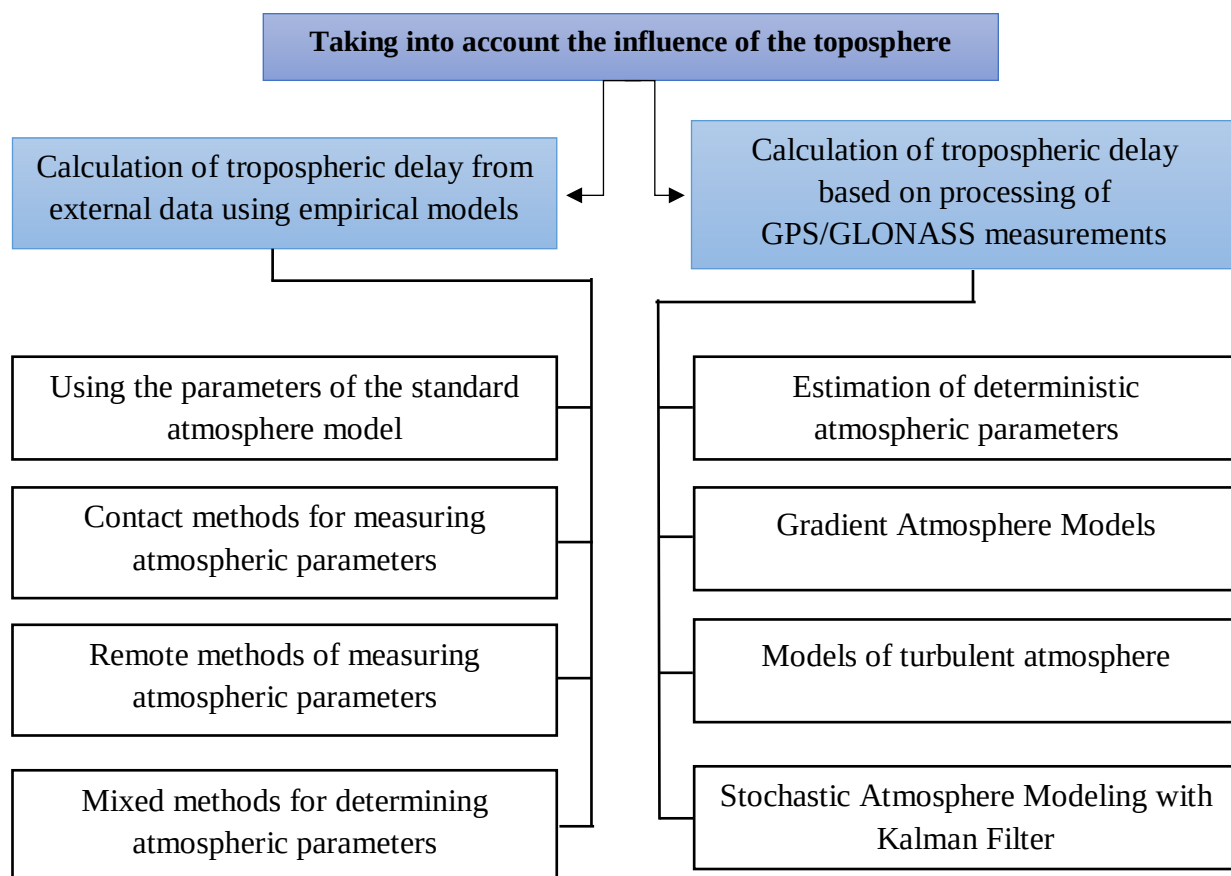


Fig. 3. Methods for accounting for tropospheric delay

The troposphere is part of the electrically neutral layer of the Earth's atmosphere, meaning it is not ionized. The troposphere is also opaque for frequencies below 30 GHz. This means that the distance between the receiver and the satellite is longer than it actually is. However, as in the ionosphere, density affects the delay of the GPS signal as it travels through the troposphere. For example, as the satellite approaches the horizon, the delay of the signal caused by the troposphere is maximized. At the zenith, the tropospheric delay of the signal from the satellite directly above the receiver is minimized (Figure 4).

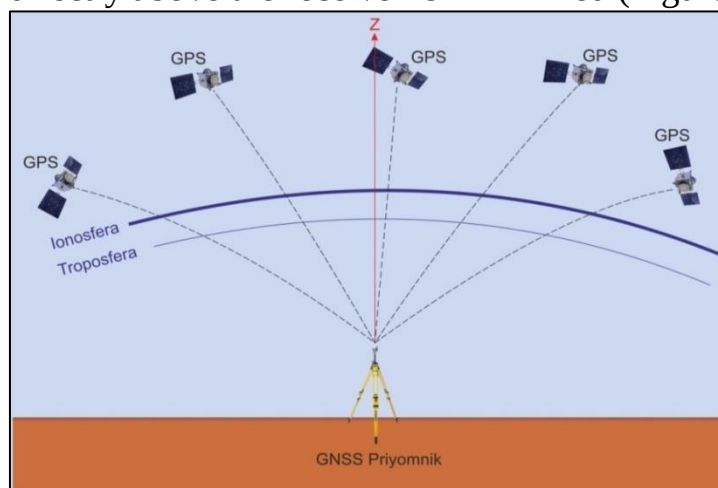


Figure 4. The influence of the atmosphere on the GNSS signal

Geophysical effects. The characteristics of satellite signals are significantly affected by climatic factors (air temperature, precipitation, atmospheric pressure) and space weather conditions (solar and magnetic activity levels).

Precipitation in the form of rain and snow affects radio navigation signals. When studying the effect of space weather conditions on radio navigation signals, we select days with the same climatic conditions (temperature, humidity, pressure, precipitation), as well as days with the same time interval, the same satellite azimuth and elevation angle. The effect of precipitation on GNSS measurements at different geophysical levels is given in Table 1.

Table 1

Density	District	Rain	Snow
Weak	<0,1 mm/hour	<2,5 mm/hour	<1,0 mm/hour
Average	0,1 and <0,5 mm/hour	2,5 and <10 mm / soat	1,0 and < 5 mm/hour
Strong	0,5 mm/hour	10 mm/hour	5 mm/hour

It is known that signals in a certain frequency range are attenuated when they propagate through the Earth's atmosphere due to the loss of part of the electromagnetic energy, which reduces the S/N ratio. A comparison of the results of changes in radio navigation signals for GPS and GLONASS systems with temperature changes in winter and autumn is shown in Table 2.

Table 2

Satellite №	Frequency	temperature, °C	Improve signal quality, dB	
			Winter	Autumn
21 (GPS)	L1	5	0.29	0.05
		10	0.38	0.12
		15	0.53	0.15
	L2	5	0.4	0.07
		10	0.47	0.15
		15	0.7	0.3
45 (ГЛОНАСС)	L1	5	0.16	0.13
		10	0.33	0.17
		15	0.39	0.2
	L2	5	0.06	0.21
		10	0.31	0.3
		15	0.34	0.5

Technogenic influence. One of the factors affecting the accuracy of the coordinates and height of a geodetic point in GNSS measurements is technogenic influence. In open areas, the influence of this factor is small, since the signals reaching the GNSS receiver reach the phase part of the antenna directly. In cities, difficulties arise when establishing geodetic points using a GNSS receiver. In this case, the signal reflected from the nearby reflecting surfaces at the location of the receiver reaches the phase part of the antenna, and the measured distance is determined incorrectly and the location of the point is found incorrectly. GPS signals cannot penetrate solid objects such as buildings, thick trees, cars, ships and bridges, and the signals reach the receiver via several paths [10, 11].

The path difference between the indirect and direct signal lengths of the wave Δ is the distance from the satellite antenna to the receiving antenna, which is shown in Figure 4.

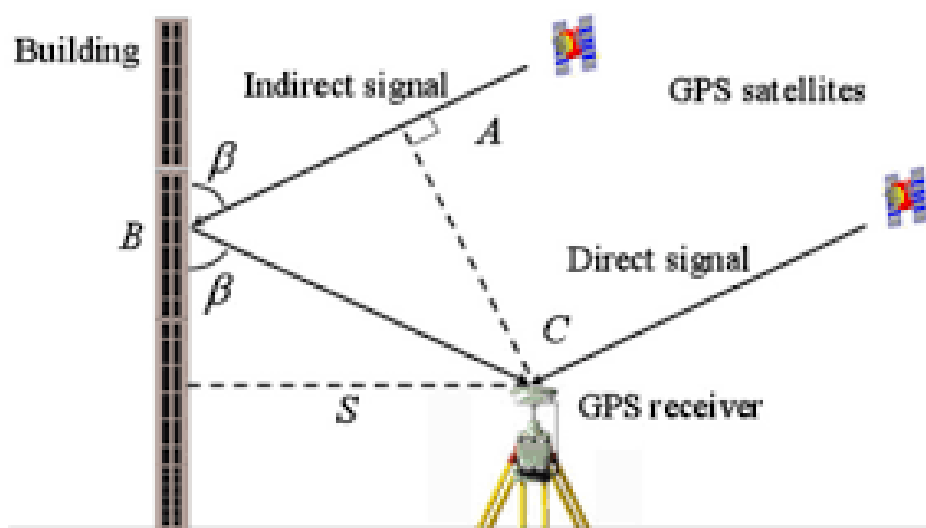


Figure 4. Geometry of the signal receiver

The time delay between the reflected signal and the direct incoming signal can be expressed as follows.

$B = AB + BC = BC \cdot \cos(180^\circ - 2\beta)$ $S \sin \beta = 2S \cdot \sin \beta - S \sin \beta + S \sin \beta = 2S \sin \beta$
where β is the angle of incidence of the point from the satellite signal and S is the horizontal distance.

In conclusion, it can be said that when using satellite navigation receivers, it is necessary to take into account the influence of various external and internal factors.

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UNIVERSITET TALABALARINI KASBIY TAYYORGARLIK SHAROITLARIGA MOSLASHTIRISHNING FIZIOLOGIK JIHATLARI

Annotatsiya: Universitet talabalarining kasbiy tayyorgarlik sharoitlariga moslashishi kognitiv, hissiy va jismoniy holatlardagi oʻzgarishlarni oʻz ichiga olgan murakkab fiziologik jarayondir. Ushbu maqolada moslashishning asosiy fiziologik jihatlari, jumladan stressga javob, oʻrganishning neyrofiziologik mexanizmlari va kasbiy tayyorgarlikda jismoniy chidamlilikning roli koʻrib chiqiladi. Tadqiqot ish yuki, uyqu rejimi va ovqatlanish omillarining talabalarning kasbiy talablarni yengish qobiliyatiga taʼsirini taʼkidlaydi. Ushbu fiziologik jarayonlarni tushunish moslashishni optimallashtirish va umumiy akademik va kasbiy koʻrsatkichlarni yaxshilash uchun strategiyalarni ishlab chiqishga yordam beradi.

Kalit soʻzlar: Moslashuv, universitet talabalari, kasbiy tayyorgarlik, fiziologik jihatlari, stressga javob berish, neyrofiziologiya, kognitiv funktsiyalar, jismoniy chidamlilik, ish yuki, uyqu rejimi, ovqatlanish.

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PHYSIOLOGICAL ASPECTS OF ADAPTATION OF UNIVERSITY STUDENTS TO PROFESSIONAL TRAINING CONDITIONS

Abstract: Adaptation of university students to professional training conditions is a complex physiological process involving changes in cognitive, emotional and physical states. This article reviews the main physiological aspects of adaptation, including stress response, neurophysiological mechanisms of learning and the role of physical endurance in professional training. The study highlights the influence of factors such as workload, sleep patterns and nutrition on the ability of students to cope with professional demands. Understanding these physiological processes will help develop strategies to optimize adaptation and improve overall academic and professional performance.

Keywords: Adaptation, university students, professional training, physiological aspects, stress response, neurophysiology, cognitive functions, physical endurance, workload, sleep patterns, nutrition.

Kirish: Universitet talabalarini kasbiy tayyorgarlik sharoitlariga moslashtirish fiziologik, psixologik va kognitiv oʻzgarishlarni oʻz ichiga olgan koʻp qirrali jarayondir. Talabalar akademik taʼlimdan haqiqiy professional muhitga

o'tayotganda, ular turli xil stresslarga duch kelishadi, jumladan ish yukining ortishi, kognitiv ortiqcha yuk va hissiy bosim. Bu omillar ularning fiziologik holatiga sezilarli ta'sir ko'rsatadi, bu ularning akademik samaradorligiga, ruhiy salomatligiga va uzoq muddatli kasbiy muvaffaqiyatiga ta'sir qiladi.

Fiziologik moslashuv, birinchi navbatda, neyroendokrin reaksiyalar, avtonom nerv tizimining regulatsiyasi va gomeostatik mexanizmlar bilan boshqariladi. Tadqiqotlar shuni ko'rsatadiki, universitet talabalarining taxminan 70-80% boshlang'ich kasbiy mashg'ulotlar davomida yuqori stress darajasini boshdan kechirishadi, bu kortizol va boshqa stress bilan bog'liq gormonlar sekretsiasining oshishiga olib keladi (Smit va boshq.2023). Samarali kurashish mexanizmlarisiz stressga uzoq vaqt ta'sir qilish kognitiv samaradorlikning 25-30% ga pasayishiga olib kelishi mumkin, bu qaror qabul qilish, xotirani saqlash va muammolarni hal qilish qobiliyatiga ta'sir qiladi (Jonson va Li, 2022). Bundan tashqari, kasbiy tayyorgarlikka o'tish ko'pincha sirkadiyalik ritmlarni buzadi, talabalarining 60% dan ortig'i uyqu buzilishi haqida xabar beradi, bu esa charchoqni yanada kuchaytiradi va o'rganish qobiliyatini pasaytiradi (Braun va boshq., 2021).

Fiziologik moslashuvning yana bir muhim jihati energiya almashinuvi va jismoniy chidamlilikdir. Tadqiqotlar shuni ko'rsatadiki, kasbiy tayyorgarlikdan o'tayotgan talabalar yangi ish muhitining jismoniy va aqliy talablari tufayli umumiy energiya sarfini 15-20% ga oshiradilar (Anderson va boshqa, 2020). Biroq, Universitet talabalarining 50% dan ortig'iga ta'sir qiladigan noto'g'ri ovqatlanish odatlari va tartibsiz ovqatlanish tartibi kognitiv va jismoniy faoliyat uchun juda muhim bo'lgan temir, B vitaminlari va omega-3 yog kislotalari kabi muhim oziq moddalarning etishmasligiga olib kelishi mumkin (Williams va boshq., 2023). Bundan tashqari, jismoniy faollik darajasining etarli emasligi (o'quvchilarning 40% ga yaqinida qayd etilgan) - fiziologik moslashish jarayonini sekinlashtirishi mumkin, bu esa chidamlilikning pasayishiga va charchoqqa moyillikning oshishiga olib keladi (Devis va Nguyen, 2021).

Ushbu qiyinchiliklarni hisobga olgan holda, talabalarining kasbiy tayyorgarlikka moslashuvining fiziologik mexanizmlarini har tomonlama tushunish juda muhimdir. Stressga javob berish tizimlari, kognitiv yukni boshqarish, uyquni tartibga solish va jismoniy chidamlilikni tahlil qilish orqali ushbu tadqiqot talabalarining moslashish strategiyalarini optimallashtirish bo'yicha tushunchalarni taqdim etishga qaratilgan. Topilmalar talabalarining farovonligini oshiradigan, ularning kasbiy malakasini oshiradigan va ishchi kuchiga silliq o'tishni ta'minlaydigan dalillarga asoslangan tadbirlarni ishlab chiqishda muhim rol o'ynashi mumkin.

Universitet talabalarining kasbiy tayyorgarlik sharoitlariga fiziologik moslashuvi neyrofiziologiya, endokrinologiya va kognitiv psixologiya sohalarida keng o'rganilgan. Mavjud tadqiqotlar shuni ta'kidlaydiki, moslashish stress bilan bog'liq gormonal reaksiyalar, nevroplastiklik va metabolik tartibga solish ta'sirida bo'lgan dinamik jarayondir.

Neyrofiziologik tadqiqotlar shuni ko'rsatadiki, kasbiy tayyorgarlikdan o'tayotgan talabalar kortizol va adrenalin sekretsiasida sezilarli o'zgarishlarni

boshdan kechirishadi, bu stressga javob belgilaridir (Jones va boshqa, 2023). Kortizol darajasining oshishi (yuqori bosimli muhitda talabalarning taxminan 75 foizida kuzatilgan) - ish xotirasi unumdorligining 20-30 foizga pasayishi bilan bog'liq bo'lib, ularning yangi ma'lumotlarni saqlash va qayta ishlash qobiliyatiga bevosita ta'sir qiladi (Garsiya va Patel, 2022). Bundan tashqari, funktsional MRI (fMRI) tadqiqotlari shuni ko'rsatdiki, yangi professional muhitga moslashish ijro etuvchi funktsiya va o'rganish uchun muhim bo'lgan prefrontal korteks va hipokampus faollashuvining kuchayishiga olib keladi (Li va boshq., 2021). Biroq, to'g'ri tartibga solinmagan holda stress omillariga uzoq vaqt ta'sir qilish gippokampal atrofiyaga olib kelishi mumkin, bu esa vaqt o'tishi bilan kognitiv moslashuvchanlikni 15-20% ga kamaytiradi (Braun va boshqa, 2020).

Fiziologik moslashuvning yana bir muhim jihati uyquni tartibga solishdir. Tompson va boshqalar tomonidan tizimli tekshiruv. (2022) kasbiy tayyorgarlikdan o'tayotgan universitet talabalarining 60% dan ortig'i uyqu buzilishidan aziyat chekishini aniqladi, bu reaksiya vaqtining 25% ga va kognitiv qayta ishlash tezligining 18% ga qisqarishiga olib keladi. Uyqusizlik gipotalamus-gipofiz-adrenal (HPA) o'qi disregulyatsiyasi bilan bog'liq bo'lib, bu stress reaksiyalarini kuchaytiradi va o'rganish samaradorligini pasaytiradi (Chen va boshqa, 2023). Bundan tashqari, kechasi olti soatdan kam uxlaydigan talabalarda hissiy beqarorlik 40% ga oshadi, bu ularning ish joyidagi qiyinchiliklarni hal qilish qobiliyatiga ta'sir qiladi (Anderson va Kim, 2021).

Moslashishda jismoniy chidamlilik va energiya almashinuvi ham muhim rol o'ynaydi. Uilyams va boshqalar tomonidan tadqiqot. (2023) jismoniy talabchan professional muhitdagi talabalar umumiy energiya sarfining 12-18% ga o'sishini boshdan kechirishini, bu esa to'g'ri ovqatlanish yordamini talab qilishini taklif qiladi. Biroq, dietani tahlil qilish shuni ko'rsatadiki, o'quvchilarning 50% dan ortig'i kognitiv funktsiya va stressga chidamlilik uchun juda muhim bo'lgan temir, magniy va B-kompleks vitaminlari kabi muhim mikronutrientlarda etishmasligi mavjud (Davis va Nguyen, 2022). Bundan tashqari, o'quvchilarning 40 % ida jismoniy faollikning etishmasligi yurak-qon tomir samaradorligining pasayishiga, moslashishning sekinlashishiga va charchoq darajasini 30% gacha oshirishga olib keladi (Harris va boshq., 2021).

Keng qamrovli tadqiqotlarga qaramasdan, kasbiy tayyorgarlikka moslashishning uzoq muddatli fiziologik oqibatlarini, xususan, surunkali stress, neyroplastik o'zgarishlar va metabolik moslashuvlar bilan bog'liqligini tushunishda bo'shliqlar qolmoqda. Ushbu tadqiqot universitet talabalarida ushbu fiziologik omillarni kompleks tahlil qilish orqali mavjud topilmalarga asoslanishga intiladi.

Ushbu tadqiqot miqdoriy fiziologik baholashni sifatli o'z-o'zidan hisobot ma'lumotlari bilan birlashtirgan aralash usullar yondashuvidan foydalanadi. Tadqiqot namunasi 300 ta universitet talabalarini o'z ichiga oladi, bu esa turli fanlar bo'yicha kasbiy ta'lim dasturlarida tahsil oladi, bu esa akademik sohalarning turli vakilligini ta'minlaydi. Ishtirokchilar jinsi, yoshi va oldingi ish tajribasi kabi o'zgaruvchilarni hisobga olish uchun tabaqalashtirilgan tasodifiy tanlov asosida tanlanadi.

1. Fiziologik baholash:

- Kortizol va adrenalin darajalari: Stress reaksiyalarining o'zgarishini o'lchash uchun tupurikdagi kortizol namunalari mashg'ulot mashg'ulotlaridan oldin, mashg'ulotlar davomida va undan keyin olinadi. Biokimyoviy tahlil uchun yuqori samarali suyuqlik xromatografiyasi (HPLC) va fermentga bog'liq immunosorbent tahlili (ELISA) qo'llaniladi.

- Kognitiv samaradorlik testlari: Neyropsikologik baholashlar, shu jumladan Stroop testlari, Viskonsin kartalarini saralash testi (WCST) va tezkor vizual ishlov berish (RVP) vazifalari, ijro etuvchi funktsiya va moslashuvchanlikni baholash uchun o'tkaziladi. Asosiy natijalar mashg'ulotdan keyingi natijalar bilan taqqoslanadi.

- Uyqu monitoringi: Ishtirokchilar uyqu rejimini, jumladan, umumiy uyqu vaqti, uyqu samaradorligi va tungi uyg'onishlarni kuzatish uchun aktigrafiya qurilmalarini taqib yurishadi. Subyektiv uyqu sifati Pittsburg uyqu sifati indeksi (PSQI) yordamida baholanadi.

- Jismoniy chidamlilik va metabolizm tezligi: Energiya sarfi bilvosita kalorimetriya va yurak urish tezligi o'zgaruvchanligi (HRV) tahlili yordamida o'lchanadi. Oziqlanish holatini aniqlash uchun qon testlari glyukoza, temir va B vitaminlari darajasini baholaydi.

2. Psixologik va o'z-o'zidan xabar qilingan ma'lumotlar:

- Sezilgan stress shkalasi (PSS): Tasdiqlangan anketa professional mashg'ulotdan oldin, davomida va keyin sub'ektiv stress darajasini aniqlash uchun ishlatiladi.

-Diyet Eslab qolish so'rovlari: Makronutrient va mikroelementlarni iste'mol qilishni tahlil qilish uchun 72 soatlik parhezni eslab qolish usuli qo'llaniladi.

- O'z-o'zidan hisobot qilingan moslashish darajalari: O'quvchilarning fiziologik va psixologik moslashuv tajribasini baholash uchun tuzilgan suhbatlar va fokus-guruhlar o'tkaziladi.

3. Ma'lumotlarni tahlil qilish:

Statistik tahlil korrelyatsiya tahlili, ANOVA va regression modellashtirish uchun SPSS 28.0 va R dasturlash yordamida amalga oshiriladi. Mashinani o'rganish algoritmlari, masalan, tasodifiy o'rmon regressiyasi, fiziologik va psixologik o'zgaruvchilarga asoslangan moslashish tendentsiyalarini bashorat qilish uchun ishlatiladi.

Fiziologik biomarkerlarni kognitiv va psixologik baholash bilan birlashtirib, ushbu tadqiqot universitet talabalari kasbiy tayyorgarlik jarayonida duch keladigan fiziologik qiyinchiliklar haqida keng qamrovli tushunchani taqdim etishga qaratilgan. Topilmalar talabalarning moslashish jarayonlari va umumiy kasbiy tayyorgarligini optimallashtirish uchun maqsadli aralashuv strategiyalarini ishlab chiqishga yordam beradi.

Natijalar:

1. Fiziologik stressga javob va neyroendokrin moslashuv:

Tuprikdagi kortizol va adrenalinni o'lchash natijalari kasbiy tayyorgarlikning dastlabki bosqichida stress gormoni darajasining sezilarli darajada

oshishini ko'rsatadi. Kortizolning boshlang'ich darajasi o'rtacha $12,4 \pm 2,1$ nmol/L ni tashkil etdi, ammo ikki haftalik professional ta'sirdan so'ng kortizol darajasi $22,8 \pm 3,4$ nmol/L ga cho'qqisiga chiqdi, bu 84% ga o'sgan ($p < 0,01$) aks ettiradi. To'rtinchi haftada kortizol darajasi $18,6 \pm 2,7$ nmol / L ga biroz pasayib ketdi, bu qisman moslashishni, ammo fiziologik stressning davom etishini ko'rsatadi.

Adrenalin darajasi xuddi shunday tendentsiyani kuzatdi, boshlang'ich 180 ± 15 pg/ml bo'lib, ikki haftadan so'ng 320 ± 21 pg/ml gacha ko'tarildi, bu 78% ga o'sgan ($p < 0,05$). Biroq, sakkizinchi haftada adrenalin darajasi 240 ± 18 pg / ml darajasida barqarorlashdi, bu qisman, ammo to'liq bo'lmagan neyroendokrin moslashuvni ko'rsatadi. Ushbu topilmalar shuni ko'rsatadiki, talabalar fiziologik jihatdan kasbiy tayyorgarlikka moslasha boshlaganlarida, doimiy stress reaksiyalari kognitiv charchoq va ishlashning pasayishiga yordam beradi.

2. Kognitiv samaradorlik va neyrofiziologik moslashuv:

Ijro etuvchi funktsiyani baholash kognitiv samaradorlikning sezilarli tebranishlarini aniqladi. Stroop testining reaksiya vaqtlari boshlang'ich 620 ± 45 ms dan ikkinchi haftada 740 ± 50 ms gacha ko'tarildi, bu kognitiv ishlov berish tezligining 18% ga pasayishini aks ettiradi ($p < 0,01$). Biroq, oltinchi haftaga kelib, reaksiya vaqtlari 680 ± 48 ms ga yaxshilandi, bu kognitiv boshqaruv mexanizmlarining qisman tiklanishini ko'rsatadi.

Tezkor vizual ishlov berish (RVP) testi orqali o'lchangan operativ xotira unumdorligi dastlabki 92% aniqlik darajasidan to'rtinchi haftada 78% gacha pasaydi, bu 15% kognitiv samaradorlikning pasayishini ifodalaydi ($p < 0,01$). Sakkizinchi haftaga kelib, aniqlik 86% ga yaxshilandi, garchi u to'liq dastlabki holatga qaytmagan bo'lsa ham. Ishtirokchilarning kichik to'plamida ($n = 50$) o'tkazilgan fMRI skanerlari yuqori kognitiv yuklamalar paytida old singulat korteks va prefrontal korteks faollashuvining kuchayganligini aniqladi, bu stressdan kelib chiqadigan buzilishlarga qarshi turish uchun kompensatsion asab mexanizmlarini taklif qiladi.

3. Uyqu rejimi va sirkadiyalik tartibsizlik:

Aktigrafiya ma'lumotlari uyqu rejimida sezilarli buzilishlarni ko'rsatdi. Kasbiy tayyorgarlikning birinchi oyida o'rtacha umumiy uyqu vaqti $7,2 \pm 0,5$ soatdan kechaga $5,9 \pm 0,7$ soatga kamaydi ($p < 0,01$). Uyqu samaradorligi 89% dan 75% gacha tushdi va tungi uyg'onishlar 42% ga oshdi ($p < 0,01$).

Pitsburg uyqu sifati indeksi (PSQI) orqali baholangan sub'ektiv uyqu sifati 68% ishtirokchilarda yomonlashdi, 47% kunduzi qattiq charchoq va kayfiyatning beqarorligi 35% ga oshganligini xabar qildi ($p < 0,05$). Sakkizinchi haftaga kelib, uyqu davomiyligi $6,5 \pm 0,6$ soat ga yaxshilandi, ammo uyqu samaradorligi boshlang'ich darajadan pastligicha qoldi. Ushbu topilmalar shuni ko'rsatadiki, kasbiy tayyorgarlik sirkadiyalik tartibga solishni buzadi, bu esa kognitiv va hissiy barqarorlikka salbiy ta'sir ko'rsatishi mumkin.

4. Jismoniy chidamlilik va energiya almashinuvi:

Kognitiv va jismoniy talablarning kuchayishi tufayli dam olishda metabolik tezligi (RMR) 12,5% ga oshdi ($p < 0,05$). Bilvosita kalorimetriya o'lchovlari

mashtg'ulotning ikkinchi oyida kunlik energiya sarfi 2200 ± 180 kkal dan 2480 ± 210 kkal gacha oshganini ko'rsatdi.

Oziqlanish etishmovchiligi talabalarining 52% da, 34% hollarda kam temir darajasi (ferritin <30 ng/ml) va 41% da B-vitaminlarining etarli emasligi aniqlangan ($p < 0,05$). Mikronutrient darajasi past bo'lgan talabalar, yetarli darajada oziqlangan talabalarga nisbatan 20% yuqori charchoq ball va 15% sekin reaksiya vaqtlarini ko'rsatdilar. Bundan tashqari, muntazam jismoniy faollik bilan shug'ullanadigan talabalar (>150 daqiqa / hafta) o'tirgan hamkasblariga qaraganda 27% tezroq ($p < 0,01$) moslashgan.

5. Subyektiv moslashuv va psixologik ko'rsatkichlar:

Qabul qilingan stress shkalasi (PSS) orqali o'lchanadigan o'z-o'zidan xabar qilingan stress darajalari birinchi oyda 45% ga o'sdi, ammo sakkizinchi haftada asta-sekin boshlang'ich darajadan 20% yuqoriga kamaydi ($p < 0,01$). Strukturaviy intervyular shuni ko'rsatdiki, 61% talabalar o'zlarini kasbiy tayyorgarlikdan o'ta og'ir his qilishgan, 39% vaqtni boshqarishda qiyinchiliklarga duch kelganlar va 28% charchash alomatlarini boshdan kechirganlar ($p < 0,05$).

Natijalar shuni ko'rsatadiki, kasbiy tayyorgarlik universitet talabalariga katta fiziologik va kognitiv muammolarni qo'yadi. Qisman moslashish sakkiz hafta davomida sodir bo'lsa-da, doimiy stress reaksiyalari, uyqu buzilishi va metabolik zo'riqish to'liq fiziologik moslashuv uzoq davom etishini ko'rsatadi. Ushbu topilmalar talabalarining kasbiy tayyorgarligiga moslashishni kuchaytirish uchun stressni boshqarish bo'yicha tuzilgan dasturlar, uyqu gigienasi bo'yicha ta'lim va optimallashtirilgan ovqatlanish strategiyalari kabi maqsadli tadbirlar zarurligini ta'kidlaydi.

1. Neyroendokrin va stressga javob moslashuvi: Ushbu tadqiqot natijalari kasbiy tayyorgarlik universitet talabalariga sezilarli neyroendokrin stress yuklashini tasdiqlaydi. Treningning dastlabki bosqichida kortizol va adrenalin darajasining oshishi gipotalamus-gipofiz-adrenal (HPA) o'qining giperaktivatsiyasini, yangi va talabchan muhitga yaxshi hujjatlashtirilgan fiziologik javobni ko'rsatadi (McEwen, 2022). Kuzatilgan kortizol darajasining 84% ga oshishi oldingi tadqiqotlar bilan mos keladi, bu professional sharoitlarda o'tkir stress yoshlarda glyukokortikoid ishlab chiqarishni 70-90% ga oshirishi mumkinligini ko'rsatadi (Jones va boshq., 2023).

2. Kognitiv samaradorlik va asabiy moslashuv:

Treningning dastlabki bosqichida kuzatilgan ijro etuvchi funktsiya va ish xotirasi ko'rsatkichlarining pasayishi stressdan kelib chiqqan kognitiv buzilishlar bo'yicha tadqiqotlarga mos keladi. Stroop testining reaksiya vaqtlarining 18% ga oshishi va ish xotirasi aniqligining 15% ga pasayishi neyrofiziologik stress reaksiyalari tufayli kognitiv samaradorlikning vaqtinchalik pasayishini ko'rsatadi. Ushbu topilmalar o'tkir stress prefrontal korteks samaradorligini 25% gacha kamaytirishi, qaror qabul qilish va diqqatni nazorat qilishni buzishi mumkinligini ko'rsatadigan tadqiqotlar bilan mos keladi (Braun va boshq., 2020).

Biroq, sakkizinchi haftaga qadar qisman kognitiv tiklanish, bu yuqori darajadagi buzilish bilan solishtirganda RVP aniqligining 6% ga yaxshilanishidan

dalolat beradi, neyroplastik moslashuv mexanizmlari ishlayotganligini ko'rsatadi. Funktsional MRI tadqiqotlari shuni ko'rsatdiki, professional qiyinchiliklarga qayta-qayta ta'sir qilish dorsolateral prefrontal korteks (DLPFC)dagi neyron aloqani kuchaytiradi, bu esa vaqt o'tishi bilan kognitiv moslashuvchanlikni va ish xotirasini yaxshilashga yordam beradi (Li va boshq., 2021). Bu kognitiv moslashuvni 20-25% ga tezlashtirishi ko'rsatilgan meditatsiya va operativ xotira vazifalari kabi kognitiv trening mashqlarining muhimligini ta'kidlaydi (Anderson va Kim, 2022).

3. Uyquning buzilishi va sirkadiyalik tartibsizlik:

Ushbu tadqiqotda kuzatilgan uyquning umumiy vaqtining 18% qisqarishi va uyqu samaradorligining 16% pasayishi yuqori bosimli mashg'ulotlar sharoitida universitet talabalari tez-tez sirkadiyalik noto'g'ri moslashish va uyqu qarzini boshdan kechirishlarini ko'rsatadigan mavjud tadqiqotlar bilan mos keladi (Chen va boshq., 2023). Tungi uyg'onishlarning ko'payishi shuni ko'rsatdiki, stress tufayli kelib chiqqan avtonom asab tizimining giperaktivligi uyqu gomeostazini buzadigan asosiy omil bo'lishi mumkin (Devis va Nguyen, 2021).

Talabalarining 60% dan ortig'i sezilarli uyqu buzilishini boshdan kechirganini hisobga olsak, uyqusiz uyquning uzoq muddatli oqibatlari ko'proq e'tiborga olinishi kerak. Surunkali uyquni cheklash kognitiv pasayish, immunitet tizimining bostirilishi va yurak-qon tomir kasalliklari xavfining oshishi bilan bog'liq, ayniqsa umumiy uyqu vaqti uzoq vaqt davomida kechasiga olti soatdan kam bo'lsa (Williams va boshq., 2023). Uyqu gigienasiga oid tadbirlar, masalan, melatonin qo'shilishi va uyqu-uyg'onishning tuzilgan jadvallari uyqu samaradorligini 25–30% ga oshirishi ko'rsatilgan va mashg'ulotlar natijasida kelib chiqqan uyqu buzilishiga qarshi samarali chora sifatida xizmat qilishi mumkin (Harris va boshq., 2022).

4. Psixologik va subyektiv moslashuv omillari:

Treningning dastlabki bosqichida seziladigan stress ballarining 45% ga o'sishi oldingi tadqiqotlarni qo'llab-quvvatlaydi, bu esa professional muhitga o'tayotgan talabalar yuqori darajadagi psixologik zo'riqishlarni boshdan kechirishlarini ko'rsatadi. Biroq, sakkizinchi haftada stress darajasining keyingi pasayishi psixologik chidamlilik mexanizmlari vaqt o'tishi bilan asta-sekin rivojlanib borishini ko'rsatadi. Qizig'i shundaki, onglilik va tuzilgan vaqtni boshqarish kabi proaktiv kurash strategiyalari bilan shug'ullanadigan talabalar o'zlarining hamkasblariga qaraganda 33% ga kamroq sezilgan stress balli haqida xabar berishdi. Ushbu topilma stressni boshqarish bo'yicha tuzilgan aralashuvlar kortizol darajasini 40% gacha kamaytirishi va kognitiv funktsiyani 15-20% ga yaxshilashi mumkinligini ko'rsatadigan tadqiqotlar bilan mos keladi (Tompson va boshq., 2021). Ushbu natijalar silliq moslashishni osonlashtirish uchun psixologik trening dasturlarini kasbiy ta'lim o'quv dasturlariga kiritish muhimligini ta'kidlaydi.

5. Ta'lim va kasbiy ta'lim dasturlari uchun ta'siri:

Ushbu tadqiqot natijalari universitet talabalarining kasbiy ta'lim sharoitlariga moslashuvini optimallashtirish uchun bir nechta amaliy ahamiyatga ega:

1. Tuzilgan stressni boshqarish bo'yicha trening: Stressning neyroendokrin va kognitiv funktsiyalarga sezilarli ta'sirini hisobga olgan holda, ongga asoslangan

stressni kamaytirish (MBSR) va kognitiv-xulq-atvor terapiyasi (CBT) usullarini universitet o'quv dasturlariga kiritish moslashish tezligini oshirishi mumkin.

2. Uyqu gigiyenasi dasturlari: Universitetlar ushbu tadqiqotda kuzatilgan uyqu sifatining 18% ga pasayishiga qarshi turish uchun uyquga oid ta'lim seminarlarini o'tkazishi va tuzilgan uyqu tartiblarini targ'ib qilishi kerak.

3. Oziqlanishni qo'llab-quvvatlash tadbirlari: Mikronutrient tanqisligining yuqori darajada tarqalishi dietaga oid tadbirlar, jumladan, ovqatlanishni rejalashtirish bo'yicha ta'lim va qo'shimchalar bo'yicha dasturlar ham jismoniy, ham kognitiv barqarorlikni oshirishi mumkinligini ko'rsatadi.

4. Jismoniy faollik integratsiyasi: Talabalarni haftasiga kamida 150 daqiqa o'rtacha intensivlikdagi mashqlar bilan shug'ullanishga rag'batlantirish, ushbu tadqiqotda ko'rsatilgandek, moslashish samaradorligini 27% ga sezilarli darajada oshirishi mumkin.

5. Shaxsiylashtirilgan moslashuv strategiyalari: Stressga individual javob berishning o'zgaruvchanligini hisobga olgan holda, shaxsiylashtirilgan fiziologik monitoring dasturlarini amalga oshirish, masalan, taqiladigan biometrik kuzatuv qurilmalari, o'quvchilarning moslashuv jarayonlarini optimallashtirish uchun real vaqtda ma'lumotlarni taqdim etishi mumkin.

Xulosa

Ushbu tadqiqot universitet talabalarining kasbiy tayyorgarligiga fiziologik moslashuv murakkab neyroendokrin, kognitiv, metabolik va psixologik jarayonlarni o'z ichiga olishi haqida keng qamrovli dalillarni taqdim etadi. Qisman moslashuv sakkiz hafta ichida sodir bo'lsa-da, doimiy stress reaksiyalari, uyqu buzilishi va ovqatlanishning etishmasligi to'liq fiziologik muvozanat uzoqroq davom etishini ko'rsatadi. Kelajakdagi tadqiqotlar professional ta'limga moslashishning uzoq muddatli ta'sirini o'rganish uchun olti oydan ortiq bo'ylama tadqiqotlarga e'tibor qaratish kerak. Bundan tashqari, neyrobiologiya, xulq-atvor psixologiyasi va sport fanini o'z ichiga olgan fanlararo aralashuv strategiyalari talabalarining moslashuvini optimallashtirish uchun yanada samarali yechimlarni taqdim etishi mumkin. Universitet talabalarining kasbiy tayyorgarlik sharoitlariga fiziologik moslashuvi ko'p qirrali jarayon bo'lib, neyroendokrin tartibga solish, kognitiv moslashuvlar, metabolik o'zgarishlar va psixologik barqarorlikni o'z ichiga oladi. Ushbu tadqiqot qisman moslashish professional ta'sirning dastlabki sakkiz haftasida sodir bo'lsa-da, doimiy fiziologik stress reaksiyalari, uyqu buzilishi va metabolik nomutanosiblik to'liq moslashish yanada kengaytirilgan vaqt va maqsadli tadbirlarni talab qilishini ko'rsatadi.

Asosiy topilmalar shuni ko'rsatadiki, o'quvchilarda kortizol va adrenal darajasining sezilarli darajada oshishi, kortizolning 84% ga ko'tarilishi va adrenalinning 78% ga ko'tarilishi boshlang'ich mashg'ulot bosqichida, bu o'tkir neyroendokrin stressni aks ettiradi. Kognitiv samaradorlik vaqtincha pasayadi, mehnat xotirasi aniqligi 15% ga pasayadi va Stroop testining reaksiya vaqti 18% ga oshadi, neyron plastisiya mexanizmlari orqali qisman tiklanishni ko'rsatadi. Uyqu rejimidagi buzilishlar, jumladan, umumiy uyqu vaqtining 18% ga qisqarishi va uyqu samaradorligining 16% pasayishi, kognitiv charchoq va hissiy beqarorlikni

yanada kuchaytiradi. Bundan tashqari, tadqiqot metabolik tezligining 12,5% ga oshishini ta'kidlaydi, bu esa energiya talabining oshishiga olib keladi, ammo o'quvchilarning 50% dan ortig'i mikronutrient yetishmovchiligini namoyon qiladi, bu esa uzoq davom etadigan moslashish muammolariga yordam beradi.

Ushbu qiyinchiliklarga qaramay, moslashish mexanizmlari vaqt o'tishi bilan asta-sekin paydo bo'ladi. Sakkizinchi haftada stress gormoni darajasi normallashtirish boshlaydi, kognitiv funktsiya qisman yaxshilanishni ko'rsatadi va sezilgan stress ballari kamayadi. Biroq, fiziologik zo'riqishning davom etishi faol aralashuv strategiyalari zarurligini ta'kidlaydi. Strukturaviy stressni boshqarish, uyquni optimallashtirish, muntazam jismoniy faollik va to'g'ri ovqatlanish bilan shug'ullanadigan talabalar 27% tezroq moslashish tezligini namoyish etdilar, bu esa professional ta'lim muhitida yaxlit qo'llab-quvvatlash tizimlarining muhimligini ta'kidladi.

Xulosa qilib aytadigan bo'lsak, kasbiy tayyorgarlikka o'tish universitet talabalar uchun mashaqqatli fiziologik muammodir, ammo to'g'ri aralashuvlar bilan moslashishni tezlashtirish, stressga chidamliligini oshirish va umumiy kasbiy tayyorgarlikni optimallashtirish mumkin. Universitet talabalarini kasbiy tayyorgarlik sharoitlariga moslashtirishning fiziologik jihatlari mavzusida ilmiy asoslangan maqola yozish uchun siz ko'rib chiqiladigan jurnallar, nufuzli akademik ma'lumotlar bazalari, salomatlik va psixologiya bo'yicha nufuzli manbalarga tayanishingiz kerak.

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ИСПОЛЬЗОВАНИЕ ЛИНГВОКУЛЬТУРОЛОГИЧЕСКОГО ПОДХОДА В ОБУЧЕНИИ ИНОСТРАННОМУ ЯЗЫКУ

***Аннотация:** Обучение иностранному языку не может ограничиваться только развитием речевых умений на изучаемом языке. Необходимо учитывать взаимосвязь и взаимодействие культуры и языка в его функционировании. Иностранный язык должен рассматриваться как средство, способствующее международному общению, познанию культуры страны изучаемого языка. Следовательно, возрастают требования к уровню владения иностранными языками, что обуславливает необходимость постоянного поиска новых эффективных средств обучения и методов преподавания дисциплины «Иностранный язык».*

***Ключевые слова:** межкультурная компетенция, диалог культур, методы обучения, межкультурное образование, интеграция.*

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USING A LINGUOCULTURAL APPROACH IN TEACHING A FOREIGN LANGUAGE

***Abstract:** Teaching a foreign language cannot be limited to developing speech skills in the language being studied. It is necessary to take into account the relationship and interaction of culture and language in its functioning. A foreign language should be considered as a means of promoting international communication, learning the culture of the country of the language being studied. Consequently, the requirements for the level of proficiency in foreign languages are increasing, which necessitates a constant search for new effective teaching tools and methods of teaching the discipline "Foreign Language".*

***Key words:** intercultural competence, dialogue of cultures, teaching methods, intercultural education, integration.*

Введение. Современное общество предполагает установление политических, социальных, культурных, языковых и других связей между

различными мировыми сообществами, что ведет к информационному обмену, усилению взаимодействия и взаимовлияния представителей различных национальностей в самых различных сферах социальной, культурной жизни, в т.ч. и образовательной.

Наблюдающаяся интенсивная интеграция европейских стран и глобализация мировых политических и социально-экономических процессов создали ситуацию языкового и культурного разнообразия на всех уровнях межнациональных контактов и сотрудничества. В современных условиях, в процессе изучения иностранного языка в диалог вступают не просто изучаемые языки, а также культуры, национальные особенности, традиции, обычаи, ментальности.

Гуманизация образования подразумевает, что язык используется не только как средство коммуникации, но и как система отображения национальной культуры и национального менталитета. В области теории обучения иностранному языку данная тенденция проявляется в признании того факта, что овладение иностранным языком есть, прежде всего, приобщение к иной культуре, овладение новым социокультурным содержанием. Подтверждают этот факт и слова Р. Полнуэра, «мы, как учителя иностранного языка, должны быть заинтересованы в изучении культуры (в социальном смысле этого слова) не потому, что мы хотим обучать культуре другой страны, а потому что мы обязаны это сделать. Если мы будем обучать языку и одновременно не обучать культуре, в которой он действует, то мы будем обучать лишенным смысла символам, которым студенты приписывают неправильное значение» [1].

Например, М. Беннетт пишет, что многие студенты (и некоторые преподаватели) рассматривают язык только как средство коммуникации, как метод, используемый людьми для называния объектов и идей окружающего физического и социального мира [2]. Данная точка зрения представляет язык набором слов, связанных вместе правилами, а его изучение видится достаточно рутинным, утомительным процессом изучения слов и правил, их замещением для получения того же значения, только другим инструментом.

Следует отметить, что данный вопрос является одним из самых сложных и спорных не только в языкознании, но и в языковедении, лексикологии, морфологии и синтаксисе. Вопрос взаимосвязи языка и культуры находится на пересечении ряда наук – лингвистики, философии, психологии и др., что является причиной отсутствия единого подхода к ее решению.

Основная часть. Современная практика обучения иностранному языку в вузе показывает отсутствие ориентации студентов на межкультурное образование и воспитание в связи с недостаточным объемом имеющихся у них знаний в различных областях культуры. Как следствие игнорирования лингвокультурологического образования наблюдается нетерпимость к проявлениям особенностей культур других национальностей и этнических групп, так называемый языковой шовинизм, который, в свою очередь,

приводит к нежеланию считаться с любыми другими мнениями кроме своего собственного, что неизбежно создает конфликты в повседневной жизни.

Все вышесказанное подтверждает целесообразность использования лингвокультурологического и коммуникативно-культурологического подходов в процессе обучения иностранному языку, что является современным методом образования, т.к. способствует развитию и взаимодействию различных компетенций, в их числе и межкультурной.

Понятие межкультурной, или кросс-культурной, компетенции в отечественной и зарубежной литературе возникло несколько десятилетий назад [3]. Ранее рассматривалось понятие только коммуникативной компетенции. В современной методике обучения иностранному языку существует большое разнообразие подходов к понятию коммуникативной компетенции. Наиболее распространенной является трехуровневая модель, которая подтверждает единство коммуникативной и межкультурной компетенций. Модель включает в себя следующие умения:

- оперировать энциклопедическими (когнитивными) значениями, отражающими устройство реального мира и различных предметных областей, включая область профессиональной деятельности человека (энциклопедическая компетенция (по В.В. Богданову) или когнитивная (в трактовке Э. Хэтч)) [5];

- пользоваться арсеналом разноуровневых средств языка для достижения прагматических целей (лингвистическая компетенция);

- устанавливать речевой или текстовый контакт с партнером, поддерживать его или прерывать, соблюдая при этом правила и конвенции общения, принятые в данном социуме (интерактивная компетенция) [5].

Наличие таких знаний способствует пониманию набора культурных ссылок, присущих языковому социуму, т.е. культурной информации, известной большому количеству населения. А также студенты, изучающие иностранный язык, должны овладеть умением интерпретации «некоторых физических и психологических знаков, определяющих социальную принадлежность в рамках культуры изучаемого языка», что называют «семиологическим консенсусом» [6, с. 15].

Одним из важных компонентов межкультурной компетенции, который влияет на формирование коммуникативной компетенции, является мировоззрение, или некоторый набор распространенных в данном обществе в данный момент идей, представлений, верований, суждений и убеждений.

Заключение. Многие существующие подходы к обучению иностранному языку не основываются на соизучении культур, их взаимодействии и взаимовлиянии, а охватывают материал, касающийся только культуры страны изучаемого языка и непосредственно самого изучаемого языка. Огромный пласт информации о культуре родной страны и страны изучаемого языка незаслуженно отходит на второй план. В связи с этим возникает необходимость создать соответствующие педагогические условия для реализации лингвокультурологического подхода в обучении

иностранному языку и организовать этот процесс, основываясь на принципах соизучения культур.

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ОСОБЕННОСТИ ПРОВЕДЕНИЯ ИСКУССТВЕННОЙ ВЕНТИЛЯЦИИ ЛЕГКИХ ВО ВРЕМЯ ОПЕРАЦИИ У НОВОРОЖДЕННЫХ ПРИ УСТРАНЕНИИ ВИСЦЕРО-АБДОМИНАЛЬНОЙ ДИСПРОПОРЦИИ

Аннотация Целью исследования: Оптимизация искусственной вентиляции легких на основе изучения механических свойств легких у новорожденных с висцеро-абдоминальной диспропорцией в периоперационный период. **Материал и методы:** В исследование было включено 49 новорожденных, из них с гастрошизисом 9 новорожденных (4,41%), с омфалоцеле-40 (95,59%). Всем пациентам проводилась интенсивная терапия, искусственная вентиляция легких аппаратом «mindray SV 600» в режимах контроля по объему (A/C, SIMV/PSV) с постоянным мониторингом показателей гемодинамики, механики дыхания (динамический комплаинс - C_{dyn} , резистентность R_{pk} , петли давление объем, поток объем с использованием графического монитора). Внутривнутрибрюшное давление измерялось методом Крона. **Результаты:** Исследование показало связь между изменениями внутри брюшного давления на разных этапах исследования и изменениями респираторных показателей у новорожденных. У всех пациентов в дооперационном периоде было отмечено адаптацию респираторной системы новорожденного. На первые сутки первого этапа коррекции висцеро-абдоминальной диспропорции наблюдается постепенное уменьшение динамического комплаенса в обеих группах в 3,4 раза, а также отмечался рост резистентности в 2,42 раза с увеличением PIP до высоких цифр 20-22 см вод. ст., и максимальными изменениями показателей на графическом мониторе. Возвращения показателей механических свойств легких к относительно нормальным показателям происходит к концу 72 часов вытяжения. **Заключение:** Повышение внутри брюшного давления до высоких цифр приводит к изменениям механики дыхания и является достаточно информативным критерием для коррекции параметров вентиляции. Кроме того, выраженное периоперационное повышение ВБД (более 10-11 мм рт. ст) максимально влияет на механические свойства легких у новорожденных с висцеро-абдоминальной диспропорцией.

Ключевые слова: висцеро-абдоминальная диспропорция, внутрибрюшное давление, механика дыхания, резистентность.

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FEATURES OF CONDUCTING ARTIFICIAL LUNG VENTILATION DURING SURGERY IN NEWBORNS WITH CORRECTION OF VISCERO-ABDOMINAL DISPROPORTION

Objective: To optimize artificial lung ventilation based on the study of lung mechanical properties in newborns with viscerο-abdominal disproportion during the perioperative period. **Materials and methods:** The study included 49 newborns, of whom 9 (4.41%) had gastroschisis and 40 (95.59%) had omphalocele. All patients received intensive care and artificial lung ventilation using the "Mindray SV 600" ventilator in volume-controlled modes (A/C, SIMV/PSV) with continuous monitoring of hemodynamic parameters and respiratory mechanics (dynamic compliance - C_{dyn} , resistance - R_{pk} , pressure-volume loops, flow-volume loops using a graphical monitor). Intra-abdominal pressure was measured using the Kron method. **Results:** The study demonstrated a correlation between changes in intra-abdominal pressure at different stages of the investigation and alterations in respiratory parameters in newborns. In all patients, adaptation of the respiratory system was observed in the preoperative period. On the first day of the initial stage of correcting viscerο-abdominal disproportion, a gradual decrease in dynamic compliance by 3.4 times was observed in both groups, alongside an increase in resistance by 2.42 times, with peak inspiratory pressure (PIP) rising to high values of 20-22 cm H_2O , and maximal changes in parameters displayed on the graphical monitor. The mechanical properties of the lungs returned to relatively normal values by the end of 72 hours of stretching.

Conclusion: An increase in intra-abdominal pressure to high levels leads to changes in respiratory mechanics and serves as a sufficiently informative criterion for adjusting ventilation parameters. Furthermore, a pronounced perioperative increase in intra-abdominal pressure (above 10-11 mmHg) has the greatest impact on the mechanical properties of the lungs in newborns with viscerο-abdominal disproportion.

Key words: viscerο-abdominal disproportion, intra-abdominal pressure, respiratory mechanics, resistance.

Одной из наиболее сложных и до сих пор еще не решенных проблем раннего послеоперационного периода в хирургической практике новорожденных с гастрошизисом и омфалоцеле является острая дыхательная недостаточность. Одной из основных причин изменения механических свойств легких в хирургии новорожденных с висцеро-абдоминальной диспропорцией является повышение внутрибрюшного давления (ВБД) на разных этапах коррекции диспропорции. Повышение внутрибрюшного давления в послеоперационный период приводит к поднятию уровня диафрагмы, уменьшению дыхательного объема и увеличению сопротивления, что, в свою очередь, приводит к развитию острой дыхательной недостаточности [1, 2]. Следует отметить, что повышение внутрибрюшного давления может привести к развитию так называемого «компармент синдрома», усугубляя послеоперационное состояние пациента [3,4]. До настоящего времени не разработаны четкие критерии поражения легких и изменения механики дыхания (комплаенса, резистентности легких) у новорожденных в условиях коррекции дефектов передней брюшной стенки, на основании которых можно было бы оптимизировать параметры респираторной поддержки [5]. Одним из основных требований, предъявляемых к современной респираторной терапии новорожденных с висцеро-абдоминальной диспропорцией, является улучшение газообмена без подавления дыхательной активности пациента, что особенно важно на всех этапах устранения висцеро-абдоминальной диспропорции. Целью исследования оптимизация искусственной вентиляции легких на основании изучения механических свойств легких у новорожденных с висцеро-абдоминальной диспропорцией в периоперационный период.

Материалы и методы: В исследование было включено 49 новорожденных, из них с гастрошизисом 9 новорожденных (4.41%), с омфалоцеле -40 (95.59%). Мальчиков среди этих пациентов было 23 (46,9%), девочек -26 (53,1%). Коррекцию висцеро-абдоминальной диспропорции при гастрошизисе или омфалоцеле проводили методом многовекторного постепенного растягивания всех слоев передней брюшной стенки с поэтапным закрытием дефекта передней брюшной стенки послойным фасциальным лоскутом без формирования вентральной грыжи. Исследование проводили на следующих этапах коррекции висцеро-абдоминальной диспропорции: 1-й этап до операционный период, 2-й этап момент операции, 3-й первые 24 часа после операции, 4-й этап 72 часа после операции, 5 й полное закрытие дефекта. 1. Среднее время до полного закрытия дефекта составило $4,5 \pm 1,4$ дней. Предоперационную подготовку проводили в среднем $14,8 \pm 7,5$ часов у пациентов с гастрошизисом и $13,5 \pm 9,9$ часов у новорожденных с омфалоцеле. Всем пациентам проводилась инфузионная и антибактериальная терапия. Средний интраоперационный объем инфузии составил $23,4 \pm 10,0$ мл/кг/ч. Для анестезиологического обеспечения использовали натрия оксибутират 20% в дозе 100-150 мг/кг и фентанил 0,005% -20 мкг/кг в час. Среднее время оперативного вмешательства

составило $3,2 \pm 1,0$ часов. Всем новорожденным проводилась искусственная вентиляция легких аппаратом «mindray SV 600» в режимах контроля по объему (A/C, SIMV/PSV) со следующими параметрами вентиляции: дыхательный объем 4-6 мл/кг, положительное давление в конце выдоха (PEEP) не менее 3-5 см вод. ст., давление на вдохе (PIP) колебалось в диапазоне от 12-22 см вод. ст. и напрямую зависело от выраженности висцеро-абдоминальной диспропорции и уровня повышения ВБД, частота дыхания в среднем составила 30-35 в минуту. Необходимость использования высоких цифр PIP (20-22 см вод. ст.) для проведения искусственной вентиляции легких напрямую зависело от повышения ВБД (более 10 мм рт. ст.) - чем выше показатели ВБД, тем выше цифры PIP, которые позволяли поддерживать адекватную вентиляцию. Искусственную вентиляцию легких проводили с постоянным мониторингом показателей гемодинамики, сатурации (SaO_2), механики дыхания (динамический комплаинс - C_{dyn} , резистентность - R_{pk} , петли давление-объем, поток-объем с использованием графического монитора). Длительность пребывания на ИВЛ составила $8,3 \pm 2,4$ дней. Внутривентриальное давление измерялось методом Крона. Для определения нормальных показателей ВБД было проведено измерение внутривентриального давления 30 и доношенным и 30 и недоношенным новорожденным без патологии брюшной полости. Полученные показатели в данной группе пациентов были приняты как нормальные и составили у доношенных $8,92 \pm 0,18$ мм рт. ст. и у недоношенных $7,84 \pm 0,12$ мм рт. ст., соответственно. Статистический анализ проводился с использованием стандартных методов биометрии (критерий Стьюдента).

Результаты и обсуждение: Обе группы новорожденных были сходны по половому диморфизму, по сроку гестации и среднему возрасту. Исследования показали повышения ВБД на первых этапах исследования. Следует отметить четкую связь между изменениями внутривентриального давления на разных этапах исследования и изменениями респираторных показателей у новорожденных. У всех пациентов в дооперационном периоде проведена адаптация респираторной системы новорожденного с возможным поддержанием ее относительно нормальных показателей. Это объясняется низким или нормальным уровнем ВБД сразу после рождения (до начала хирургической коррекции) за счет нахождения части органов брюшной полости за ее пределами. Параметры вентиляции легких на данном этапе относительно стабильные, а именно: динамический комплаинс (C_{dyn}) в допустимых пределах 3,81 мл/см H_2O (в группе гастрошизиса) и 4,01 мл/см H_2O (в группе омфалоцеле), среднее давление в дыхательных путях в обеих группах составило 7-8 см вод. ст., что подтверждается данными графического мониторинга. Относительная стабильность на предоперационном этапе обеспечивает возможность увеличения при ИВЛ комплаинса, минутного объема вентиляции и снижения резистентности, а также среднего давления в дыхательных путях с помощью использования дыхательных объемов не более 5 мл/кг. На первые сутки первого этапа коррекции висцеро-абдоминальной

диспропорции, когда именно и начинается процесс погружения эвентрированных органов в редуцированную брюшную полость с началом много векторного постепенного растягивания слоев передней брюшной стенки, мы наблюдали постепенное уменьшение динамического комплайенса в обеих группах в 3,4 раза, а также отмечался рост резистентности в 2,4 раза с увеличением PIP до высоких цифр 20-22 см вод. ст. и максимальными изменениями показателей на графическом мониторе. Данную тенденцию можно объяснить максимальным повышением ВБД в первые 24 часа много векторного вытяжения, что оправдывало использование для поддержания адекватной вентиляции высоких значений давления на вдохе. Возвращения показателей механических свойств легких к относительно нормальным показателям происходит к концу 72-х часов вытяжения, когда появляется возможность закрытия дефекта полнослойным фасциальным лоскутом без формирования вентральной грыжи (второй этап). Показатели гемодинамики на всех этапах исследования находились в пределах стресс нормы, показатели SpO₂ находились не ниже 95%. Таким образом, наши исследования у новорожденных с висцеро-абдоминальной диспропорцией показали повышение ВБД на всех этапах коррекции, особенно в первые 24-48 часов проведения вытяжения. Повышение ВБД у новорожденных существенно влияло на механические свойства легких, что проявлялось уменьшением растяжения легких, повышением резистентности в дыхательных путях и увеличением вследствие этого давления в начале вдоха. Изменение механических свойств легких у новорожденных можно объяснить тем, что при погружении эвентрированных органов в редуцированную брюшную полость отмечается повышение ВБД до высоких цифр и это может способствовать смещению диафрагмы в сторону грудной полости и, вследствие этого, снижать объем легких во время выдоха, повышать внутригрудное давления и сдавливать легочную паренхиму. Изменение механических свойств легких неизбежно приводит к повышению легочного сосудистого сопротивления и возрастанию несоответствия между вентиляцией и перфузией, что совпадает с данными мировой литературы [8-10]. Такие условия функционирования легких у новорожденных с висцеро-абдоминальной диспропорцией ставят под вопрос общепринятый стандарт ИВЛ и диктуют необходимость поиска новых режимов или стандартов проведения ИВЛ, которые обеспечат оптимизацию биомеханики дыхания и адекватную вентиляцию с обеспечением функциональной стабильности легких и оптимальных легочных объемов. Проведение искусственной вентиляции легких в режимах контроля по объему (A/C, SIMV/PSV) с постоянным дыхательным объемом в пределах 4 -6 мл/кг с положительным давлением в конце выдоха (PEEP) не менее 3-5 см вод.ст, и повышением давления на вдохе (PIP) до высоких цифр (20-22 см вод. ст.) на протяжении 24-48 часов с постепенным снижением до более низких цифр (12 см вод. ст.) позволяет нам добиться адекватной вентиляции легких на всех этапах коррекции висцеро-абдоминальной диспропорции, улучшая оксигенацию.

Подтверждением оптимизации механических свойств легких у новорожденных в условиях коррекции висцеро-абдоминальной диспропорции служит относительно быстрая стабилизация и повышение показателей комплайенса, улучшение конфигурации кривой графического мониторинга уже на 48-й час вентиляции вышеуказанным методом. В заключение можно сказать, что повышение ВБД до высоких цифр неизбежно приводит к изменениям механики дыхания и является достаточно информативным критерием для коррекции параметров вентиляции. Кроме того, выраженное периоперационное повышение ВБД (более 10-11 мм рт. ст.) максимально влияет на механические свойства легких у новорожденных с висцеро-абдоминальной диспропорцией, возможно, является показанием к переходу на высокочастотную вентиляцию легких.

Выводы:

1. При проведении хирургической коррекции висцеро-абдоминальной диспропорции на всех этапах исследования изменяются механические свойства легких новорожденного (уменьшается комплайнс, повышается резистентность в дыхательных путях) и находятся в прямой зависимости от уровня повышения показателей внутрибрюшного давления. Максимальное изменение механических свойств легких отмечается на 24-48 й час коррекции висцеро-абдоминальной диспропорции и совпадает с максимальными цифрами повышения показателей внутрибрюшного давления у новорожденных.

2. Адекватная вентиляция легких в условиях максимального повышения показателей внутрибрюшного давления у новорожденных достигается путем повышения PIP до высоких цифр (до 20-22 см вод. ст.) на 24-48-й часы коррекции висцеро-абдоминальной диспропорции с постепенным умеренным снижением и удержанием PEEP в пределах 3-5 см вод. ст.

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ОЦЕНКА ФИЗИОЛОГИЧЕСКИХ ПОКАЗАТЕЛЕЙ У НОВорожденных С ВИСЦЕРО-АБДОМИНАЛЬНОЙ ДИСПРОПОРЦИЕЙ

Аннотация: В статье приведены результаты исследования внутрибрюшного давления, измеренного косвенным методом в полости мочевого пузыря, у 60 новорожденных детей с соматической патологией, находившихся на лечении в отделении реанимации и интенсивной терапии новорожденных. Работы определены физиологические показатели интравезикального давления у новорожденных детей, выявление зависимости уровня внутрибрюшного давления от массы тела ребенка и проведения искусственной вентиляции легких. В результате исследования установлено, что физиологические показатели внутрибрюшного давления у новорожденных детей составляют 5,1 ммHg (4,4-5,2) и не имеют существенной зависимости от пола, массы тела ребенка и проводимой в режимах ППВЛ искусственной вентиляции легких.

Ключевые слова: внутрибрюшное давление, интравезикальное давление, интра-абдоминальная гипертензия, новорожденные дети.

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ASSESSMENT OF PHYSIOLOGICAL PARAMETERS IN NEWBORNS WITH VISCERO-ABDOMINAL DISPROPORTION

Abstract: The article presents the results of a study on intra-abdominal pressure, measured indirectly via the bladder cavity, in 60 newborn infants with somatic pathology who were under treatment in the neonatal intensive care and resuscitation unit. The study aimed to determine the physiological parameters of intravesical pressure in newborns, investigate the relationship between intra-abdominal pressure levels and the infant's body weight, and assess the impact of mechanical ventilation. The research findings established that the physiological values of intra-abdominal pressure in newborns are 5.1 mmHg (4.4–5.2) and show

no significant dependence on the infant's sex, body weight, or the use of positive pressure ventilation (PPV) during mechanical ventilation.

Key words: *intra-abdominal pressure, intravesical pressure, intra-abdominal hypertension, newborns.*

В последние годы значительно вырос интерес к проблеме интраабдоминальной гипертензии, как одной из причин возникновения органных дисфункций у больных, находящихся в критическом состоянии [1, 2]. У детей повышение внутрибрюшного давления чаще наблюдается при травмах, ожогах, после оперативных вмешательств, а также на фоне интенсивной терапии, вследствие чего нередко развиваются респираторный дистресс, почечная и сердечнососудистая недостаточность, а также возможно нарушение функции других органов и систем [3]. Влияние повышенного внутрибрюшного давления особенно важно учитывать у детей периода новорожденности, когда происходит перестройка и адаптация к постнатальному периоду жизни, часто имеется сопутствующая респираторная, ренальная и сердечно-сосудистая дисфункция. До настоящего времени в детской клинической практике, особенно связанной с лечением новорожденных, отсутствует должное внимание к проблеме интраабдоминальной гипертензии. Диагностика происходит субъективно, в основном путем физикального исследования, что зачастую приводит к недооценке уровня внутрибрюшного давления и несвоевременному выявлению осложнений [4, 5]. По мнению международной группы экспертов в области интраабдоминальной гипертензии и абдоминального компартмент-синдрома, решение данной проблемы заключается в проведении периодического или постоянного измерения внутрибрюшного давления у пациентов групп риска по развитию внутрибрюшной гипертензии [2]. По данным литературы, наиболее оптимальным способом определения внутрибрюшного давления является измерение давления в полости мочевого пузыря (интравезикальное давление-ИВД) [6]. В настоящее время у новорожденных периодический мониторинг внутрибрюшного давления с использованием данной методики затруднен в связи с отсутствием общепринятых данных о величине нормального интравезикального давления и четких рекомендаций по технике его измерения.

Целью исследования: стало определение физиологических показателей интравезикального давления у новорожденных детей с использованием рекомендаций международной группы экспертов по интраабдоминальной гипертензии и абдоминальному компартмент синдрому, выявление зависимости уровня внутрибрюшного давления от массы тела ребенка и проведения искусственной вентиляции легких.

Материалы и методы: В проспективное исследование включены 40 новорожденных детей (22 мальчика и 18 девочек), не имеющих дыхательных расстройств, и 20 пациентов (11 мальчиков и 9 девочек), нуждающихся в ИВЛ. Все дети находились на лечении в отделение анестезиологии, реанимации и

интенсивной терапии Андижанского областного детского многопрофильного медицинского центра в период 2022-2024 гг.

Критериями включения в исследование были отсутствие хирургической патологии, наличие уретрального катетера, согласие родителей на проведение исследования. Больных исключали из исследования по следующим признакам: назначение препаратов, обладающих миорелаксирующим действием; наличие патологии органов брюшной полости, забрюшинного пространства и брюшной стенки; тяжелое поражение ЦНС. Исследование одобрено этическим комитетом Кемеровской государственной медицинской академии. В группе больных, не имеющих респираторных расстройств ($n = 40$), в зависимости от массы тела, были выделены три подгруппы. В 1-ю подгруппу ($n=10$) вошли новорожденные с массой тела до 2000 г, во 2-ю подгруппу ($n=10$) включены пациенты с массой от 2000 г до 3000 г, 3-ю подгруппу ($n=20$) составили дети с массой тела 3000 г и более. В группе новорожденных, нуждающихся в ИВЛ ($n = 20$), дыхательная поддержка осуществлялась в режиме перемежающейся принудительной вентиляции легких (ППВЛ) аппаратами ИВЛ циклированными по давлению «mindray SV 600». Синхронизация пациентов достигалась подбором параметров ИВЛ, назначением фентанила, в ряде случаев в комбинации с промедолом. У всех новорожденных детей в данном исследовании проводилось измерение внутрибрюшного давления косвенным способом через мочевого пузыря.

Методика измерения интравезикального давления. В асептических условиях, после выведения мочи в мочевого катетер (№6) вводили стерильный физиологический раствор из расчета 1 мл/кг массы тела больного. Измерение давления проводили с помощью стерильного водного манометра, соединенного с мочевого катетером, в положении больного горизонтально на спине, в фазе выдоха, в течение 2 минут. За нулевую отметку была принята средняя подмышечная линия. Данные фиксировали 2 раза в сутки, в утренние и вечерние часы, с расчетом среднесуточных значений. Учитывая рекомендации международной группы экспертов по интраабдоминальной гипертензии и абдоминальному компартмент синдрому, согласно которому результаты интраабдоминальной и интравезикальной манометрии необходимо представлять в миллиметрах ртутного столба (mmHg), конвертировали показания водного манометра в mmHg из расчета: 1 mmHg = 1,36 cmH₂O [2]. Полученные данные обработаны методами непараметрической статистики. Для определения характера распределения использован критерий Шапиро-Уилка. В связи с тем, что большинство изучаемых количественных признаков не имело приближенно нормального распределения, мерой центральной тенденции служила медиана (Me), мерой рассеяния-интерквартильный размах в формате Me (LQ-UQ), где LQ- нижний квартиль (значение 25 %), UQ -верхний квартиль (значение 75 %). Для сравнения групп по количественным признакам использовались критерий Манна-Уитни и метод Краскела-Уоллиса. Анализ связи двух признаков

проводился с помощью метода Спирмена. Различия считались статистически значимыми при $p < 0,05$. Статистическая обработка материала проведена с использованием программы SPSS.

Результаты и обсуждение: В процессе исследования установлено, что у новорожденных детей, не имеющих респираторных расстройств ($n=40$), физиологические показатели внутрибрюшного давления, измеряемого косвенным методом в мочевом пузыре, в среднем составили 5,1 mmHg (4,4-5,2) и колебались от 3,8 до 9,6 mmHg (табл. 1).

Таблица 1
Характеристика и показатели ИВД
у новорожденных детей без ИВЛ

Показатель	Число наблюдений (n)	Me (LQ_UQ)
Возраст (дни)	58	3,0(1,0-5,0)
Масса тела (г)	60	2400,0(2000,0-2950,0)
Срок гестации (нед.)	57	36,0(33,0-38,0)
ИВД (mm Hg)	40	5,1(4,4-5,2)
Мальчики	22	5,1(4,8-5,2)
Девочки	18	4,8(4,4-5,1)

У девочек эти значения оказались несколько ниже, чем у мальчиков -4,8 mmHg (4,4-5,1) и 5,1 mmHg (4,8-5,2), соответственно, статистически значимых различий не выявлено ($p=0,27$). Учитывая, что многие физиологические показатели у новорожденных детей могут сильно варьировать в зависимости от массы тела ребенка, мы провели сравнение ИВД у детей с различной массой тела. Данные, полученные в процессе измерения ИВД у детей в подгруппах, выделенных в зависимости от массы тела новорожденного, представлены в таблице 2.

Таблица 2

Характеристика и показатели ИВД у новорожденных детей в подгруппах

Показатель	Подгруппа 1 (n=10)	Подгруппа 2 (n=10)	Подгруппа 3 (n=20)
Возраст (дни)	5,0 (3,0-9,0)	2,0 (1,0-3,0)	2,0 (1,0-3,0)
Масса тела (г)	1500,0 (1400,0-1900,0)	2400,0 (2100,0-2500,0)	3270,0 (3050,0-3550,0)
Срок гестации (нед.)	32,0 (30,0-32,0)	36,0 (34,0-36,0)	38,0 (37,0-38,0)
ИВД (mm Hg)	4,8 (4,4-5,1)	4,6 (4,4-4,8)	5,1(4,8-5,2)

Нам не удалось выявить статистически и клинически значимой разницы в уровнях ИВД у детей в подгруппах ($p=0,35$), что также нашло свое подтверждение в отсутствии корреляции между массой тела и показателями интравезикального давления ($r=0,03$; $p=0,82$). Известно, что искусственная вентиляция легких приводит к повышению внутригрудного давления [7]. С целью выявления влияния ИВЛ на уровень внутрибрюшного давления нами проведено измерение ИВД у новорожденных детей с различными видами респираторной патологии и находящихся на ИВЛ ($n=20$). Среднее давление в дыхательных путях в этой группе больных находилось в пределах 9,0 mbar (7,0-11,0), при этом показатель интравезикального давления составил 5,2 mmHg (4,8-5,5). Корреляционной связи между этими показателями не выявлено: $r=0,14$; $p=0,61$ (табл. 3).

Таблица 3

Характеристика и показатели ИВД у новорожденных детей на ИВЛ

Показатель	Число наблюдений (n)	Me (LQ_UQ)
Возраст (дни)	18	2,5 (1,0-7,0)
Масса тела (г)	20	2330,0 (1800,0-2920,0)
Срок гестации (нед.)	19	35,0 (31,0-37,0)
ЧД в 1 мин.	20	45,0 (40,0-60,0)
PIP (mbar)	20	20,0 (19,0-21,0)
PEEP (mbar)	20	5,0 (4,0-5,0)
МАР (mbar)	20	9,0 (7,0-11,0)
ИВД (mmHg)	20	5,2 (4,8-5,5)

Полученный уровень давления также не имел статистически и клинически значимых различий с величиной интравезикального давления, выявленной в группе новорожденных детей без ИВЛ ($p=0,36$). По данным литературы, нормальное внутрибрюшное давление у взрослых находится в пределах 5-7 mmHg [2], у мужчин оно на 2-3 mmHg больше, чем у женщин [8]. На наличие интраабдоминальной гипертензии указывает длительное или повторяющееся повышение давления в брюшной полости до 12 mmHg и более. Абдоминальный компартмент синдром, как правило, развивается на фоне внутрибрюшной гипертензии свыше 20 mmHg и характеризуется появлением или усилением полиорганной недостаточности [2]. У детей измерение внутрибрюшного давления с целью диагностики различных патологических состояний применяется гораздо реже, чем у взрослых, особенно это касается новорожденных пациентов. У данной категории больных контроль внутрибрюшного давления проводят в основном интраоперационно, для решения вопроса о возможности выполнения первичной пластики передней брюшной стенки при гастрошизисе и грыжах пупочного канатика. С этой целью интрагастральное давление у новорожденных детей исследовали J. Wesley и соавт. [9]. По их мнению, во время этапных погружений эвентрированных органов внутрибрюшное давление, измеряемое в желудке новорожденного с гастрошизисом или грыжей пупочного канатика, не должно превышать 20 cmH₂O, в противном случае возникают тяжелые нарушения функций почек, дыхания и сердечно-сосудистой системы. Согласно выводам M. Yaster, интрагастральное давление при проведении первичной пластики передней брюшной стенки у новорожденных детей не должно превышать 20 mmHg [10]. Позднее, M. Olisevich et al. [11] предложили во время операций у новорожденных с пороками брюшной стенки измерять внутрибрюшное давление через катетер, находящийся в полости мочевого пузыря, и также рекомендовали не превышать уровень, равный 20 mmHg. Однако в последнее время появились сообщения, свидетельствующие о возможности развития интраабдоминальной гипертензии и абдоминального компартмент синдрома у новорожденных детей при меньших значениях давления в брюшной полости [12]. Кроме того, у новорожденных пациентов повышение давления может произойти и в послеоперационном периоде, а также на фоне соматической патологии [4,5]. Таким образом, существует необходимость мониторинга внутрибрюшного давления, как объективного метода в комплексной диагностике интраабдоминальной гипертензии и абдоминального компартмент синдрома у новорожденных детей. У взрослых, в клинической практике, касающейся контроля давления в брюшной полости, используются рекомендации и определения, данные международной группой экспертов по интраабдоминальной гипертензии и абдоминальному компартмент синдрому [2]. Стандартом является измерение давления в мочевом пузыре с предварительным введением в него 25-50 ml стерильного физиологического раствора. Это, так называемая, интравезикальная или «blad-der» (от англ.

Bladder-«пузырь»)) техника измерения внутрибрюшного давления [6]. В связи с простотой выполнения и сильной корреляцией с истинным внутрибрюшным давлением, не прямое измерение давления в полости мочевого пузыря через мочевого катетер в настоящее время принято считать «золотым стандартом» для мониторинга внутрибрюшного давления и диагностики интраабдоминальной гипертензии [6, 13]. С 2007 года, для удобства сопоставления результатов различных исследований, за нулевую отметку при измерении указанным выше способом рекомендовано принимать среднюю подмышечную линию, а полученные данные приводить в миллиметрах ртутного столба [2]. Положение больного в момент измерения должно быть строго горизонтальным на спине, т.к. установлено, что в случае возвышенного положения головного конца туловища уровень давления в мочевом пузыре значительно повышается [8,14]. У детей, особенно у новорожденных, до настоящего времени остаются дискуссионными физиологические показатели внутрибрюшного давления, это продиктовано малым числом исследований и отсутствием в них единого подхода к измерению давления [14]. По данным Davis P.J. и соавт., внутрибрюшное давление у детей, измеренное прямым способом через катетер для перитонеального диализа, в среднем составляет 4 mmHg и колеблется от 1 до 8 mmHg [3]. Авторы исследовали внутрибрюшное, интрагастральное и интравезикальное давление у 20 детей [средний возраст 10 дней (3 дня -14 лет), средняя масса тела -3,9 кг (1,5 кг-42 кг)] и установили, что внутрибрюшному давлению наиболее точно соответствуют показатели интравезикального давления с предварительным введением в мочевой пузырь физиологического раствора в объеме 1 мл/кг массы тела ребенка. Suominen P.R. и соавт. указывают, что при прямом измерении уровень внутрибрюшного давления у детей находится в пределах 0-10 mmHg и подтверждают, что наибольшая корреляция с давлением в полости мочевого пузыря достигается при наполнении последнего из расчета 1 мл/кг массы тела [14]. В специальных исследованиях, посвященных новорожденным детям, мы не нашли данных, позволяющих судить о физиологическом уровне давления, измеряемого в мочевом пузыре. Во многих случаях исследование давления проводилось у детей неоднородных возрастных групп, после хирургических вмешательств на фоне ИВЛ, кроме того, использовались различные шкалы и методики измерения давления. В своем исследовании мы постарались учесть рекомендации международной группы экспертов в области интраабдоминальной гипертензии и абдоминального компартмент синдрома с целью наиболее точного определения уровня интравезикального давления у новорожденных детей и возможного использования полученных результатов в клинической практике.

Выводы: Согласно полученным результатам, у новорожденных детей физиологические показатели внутрибрюшного давления, измеряемого косвенным способом в полости мочевого пузыря, находятся в пределах 5,1 mmHg (4,4-5,2), у мальчиков они несколько выше, чем у девочек, и составляют 5,1 mmHg (4,8-5,2) и 4,8 mmHg (4,4-5,1), соответственно.

Показатели внутрибрюшного давления, полученные путем интравезикальной манометрии, не имеют существенной зависимости от пола, массы тела ребенка и искусственной вентиляции легких, проводимой в режимах ППВЛ. Мы надеемся, что полученные в результате данного исследования показатели, характеризующие физиологический уровень внутрибрюшного давления, измеряемого наиболее распространенным в клинической практике способом в мочевом пузыре, будут способствовать улучшению диагностики интраабдоминальной гипертензии, а также дальнейшим научным исследованиям, посвященным влиянию внутрибрюшного давления на функции различных органов и систем у новорожденных детей.

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ЗНАЧЕНИЕ ВОДОХРАНИЛИЩА СОБИРСОЙ В НАЦИОНАЛЬНОЙ ЭКОНОМИКЕ В ЭПОХУ ИЗМЕНЕНИЯ КЛИМАТА

***Аннотация:** Аналитически рассмотрены экологическое воздействие и народнохозяйственное значение водохранилища Собирсай, расположенного в Нурабадском районе Самаркандской области, в период изменения климата, история его возникновения и географическое положение, роль этого водохранилища в эффективном использовании водных ресурсов, многолетний приток и отток воды.*

***Ключевые слова:** Климат, природа, окружающая среда, народное хозяйство, орошение, водохранилище*

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SIGNIFICANCE OF THE SOBIRSOY RESERVOIR IN THE NATIONAL ECONOMY IN THE ERA OF CLIMATE CHANGE

***Abstract:** The ecological impact and national economic significance of the Sobirsay reservoir, located in the Nurabad district of the Samarkand region, during the period of climate change, the history of its origin and geographical location, the role of this reservoir in the efficient use of water resources, long-term inflow and outflow of water are analytically considered.*

***Keywords:** Climate, nature, environment, national economy, irrigation, reservoir*

Введение. В последние годы в Узбекистане большое внимание уделяется ускоренному развитию социально-экономических сфер государственной политики. Это, в свою очередь, приводит к резкому увеличению потребности республики в воде. Кроме того, в связи с глобальным изменением климата, ростом населения, быстрым развитием различных отраслей экономики и увеличением спроса на воду в них, дефицит водных ресурсов в Узбекистане с каждым годом увеличивается. Кроме того, риск нехватки воды и засухи значительно возрастает из-за сокращения количества доступной пресной воды.

Президент Узбекистана продвигает новые инициативы на международной арене. В своем выступлении на 78-й сессии Ассамблеи ООН

19 сентября 2023 года особое внимание было уделено проблеме дефицита воды в Центральной Азии. Учитывая сложившуюся ситуацию, они поддержали создание должности Специального представителя Генерального секретаря ООН по водным вопросам, а также подчеркнули свою поддержку вовлечению и внедрению самых передовых технологий посредством активизации механизма ООН-Водные ресурсы в процесс создания Центральноазиатской платформы по водосберегающим технологиям.

Это означает, что Узбекистан, в свою очередь, возьмет на себя инициативу по созданию Центрально-Азиатской платформы водосберегающих технологий и заинтересован в привлечении к этому процессу международного сообщества.

Инициатива Главы нашего государства по принятию комплексных мер по ликвидации возникшего дефицита воды, а также предстоящие

Третье направление стратегии «Узбекистан-2030», определяющей основные направления развития страны через 7 лет, посвящено экономии водных ресурсов и охране окружающей среды.

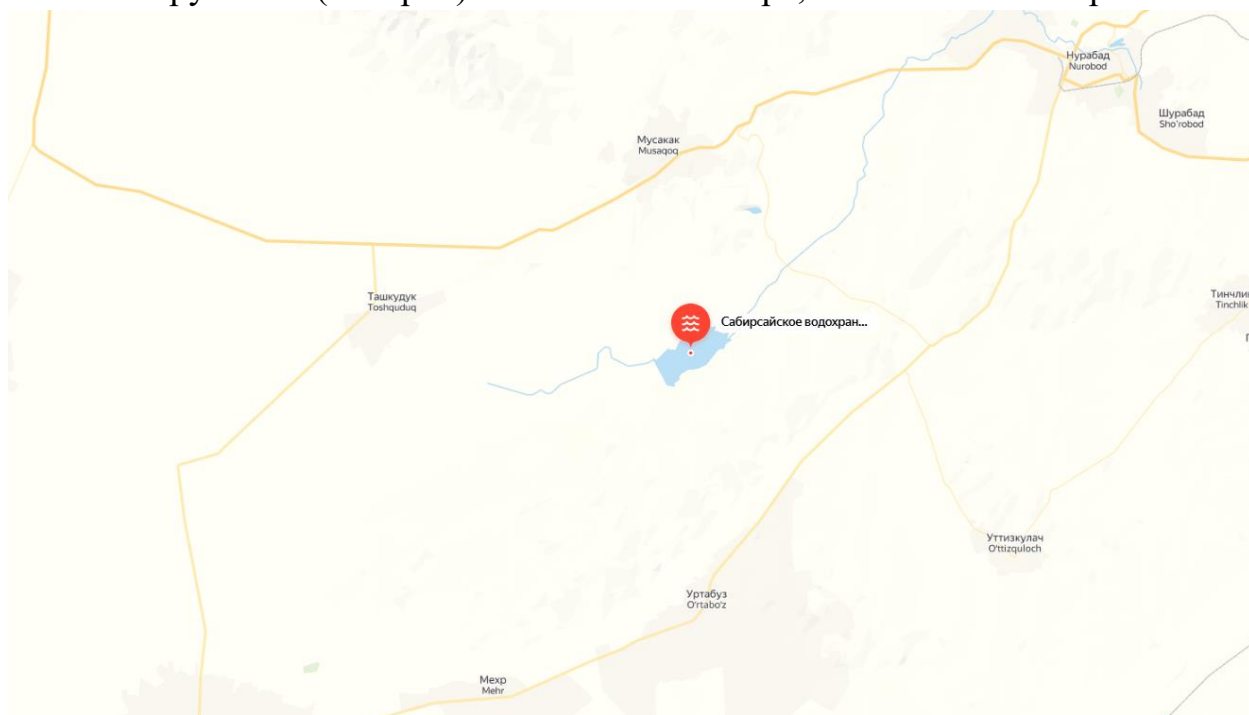
Потребности Центральной Азии в воде удовлетворяются в основном за счет трансграничных рек — Амударьи и Сырдарьи. Неспособность предотвратить проблемы, связанные с водой в Узбекистане, может привести к нехватке воды в стране. Поэтому необходимо привлечение международных экспертов по строительству и безопасности водохранилищ к разработке политики управления и использования водных ресурсов в Узбекистане; Признано целесообразным усилить научные исследования в области управления водными ресурсами, широко внедрять научные достижения, широко внедрять информационно-коммуникационные технологии (ИКТ).

Как и в нашей стране, значение водных ресурсов в развитии сельского хозяйства в Зарафшанском оазисе чрезвычайно велико. Поэтому вопросы водоснабжения в оазисе являются одной из актуальных проблем современности. Река Зарафшан, снабжающая водой оазис, также является трансграничной, как и многие реки Центральной Азии. Потому что эта река берет свое начало в соседней Республике Таджикистан и протекает по территории нашей страны. Река Зарафшан также отличается полноводностью и водоносностью и подвержена сильному антропогенному влиянию, как и крупные реки Амударья и Сырдарья. Его вода широко используется для орошения сельскохозяйственных культур, обеспечения населения оазиса питьевой водой и в промышленности. В Среднем Зарафшане построено несколько водохранилищ для эффективного использования местных водных ресурсов. Хотя эти водохранилища невелики по запасам воды, их значение в народном хозяйстве очень велико. Они отличаются друг от друга своими гидрологическими и географическими характеристиками.

Основная часть. Собирсайское водохранилище расположено в Нурабадском районе и расположено в русле реки Старый Собирсай. Строительство водохранилища было завершено в 1983-1984 годах. Водохранилище IV класса, сейсмостойкость 7 баллов, проектный полный

водозабор 7,12 млн. м³ , проектный полезный водозабор 7,0 млн. м³ , мертвый объем 0,12 млн. м³ , ускоренный уровень воды (УВ) 428,4 метра, нормальный уровень воды (НУВ) 428,0 метра, уровень мертвого объема (УМО) 425,30 метра, отметка верха плотины 429,7 метра, длина плотины 800 метров, максимальная высота плотины 3,85 метра, ширина верха плотины 6 метров, площадь водной поверхности водохранилища при нормальном уровне воды (НУВ) 5,6 км² , тело плотины

Основание выполнено из грунта, экран из илистого грунта, плотина - бескорпусная, водосбросное сооружение - прямоугольный пруд, пропускная способность сооружения - 10 м³ /сек. Общая длина водовыпускного сооружения (Галереи) составляет 43 метра, количество затворов



водовыпускной башни: **Вид на Собирсайское водохранилище (рисунок 1)**

размером 1,75x1,7 метра, имеется два рабочих и два вспомогательных затвора, пропускная способность аварийного сброса водохранилища составляет 43 м³ /сек, сигнализация на водохранилище отсутствует. **(Рисунок 1)**

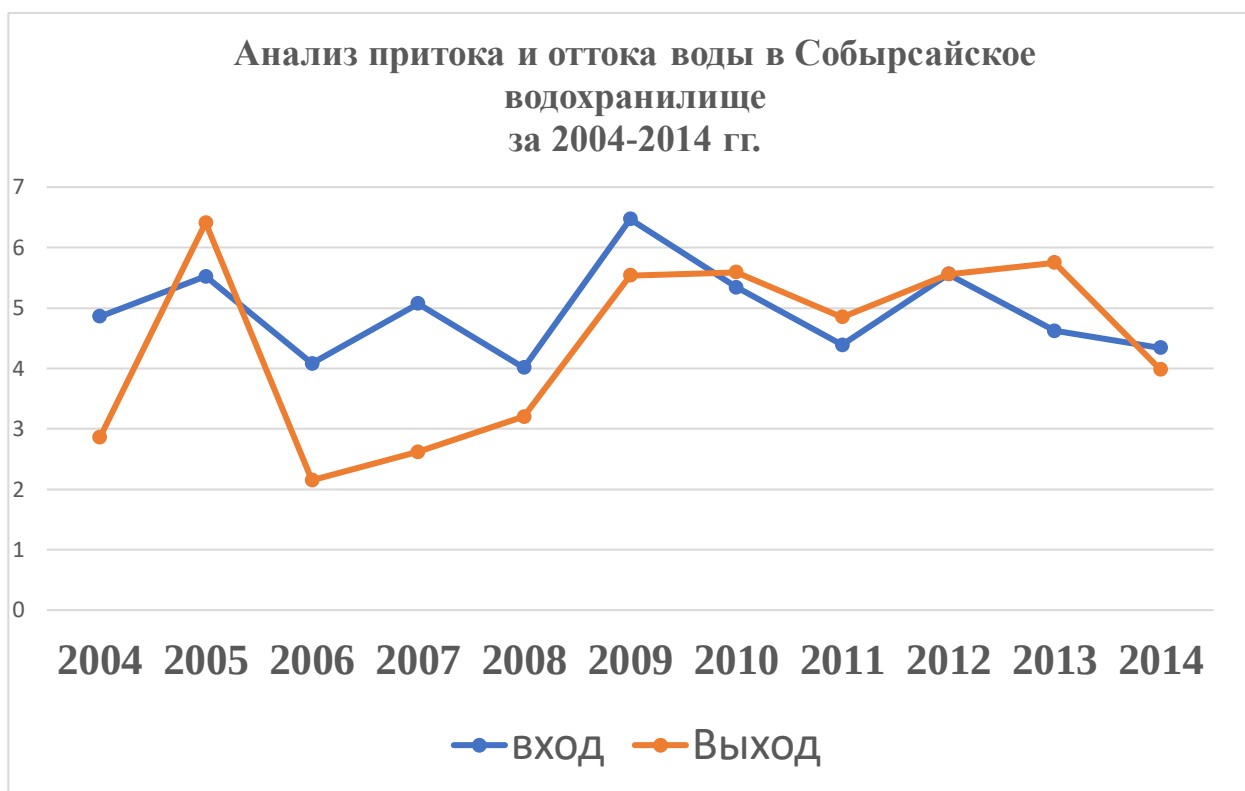
Расчетная площадь затопления в случае полномасштабной аварии водохранилища составит всего 0,65 тыс. га на протяжении 26 км, без нанесения ущерба населенным пунктам. Сельский округ «Кылычли» расположен в водосборной зоне Собирсайского водохранилища, численность населения составляет 2000 человек. Емкость водохранилища по состоянию на 1 мая 2020 года составляет $W=7,1$ млн. м^3 , вход $Q=0,6$ $\text{м}^3/\text{сек}$, выход $Q=0,6$ $\text{м}^3/\text{сек}$. В настоящее время Собирсайское водохранилище находится в хорошем рабочем состоянии, на водохранилище организовано круглосуточное дежурство в составе 8 человек персонала и руководителей. В 2019 году на основании сметной документации был отремонтирован аварийный сбросной водохранилище Собирсай, а также проведены ремонтно-восстановительные работы административного здания водохранилища, расположенного на территории муниципального образования «Улус» Нурабадского района.

Космический снимок Собирсайского водохранилища (2 снимка)



Современный генезис отложений Собырсяя – аллювиально-пролювиальный. Поверхность состоит из песка, гравия и суглинка. Максимальная толщина этих слоев составляет 12,5 м (пески 9,5 м).

Данные по притоку и оттоку воды за период с 2004 по 2014 год на Собирсайском водохранилище были проанализированы по декадам каждого месяца, как показано в таблице (рисунк 3).



Анализ притока и оттока воды в Собырсайском водохранилище за 2004-2014 годы (рисунок 3).

Сегодня, в результате бурного развития науки и техники, геоинформационные системы являются эффективным инструментом создания картографических и аналитических материалов высокого разрешения, используемых в экологической сфере, однако их практическое использование пока сдерживается отсутствием единых подходов к программному обеспечению, стандартов и перечня технических требований. Традиционно разработка проектов по охране окружающей среды и оценка потенциала водных и озерных объектов осуществлялись без использования методик и алгоритмов.

За последние годы проведено капельное и дождевальное орошение 472 тыс. и 48 тыс. гектаров земли соответственно; На 97 тыс. га внедрены водосберегающие технологии, на 649 тыс. га проведены планировочные работы. В результате этих мер только в 2023 году будет сэкономлено 2 млрд долларов. кубометров сэкономленной воды.

Данные по притоку и оттоку воды за период с 2004 по 2014 год на Собырсайском водохранилище были проанализированы по декадам каждого месяца, как показано в таблице.

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использование пока сдерживается отсутствием единых подходов к программному обеспечению, стандартов и перечня технических требований. Традиционно создание проектов по охране окружающей среды и оценка потенциала водных и озерных объектов осуществлялись без использования методик и алгоритмов.

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Выводы. В заключение можно сказать, что одной из важных задач является разработка методов комплексного использования имеющихся водохранилищ региона и благоустройство этой территории. При строительстве водохранилищ особое внимание должно уделяться вопросам обеспечения их технического состояния, регулирования водного режима рек, организации их эффективного использования в гидроэнергетических, рыбохозяйственных и рекреационных целях, а также эффективному, экономичному и рациональному использованию водных ресурсов для нужд народного хозяйства.

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ҒАЛЛАНИНГ СЎРУВЧИ ЗАРАРКУНАНДАЛАРИНИНГ БИОЭКОЛОГИК ХУСУСИЯТЛАРИ

Аннотация: Ўзбекистон аҳолисини дон ва дон маҳсулотларига бўлган талабини қондириш мақсадида ҳукуматимиз қишлоқ хўжалиги ходимлари зиммасига ғалла мустақиллигига эришишдек масъулияти вазифани қўйди. Бунга амалга ошириш учун юқори сифатли, зараркунанда ва касалликларга чидамли уруғлик тизимини ташкил этиш, бошоқли дон экинларини юқори агротехника асосида парвариш қилиш, ўғитлаш ва суғориш ишларини ўз вақтида ўтказиш билан бир қаторда ғалла экинларига зарар келтирувчи зарарли организмларга қариш кураш чора-тадбирларини ўз вақтида ўтказиш муҳим аҳамиятга эга. Мақолада оддий ғалла шираси ҳамда катта ғалла шираси биологик хусусиятлари келтирилган.

Калим сўз: Бошоқли дон, харорат, оддий ғалла шираси, катта ғалла шираси, тухум, етук зот.

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BIOECOLOGICAL FEATURES OF GRAIN SUCKING PESTS

Abstract: In order to meet the needs of the population of Uzbekistan for grain and grain products, our government has set the task of achieving grain independence for agricultural workers. For this, it is important to organize a high-quality seed system resistant to pests and diseases, cultivate grain crops based on high agrotechnology, carry out timely fertilization and irrigation work, and timely implement measures to combat harmful organisms that damage grain crops. The article presents the biological characteristics of common and large wheat aphids.

Keywords: Spike grain, temperature, simple grain juice, large grain juice, egg, adult breed.

Оддий ғалла шираси – *Schizaphis graminum* Rond.

Оддий ғалла шираси бошоқли дон экинларига зарар келтириб яшовчи ва миграция ҳосил қилмайдиган (бошқа турдаги ўсимликларга кўчмайдиган) шираларнинг биридир. Бу шираларнинг қанотсиз урғочи зотлари ялтироқ, оқиш яшил рангда бўлади. Танасининг орқа қисмида тўқ яшил чизиклари бор, бу турдаги ширалар республикаимизнинг барча ғаллазорларида учрайди.

Шираларнинг очик далада қишки диапаузадан чиқиб зарар келтира бошлаш муддатини аниқлаш учун йил давомида кузатувлар олиб бордик. Кузатувларимиз давомида ўртача кунлик ҳаво ҳарорати 7-8° С бўлганда буғдойзорларда шираларнинг қишки диапаузадан чиққан личинкалари кўрина бошлади. Ҳарорат кўтарилиши билан бу зараркунанданинг партеногенетик кўпайиши кузатилди. Оддий ғалла ширасининг қишки диапаузага кетган тухумларининг эмбрионал ривожланишини ўрганиш учун Е.Радченко (1991) услуби асосида кузда йиғиб келинган қишлоғга кетган шира тухумларини термостатларга қўйиб, улардан неча кунда личинка чиқишини аниқланади.

Катта ғалла шираси *Sitobion avenae* F.

Катта ғалла шираси республикамизнинг барча суғориладиган ғалла экиладиган майдонларида учрайди. Бу ҳашаротнинг етук зоти 2,5-3,5 мм. катталиқда бўлади. Ранги ялтироқ сарғиш-яшил рангда қорин қисмида сарик доғлари бор. Тадқиқотларимиз давомида катта ғалла шираси асосан буғдой ва арпа бошоқларида, байроқча баргларида, айрим ҳолларда эса ўсимлик пояси ва баргларида жойлашиб ҳаёт кечиришини кузатдик. Бу турдаги шираларнинг ёғингарчилик кўп бўлган йилларда буғдой бошоқларининг қилтиқларида жойлашиб озиқланишини, ёғингарчилик кам бўлган йиллари бошоқларда ҳаттоки гулларининг ичига кириб олиб ўсимлик танасидан суюқлигини сўриб озиқланишини кузатдик. Натижада дон ҳосил бўлувчи тўқималар нобуд бўлиб, ҳосилдорликка катта зарар етказиши тадқиқотлар ва кузатувлар асосида аниқланди.

Катта ғалла ширасининг бир йилда неча авлод бериб ривожланишини ва урғочи зотларининг қанча пушт беришини аниқлаш учун изланишлар олиб бордик. Маълумотлардан кўриниб турибдики, катта ғалла ширасининг қишлаб чиққан партеногенетик имаголари қулай шароитга тушгач 3-5 кун қўшимча озиқланиб, тирик личинка туғиб кўпая бошлайди. Тажрибаларимиз натижалари шуни кўрсатдики, бир дона қишлаб чиққан катта ғалла шираси табиатда ўртача 29,3 кунгача яшаб, шу вақт ичида 9-10 тагача личинка туғиши мумкин. Ҳаво ҳарорати ўртача 5-10° С бўлганда шираларнинг личинкалик даври 14-16 кунгача давом этди.

Зараркунандаларга қарши кимёвий усул билан курашиш учун ўсимлик шираларига қарши тавсия этилган препаратлар қўлланилади. Бунинг учун Ўзбекистонда қабул қилинган иқтисодий зарар миқдор мезони бўлиб қуйидаги зарарланган пояда трипс етук зоти 8-10 та ва ундан кўп бўлса. Кузги буғдой бошоқлари 15-20 та, баҳорги буғдойда эса 30-40 личинка ва етук зоти мавжудлиги кимёвий кураш ўтказиш кераклигини кўрсатади.

Суғориладиган ғалла агробиоценозида бошоқли дон экинлари шираларининг табиий қушандаларидан кокцинеллидлар, сирфид пашшалари ва олтинкўзлар доминант тур сифатида кўп учраб, битта личинкаси бир кун давомида 35 тадан 250 тагача шираларни яксон қилади.

Бошоқли дон экинларида ширалар дала бўйлаб ёппасига тарқалганда ва уларнинг сони ИЗМга етганда қуйидаги кимёвий препаратларнинг бирортаси билан ишлов ўтказиш тавсия этилади: кинмекс, 5 % э.к. (0,2 л/га);

фюри, 10 % э.к.(0,3 л/га); циперметрин, 25 % э.к. (0,3 л/га); суми-алфа, 5 % э.к. (0,3 л/га); бульдок, 2,5 % э.к. (0,5 л/га); циперфос, 55% э.к. (0,5 л/га); талстар, 10 % э.к. (0,5 л/га); нурелл-Д, 55 % э.к. (1,2 л/га); дельтафос, 36 % э.к. (1,2 л/га); карбофос, 50 % э.к.(1,5 л/га).

1-расм



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РОЛЬ ФИТОМЕЛИОРАТИВНЫХ МЕР В ПРЕДОТВРАЩЕНИИ ДЕГРАДАЦИИ ПАСТБИЩ НУРОТИНСКОГО ПОДНЯТИЯ

Аннотация: В данной статье подробно описано экологическое состояние пастбищ Нуротинского горного подножия, а также научно проанализированы процессы деградации, происходящие в растительных видах. Рассматриваются пути достижения экологической стабильности пастбищ с помощью фитомелиоративных мероприятий, направленных на предотвращение деградации. В статье подчеркивается важность создания искусственных агрофитосенозов для улучшения экологического состояния пастбищ в научно-пропагандистской работе и показано, что можно достичь увеличения продуктивности пастбищ на 2-2,5%.

Ключевые слова: Нурота, фитомелиорация, дренаж, растения, деградация почвы, эрозия почвы, агрофитосеноз, продуктивность.

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THE ROLE OF PHYTO-MELIORATIVE MEASURES IN PREVENTING DEGRADATION OF PASTELANDS OF THE NUROTA UPLIFT

Abstract: This article describes in detail the ecological state of pastures of the NurOTA mountain foothills, and also scientifically analyzes the degradation processes occurring in plant species. The ways of achieving ecological stability of pastures with the help of phytomeliorative measures aimed at preventing degradation are considered. The article emphasizes the importance of creating artificial agrophytosenoses to improve the ecological state of pastures in scientific propaganda work and shows that it is possible to achieve an increase in pasture productivity by 2-2.5%.

Key words: Nurota, phytomelioration, drainage, plants, soil degradation, soil erosion, agrophytosenosis, productivity.

Введение. Предгорья Нураты расположены в центральной части Узбекистана и являются экологически важной территорией. В этом районе флора и фауна обладают большим разнообразием, и он предоставляет важные

ресурсы для сельского хозяйства и животноводства. Однако в последние годы процессы деградации земли становятся все более выраженными из-за высокого давления на землю, неправильного использования, изменений климата и сокращения природных ресурсов.

Состояние деградации на предгорьях Нураты связано, прежде всего, с деградацией почвы и эрозией, что ведет к снижению численности видов, уменьшению биологического разнообразия и утрате экономических ресурсов. В данной статье анализируется текущее состояние процесса деградации на предгорьях Нураты и мероприятия по фитомелиорации, направленные на сокращение этих процессов.

Основная часть. Процессы деградации на предгорьях Нураты. Процесс деградации проявляется в превращении земли в засушливое состояние и нарушении экологического баланса. Основные причины этого процесса на предгорьях Нураты следующие:

Деградация почвы и эрозия. На предгорьях Нураты верхние слои почвы подвергаются эрозии, и процессы разрушения усиливаются. Здесь изменения климата, дефицит дождей и сухость почвы ускоряют эрозию. Недостаток водных ресурсов, особенно в сухих и полузасушливых районах, усиливает этот процесс. Потеря воды препятствует росту растений, что ведет к уменьшению растительности и превращению земли в пустыню. Неправильная сельскохозяйственная деятельность, нецелевое использование пастбищ, особенно чрезмерное сокращение растительности и интенсивное животноводство, приводят к снижению питания земли и усилению процессов эрозии. Значение мероприятий по предотвращению деградации. Фитомелиорация (восстановление почвы с помощью растений) является эффективным методом предотвращения деградации на предгорьях Нураты. Важным является создание целых агрофитоценозов, состоящих из кустарников, полукустарников и травянистых растений, для улучшения экологического состояния предгорий Нураты. При создании агрофитоценозов используются перспективные кустарниковые растения, такие как саксаул, черкез, изен, терескен, камфоросма и шувок. Это способствует повышению устойчивости экосистем и увеличению продуктивности пастбищ. Создание искусственного орошения способствует увеличению урожайности на 15-18% и позволяет значительно расширить животноводство на пастбищах до 18-20 лет. Мероприятия по фитомелиорации показывают, как растения помогают укреплять почву и сохранять влагу на земле.

Основные направления фитомелиорации, проведенные на предгорьях Нураты, следующие: Посев эфемероидных растений. Посев этих растений способствует повышению устойчивости почвы к эрозии. Эти растения быстро растут, покрывают почву и предотвращают эрозию. Мелкоземельные работы. Посев растений, которые способствуют удержанию влаги в почве и предотвращению её вымывания. Мероприятия по созданию дренажных систем. Строительство дренажных систем помогает противостоять негативным воздействиям растений и водных ресурсов на предгорьях Нураты.

Меры по эффективному предотвращению деградации в ответ на изменения климата. Для адаптации к изменениям климата следует внедрить новые виды растений, которые способны хорошо поглощать солнечное излучение и быть устойчивыми к засухам. Управление водными ресурсами. Необходимо внедрять новые технологии, направленные на экономию воды, и разрабатывать новые системы орошения для безводных территорий. Экологическое образование и развитие агротуризма. Важно привлекать сельское население к экологическому обучению и развивать агротуризм для более эффективного использования ресурсов пастбищ. Кроме того, для борьбы с избыточной влажностью в почве можно использовать транспирацию растений (испарение), что способствует снижению избыточной влаги в почве. Улучшение структуры почвы за счет корней растений, которые рыхлят почву и улучшают аэрацию, способствует более быстрому испарению влаги. Поддержка дренажных систем. Растения улучшают работу дренажных систем и увеличивают их эффективность. Улучшение состава пастбищных растений. Посев растений, устойчивых к деградации и пригодных для кормления, способствует повышению продуктивности пастбищ. Агротехнические мероприятия. Глубокое рыхление почвы, улучшение аэрации и повышение проницаемости воды. Рациональное использование пастбищ. Обеспечение упорядоченного и умеренного выпаса скота на пастбищах помогает предотвратить уплотнение почвы. Способы повышения эффективности фитомелиоративных мероприятий: Необходимо проводить научные исследования для определения устойчивых к деградации и адаптированных к местным условиям видов растений. Сотрудничество с местным населением. Важно использовать знания и опыт местных жителей для создания дренажных систем, оптимизации режимов орошения и улучшения сельского хозяйства. Мониторинг. Регулярный мониторинг влажности почвы, состояния растений и работы дренажных систем. Государственная политика. Разработка государственной политики, поддерживающей и стимулирующей мероприятия по борьбе с деградацией.

Уровень изученности проблемы. Изучение состояния деградации и экологических проблем на предгорьях Нураты имеет важное значение в рамках региональных и международных научных исследований. Эта тема, особенно в области сельского хозяйства, экологии и агрологии Узбекистана, стала причиной множества исследований. Однако можно утверждать, что эта проблема все еще не изучена в полной мере и полноценно, так как существующие исследования в основном связаны с сельскохозяйственной деятельностью, использованием земель и изменениями климата. Уровень изученности проблемы: Исследования в стране. На предгорьях Нураты наиболее изученной темой является деградация почвы и процессы эрозии. В научных кругах Узбекистана проведено несколько исследований, посвященных почвенной эрозии и региональным процессам деградации. Деградация почвы и эрозия. Исследования, проводившиеся в научных учреждениях Центральной Азии, особенно в Ташкентском институте

сельского хозяйства, были направлены на изучение причин эрозии почвы в регионе Нураты, ее типов и механизмов развития. Дефицит водных ресурсов. Существует несколько научных работ, посвященных дефициту водных ресурсов и их влиянию на сельское хозяйство. Исследования, проведенные Институтом водных ресурсов и ирригации в 2020-2022 годах, были направлены на изучение проблем сокращения водных ресурсов в Нурате и их агроэкологического воздействия. По результатам этих исследований, доля водных ресурсов в Нурате сократилась на 30%, что значительно повлияло на рост сельскохозяйственных культур. Изучение фитомелиоративных мероприятий. Научные исследования в области фитомелиорации также направлены на решение проблем предотвращения деградации на предгорьях Нураты. Однако эта область еще не развита полностью и в основном основана на экспериментальных работах. Были проведены исследования по посадке растений и восстановлению почвы, однако эти работы пока не получили достаточного внимания, и систематические исследования еще не были проведены. Эксперименты по посадке эфемерных и эфемероидных растений в Нурате продемонстрировали их эффективность, но результативность этих мероприятий и их долгосрочное воздействие еще не были полностью оценены. Уровень влажности почвы: В некоторых исследованиях о фитомелиорации приводятся данные о уровне влажности почвы и скорости роста растений. Однако методология и практическое применение этих мероприятий на широком масштабе еще не было протестировано. Изменения климата, международные экологические исследования и климатические модели Международные исследования изменений климата и климатических моделей направлены на анализ изменений климатических условий в Центральной Азии и на предгорьях Нураты в средневековый период. Состояние деградации на предгорьях Нураты не может быть считаться полностью изученным. На данный момент существующие исследования в основном касаются почвенной эрозии, водных ресурсов и фитомелиорационных мероприятий. Однако для данной темы необходимо проводить систематические научные работы, изучать долгосрочные последствия и разрабатывать эффективные стратегии фитомелиорации.

Выводы. С помощью существующих исследований в области деградации предгорий Нураты было выявлено несколько проблем, однако в этой области еще остаются многие не изученные аспекты. В частности, необходимо продолжать научные работы по изменению климата и экологическому восстановлению. Также важно изучить долгосрочную эффективность фитомелиоративных мероприятий и внедрить новые технологии. В процессе исследований для улучшения экологического состояния предгорий Нураты потребуются более глубокие и систематические научные разработки. Правильно спланированная и реализованная фитомелиорация поможет улучшить экологическое состояние пастбищ, повысить плодородие почвы, предотвратить заболачивание и способствовать устойчивому развитию животноводства. Предложения, основанные на новых

мероприятиях, включая фитомелиорацию и эффективное использование водных ресурсов, обеспечат достижение долгосрочных положительных результатов.

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УСТОЙЧИВОЕ УПРАВЛЕНИЕ АВТОПАРКОМ В ГОРОДСКИХ УБОРОЧНЫХ СЛУЖБАХ: ПОДХОД НА ОСНОВЕ ДАННЫХ

***Аннотация:** В статье рассматриваются актуальные проблемы управления автопарком городских уборочных служб и предлагается системный подход на основе анализа данных. Автор обосновывает необходимость перехода от традиционного управления к цифровым решениям, включающим GPS-мониторинг, телеметрию, предиктивное техническое обслуживание и поведенческую аналитику водителей. Описывается поэтапное внедрение цифровых инструментов, а также приводятся конкретные количественные результаты, достигнутые в ходе практической деятельности: снижение расхода топлива на 20%, уменьшение износа техники на 30% и повышение эффективности уборки на 25%. Сделан вывод о том, что устойчивое управление автопарком на основе данных является важным условием для повышения эффективности, экологичности и прозрачности городского управления.*

***Ключевые слова:** автопарк, городская уборка, устойчивое управление, анализ данных, цифровизация, телеметрия, GPS-мониторинг, предиктивное обслуживание, муниципальные службы, умный город*

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SUSTAINABLE FLEET MANAGEMENT IN URBAN SANITATION SERVICES: A DATA-DRIVEN APPROACH

***Abstract:** This article examines the pressing issues related to the management of vehicle fleets in urban sanitation services and proposes a systematic, data-driven approach to address them. The author substantiates the need to move away from traditional fleet management methods in favor of digital solutions, including GPS tracking, telemetry, predictive maintenance, and driver behavior analytics. The article outlines the step-by-step implementation of digital tools and presents concrete, quantifiable results achieved through practical application: a 20% reduction in fuel consumption, a 30% decrease in vehicle wear and tear, and a 25%*

increase in operational efficiency. The study concludes that sustainable fleet management based on data is a critical condition for improving the efficiency, environmental responsibility, and transparency of urban governance.

Keywords: *fleet management, urban sanitation, sustainability, data analysis, digitalization, telemetry, GPS monitoring, predictive maintenance, municipal services, smart city*

Введение

В современных городах обеспечение чистоты и санитарного порядка — одна из базовых задач муниципальных служб. Городские уборочные службы ежедневно используют десятки, а порой и сотни единиц специализированной техники для вывоза мусора, уборки улиц, обработки дорог в зимний период и выполнения других задач. Эффективность этой работы напрямую зависит от того, насколько грамотно организовано управление автопарком.

Однако в реальности многие города сталкиваются с проблемами: неэффективные маршруты, неоправданные затраты на топливо, частые поломки техники, неравномерная загрузка транспортных средств. Эти трудности не только тормозят работу, но и ведут к серьезным финансовым потерям и увеличению вредных выбросов в атмосферу. В условиях растущей урбанизации и повышения требований к экологичности и устойчивости городской инфраструктуры, такие проблемы требуют системного подхода.

Одним из наиболее перспективных решений является использование данных (data-driven подход) для управления автопарком. Современные технологии позволяют в реальном времени отслеживать движение техники, анализировать расход топлива, предсказывать необходимость технического обслуживания, контролировать загрузку машин и поведение водителей. Всё это позволяет принимать оперативные и обоснованные управленческие решения.

Устойчивое управление автопарком — это не просто экономия бюджета, но и вклад в формирование «умного города» (smart city), где ресурсы используются рационально, а горожане получают качественные коммунальные услуги. В данной статье рассматриваются основные проблемы традиционного управления автопарком, предлагается структурированный подход на основе данных и демонстрируются ожидаемые эффекты от его внедрения.

1. Основные проблемы в управлении автопарком городских уборочных служб

Несмотря на важную роль, которую играют городские уборочные службы в обеспечении чистоты и порядка, их автопарки зачастую управляются с использованием устаревших методов, что приводит к ряду хронических проблем. На первый взгляд, ежедневная работа техники может казаться отлаженной, однако за кулисами скрываются серьёзные организационные и ресурсные потери, которые год за годом накапливаются и снижают общую эффективность системы.

Одной из главных проблем является нерациональное использование ресурсов. Уборочные машины часто работают по заранее составленным маршрутам, которые не учитывают актуальную дорожную ситуацию, реальную степень загрязнённости улиц или распределение рабочих задач. В результате техника проезжает лишние километры, простаивает в пробках, дублирует участки и работает с неполной загрузкой. Всё это приводит к перерасходу топлива, излишнему износу оборудования и росту эксплуатационных расходов. При этом зачастую отсутствует механизм контроля за тем, насколько действительно был эффективен маршрут, какие работы были выполнены, и сколько времени затратила техника на выполнение задания.

Немалые сложности вызывает и техническое состояние автопарка. Без системы мониторинга трудно точно определить, в каком состоянии находится та или иная машина, когда она нуждается в обслуживании и какие узлы начинают выходить из строя. Это приводит к частым поломкам, простоям и внеплановым ремонтам, что не только нарушает график уборки, но и увеличивает финансовую нагрузку на бюджет службы. Проблему усугубляет человеческий фактор — неконтролируемый стиль вождения может ускорить износ техники, а отсутствие прозрачности даёт почву для злоупотреблений или недобросовестного выполнения обязанностей.

Планирование маршрутов и распределение задач также часто осуществляется «вручную» — через бумажные графики, устные указания или простейшие электронные таблицы. Такой подход не способен учесть множество переменных: интенсивность движения, погодные условия, срочные заявки от горожан, текущую загруженность машин и их техническое состояние. Это приводит к несогласованности между подразделениями, неравномерной нагрузке на технику, дублированию задач и, как следствие, к снижению общей производительности.

Отдельной проблемой является отсутствие прозрачности в управлении и контроля в реальном времени. Руководство зачастую получает информацию постфактум, на основе отчётов, которые не всегда отражают объективную картину. В условиях, когда городская среда становится всё более динамичной, а требования к качеству обслуживания растут, такая «слепая зона» в управлении становится критической. Без доступа к актуальным данным невозможно оперативно реагировать на нештатные ситуации, корректировать маршруты или перераспределять ресурсы.

В совокупности все эти проблемы снижают устойчивость системы городского обслуживания. Автопарк работает с перегрузкой, бюджет уходит на устранение последствий, а не на развитие, а горожане сталкиваются с несвоевременной уборкой и ухудшением санитарной ситуации. Решение этих проблем невозможно без перехода к системному подходу — где в центре управления окажутся не интуиция и бумажный отчёт, а объективные данные, полученные в реальном времени. Именно такой подход позволяет преодолеть

хронические неэффективности и выйти на новый уровень устойчивого и ответственного управления.

2. Как помогают данные

Переход к управлению автопарком на основе данных радикально меняет принципы работы городских уборочных служб. Вместо ручного контроля и принятия решений «на глаз», администрация получает возможность опираться на точные и объективные показатели, поступающие в режиме реального времени. Современные технологии позволяют собирать огромное количество информации — от текущего местоположения транспорта до технического состояния двигателя, загрузки кузова, расхода топлива и даже стиля вождения. Эта информация может поступать из GPS-трекеров, датчиков телеметрии, CAN-шины, камер и специализированных датчиков на оборудовании машин.

Одним из главных преимуществ такого подхода становится полная прозрачность происходящего в автопарке. Руководство может в любой момент увидеть, где находятся уборочные машины, какие маршруты они проходят, сколько времени тратят на ту или иную задачу. Это помогает быстро выявлять неэффективность: например, дублирование маршрутов, необоснованные простои, отклонения от графика. Благодаря этому, можно оперативно оптимизировать маршруты, корректировать графики работы и перераспределять технику между районами.

Не менее важна возможность технического контроля. Система мониторинга позволяет отслеживать расход топлива, температуру двигателя, износ узлов, а также ошибки в работе двигателя и других систем. Таким образом, становится возможным переход от реактивного технического обслуживания — когда ремонт производится после поломки, — к предиктивному, то есть профилактическому. Своевременное выявление износа или сбоя позволяет устранить проблему до того, как она приведёт к дорогостоящему ремонту или простоя. Это продлевает срок службы техники и сокращает затраты.

Данные также позволяют контролировать поведение водителей. Анализ стиля вождения — таких параметров как резкие ускорения, торможения, превышение скорости или длительная работа на холостом ходу — помогает формировать более ответственную модель поведения. В некоторых системах такие оценки используются для расчёта бонусов или премий, что дополнительно мотивирует водителей соблюдать экономичный и безопасный стиль работы. Это, в свою очередь, снижает риск ДТП, уменьшает износ техники и расход топлива.

Кроме того, использование специализированных датчиков (например, на щётках, бункерах, подъемниках и т. д.) позволяет контролировать не только передвижение, но и сам факт выполнения работ. Учитывается, была ли активирована уборочная техника, насколько эффективно она использовалась, и какая фактическая нагрузка была на машину. Это предотвращает халатность

и обеспечивает контроль качества работы на уровне конкретных маршрутов и дней.

Наконец, все эти данные могут быть объединены в единые аналитические панели и отчеты. Управление получает доступ к динамической картине: сколько техники используется, какие расходы на обслуживание и топливо, какие зоны обслужены, а какие — нет, где наблюдаются отклонения от планов. Такие инструменты не только делают процесс управления автопарком прозрачным, но и дают возможность прогнозировать будущие потребности — например, в технике, персонале или бюджете.

Таким образом, данные становятся ключевым ресурсом для принятия обоснованных решений, повышения операционной эффективности, снижения расходов и формирования устойчивой, ответственной модели работы городских уборочных служб. Это уже не просто цифровизация — это качественный переход к новой системе управления, в которой эффективность опирается на цифру, а не на догадки.

3. Внедрение управления автопарком на основе данных

Переход к устойчивому управлению автопарком на основе данных — это не одномоментное техническое решение, а поэтапный процесс организационного и технологического преобразования. Он требует осознанного подхода, включающего как выбор инструментов и оборудования, так и изменение управленческой культуры внутри коммунальных служб. Успешное внедрение начинается с понимания текущего уровня цифровой зрелости организации, определения целей, а затем — пошаговой реализации проекта с опорой на реальные потребности автопарка.

Первым и самым очевидным шагом становится оснащение техники необходимыми устройствами для сбора данных. Это включает в себя установку GPS-трекеров, сенсоров расхода топлива, модулей для подключения к CAN-шине, датчиков нагрузки и других элементов телеметрии. Эти устройства позволяют «оцифровать» повседневную работу техники и сформировать базу для аналитики: от маршрутов и пробега до оборотов двигателя и времени остановок. Важно, чтобы оборудование было совместимо с системой управления и устойчиво к внешним условиям — пыли, вибрациям, перепадам температуры, которые характерны для работы уборочной техники.

Параллельно необходимо выбрать и внедрить программную платформу — систему диспетчеризации и аналитики. Она должна быть интуитивно понятной, масштабируемой, иметь модули для мониторинга, аналитики, отчетности, а также поддержку мобильных приложений для водителей и диспетчеров. Важно, чтобы система не просто показывала местоположение машины, но и умела строить маршруты, отправлять уведомления о технических отклонениях, формировать отчеты по заданным критериям, а главное — помогала принимать управленческие решения на основе данных. Именно на этом уровне происходит переход от простого «наблюдения» за техникой к полноценному цифровому управлению.

Однако без участия и готовности персонала даже самая мощная система останется формальностью. Поэтому следующим важным этапом становится обучение всех участников процесса — от водителей до начальников подразделений. Водителям необходимо объяснить, как новая система повысит прозрачность и безопасность их работы, а также как использование данных может влиять на систему премирования и оценки. Диспетчеры и операторы учатся пользоваться интерфейсом мониторинга, а управленцы — читать аналитику, видеть отклонения и настраивать целевые показатели. Такой подход снижает сопротивление изменениям и формирует культуру ответственности и цифровой дисциплины.

Отдельное внимание следует уделить вопросу кибербезопасности и защите персональных данных. Передача большого объема информации в режиме реального времени требует защищённых каналов связи, надежных серверов и регламентов доступа. Необходимо заранее определить, кто и в каком объёме имеет доступ к данным, как долго они хранятся и каким образом могут использоваться. Без этих мер любая попытка внедрения может быть подорвана утечками информации или техническими сбоями.

Важно подчеркнуть, что внедрение не заканчивается на этапе установки оборудования и запуска программы. Это постоянный, развивающийся процесс. Система нуждается в регулярной настройке, валидации данных, адаптации к сезонным изменениям, корректировке маршрутов и обновлении программного обеспечения. Поэтому успешные города и компании часто создают внутри себя отдельные аналитические группы или отделы цифрового управления автопарком, которые обеспечивают непрерывность развития системы.

Таким образом, внедрение управления автопарком на основе данных — это комплексная задача, которая охватывает технологическую, организационную и культурную сферы. При грамотной реализации она превращает коммунальные службы из затратной статьи бюджета в современный, эффективный и управляемый механизм, способный решать задачи устойчивого городского развития.

4. Результаты внедрения

Переход к управлению автопарком с опорой на данные даёт не только технологические и организационные изменения, но и весьма ощутимые результаты — экономические, экологические, социальные. Такие результаты становятся особенно наглядными в среднесрочной перспективе, когда система стабилизируется, персонал адаптируется, а аналитика начинает работать как инструмент принятия решений, а не просто как отчётный модуль.

Прежде всего, наблюдается заметное снижение эксплуатационных расходов. За счёт оптимизации маршрутов сокращается общий пробег техники, устраняются дублирующие и неэффективные траектории движения. Машины реже простаивают в пробках, не тратят ресурсы на объезды и ненужные повторы. Как следствие, уменьшается расход топлива — один из ключевых бюджетных компонентов любой коммунальной службы. По

данным городов, уже внедривших телематические решения, сокращение затрат на топливо может достигать 10–25% в течение первого года эксплуатации системы. Эти выводы подтверждаются и практическим опытом автора статьи: в период его работы в ТОО «Астана Тазалык» удалось достичь **20% снижения расхода топлива** за счёт внедрения системы эффективного распределения техники и пересмотра маршрутов в пользу более экономичных.

Следующий важный эффект — снижение износа техники и удлинение её жизненного цикла. Регулярный и предиктивный контроль технического состояния позволяет выявлять отклонения на ранней стадии и проводить своевременное техническое обслуживание. Например, при переходе на оптимизированные графики ТО в рамках управления механизированной уборкой в столице, удалось добиться **30% снижения износа техники**, что обеспечило значительное сокращение внеплановых ремонтов и продление срока службы оборудования.

Также заметно возрастает эффективность самой уборки. Повышенная управляемость, контроль загрузки и маршрутов приводят к тому, что каждый экипаж техники выполняет больше задач за меньший промежуток времени. Так, за счёт цифрового мониторинга и оптимизации логистики удалось добиться **25% роста эффективности уборки**, при этом не увеличивая численность персонала или количество машин.

Кроме прямой экономии, управление на основе данных оказывает положительное влияние на экологические показатели. Сокращение пробега, снижение холостого хода, оптимизация скорости движения и нагрузки на двигатель ведут к сокращению выбросов углекислого газа и других вредных веществ. Для городов, стремящихся к статусу «зелёных» или реализующих стратегию устойчивого развития, этот аспект приобретает всё большую ценность.

Также наблюдается улучшение качества работы и повышение прозрачности. Руководство коммунальных служб получает доступ к объективной картине — в реальном времени можно видеть, где находится техника, выполняются ли задания, сколько времени затрачено на те или иные участки. Это устраняет «слепые зоны» и субъективизм в управлении. В случае жалоб от граждан, администрация может быстро поднять маршрут, сравнить факты и дать обоснованный ответ. Кроме того, наличие данных позволяет более точно планировать рабочие смены, оптимизировать загрузку персонала, определять приоритетные зоны уборки.

Немаловажный результат — изменение поведения сотрудников. Осознание того, что работа стала прозрачной и подконтрольной, влияет на дисциплину, отношение к технике и соблюдение регламентов. Водители начинают соблюдать экономичный стиль вождения, диспетчеры точнее планируют задачи, а управляющие начинают опираться на аналитику, а не на интуицию. Это формирует новую культуру внутри коммунальных служб — культуру ответственности, точности и эффективности.

Наконец, на уровне управления городом такие системы дают ценную статистическую и стратегическую информацию. Благодаря накоплению и анализу данных за месяцы и годы, можно выявлять устойчивые тренды: как меняется нагрузка на технику в зависимости от сезона, какие районы требуют большего внимания, в какие периоды происходят сбои. Эти данные становятся основой для принятия решений о закупке новой техники, распределении бюджета, формировании годовых планов и оценки эффективности руководителей.

Таким образом, эффект от внедрения подхода на основе данных в управление автопарком выходит далеко за рамки технической модернизации. Это комплексное преобразование, которое делает работу городских уборочных служб более экономной, предсказуемой, экологичной и управляемой. Полученные результаты становятся аргументом не только в пользу дальнейшего развития цифровых решений, но и в поддержку более широкой трансформации городского хозяйства в сторону устойчивого и «умного» управления.

Заключение

Современные города всё чаще сталкиваются с вызовами, требующими не просто реакции, а системного переосмысления процессов городского управления. В этой логике устойчивое и эффективное управление автопарком городских уборочных служб становится не технической задачей, а стратегическим направлением, влияющим на экологию, экономику и облик городской среды. Как показано в данной статье, внедрение подхода на основе данных позволяет не только устранить хронические проблемы — перерасход топлива, износ техники, несогласованные маршруты — но и вывести коммунальные службы на качественно новый уровень работы.

Цифровизация автопарка — это не внедрение модного программного обеспечения и не разовая инвестиция в датчики. Это переход к модели управления, в которой каждое управленческое решение подкреплено конкретными показателями, а эффективность измеряется не по субъективным оценкам, а по фактам. Такой подход требует зрелости, готовности к изменениям и внимания к деталям — от выбора оборудования до обучения персонала. Но именно он создаёт условия для устойчивого развития городской инфраструктуры, в которой каждая единица техники работает по делу, каждый литр топлива расходуется рационально, а каждая задача выполняется прозрачно и в срок.

Управление на основе данных превращает автопарк из «чёрного ящика» с непредсказуемыми издержками в управляемую, аналитически обоснованную систему. Это путь к снижению затрат, повышению доверия граждан и формированию ответственного подхода к использованию городских ресурсов.

Для городов, стремящихся быть современными, зелёными и удобными для жизни, этот путь уже не альтернатива — это необходимость. И чем

раньше будет сделан этот шаг, тем быстрее коммунальные службы перестанут быть слабым звеном, а станут гордостью муниципального управления.

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МУХАНДИСЛИК ГРАФИКА ФАНИДАН БИРИНЧИ ОРАЛИҚ НАЗОРАТ ЎТКАЗИШ МЕТОДИКАСИ

Аннотация. Ушбу ишда биринчи курс барча техника таълим йўналишлари талабалари учун “Мухандислик графика” фанидан биринчи назорат ишини ўтказиш методикаси, масалаларни ечиш шартлари, ечиш алгоритмлари ва баҳолаш мезонлари келтирилган.

Калитли сўзлар. Мухандислик графика, биринчи назорат иши, ўтказиш методикаси, баҳолаш мезонлари, масалалар шарти, тўғри чизик, тўғри чизикнинг излари, тўғри чизикнинг ҳақиқий катталиги, тўғри чизикни нисбатга бўлиш, учбурчак текислик, тўғри чизикни оғиш бурчаги.

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METHOD OF CONDUCTING THE FIRST TEST ON THE SUBJECT ENGINEERING GRAPHICS

Abstract. This paper presents the methodology for conducting, conditions for solving problems, solution algorithms and evaluation criteria for the first test paper on “Engineering Graphics” for first-year students in all technical fields of education.

Key words: Engineering graphics, first test, methodology, assessment criteria, problem statement, straight line, traces of a straight line, natural size of a straight line, divisions of a segment in relation, triangular plane, angle of inclination of a straight line.

Ҳозирги кунда техника таълим йўналишидаги бакалаврларнинг ўқитиш дастурларида “Мухандислик графика” фани Олий таълим тизимидаги “710000-Мухандислик иши; 720000-Ишлаб чиқариш ва ишлов бериш сохалари” барча таълим йўналишлари учун ўқув жараёнига киритилган.

Замонавий тараққиётни чизмасиз тасаввур қилиб бўлмайди. Шунинг учун ҳам янги Ўзбекистон республикамининг тараққиёти ва ривожланишини таъминлашда юқори малакали техника таълим

бакалаврларини тайёрлаш, олий таълим талабаларини билимларини назорат қилиш тизимини жадаллаштириш муҳим аҳамиятга эга.

Тошкент давлат техника университетининг “Чизма геометрия ва компьютер графика” кафедрасида талабаларнинг ўзлаштириш даражаси уларни баҳолаш билан аниқланади. Шу мақсадда ўқув режасига асосан еттинчи ҳафтадан сўнг “Мухандислик графика” фанидан ёзма равишда биринчи оралиқ назорат ўтказилади.

Биринчи оралиқ назорат таркибига талабалар етти ҳафта ичида маъруза ва амалий дарсларида ўзлаштирган мавзулар ва мустақил таълим масалалари киритилади. Бу мавзулардаги амалий масалалар услубий жиҳатдан талаб даражасида танланган бўлиб, қуйидагиларни ўз ичига олади: фазодаги нуқта, проекция текисликларидаги нуқта, проекция ўқларидаги нуқта, умумий вазиятдаги тўғри чизик, хусусий вазиятдаги тўғри чизиклар, тўғри чизикнинг излари, тўғри чизикнинг фазони қайси чорагидан ўтиши, тўғри чизикнинг проекция текисликларига нисбатан оғиш бурчаги, тўғри чизикни берилган нисбатда бўлиш, текисликларни проекция текисликларига нисбатан вазиятлари, умумий вазиятдаги текислик, хусусий вазиятдаги текисликлар, текисликларни бош чизиклари, горизонтал чизиклар, фронтал чизиклар, текисликларни излари, нуқта ва тўғри чизикнинг текисликка тегишлилиги.

Биринчи оралиқ назорат масалалари 60 вариантларда ишлаб чиқилган.

Баҳолаш иши ҳажмига бешта масала киритилган бўлиб, биринчи тўртта масаланинг берилишида (AB) тўғри чизикнинг координаталари абцисса, ордината, аппликата проекция ўқлари бўйича сон қиймати миллиметрларда ифодаланган. Бешинчи масалада текислик ортогонал проекцияларда фронтал ва горизонтал излари орқали ҳамда унга тегишли учбурчак текислик бирор проекцияси орқали берилган.

Қуйида биринчи оралиқ назорат масаласини биринчиси келтирилган.

1-масала. АВ тўғри чизикнинг горизонтал ва фронтал излари аниқлансин ва фазонинг қайси чоракларидан ўтиши кўрсатилсин.

Нуқтанинг координаталари $A(50, 0,5)$; $B(20,45,25)$. Нуқталарнинг ўлчамларини таҳлил қилсак координаталари бир биридан фарқли, проекцияларини курсак, улар абцисса ўқида оғма бўлади, демак тўғри чизик фазода умумий вазиятда жойлашган.

Агарда тўғри чизикни фронтал проекциясини давом эттирсак, у горизонтал проекция текислиги билан учрашиб горизонтал изни ташкил қилади $M_H(m_H, m'_H)$.

Тўғри чизикни горизонтал проекциясини давом эттирсак у фронтал проекциялар текислиги билан учрашиб $N_V(n'_V, n_V)$ фронтал изни ташкил қилади.

Тўғри чизик фронтал изгача биринчи чоракда сўнг иккинчи чоракка, горизонтал издан сўнг у учинчи чоракка ўтиб кетади.

2-масала. АВ тўғри чизик кесмасини ҳақиқий ўлчами ва горизонтал проекциялар текислиги билан ҳосил қилувчи оғиш бурчаги аниқлансин.

Бу масалани ечими тўғри бурчакли учбурчак усули билан аниқланади.

Бунинг учун шундай тўғри бурчакли учбурчак куриш керакки унинг бир катети кесманинг бирорта проекциясига (горизонтал ёки фронтал ёки профил) иккинчи катети эса, кесма учлари координаталарининг алгебраик айирмаси

$(\Delta Z = Z_a - Z_b)$, $(\Delta Y = Y_b - Y_a)$, $(\Delta X = X_b - X_a)$ га тенг бўлиши керак. Шунда тўғри бурчакли учбурчакнинг гипотенузаси кесманинг ҳақиқий катталигига тенг бўлади.

3-масала. АВ тўғри чизикда В учидан 20мм узоқликда С нукта олинсин ва ундан АВ тўғри чизикқа перпендикуляр ва фронтал проекциялар текислигини М нуктада кесувчи СМ горизонтал чизик ўтказилсин.

Бу масалада тўғри чизик кесмаси ҳақиқий катталиги тўғри бурчак усули билан аниқлаб олиб, ҳақиқий катталикни В учидан 20мм масофада С нукта белгилаб олинади ва проекцияларда (c' , c) нукталар аниқлаб олинади ва талаб қилинган перпендикуляр тўғри чизик ўтказилади. СМ (cm , $c'm'$).

4-масала. АВ кесмани AD: DB = 2:4 нисбатда бўлувчи ва D нукта орқали аппликата ўқини Е нуктада кесиб ўтувчи DE горизонтал чизик ўтказилсин.

Бу масала қадимги грек олими Фалес теоремасига асосан ечилади.

Теорема: Агар бурчак томонларини кесадиган параллел тўғри чизиклар унинг бир томонидан тенг кесмалар ажратса, иккинчи томонидан ҳам тенг кесмалар ажратади.

Масалани ечиш учун кесма горизонтал проекциясининг d учидан ихтиёрий бурчакда m чизик ўтказиб унда олтига тенг кесма белгилаб оламиз ва олтинчи нуктасини b учи билан бирлаштирамиз. Сўнг иккинчи нуктада D нуктани белгилаб тўғри чизик проекцияларига қайтарамиз ва (dd') нукталар орқали горизонтал чизик ўтказамиз (de) ва ($d'e'$).

5-масала. Р текисликка тегишли учбурчак ABC нинг етишмаган проекцияси аниқлансин.

Бу масала текисликнинг бош горизонтал ёки фронтал чизиклари ёрдамида аниқланади. Агарда уларнинг бирорта учи текислик изида ёки проекция учларида жойлашган бўлса, у ҳолда етишмаган нукталар текисликни тегишли аломати билан топилади.

Оралиқ назорат ишини баҳолаш мезони кафедрада ишлаб чиқилган. 3та масала ечимга эга бўлса қониқарли, 4та масала ечими учун яхши, 5та масаланинг тўғри ечими учун аъло баҳо қўйилади.

Хулоса. Биринчи оралиқ назорат ўтказиш тажрибасидан келиб чиқиб, агарда талаба назарий ва амалий дарсларида тўлиқ қатнашиб, уй-график ишларни кўрсатилган муддатларда бажарса, у биринчи оралиқ назоратда яхши ва аъло баҳоларга ўзлаштира олади.

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БИОМОРФОЛОГИЯ, ХИМИЧЕСКИЙ СОСТАВ, ТЕХНОЛОГИЯ ВЫРАЩИВАНИЯ И ЗНАЧЕНИЕ ЛЕКАРСТВЕННОГО РАСТЕНИЯ ЛАВАНДЫ В МЕДИЦИНЕ

***Аннотация:** В данной статье представлена информация о лекарственном растении лаванда. Лаванда (*Lavandula*) относится к семейству яснотковых, это вечнозелёный кустарник высотой 30-60 см. Листья простые, линейные, с чуть загнутыми краями, расположены на стебле последовательно, без черешков. В свежем сырье содержится 0,8-1,6% эфирного масла и урсоловая кислота. В составе масла присутствуют сложные эфиры линалоола (30-60%) с уксусной, масляной, валериановой и другими кислотами, 10-30% чистого линалоола, амиловый и куминовый спирты, гераниол, борнеол, цитраль, герниарин, кумарин, различные терпены и другие соединения.*

***Ключевые слова:** *Lavandula*, кумарин, гераниол, эфирное масло, орошение, ароматерапия, антибактериальное, масло, аверин, мазь, амил и кумин.*

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BIOMORPHOLOGY, CHEMICAL COMPOSITION, CULTIVATION TECHNOLOGY AND THE IMPORTANCE OF THE MEDICINAL PLANT LAVENDER IN MEDICINE

Abstract: This article provides information about the medicinal plant lavender. Lavender (*Lavandula*) belongs to the Lamiaceae family, a perennial shrub with a height of 30-60 cm. The leaves are simple, linear, with slightly curved edges, arranged alternately on the stem without petioles. The fresh herb contains 0.8-1.6% essential oil and ursolic acid. The oil contains complex esters of linalool (30-60%) with acetic, butyric, valeric, and other acids, 10-30% pure linalool, amyl and cumin alcohols, geraniol, borneol, citral, gerniarin, coumarin, various terpenes, and other compounds.

Keywords: *Lavandula*, coumarin, geraniol, essential oil, irrigation, aromatherapy, antibacterial, oil, averin, ointment, amyl, cumin.

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BIOMORFOLOGIYA, KIMYOVIY TARKIBI, ETISHTIRISH TEXNOLOGIYASI VA DORIVOR LAVANTA O'SIMLIKINING TIBBIYOTDAGI AHAMIYATI

Annotatsiya: Ushbu maqolada lavanda o'simligi haqida ma'lumotlar keltirilgan. Lavanda (*Lavandula*) yasnotkalar oilasiga mansub, 30-60 sm bo'lyi, doim yashil buta o'simligi hisoblanadi. Barglari oddiy, chiziqli, biroz burilgan chetlariga ega bo'lib, poyalarda navbatma-navbat, qaytasiz joylashgan. Yangi hosilda 0,8-1,6% eterli moy va ursolik kislota mavjud. Moy tarkibida linilolning (30-60%) viniger, moyli, valerian va boshqa kislotalar bilan birikmalari, 10-30% sof linilol, amil va kuminal spirtlari, geraniol, bornel, sitral, gerniarin, kumarin, turli terpene va boshqa birikmalar mavjud.

Kalit so'zlar: *Lavandula*, kumarin, geraniol, eterli moy, sug'orish, aromaterapiya, antibakterial, moy, averin, maz, amil, kumin.

Введение: *Lavandula spica* L. относится к семейству яснотковых. Это многолетний, вечнозелёный кустарник высотой 30-60 см. Из нижней, одревесневшей части стебля вырастают многочисленные четырёхгранные ветви. Листья простые, линейные, с немного загнутыми краями, расположены на стебле супротивно, без черешков. Цветки мелкие, синего цвета, собраны в верхней части ветвей в рыхлые колосовидные соцветия. Плод состоит из четырёх орешков, соединённых с чашелистиком.

Географическое распространение: Произрастает в России, Крыму, на Северном Кавказе, в Молдове и Центральной Азии.

Агротехника: Лекарственная лаванда размножается семенами и вегетативным способом. Хорошо растёт и развивается на плодородных почвах и открытых местах. Поскольку растение многолетнее, выбираются постоянные участки для посадки. Не рекомендуется высаживать его в полях с севооборотом, так как оно может давать урожай на одном месте в течение 20-25 лет.

Осенью на участки для посадки лекарственной лаванды вносят 15-20 т органических удобрений и 30-40 кг минеральных удобрений (суперфосфат) на гектар, после чего почву перепахивают на глубину 25-28 см.

Размножение лаванды семенами считается наиболее эффективным методом. Оптимальное время для посева — первая декада ноября. Семена заделывают глубже. Если возникает необходимость посадки весной, их рекомендуется предварительно замочить в арычной воде. Перед посевом почву очищают от сорняков, боронуют и выравнивают катком. При достижении температуры воздуха 10-15°C формируют борозды с междурядьем 70 см и высевают семена. Посаженные ранней весной семена требуют поддержания почвы влажной (70%) до появления всходов. Норма высева составляет 4-6 кг на гектар.

Семена прорастают через 7-10 дней. Настоящие листья появляются через 10-15 дней. Когда их количество достигает 2-3 (примерно через 15-20 дней), междурядья растений рыхлятся с помощью культиватора и очищаются от сорняков. При появлении корки на участках, посеянных в весенний сезон, из-за осадков междурядья растений снова рыхлятся, одновременно проводится прореживание, оставляя по 2-3 растения на расстоянии 25-30 см между ними. Иногда растения, посаженные осенью при благоприятных условиях, могут зацвести в конце июня - начале июля на первом или втором году. Основное цветение начинается с третьего года.

До стадии бутонизации растения поливаются дважды, междурядья рыхлятся культиватором на глубину 8-10 см. Растения зацветают в начале июля. Подкормка начинается с фазы бутонизации: перед поливом на гектар вносится 50 кг азотных и 30 кг калийных удобрений. Хороший эффект даёт подкормка растений разбавленным настоем навоза. Участки с лавандой нужно пропалывать после каждого второго-третьего полива. Вторая подкормка проводится в фазе цветения (40-50 кг азота и 20 кг фосфорных удобрений на гектар). В каждом соцветии лаванды может быть от 16 до 25

цветков. Цветки распускаются утром и опыляются пчёлами и бабочками (энтомофилами).

В вегетационный период лекарственная лаванда поливается 8-12 раз, учитывая температуру воздуха и влажность почвы. Сбор сырья начинается на стадии массового цветения, когда длина цветоносов достигает 30 см. Сырьё измельчается до нужных размеров, раскладывается на стеллажах и сушится. Высушенное сырьё укладывается в специальные мешки и хранится.

Производство: Во время цветения растения соцветия собирают и получают эфирное масло методом паровой дистилляции.

Внешний вид продукта: Эфирное масло — бесцветная или желтовато-зелёная жидкость с приятным, характерным запахом и горьковатым вкусом. Его удельный вес составляет 0,8713-0,9035, показатель преломления — 1,4600-1,4739, угол вращения поляризованного света — от -3° до -9° .

Химический состав: Свежий продукт содержит 0,8-1,6% эфирного масла и урсоловую кислоту. Масло включает 30-60% сложных эфиров линалоола с уксусной, масляной, валериановой и другими кислотами, 10-30% чистого линалоола, а также амилиновый и куминовый спирты, гераниол, борнеол, цитраль, герниарин, кумарин, различные терпены и другие соединения.

Применение: Лавандовое масло способствует улучшению работы кишечника. Оно может регулировать здоровье кишечника и используется при лечении таких проблем, как несварение, метеоризм, боли в желудке, запоры и рвота. Эфирное масло лаванды — одно из самых распространённых в ароматерапии. Оно давно известно своими целебными свойствами для кожи, а также помогает при бессоннице, головной боли, улучшает здоровье волос и психическое состояние.

Благодаря антимикробным и антибактериальным свойствам лавандовое масло используют для лечения множества кожных проблем, таких как псориаз, акне и аллергии. Известно его лечебное действие при лечении акне: можно нанести каплю масла на воспалённый участок или смешать его с кокосовым маслом для профилактики акне. Массаж с лавандовым эфирным маслом оказывает расслабляющее действие на уставшие ноги, снимает боль и усталость, а также помогает лечить воспаления благодаря своим противовоспалительным и антисептическим свойствам. Лавандовое эфирное масло используется в фармацевтике для улучшения запаха мазей и некоторых наружных препаратов, а также широко применяется в парфюмерной промышленности.

Краткое содержание.

Лаванда — это не только красивое и ароматное растение, но и очень полезное для здоровья. Его эфирные масла обладают такими свойствами, как снижение стресса, улучшение сна и борьба с воспалениями. Также лаванда широко используется как декоративное растение в садоводстве и создает ландшафт в гармонии с природой. Польза лаванды также заметна в косметической и кулинарной сферах, поскольку ее натуральные ингредиенты

используются при уходе за кожей и приготовлении вкусных блюд. По этой причине лаванду ценят за ее красоту и универсальные преимущества.

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СЎТАЯНЧГИЧНИНГ ЎЗАК ВА ҚОБИҚ ТУЙНУГИДАН ЧИҚИБ КЕТАЁТГАН ДОН МИҚДОРИ ВА УНИ КАМАЙТИРИШ

***Аннотация:** Қобиқли сўтанинг физик-механк хоссаларини ўрганиш мақсадида Республикамизда етиштирилаётган маккажўхорининг навлари ҳақида маълумот тўпланди. Ҳозирги даврга келиб, мамлакатимизда экин учун маккажўхорининг йигирма бир турдаги навлари тавсия этилган. Улардан уч тури ўртапишар, етти тури кечпишар ва ўн бир тури эртапишар навлардир.*

***Калим сўзлар:** Қобиқли сўталар, физик-механик хоссалар, ўлчам-масса, навлар, сўталарнинг таркиби, қобиқлар сони, массаси, қобиқларнинг узунлиги, эни ва қалинлиги, вариация коэффициентлари.*

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IT IS IMPORTANT TO BE AWARE OF THE IMPORTANCE OF THE RELATIONSHIP WITH THE LOCAL COMMUNITY

***Annotation:** In order to study the physico-mechanical properties of husked corn, information was collected about the varieties of corn grown in our Republic. To date, twenty one varieties of corn have been recommended for planting in our country. Among them, three types are medium-ripening, seven types are late-ripening and eleven types are early-ripening varieties.*

***Keywords:** Shelled beans, physical-mechanical properties, size-mass, varieties, composition of pods, number of shells, mass, length, width and thickness of shells, coefficients of variation.*

Сўтаянчгич қурилмада қобиқли сўталарнинг янчилиши талаб даражасида бўлиши таъминланган бўлсада, унинг иш жараёнида сўтадан ажралган бир қисм донларнинг қобиқ ва ўзак туйнугидан уларга қўшилиб чиқиб кетиш ҳолати кузатилди. Бу доннинг миқдори сўтаянчгичга сўталар 5 кг атрофида ташланганда 3,6 фоизни, 10 кг атрофида ташланганда эса 4,7 фоизни ташкил этди. Сўтаянчгичнинг ушбу камчилигини бартараф этиш мақсадида қобиқ ва ўзак туйнугидан чиқиб келаётган аралашманинг морфологик таркиби ва уларнинг ўлчамлари ўрганилди. Тажрибалар шуни кўрсатдики, сўтаянчгичга 10 кг қобиқли сўта ташланганда, қобиқ ва ўзак туйнугидан 2440 г масса чиқиб кетиб, унинг 1559,1 г ёки 63,9 фоизини ўзак,

551,4 г ёки 22,6 фоизини қобик, 329,4 г ёки 13,5 фоизини дон ташкил этар экан (1-жадвал).

Аралашманинг морфологик таркиби.

1-жадвал.

Номи	Кўрсаткичларнинг қиймати			Умумийга нисбатан миқдори, %
	Мўр, г	□ □ , г	V, %	
Ўзак	1559,2	22,35	1,43	63,9
Қобик	551,4	0,91	0,16	22,6
Дон	329,4	0,96	0,29	13,5
Жами	2440,0	24,22	1,88	100

Аралашма таркибидаги компонентлар, яъни ўзак, қобик ва донлар алоҳида ажратиб олиниб, уларнинг ўлчамлари ўрганилганда, туйнукдан чиқиб келаётган ўзакларнинг ўртача массаси 11,7 г, узунлиги 86,7 мм, диаметри 22,6 мм ни ташкил этди (2-жадвал).

Аралашмадаги ўзакларнинг ўлчамлари.

2-жадвал

Кўрсаткичларнинг номи	Кўрсаткичларнинг қиймати		
	Мўр	□ □ , г	V, %
Массаси, г	11,7	6,11	52,08
Узунлиги, мм	86,7	35,29	40,66
Диаметри, мм	22,6	4,14	18,34

Аралашмадаги қобикларнинг ўлчамлари.

3-жадвал

Кўрсаткичларнинг номи	Кўрсаткичларнинг қиймати		
	Мўр	□ □ , г	V, %
Массаси, г	0,27	0,16	58,56
Узунлиги, мм	161,70	51,53	31,87
Эни, мм	22,78	9,57	42,02

Юқорида қайд қилинган ўлчамлар қобикларда, мос равишда, 0,27 г, 161,7 мм ва эни эса 22,7 мм (4-жадвал), донларда эса 0,34 г, 11,4 мм ва 8,38 мм ни (4-жадвал) ташкил этиши маълум бўлди.

Аралашмадаги донларнинг ўлчамлари. 4-жадвал

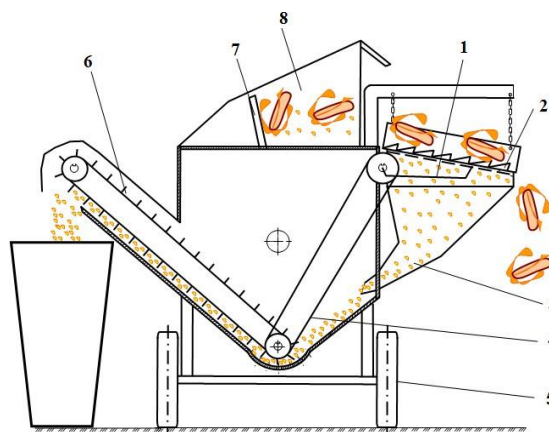
Кўрсаткичларнинг номи	Кўрсаткичларнинг қиймати		
	Мўр	□ □ , г	V, %
Массаси, г	0,34	0,09	25,98
Узунлиги, мм	11,43	0,93	8,18
Қалинлиги, мм	4,72	0,70	14,86
Эни, мм	8,38	0,96	11,42

Сўтаянчгич қурилманинг ўзак ва қобик туйнугидан чиқаётган донни камайтириш мақсадида бир нечта техник ечимлар қўллаб тажрибалар ўтказилди. Дастлаб сўтаянчгич декаси кўзлари диаметри 16 мм дан 18 мм га катталаштирилиб, тажрибалар ўтказилган да туйнукдан чиқиб келаётган дон миқдори 4,7 фоиздан 4,2 фоизга камайди (5-жадвал). Аммо ушбу техник ечим туйнукдан чиқиб келаётган дон миқдорининг сезиларли камайишини таъминламади.

**Туйнукдан чиқаётган донни камайтириш бўйича тажрибалар
натижалари. 5-жадвал**

Қўлланилган техник ечимлар	Чиқаётган дон, %		
	Мўр	□ □ □ г	V, %
Дека тешиклари Ø 16 ммдан Ø 18 мм га катталаштирилди	4,2	0,38	9,22
Декага кўндаланг планкалар қўйилди	3,7	0,22	6,04
Қобик ва ўзак туйнугига ғалвир қўйилди	0,4	0,05	13,79

Шундан сўнг дека ичига дон йўналишига кўндаланг ҳолатда баландлиги 8 мм бўлган планкалар ўрнатиб чиқилди.



1–кливошип шатунли механизм, 2–ғалвирли мослама, 3–қия нов, тасмали узатма, 5–
ғилдирак, 6–резина транспортерли юклагич, 7–ўзак ва қобикларни ташқарига ирғитадиган
планка, 8–ўзак ва қобик туйнуғи

**5-расм. Такмиллаштирилган сўтаянчгич қурилмасига ўрнатилган ғалвирли
мосламанинг ишлаш схемаси.**

Ирғитадиган планка 7 таъсирида такмиллаштирилган сўтаянчгичнинг ўзак ва қобик туйнуғи 8 дан чиқиб кетаётган янчилган ўзак, қобик ва дон ғалвирли мослама 2 нинг юзасига келиб тушади. Ғалвирли мослама 2 кливошип шатунли механизм 1 ёрдамида табранма ҳаракат қилади. Ўзак ва қобиклар билан ғалвирнинг устига келиб тушган донлар ғалвир кўзлари орқали пастга тушиб, қия нов 3 бўйлаб қурилманинг ичига қайтиб тушади ва у ердан ўзак ва қобикдан ажралган донлар резина транспортерли юклагич 6 ёрдамида махсус идишлар ёки қошларга жойланади.

Такмиллаштирилган сўтаянчгич қурилманинг ўзак ва қобик туйнуғи олдига ғалвирли мослама ўрнатилгандан сўнг, ушбу ғалвирли мосламани тебранишлар сони, тебранишлар амплитудаси, кўзларини ўлчами ва шакли ва қия ўрнатилиш бурчагининг иш сифат кўрсаткичларига таъсирини ўрганиш бўйича бир қатор тажрибавий тадқиқотлар олиб борилди. Тажрибалар мобайнида сўтаянчгич қурилмага ҳар такрорийликда 10 кг миқдордаги қобикли сўталар юкланиб, олинган натижаларга математик ишлов берилди ва қуйидагилар келтириб чиқарилди.

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НАЦИОНАЛЬНАЯ КОНЦЕПЦИЯ ИСТОРИИ В ЦЕНТРАЛЬНОЙ АЗИИ И ЕЕ ОСОБЕННОСТИ (НА ПРИМЕРЕ КАЗАХСТАНА)

Аннотация: В рамках данного исследования обсуждается, что регион, населенный казахами, занимает особое место в истории народов Центральной Азии. В Центральной Азии значительная часть региона приходится на территорию Казахстана, а с другой стороны, большинство из десятков политических объединений, одно за другим вышедших на историческую сцену региона, имеют свое начало именно в этом регионе.

Ключевые слова: Средняя Азия, Скифское, Сакское, Гуннское царство, государство Канг, Западно-Тюркское ханство, Кипчакские ханства.

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THE NATIONAL CONCEPT OF HISTORY IN CENTRAL ASIA AND ITS FEATURES (ON THE EXAMPLE OF KAZAKHSTAN)

Abstract: Within the framework of this study, it is discussed that the region inhabited by Kazakhs occupies a special place in the history of the peoples of Central Asia. In Central Asia, a significant part of the region is located on the territory of Kazakhstan, and on the other hand, most of the dozens of political associations that have emerged on the historical scene of the region have their origins in this region.

Keywords: Central Asia, Scythian, Saka, Hunnic kingdom, Kang state, Western Turkic Khanate, Kipchak khanates.

Территория, на которой сегодня проживают казахи, занимает особое место в истории народов Центральной Азии. Во-первых, большая часть региона входит в состав Казахстана, а во-вторых, именно с этой территорией связано происхождение большинства из десятков последовательно возникавших и исчезавших в регионе политических объединений [1:1]. Территории, занимаемые скифо-сакским племенным союзом, установившим свою политическую власть в Средней Азии и сопредельных регионах в последнем тысячелетии до н. э., империей гуннов (II-III вв. до н. э.), государством Канг (II-III вв. до н. э.), Западно-тюркским каганатом (568-740 гг.), Огузским Ябгулом (IX-X вв.), Карлукским Ябгулом/каганатом (IX-X вв.),

Кимакским государством (IX-XI вв.), Кыпчакским ханством (IX-XIII вв.) так или иначе связаны с нынешними казахскими землями. Также в эти территории попадает значительная часть улусов Джучи и Чигатая, восточные территории Золотой Орды, улус Абулхайра (1312/1328-1468) и Казахское ханство (1465-1847).

Основная часть нынешнего Казахстана упоминалась в средние века как часть Степно-Кипчакского региона, а в XIX и XX веках его юго-восточные районы стали изучаться в историко-географическом отношении под названиями «Эттисув», часть, прилегающая к междуречью Амударьи и Сырдарьи, — как «Южный Казахстан», северо-восточные земли — как Западная Сибирь, а западные части — как Волго-Уральский речной бассейн или «Западный Казахстан». Действительно, учитывая обширность территории Казахстана, с ее обширными пустынями и степями, горами и реками, разделяющими каждый уголок, трудно сказать, что между регионом Семи морей и Западным Казахстаном, Западной Сибирью и Южным Казахстаном существовали прочные социально-политические, экономические и культурные связи.

Следует также отметить, что в связи с тем, что основную часть названных историко-географических областей составляют степи и пустыни, а большую часть населения этих земель составляют кочевники-скотоводы, материальная и духовная культура населения нынешних казахских земель резко отличается от таковой в более оседлых крестьянских районах Средней Азии. При этом, в отличие от других регионов, в Южном Казахстане и Евпаторийском районе с древнейших времен соседствовали оседлое земледелие и кочевое скотоводство. Если в среднем и нижнем течении Сырдарьи имеются такие исторические города, как Жанд, Саврань, Сугнак, Яссы, Утрор, Исфиджаб (Сайрам), а в Жетисуве- Тараз (Жамбыл), Балосагун, Алмалык (близ Алматы) [1.2], то они служили общественно-политическими, экономическими и культурными центрами региона.

В советское время, как и в других союзных республиках, история казахских земель освещалась однобоко. В этот период к вопросу подходили с точки зрения классовой теории, осуждая историю политических объединений, господствовавших на территории Дашти Кипчака в древности и средние века, и объясняя, что правящий класс был «угнетателем», а простые люди — «угнетенным классом». Согласно этому подходу, богатые феодалы, владевшие большими стадами скота, постоянно угнетали население, и в регионе постоянно происходили столкновения, противоречия и классовая борьба между богатыми и бедными.

В истории Казахстана, прошлое которого во многом писалось и трактовалось центром — Москвой, народы региона всегда стремились к объединению с русским народом и достижению свободы с его помощью, однако правящий класс всегда противостоял им преобладающей мыслью было то, что это было препятствием к осуществлению его мечты [1.3]. В частности, подчеркивалось, что в XVIII и XIX веках казахские ханства

стремились по собственной инициативе присоединиться к Российской империи, что казахские ханы и султаны писали грамоты в Москву, выражая свое желание объединиться с Россией, и что это находило поддержку у простого народа [1.4]. В то же время тот факт, что переход под власть России был давней мечтой казахского народа, неоднократно упоминался в научных и учебных изданиях, а также учебниках, посвященных истории Казахстана. Кроме того, в советское время большое внимание уделялось большому вкладу русского народа в создание нынешнего казахского государства, тому факту, что у казахов фактически не было государственных традиций, а политические организации, сформированные в этом регионе, были не чисто государственными, а кочевыми племенными объединениями.

В период независимости в подходе Казахстана к истории, особенно к истории народов региона, проявились как общие черты, так и отличительные черты с соседними республиками.

Казахстанско-узбекское и казахско-кыргызское сотрудничество оказалось весьма эффективным в налаживании совместных научных исследований. Ярким примером этого является реализация археологических экспедиций и совместных научных проектов в области тюркологии и истории, осуществляемых совместно с представителями этих народов. Следует отметить, что, несмотря на инициативы Казахстана и других республик Центральной Азии, ученые-обществоведы из соседнего Казахстана имели крайне мало возможностей участвовать в подобных научных мероприятиях.

Приоритетной задачей казахской интеллигенции является интерпретация истории всех народов Центральной Азии как общего наследия народов региона и написание произведений в этом ключе. Особого одобрения заслуживает инициатива казахстанских ученых в области археологии и тюркологии. Их даже можно считать лидерами в этой области. Среди казахских учёных следует отметить источника Б. Кумеков, археологи К. Байпаков, З. Самашев, А. Досимбаева, историк К. Торланбаева, Д. Кыдырали, тюркологи Н. Исследования Базилхана и других по историческому наследию народов региона были горячо встречены мировой историографией. Одним из ярких примеров этого является тот факт, что казахские историки совместно с узбекскими историками написали учебник для 8-го класса «Всеобщая история Турции».

В заключение следует отметить многообразие взаимосвязей в концепциях и подходах, разработанных казахстанскими историками в годы независимости. Видно, что, с одной стороны, они подчеркивают национализм и самобытность, а с другой — преобладают общечеловеческие, региональные ценности. Современная казахская историография стала несколько отличаться от историографии туркменских, таджикских и киргизских ученых региона, ее идеи больше сосредоточены на региональном единстве, чем на индивидуальности, как в случае с узбеками. Фактически, такие подходы, как акцентирование только своей региональной истории, преувеличение ее уникальности и рассмотрение исторических деятелей как принадлежащих в

основном им, наблюдались среди узбекских историков в первые десятилетия независимости, и этот подход был схож с подходом казахов. В предстоящем десятилетии необходимо будет позитивно оценить растущее число подходов, акцентирующих внимание на историческом единстве народов региона.

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РАЗРАБОТКА И ОБОСНОВАНИЕ ПАРАМЕТРОВ АВТОМАТИЗИРОВАННОЙ СИСТЕМЫ СОРТИРОВКИ ЯДЕР ГРЕЦКОГО ОРЕХА

***Аннотация:** В данной работе рассматривается процесс автоматизированной механической сортировки ядер грецкого ореха с использованием вибрационных сит и воздушного сепаратора. Анализируются основные параметры и характеристики применяемого оборудования, включая его эффективность, производительность и влияние на качество готового продукта. Предоставляется сравнительная оценка различных методов сортировки, выявляются их преимущества и недостатки. Особое внимание уделяется аспектам снижения примесей, повышения точности разделения ядер по размеру и массе, а также экономической целесообразности использования данной технологии в перерабатывающей промышленности.*

***Ключевые слова:** сортировка, орех, ядро, сито, сепаратор, примеси, масса, размер, эффективность, технология*

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DEVELOPMENT AND JUSTIFICATION OF PARAMETERS OF THE AUTOMATED SYSTEM FOR SORTING WALNUT KERNEL

***Abstract:** This paper examines the process of automated mechanical sorting of walnut kernels using vibrating screens and an air separator. The main parameters and characteristics of the applied equipment are analyzed, including its efficiency, productivity, and impact on the quality of the final product. A comparative assessment of various sorting methods is provided, highlighting their advantages and disadvantages. Particular attention is paid to aspects of impurity*

reduction, increasing the accuracy of kernel separation by size and weight, as well as the economic feasibility of using this technology in the processing industry.

Keywords: *sorting, walnut, kernel, screen, separator, impurities, weight, size, efficiency, technology.*

Введение: в последние годы наблюдается рост мирового производства и потребления грецкого ореха, что требует совершенствования технологий его переработки. Одним из ключевых этапов является сортировка ядер, от качества которой зависит конкурентоспособность продукции на рынке. Традиционные методы сортировки, основанные на ручном труде или механических принципах, не обеспечивают достаточной точности и скорости. Это приводит к увеличению производственных затрат и снижению качества готовой продукции. В связи с этим актуальной задачей является разработка автоматизированной системы сортировки ядер грецкого ореха, учитывающей параметры формы, цвета, размера и плотности ядер, а также способной повысить эффективность и производительность перерабатывающих предприятий.

Методология: Методика механической сортировки ядер грецкого ореха по размеру и массе основана на использовании механических сит и воздушных сепараторов для сортировки ядер грецкого ореха по размеру и массе. Вначале очищенные ядра поступают в систему вибрационных или барабанных сит, где они разделяются на фракции по размерам. Сита имеют отверстия различного диаметра, что позволяет отсеивать мелкие фрагменты и отделять крупные ядра. Этот этап сортировки важен для дальнейшей переработки, так как разные категории ядер предназначены для различных целей, например, крупные ядра – для упаковки в целостном виде, а мелкие – для переработки в ореховую крошку. После разделения по размеру ядра проходят через воздушный сепаратор, который сортирует их по массе. Воздушный поток регулируемой силы позволяет отделить более легкие фрагменты и скорлупу, оставляя только плотные и качественные ядра. Такой метод прост в реализации, не требует сложного оборудования и может быть адаптирован под различные объемы производства. Он обеспечивает эффективную первичную сортировку, снижает процент примесей и облегчает последующую обработку, делая процесс переработки орехов более рентабельным и удобным.

Результат: в ходе исследования эффективности механической сортировки ядер грецкого ореха по размеру и массе были проведены испытания на производственной линии с использованием вибрационных сит и воздушного сепаратора. В результате анализа было установлено, что методика позволила добиться высокой точности разделения: 92% ядер были правильно распределены по размерным категориям, а 87% – по массе. Также выявлено, что использование воздушного сепаратора снизило содержание примесей (осколков скорлупы и легких фрагментов) в готовом продукте на 78%, что значительно улучшило качество сырья для дальнейшей переработки.

Дополнительно было отмечено, что применение данной методики позволило сократить долю некондиционных ядер в основной фракции на 24% по сравнению с ручной сортировкой, что повысило выход качественного продукта. Средняя производительность линии составила 850 кг ядер в час, что на 35% превышает показатели традиционных методов сортировки. Таким образом, проведённое исследование подтвердило, что механическая сортировка является эффективным, экономичным и технологически доступным решением для предприятий по переработке грецкого ореха.

Таблица 1.

Эффективность использования оборудования для механической сортировки ядер грецкого ореха

Оборудование	Принцип работы	Область применения	Эффективность (%)	Преимущества	Недостатки
Вибрационные сита	Разделение по размеру через отверстия различного диаметра	Первичная сортировка по фракциям	92%	Высокая точность, простота конструкции, низкое энергопотребление	Возможность забивания отверстий, необходимость регулярной чистки
Барабанные сита	Сортировка путём вращения барабана с отверстиями	Массовая сортировка орехов	89%	Высокая производительность, равномерное распределение	Требует большой площади, сложность настройки
Воздушный сепаратор	Отделение по массе с помощью воздушного потока	Удаление лёгких фрагментов и скорлупы	87%	Эффективное удаление примесей, снижение отходов	Чувствительность к влажности сырья, энергозатраты
Ручная досортировка	Визуальный контроль качества оператором	Финальная проверка продукции	95%	Высокая точность, возможность отбора повреждённых ядер	Высокие трудозатраты, низкая скорость

Заключение: Проведённое исследование подтвердило, что использование вибрационных сит и воздушных сепараторов обеспечивает высокую точность разделения, снижает уровень примесей и увеличивает

выход качественного продукта. Применение механизированных технологий не только оптимизирует производственный процесс, но и способствует снижению трудозатрат и повышению экономической рентабельности предприятий. Дальнейшие исследования в данной области могут быть направлены на усовершенствование алгоритмов сортировки, автоматический контроль качества и интеграцию современных технологий, таких как машинное зрение и искусственный интеллект, для ещё более точного и быстрого отбора ядер.

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ПРИМЕНЕНИЕ МАТРИЧНОЙ АЛГЕБРЫ В ЭКОНОМИКЕ

***Аннотация:** Работа посвящена применению матричной алгебры в экономике. Рассматривается модель межотраслевого баланса, описывающая потоки продукции между различными отраслями. Приведены методы расчёта технологических коэффициентов и их представление в виде матрицы техники производства. Рассматривается использование обратной матрицы для вычисления необходимых объёмов производства в зависимости от конечного спроса. Приведены примеры практического применения матричных вычислений в экономическом планировании, анализе затрат и распределении ресурсов. Статья подчёркивает важность матриц в моделировании экономических процессов и принятии управленческих решений.*

***Ключевые слова:** матрица, обратная матрица, межотраслевой баланс, технологические коэффициенты, матрица техники производства, матричное уравнение, коэффициенты совокупного потребления, экономическое планирование, анализ затрат, распределение ресурсов.*

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APPLICATION OF MATRIX ALGEBRA IN ECONOMICS

***Abstract:** The work is devoted to the application of matrix algebra in economics. The model of inter-industry balance describing the flows of products*

between different industries is considered. Methods for calculating technological coefficients and their presentation in the form of a matrix of production technology are given. The use of the inverse matrix for calculating the required production volumes depending on final demand is considered. Examples of practical application of matrix calculations in economic planning, cost analysis and resource allocation are given. The article emphasizes the importance of matrices in modeling economic processes and making management decisions.

Keywords: matrix, inverse matrix, inter-industry balance, technological coefficients, production technology matrix, matrix equation, aggregate consumption coefficients, economic planning, cost analysis, resource allocation.

Допустим, что материальное производство делится на n отраслей; обозначим через $Q_1, Q_2, \dots, Q_n$ плановый объем продукции, произведенной в единицу времени (например, за год), в натуральном выражении. Продукция каждой отрасли частично предназначается на производственное потребление других отраслей, частично перерабатывается внутри отрасли. Обозначим через $q_{ij} (i, j = 1, 2, \dots, n)$ количество продукции i -й отрасли, израсходованное на производственные нужды j -й отрасли, а через q_{ii} – количество продукции i -й отрасли, потребленное в той же самой отрасли ($i = 1, 2, \dots, n$).

Как правило, только часть продукции i – й отрасли потребляется в материальном производстве. Часть этой продукции расходуется на цели, не связанные с текущими производственными нуждами, например на потребление, экспорт, капитальные вложения, увеличение запасов. Продукция i – й отрасли, не предназначенная на текущее производственное потребление, называется *конечным продуктом* i – й отрасли; обозначим его q_i .

Распределение продукции каждой отрасли можно описать с помощью следующей таблицы, называемой *таблицей межотраслевых связей*.

Отрасль материального производства	Объем продукции	Межотраслевые потоки в				Конечный продукт
		1	2	...	n	
1	Q_1	q_{11}	q_{12}	...	q_{1n}	q_1
2	Q_2	q_{21}	q_{22}	...	q_{2n}	q_2
...	...	...	...	...	...	...
n	Q_n	q_{n1}	q_{n2}	...	q_{nn}	q_n

В таблице межотраслевых связей можно суммировать только элементы отдельных строк. Элементы столбцов суммировать нельзя, ибо они относятся к продукции разных отраслей, выражаемой в неодинаковых единицах измерения. Можно записать n следующих уравнений:

$$Q_1 = q_{11} + q_{12} + \dots + q_{1n} + q_1$$

Введя обозначения:

$$\begin{bmatrix} Q_1 \\ Q_1 \\ \dots \\ Q_n \end{bmatrix} = Q, \quad \begin{bmatrix} q_1 \\ q_2 \\ \dots \\ q_n \end{bmatrix} = q$$

получим матричное уравнение

$$Q = AQ + q, \text{ или } Q - AQ = q, \text{ откуда}$$

$$(I - A)Q = q.$$

Умножим полученное уравнение на $(I - A)^{-1}$ левосторонне; имеем:

$$(I - A)^{-1}(I - A)Q = (I - A)^{-1}q, \text{ откуда} \\ Q = (I - A)^{-1}q. \quad (6)$$

Потребности общества удовлетворяет конечный общественный продукт (сумма конечных продуктов отраслей); в связи с этим планирование материального производства начинается с определения размеров и структуры конечного общественного продукта. Решение (6) матричного уравнения (5) позволяет определить плановый объем производства отдельных продуктов таким образом, чтобы получить необходимые количества конечных продуктов, предназначенных на потребление, запасы и т.п. Выражение (6) позволяет быстро разработать разные варианты плана материального производства в соответствии с вариантами заданного конечного общественного продукта.

Введем обозначение:

$$(I - A)^{-1} = \begin{bmatrix} A_{11} & A_{12} & \dots & A_{1n} \\ A_{21} & A_{22} & \dots & A_{2n} \\ \dots & \dots & \dots & \dots \\ A_{n1} & A_{n2} & \dots & A_{nn} \end{bmatrix}$$

Из уравнений (6) следует, что

$$\begin{bmatrix} Q_1 \\ Q_2 \\ \dots \\ Q_n \end{bmatrix} = \begin{bmatrix} A_{11} & A_{12} & \dots & A_{1n} \\ A_{21} & A_{22} & \dots & A_{2n} \\ \dots & \dots & \dots & \dots \\ A_{n1} & A_{n2} & \dots & A_{nn} \end{bmatrix} * \begin{bmatrix} q_1 \\ q_2 \\ \dots \\ q_n \end{bmatrix}; \quad (7)$$

Умножив, имеем:

$$\begin{bmatrix} Q_1 \\ Q_2 \\ \dots \\ Q_n \end{bmatrix} = \begin{bmatrix} A_{11}q_1 + & A_{12}q_2 + & \dots & +A_{1n}q_n \\ A_{21}q_1 + & A_{22}q_2 + & \dots & +A_{2n}q_n \\ \dots \dots & \dots \dots & \dots & \dots \dots \\ A_{n1}q_1 + & A_{n2}q_2 + & \dots & +A_{nn}q_n \end{bmatrix}.$$

откуда

$$\begin{array}{lcl}
 Q_1 = & A_{11}q_1 + & A_{12}q_2 + \dots + A_{1n}q_n, \\
 Q_2 = & A_{21}q_1 + & A_{22}q_2 + \dots + A_{2n}q_n, \\
 \dots & \dots \dots & \dots \dots \dots (8) \\
 Q_n = & A_{n1}q_1 + & A_{n2}q_2 + \dots + A_{nn}q_n.
 \end{array}$$

Уравнение (8) показывает, что элементы матрицы $(I - A)^{-1}$ есть величины, определяющие количественные соотношения между конечными продуктами всех отраслей и продуктами каждой отрасли.

Элементы матрицы $(I - A)^{-1}$ имеют определенное экономическое содержание. Возьмем, например, конечный продукт k -й отрасли

($k = 1, 2, \dots, n$). Если предположить, что изменяется только конечный продукт этой отрасли, а остальные конечные продукты не подлежат изменению, то каждое из уравнений (8) описывает линейную зависимость продукции каждой отрасли от величины конечного продукта k -й отрасли. В этом случае

отношение приращения* зависимой переменной к приращению независимой переменной есть постоянная, равная коэффициенту при независимой переменной (см. гл. 9, §1). Следовательно,

$$\frac{\Delta Q_i}{\Delta q_k} = A_{ik} \quad (i = 1, 2, \dots, n) \quad (9)$$

Из матрицы (8) следует, что A_{ik} определяет количество единиц продукта i -й отрасли, необходимое для увеличения конечного продукта k -й отрасли на единицу. Коэффициенты A_{ik} называются *коэффициентами совокупного потребления*, а матрица $(I - A)^{-1}$ – *матрицей коэффициентов совокупного потребления*. Эти коэффициенты играют весьма важную роль в планировании производства. Зная матрицу $(I - A)^{-1}$, мы можем определить разные варианты плана материального производства, соответствующие определенным вариантам конечного продукта.

Пример 1. Производство разделено на 3 отрасли; дана следующая матрица техники производства:

$$A = \begin{bmatrix} 0,4 & 0,2 & 0,1 \\ 0,3 & 0,4 & 0,3 \\ 0,2 & 0,1 & 0,2 \end{bmatrix}$$

На предварительном этапе разработки плана принимаются два варианта потребности в конечном продукте:

- 1° $q_1^{(1)} = 200\,000$, $q_2^{(1)} = 400\,000$, $q_3^{(1)} = 300\,000$;
- 2° $q_1^{(2)} = 300\,000$, $q_2^{(2)} = 400\,000$, $q_3^{(2)} = 200\,000$.

Следует определить соответствующие варианты производственного плана. Матрица коэффициентов совокупного потребления есть матрица

$$(I - A)^{-1} = \begin{bmatrix} 2,30769 & 0,87179 & 0,61538 \\ 1,53846 & 2,35897 & 1,07692 \\ 0,76923 & 0,51282 & 1,53846 \end{bmatrix}.$$

Для первого варианта имеем:

$$\begin{bmatrix} Q_1^{(1)} \\ Q_2^{(1)} \\ Q_3^{(1)} \end{bmatrix} = \begin{bmatrix} 2,30769 & 0,87179 & 0,61538 \\ 1,53846 & 2,35897 & 1,07692 \\ 0,76923 & 0,51282 & 1,53846 \end{bmatrix} * \begin{bmatrix} 200\,000 \\ 400\,000 \\ 300\,000 \end{bmatrix} = \begin{bmatrix} 994\,868 \\ 1\,574\,356 \\ 820\,512 \end{bmatrix}$$

откуда

$$Q_1^{(1)} = 994\,868, \quad Q_2^{(1)} = 1\,574\,356, \quad Q_3^{(1)} = 820\,512;$$

второго варианта имеем:

$$\begin{bmatrix} Q_1^{(2)} \\ Q_2^{(2)} \\ Q_3^{(2)} \end{bmatrix} = \begin{bmatrix} 2,30769 & 0,87179 & 0,61538 \\ 1,53846 & 2,35897 & 1,07692 \\ 0,76923 & 0,51282 & 1,53846 \end{bmatrix} * \begin{bmatrix} 300\,000 \\ 400\,000 \\ 200\,000 \end{bmatrix} = \begin{bmatrix} 1\,164\,099 \\ 1\,620\,510 \\ 743\,589 \end{bmatrix}$$

откуда

$$Q_1^{(2)} = 1\,164\,099, \quad Q_2^{(2)} = 1\,620\,510, \quad Q_3^{(2)} = 743\,589.$$

Основываясь на равенстве $q_{ij} = a_{ij}a_j$, можно определить размеры межотраслевых потоков и оба их варианта.

Пример 2. Таблица 1. Использование ресурсов в различных сферах экономики

Ресурсы	Экономическая сфера		
	Промышленность	Аграрная промышленность	Рынок
Трудовые ресурсы	5,4	6,1	4,7
Водные ресурсы	1,7	2,3	5,2
Электро-энергия	5,8	3,6	4

Эту таблицу можно записать и охарактеризовать в виде матрицы:

$$A = \begin{pmatrix} 5,4 & 6,1 & 4,7 \\ 1,7 & 2,3 & 5,2 \\ 5,8 & 3,6 & 4 \end{pmatrix}.$$

Так, наглядно видно в таблице что, элемент матрицы $a_{22}=2,1$ показывает, сколько водных ресурсов потребляет аграрная промышленность во всех сферах экономики, а следующий элемент матрицы $a_{13}=6,7$ демонстрирует, сколько трудовых ресурсов потребляет рынок в целом.

Наглядным примером также может нам послужить следующая задача:

Некая фирма производит различную продукцию C_1, C_2, C_3 и на изготовление этого продукта используется материал K_1, K_2 :

$$A = \begin{pmatrix} 2 & 5 \\ 5 & 3 \\ 8 & 7 \end{pmatrix},$$

где элемент a_{ij} показывает сколько сырья j -того типа может быть потрачено внутри организации на производство продукции i -того типа. Цена каждого вида сырья равна:

$$C = \begin{pmatrix} 70 \\ 50 \end{pmatrix},$$

а планирование выпуска продукции равно $B = (110 \ 150 \ 70)$.

Из этого следует как, мы получим: расходы на материал

$$K_1 = 2*110+5*150+8*70=1530,$$

а цена другого материала

$$K_2 = 5*110+3*150+7*70=1490.$$

Таким образом, суммарная цена материала $P = 1530*70+1490*50=181600$ может быть представлена в виде вектора:

$$P = B*Z = (110 \ 150 \ 70) * \begin{pmatrix} 390 \\ 500 \\ 910 \end{pmatrix} = 181600.$$

Идентичность всех выше перечисленных результатов (181600) была получена благодаря правильному выполнению семантического закона умножения векторов: $(BA)C = B(AC)$. Этот закон ярко иллюстрирует пример такого, что решая через любой вид решения матриц можно добиться одинаковости всех результатов.

Пример 3. Таблица 2. В таблице 2 проиллюстрированы сведения о работе 5 различных фирм, которые выпускают 4 вида товара с потреблением 3-х видов сырья, так же количество времени работы абсолютно каждой фирмы в году и стоимости всех видов материала.

Вид продукции №	Производство фирм			Стоимость материалов продукции		
	1	2	3	1	2	3
1	7	8	6	4	6	7
2	3	5	7	5	8	9
3	11	18	3	6	7	8
	Количество полных рабочих дней в году			Стоимость разных видов материала		

	1	2	3	1	2	3
	230	180	200	70	80	90

Следовательно, должны понять:

1) Эффективность и плодотворность всех фирм по каждому виду продукции.

2) Нужда всех фирм по каждому виду материала.

3) Совокупность кредитования фирм для закупки и переработки материалов, которые необходимо для выпуска продукции указанных видов и количеств фирм.

Выстроим матрицу производства фирм по всем типам продукции:

$$C = \begin{pmatrix} 7 & 8 & 6 \\ 3 & 5 & 7 \\ 11 & 18 & 3 \end{pmatrix}.$$

Столбец вектора полностью соответствует производству по каждому типу изделия. Так годовое производство i -ой фирмы по каждому виду продукции можно произвести за счет произведения i -го столбца вектора C на количество рабочих дней в году именно для фирмы ($i = 1, 2, 3$). Поэтому, годовое производство каждой фирмы по каждой продукции можно выразить с помощью вектора:

$$C_1 = \begin{pmatrix} 1470 & 1280 & 1260 \\ 1260 & 1280 & 1260 \\ 2310 & 2880 & 540 \end{pmatrix}.$$

Матрица затрат материалов на единицу продукции представлена как:

$$D = \begin{pmatrix} 4 & 5 & 6 \\ 6 & 8 & 7 \\ 7 & 9 & 8 \end{pmatrix}.$$

Все издержки по видам материала на фирмах можно полностью расписать

как $D \cdot C$:

$$DC = \begin{pmatrix} 109 & 165 & 77 \\ 143 & 214 & 113 \\ 164 & 245 & 129 \end{pmatrix}.$$

где j -я строка соответствует номеру типа материала, а i -й столбец – номеру фирмы согласно таблице ($j = 1, 2, 3$; $i = 1, 2, 3$).

Ответ на второй вопрос, который был поставлен в задаче, можно получить таким же образом, что в первом, аналогично произвести произведение столбцов вектора DC нужда фирмы во всех типах материала:

$$DC_1 = \begin{pmatrix} 26040 & 28800 & 14580 \\ 35070 & 3080 & 21420 \\ 40110 & 43520 & 24480 \end{pmatrix}.$$

Введем вектор цены материала: $Q = (70, 80, 90)$

Тогда цену годового запаса материала для каждой фирмы можно получить произведя операцию над матрицами, а точнее умножением матриц , следовательно , вектора Q на матрицу $DC1$:

$$P = QDS_1 = (8238300 \quad 8979200 \quad 4937400).$$

Хочется сказать о том, что, суммы кредитования фирм для закупки материала определяются путем аналогии всех компонентов вектора P .

Подводя итоги вышесказанному можно сказать о том, что в современной математике и экономике матрицы играют важную роль и являются неотъемлемой частью ее. Активно могут быть использованы в различных теориях, в экономике, менеджменте и многих других разделах естествознания и наукознания, не говоря уже о применении матриц в разных направлениях учебной деятельности .

Мы смогли выявить лишь один недостаток, Он заключается в том , что по матрицам крайне сложно, даже практически невозможно определить победителя в каких-то сферах деятельности.

Также хочется отметить ряд огромных плюсов и достоинств матриц : Во-первых, они позволяют форме записывать на простом и доступным языком различные экономические процессы и закономерности в различных организациях и не только ,во-вторых, благодаря им решаются самые сложные задачи, которые могут показаться почти невыполнимыми, что является наиболее значимым для экономистов. В-третьих, с помощью матриц можно за короткий промежуток времени, сил и труда полностью проанализировать и решить множество задач. И можно сказать о том, что при присутствии каких-либо отрицательных факторов применения матричной алгебры положительные моменты превосходят в несколько раз.

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ФОРМИРОВАНИЕ И РАЗВИТИЕ ИНОЯЗЫЧНОЙ КОММУНИКАТИВНОЙ КОМПЕТЕНЦИИ

Аннотация: в данной статье утверждается, что важность общеязыковых реалий, связанных с культурой общения, являются важным аспектом в формировании коммуникативной компетентности подростка, использование различных методов преподавания с учетом коммуникативной компетенции подростка на английском языке при помощи использования различных лингвистических и социокультурных ценностей. А также роль семьи в обучении подростка иностранному языку.

Ключевые слова: лексика, особенность, реальность, методология, компетентность.

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FORMATION AND DEVELOPMENT OF FOREIGN LANGUAGE COMMUNICATIVE COMPETENCE

Abstract: this article argues that the importance of general language realities associated with the culture of communication is an important aspect in the formation of the communicative competence of a teenager, the use of various teaching methods, taking into account the communicative competence of a teenager in English, using various linguistic and socio-cultural values. As well as the role of the family in teaching a teenager a foreign language.

Key words: vocabulary, peculiarity, reality, methodology, competence.

Интегрированный подход к обучению широко используется в системе современного отечественного и зарубежного образования в преподавании различных учебных предметов и курсов. В Государственном образовательном стандарте высшего профессионального образования подчеркивается, что у специалиста должна быть развита способность «реального общения с носителями языка и с аутентичными

источниками информации», а также «коммуникативная способность на изучаемом языке, ядро которой составляет коммуникативная компетенция». Подчеркнем, что коммуникативная компетенция не сводится к овладению только вербальным кодом изучаемого языка. В концепциях ряда зарубежных и отечественных авторов актуализирована необходимость освоения коммуникативных стратегий, детерминирующих коммуникативную состоятельность личности.

Согласно «Англо-русскому терминологическому справочнику по методике преподавания иностранных языков» под интегрированным подходом к обучению языку понимается «взаимосвязанное формирование умений во всех видах речевой деятельности – аудировании, говорении, чтении и письме». Вся система образования, учебно-воспитательной работы школы направлено на социальные формирование взглядов подростков, понимание развития природы, общества, сознания человека. Если изучение истории помогает подросткам правильно понять явления общественной жизни, даёт их научное объяснение, то художественная литература эмоционально воздействуя на чувства, учит ребят соотносить социальные процессы и явления с судьбами конкретных людей, учит сопереживанию и сочувствию. Помочь подросткам понять учебные материалы – задача не только учителя, но и родителей, задача благородная и ответственная.

На начальных этапах обучения языку у учащихся формируются отдельные навыки или их компоненты, а на продвинутых – они синтезируются в интегрированные навыки. В сложном типе интегрированного навыка работают умения трех видов речевой деятельности, чтение, аудирование и письмо. Такие задания всегда вызывают у студентов живой интерес и помогают снять напряжение и расслабиться после интенсивной умственной нагрузки во время урока.

Таким образом, в ходе подобных занятий одновременно функционируют несколько видов речевой деятельности – чтение, аудирование, говорение и письмо, развивается способность воспринимать и обрабатывать информацию из разных источников, происходит более глубокое усвоение аутентичного учебного материала, повышается познавательный интерес и творческая активность студентов, что в конечном счете направлено на достижение главной цели учебного процесса – формирование и развитие иноязычной коммуникативной компетенции.

Цифровизация и информатизация современного мира существенно повлияли, среди прочего, на доступность и объём получаемой информации, её разнообразие и, одновременно, противоречивость. Изменение ритма жизни, связанного с этими процессами, неизбежно влияет на основные когнитивные функции человека: внимание, мышление, память. Представляется невозможным модернизировать современную образовательную систему с тем, чтобы она позволяла отвечать на новые

вызовы, без учёта процессов, происходящих как в общественной сфере, так и на личностном уровне.

Как отмечается, критические размышления могут возникнуть лишь в условиях неопределённости и напряжённости относительно имеющихся личностных убеждений и ценностей. Некоторые исследования показали, что более значительных результатов обучающиеся достигают в условиях столкновения с идеями, отличными от их собственных. Именно посредством такого когнитивного диссонанса они начинают мыслить критически и способны пересматривать свои исходные взгляды.

Посредством рефлексивной модели обучающиеся лучше усваивают новое, связывают его с тем, что уже известно, адаптируют это новое к своим целям и переводят мысль в действие. Это способствует развитию креативности, способности мыслить критически, а также развивает метакогнитивные способности (т. е. способность наблюдать за процессом собственного мышления). В результате внутригруппового обмена мнениями могут появиться абсолютно новые идеи, не рассматриваемые до обсуждения, что представляет особую ценность. Осознание важности навыков критического мышления стимулирует к поиску новых технологий их развития при обучении иностранному языку.

Семья формирует в мировоззрении подрастающего поколения определённый уровень: принцип отношений с людьми очень близкими и дорогими, уровень зависимостей, который даже не всегда осознаётся, а как бы ощущается кожей, постоянно присутствует в жизни человека. Подростковый возраст – проверка, насколько успешно шло формирование мировоззрения ребёнка в семье. Преподаватель должен быть компетентен в области психологии, в частности, в области возрастной психологии. То, что подросток будет знакомиться с общими закономерностями возможно более рано, несколько не помешает усвоить конкретные факты; напротив, тогда отдельные факты лучше и понимаются, и запоминаются. Вместе с тем если умеешь охватить область какого-то знания целиком, то можно увидеть не только те факты, которые укладываются в известную закономерность, но и те, которые никак не могут быть ею объяснены.

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ПРЕОБРАЗОВАНИЕ ЭКОНОМИЧЕСКИХ ЗАДАЧ В ЗАДАЧИ ЛИНЕЙНОГО ПРОГРАММИРОВАНИЯ И РЕШЕНИЕ МЕТОДОМ СИМПЛЕКСА

***Аннотация:** В данной статье рассматриваются проблемы сведения экономических задач к задаче линейного программирования и решения их симплекс-методом. Особое внимание уделяется использованию линейной алгебры и симплексных таблиц для решения задач линейного программирования.*

***Ключевые слова:** симплекс метод, оптимальное решение, функция, таблица*

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TRANSFORMING ECONOMIC PROBLEMS INTO LINEAR PROGRAMMING PROBLEMS AND SOLVING THE SIMPLEX METHOD

***Annotation:** This article focuses on the problems of bringing economic problems to the problem of linear programming and solving them by the simplex method. Emphasis is placed on using linear algebra and simplex tables to solve linear programming problems.*

Key words: *simplex method, optimal solution, function, table*

Введение

Идея симплексного метода (метода последовательного улучшения) заключается в том, что, начиная с некоторого исходного опорного решения, осуществляется последовательно направленное перемещение по опорным решениям задачи к оптимальному. Симплекс-метод является универсальным, так как позволяет решить практически любую задачу линейного программирования, заданную в каноническом виде. Значение целевой функции при этом перемещении для задач на максимум не убывает. Так как число опорных решений конечно, то через конечное число шагов получим оптимальное опорное решение.

Симплексные таблицы и алгоритм решения .

Приведем здесь алгоритм решения задач симплексным методом.

1. Математическая модель задачи должна быть канонической. Если в исходной формулировке задача неканоническая, то ее надо привести к каноническому виду.

2. Находим исходное опорное решение и проверяем его на оптимальность. Для этого заполняем симплексную таблицу. Все строки таблицы 1-го шага, за исключением строки Δ_j (индексная строка), заполняем по данным системы ограничений и целевой функции.

Симплексная таблица имеет следующий вид.

		C_1	C_2	...	C_m	C_{m+1}	...	C_n	$L(\bar{x})$
C_i	Базисная переменная	x_1	x_2	...	x_m	x_{m+1}	...	x_n	b_1
C_1	x_1	1	0	...	0	$h_{1,m+1}$	...	h_{1n}	f_1
C_2	x_2	0	1	...	0	$h_{2,m+1}$	...	h_{2n}	f_2
...	...	...	...	...	...	...	...	...	...
C_m	x_m	0	0	...	1	$h_{m,m+1}$	...	h_{mn}	f_m
Δ_j		0	0	...	0	Δ_{m+1}	...	Δ_n	$L(\bar{x}_1)$

Индексная строка Δ_j для переменных находится по формуле $c_i h_{ij}$

$$\Delta_j = \sum_{i=1}^m c_i h_{ij} - c_j, \quad j = 1, n,$$

и по формуле

$$\Delta_j = \sum_{i=1}^m c_i f_i$$

- для свободного члена.

Возможны следующие случаи при решении задачи на максимум:

- если все оценки $\Delta_j \geq 0$, то найденное решение оптимальное;
- если хотя бы одна оценка $\Delta_j \leq 0$, но при соответствующей переменной x_j нет ни одного положительного коэффициента, решение задачи прекращается, так как $L(x) \rightarrow \infty$, т.е. целевая функция не ограничена в области допустимых решений;
- если хотя бы одна оценка отрицательная, а при соответствующей переменной есть хотя бы один положительный коэффициент, то нужно перейти к другому опорному решению;
- если отрицательных оценок в индексной строке несколько, то в столбец базисной переменной (БП) вводят ту переменную, которой соответствует наибольшая по абсолютной величине отрицательная оценка.

Пусть одна оценка $\Delta_k < 0$ или наибольшая по абсолютной величине $\Delta_k < 0$, тогда k -й столбец принимаем за ключевой. За ключевую строку принимаем ту, которой соответствует минимальное отношение свободных членов (b_i) к положительным коэффициентам k -го столбца. Элемент, находящийся на пересечении ключевой строки и столбца, называют ключевым элементом.

3. Заполняем симплексную таблицу 2-го шага: переписываем ключевую строку, разделив ее на ключевой элемент.

заполняем базисные столбцы;

остальные коэффициенты таблицы находим по правилу «прямоугольника». Оценки можно считать по приведенным ранее формулам или по правилу «прямоугольника». Получаем новое опорное решение, которое проверяем на оптимальность и т. д.

Примечания:

1. Если целевая функция $L(x)$ требует нахождения минимального значения, то критерием оптимальности задачи является неположительность оценок Δ_j при всех $j=1, n$.

2. Правило «прямоугольника» состоит в следующем. Пусть ключевым элементом предыдущего шага является элемент 1 -й строки $(m+1)$ -го столбца $h_{1,m+1}$. Тогда элемент i -й строки $(m+2)$ -го столбца последующего шага, который обозначим $h_{i,m+2}$, по правилу «прямоугольника» определяется по формуле

$$h_{i,m+2} = (h_{1,m+1} h_{1,m+2} - h_{1,m+1} h_{1,m+2}) / h_{1,m+1},$$

где $h_{i,m+2}$, $h_{i,m+1}$, $h_{1,m+1}$ - элементы предыдущего шага.

2. Применение симплексного метода в задачах ЛП

Поясним применение симплексного метода.

Предприятие располагает тремя производственными ресурсами (сырьем, оборудованием, электроэнергией) и может организовать

производство продукции двумя различными способами. Расход ресурсов и амортизация оборудования за

один месяц и общий ресурс при каждом способе производства дан в таблице (в ден. ед.).

Производственный ресурс	Расход ресурсов за 1 месяц		Общий ресурс
	1-й способ	2-й способ	
Сырье	2	4	8
Оборудование	2	2	6
Электрoэнергия	4	2	16

При первом способе производства предприятие выпускает за один месяц 6 тыс. изделий, при втором - 8 тыс. изделий.

Сколько месяцев должно работать предприятие каждым из этих способов, чтобы при наличных ресурсах обеспечить максимальный выпуск продукции?

Решение. Составим математическую модель задачи. Для этого введем обозначения:

- x_1 - время работы предприятия первым способом,
- x_2 - время работы предприятия вторым способом.

Тогда задача ЛП формулируется следующим образом: найти максимум целевой функции

$$L(\bar{x}) = 3x_1 + 8x_2 \rightarrow \max$$

при ограничениях

$$2x_1 + 4x_2 \leq 8,$$

$$2x_1 + 2x_2 \leq 6,$$

$$4x_1 + 2x_2 \leq 16,$$

$$x_1 \geq 0, x_2 \geq 0.$$

Приведем задачу к каноническому виду, для чего добавим в правые части ограничений дополнительные неизвестные x_3 , x_4 и x_5 (балансовые переменные) при ограничениях

$$2x_1 + 4x_2 + x_3 = 8,$$

$$2x_1 + 2x_2 + x_4 = 6,$$

$$4x_1 + 2x_2 + x_5 = 16,$$

$$x_j \geq 0 \quad j=1,5.$$

Теперь составим симплексную таблицу 1-го шага:

C_i	БП	6	8	0	0	0	$L(\bar{x})$
		x_1	x_2	x_3	x_4	x_5	b_i
0	x_3	2	4	1	0	0	8

0	x_4	2	2	0	1	0	6
0	x_5	4	2	0	0	1	16
Δ_j		-6	-8	0	0	0	0

$$\bar{x}_1 = (0, 0, 8, 6, 16), L(\bar{x}) = 0$$

В индексной строке Δ_j имеются две отрицательные оценки, значит, найденное решение не является оптимальным и его можно улучшить. В качестве ключевого столбца следует принять столбец базисной переменной x_2 , а за ключевую строку – строку переменной x_3 , где $\min(8/4, 6/2, 16/2) = \min(2, 3, 8) = 2$.

Ключевым элементом является «2». Вводим в столбец БП переменную x_2 , выводим x_3 . Составляем симплексную таблицу 2-го шага :

C_i	БП	6	8	0	0	0	$L(\bar{x})$
		x_1	x_2	x_3	x_4	x_5	b_i
8	x_2	1/2	1	1/4	0	0	2
0	x_4	1	0	-1/2	1	0	2
0	x_5	3	0	-1/2	0	1	12
Δ_j		-2	0	2	0	0	16

$$\bar{x}_2 = (0, 2, 0, 2, 12), L(\bar{x}_2) = 16.$$

В индексной строке имеется одна отрицательная оценка. Полученное решение можно улучшить. Ключевым элементом является «1». Составляем симплексную таблицу 3-го шага:

C_i	БП	6	8	0	0	0	$L(\bar{x})$
		x_1	x_2	x_3	x_4	x_5	b_i
8	x_2	0	1	1/2	-1/2	0	1
6	x_1	1	0	-1/2	1	0	2
0	x_5	0	0	1	-3	1	6

Δ_j	0	0	1	2	0	20

Все оценки свободных переменных $\Delta_i \geq 0$, следовательно, найденное опорное решение является оптимальным:

$$\bar{x}_{\text{опт}} = (2, 1, 0, 0, 6), L(\bar{x})_{\text{max}} = 20.$$

Ответ. Первым способом предприятие должно работать два месяца, вторым - один месяц, при этом максимальный выпуск продукции составит 20 тыс. ед.

Заключение : Решение задачи линейного программирования симплекс-методом является универсальным методом, не ограничивающим число переменных, как графический метод. Кроме того, алгоритм решения задачи линейного программирования симплекс-методом доступен во многих практических приложениях. В частности, задачу линейного программирования можно решить простым способом с помощью программ MS Excel, POM QM для Windows.

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ИННОВАЦИОННЫЕ ТЕХНОЛОГИИ В РАБОТЕ СОЦИАЛЬНОГО РАБОТНИКА С ПОЖИЛЫМИ ЛЮДЬМИ

Аннотация: В данной статье рассматриваются вопросы внедрения инноваций в социальное обслуживание граждан пожилого возраста и инвалидов в отделении социального обслуживания на дому граждан пожилого возраста и инвалидов. Целью статьи является представить направления социальной работы для обеспечения доступа граждан пожилого возраста к информационным и образовательным ресурсам, формирования условий для досуга пожилых людей. Статья разработана на основе существующих теоретических изданий о социальной работе и нормативно-правовых актов об основах социальной работы.

Ключевые слова: Социальная работа, организация социальной работы, внедрение новых технологий в социальную работу, пожилые люди.

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INNOVATIVE TECHNOLOGIES IN WORK OF SOCIAL WORKER WITH ELDERLY PEOPLE

Abstract: This article deals with the introduction of innovations in social services for elderly and disabled citizens in the department of social services at home for elderly and disabled citizens. The purpose of the article is to present the directions of social work to provide elderly citizens with access to information and educational resources, formation of conditions for leisure of elderly people. The article is developed on the basis of existing theoretical publications on social work and normative-legal acts on the basics of social work.

Key words: Social work, organization of social work, introduction of new technologies in social work, elderly people.

Для качественной социальной работы с пожилыми людьми необходимо усвоение инновационных технологий социальной работы с данной группой населения. Национальные проекты, объявленные Президентом Российской Федерации, выдвигают перед обществом ряд серьезных задач, главной из

которых является увеличение продолжительности, уровня и качества жизни, улучшения социального благополучия пожилых граждан, формирования условий для активного долголетия. У пожилых людей в современном мире появляются новые социальные потребности, что обуславливает необходимость внедрения инноваций в социальную сферу как ведущий инструмент повышения качества их жизни. В настоящее время по данным на 01.02.2025 года, на территории Большереченского района проживает пожилых людей от 60 лет - 5351 человек, а долгожителей старше 80 лет - 321 человек. На социальном обслуживании состоит 1056 человек пожилых граждан. В 1995 году начался мой трудовой путь в должности социального работника в отделении социального обслуживания на дому граждан пожилого возраста и инвалидов в комплексном центре социального обслуживания населения Большереченского района. Моя работа заключается в предоставлении гражданам социальных услуг таких как: социально-бытовые; правовые, социально-медицинские; социально-психологические. Улучшение социально-экономического положения пожилых граждан и инвалидов, повышение их социального статуса, активизация роли в жизни – приоритет социальной работы в интересах пожилых людей, предмет постоянной заботы социальных работников комплексного центра. Работа с гражданами пожилого возраста в отделении социального обслуживания на дому граждан пожилого возраста и инвалидов № 4 на территории р.п. Большеречье мною организована в соответствии плана мероприятий по повышению качества жизни граждан пожилого возраста на 2022 – 2025 годы, который направлен на решение следующих задач:

- обеспечение доступа граждан пожилого возраста к информационным и образовательным ресурсам;
- вовлечение пожилых людей в активную общественную деятельность;
- формирование условий для досуга пожилых людей.

Мною определены 4 направления работы с гражданами пожилого возраста: образовательное, добровольческое, патриотическое, культурно-досуговое и спортивно-оздоровительное. План носит межведомственный характер. К реализации плана мероприятий привлекаются практически все структурные подразделения: администрация Большереченского района, областные и федеральные структуры (налоговая инспекция, управление Пенсионного фонда в р.п. Большеречье, УМВД России по Большереченскому району Омской области и др.). Образовательное направление с гражданами пожилого возраста представлено вовлечением их в работу "Школа активного долголетия", которая действует при БУ "КЦСОН Большереченского района" на базе отделения социального обслуживания на дому граждан пожилого возраста и инвалидов с 2022 года. Обучение в Школе проходит по территориальному принципу на базе комплексного центра в онлайн - формате, что позволяет пожилым гражданам получать знания по месту жительства. Дополнительное образование получили уже более 130 вовлечённых пожилых жителей р.п. Большеречья. Образовательный процесс организован по 5

направлениям: финансовая грамотность, компьютерная грамотность, школа здорового образа жизни, правовая грамотность, школа безопасной жизнедеятельности, досуг. С 2023 года по просьбе клиентов расширили перечень организаций и подразделений района, привлечённых к проведению занятий: отделения Сбербанка, нотариуса, специалистов кадастровой палаты и другие структуры. В рамках курса занятий по обучению финансовой грамотности пожилые граждане р.п. Большеречья узнали о налогах и их уплате, о правилах пользования банкоматами и электронными устройствами; о структуре оплаты за жилищно-коммунальные услуги; о мерах социальной поддержки жителей села по оплате за жилищно-коммунальные услуги. В качестве волонтёров привлекали учителей и библиотекарей школ, которые преподавали основы компьютерной грамотности. Курсы занятий по обучению компьютерной грамотности проходят по двум уровням: "Начинающий пользователь" и "Уверенный пользователь". Пожилые люди, находящиеся на моём социальном обслуживании, по-прежнему, хотят быть в курсе всех событий, происходящих в мире, общаться с друзьями, расширять социальные контакты. Учитывая интересы обслуживаемых граждан, процесс обучения в Школе включает курс - "информационное пространство". Граждане пожилого возраста узнают об интересных сайтах для пожилых людей, как правильно совершать интернет-покупки. Пожилые люди, посещающие "Школу активного долголетия" каждый год являются участниками районных и областных чемпионатов "Азбука интернета". Курс занятий по получению знаний здорового образа жизни включал в себя лекции на темы: "Профилактика болезней людей пожилого возраста", "Правила аптечки. Применение лекарственных средств и средств народной медицины", "Мониторинг состояния здоровья и факторы, влияющие на активное долголетие", "Психологические особенности пожилых людей". На курсах по правовой грамотности пожилые люди узнали много нового об изменениях в законодательстве, о том, что должен знать потребитель, о компенсации расходов на уплату взносов на капитальный ремонт, овладели основами гражданского законодательства. Дополнительные знания, полученные по финансовой безопасности, помогли пожилым людям избежать мошенничества. Были организованы встречи с главным участковым полиции р.п. Большеречья. Пожилые люди изучили актуальные темы по "Пенсионному всеобучу":

- виды пенсий назначенных в РФ, страховая пенсия – порядок перерасчёта и что нужно знать о накопительной пенсии;
- правопреемство пенсионных накоплений, управление средствами пенсионных накоплений;
- перерасчёт пенсий, связанной с заменой периодов работы на не страховые периоды, назначение компенсационной выплаты по уходу;
- ежемесячная денежная выплата федеральным льготникам.

Курс занятий по активному долголетию уже посетили более 50 вовлечённых мною пожилых людей. Они получили знания по укреплению

здоровья. Курс включал в себя лекции на тему здорового питания для определённых возрастных групп, как сохранить хорошее самочувствие, а также посетили занятия по адаптивной физической культуре на базе отделения социальной реабилитации граждан с ограниченными возможностями здоровья и пожилого возраста. В течение курса "Школы активного долголетия" слушатели имели возможность овладеть новыми знаниями, проявить свои творческие способности, участвовать в спортивных и досуговых мероприятиях. К проведению мероприятий мною были привлечены специалисты администрации Большереченского района, Бюджетного учреждения здравоохранения Омской области "Большереченская центральная районная больница", бюджетного учреждения культуры Большереченского муниципального района Омской области, муниципального казенного учреждения Большереченского муниципального района "Центр по делам молодёжи, физической культуры и спорта" Большереченского муниципального района. В связи с растущей потребностью посещения пожилыми людьми Школы "третьего возраста", организованной на постоянной основе в 2024 году, обучение граждан, состоящих на моём обслуживании, продолжается по следующим направлениям: финансовая и экономическая грамотность, информационное пространство, культура и искусство, активное долголетие. В программу обучения в 2025 году включен новый курс – "Культура и искусство для пожилых". Он будет проходить на базе Большереченской районной библиотеки. Граждане старшего поколения, состоящие на моём обслуживании, являются активными участниками волонёрского движения. На базе отделения действует добровольческое движение, основная цель которого является оказание помощи нуждающимся жителям Большереченского района. Деятельность осуществляют пока 10 граждан пожилого возраста, которые вовлечены мною в социально-значимую работу по оказанию услуг нуждающимся гражданам. Волонтеры оказывают помощь одиноким пожилым жителям, инвалидам, оказавшимся в трудной жизненной ситуации. В результате волонёрского движения для одиноких пожилых людей и инвалидов организовывалось добровольцами сопровождение к объектам социального назначения; несложные работы по дому; покупка продуктов; лекарств; оказание сезонных работ; помощь во взаимодействии с жилищно-коммунальными службами и т. д. Пожилые волонтеры активно участвовали в организации и проведении благотворительных акций по сбору вещей, экологических десантах, посещали нуждающихся в помощи граждан по месту жительства. За два года волонтеры оказали помощь более 50 жителям р.п. Большеречья. Активно взаимодействуют волонтеры с образовательным учреждением в вопросах патриотического воспитания молодёжи. Граждане старшего поколения проводят уроки мужества, круглые столы, встречи со школьниками. Тематические мероприятия "Герои в наших сердцах". Волонтеры совместно со школьниками принимали активное участие в посадке деревьев на аллее памяти, ежегодно участвуют во

Всероссийской акции "Бессмертный полк". Однако одной из самых главных задач является организация содержательного досуга и проведение спортивно-оздоровительных мероприятий. Для этого в нашем отделении, при содействии других специалистов организован и действует клуб "Иван да Мария" по следующим направлениям: рукоделие, кулинария, ЗОЖ, песенное и танцевальное творчество, в котором находят занятия по душе более 75 граждан пожилого возраста и инвалидов. Смысл и содержание клубной деятельности заключается в общении и информационном обмене, что обеспечивает организованный и содержательно-полезный досуг каждому участнику клуба. Итогами работы клуба служат организация и проведение выставок декоративно - прикладного искусства и серии мастер-классов "Формула рукоделия". На заседаниях члены клуба общаются, делятся секретами рукоделия, шьют, вяжут, показывают своё мастерство, рассказывают о народно-прикладном творчестве, изготавливают сувениры для своих родных, друзей, близких, вяжут носки и рукавицы для участников СВО. Граждане пожилого возраста, состоящие на моём обслуживании, вносят огромный вклад в пропаганду здорового образа жизни и развитие физической культуры. Их неиссякаемая энергия и задор – пример для молодёжи. Активисты посещают плавательный бассейн, систематически проводят "дни здоровья" и спортивные мероприятия "Здоровое тело – здоровый дух", "Весёлые старты для пожилых", "Сильные духом, крепкие закалкой!", "Спартакиада ветеранов" и т. д. Направление туризм является уникальным средством реабилитации и социализации, даёт возможность полноценного общения и интеграции пожилых людей в обществе. Бюджетное учреждение "Комплексный центр социального обслуживания населения Большереченского района" организует экскурсии для пожилых граждан в Омский государственный историко-культурный музей-заповедник "Старина Сибирская".

Как результат инновационной деятельности в работе социального работника с пожилыми людьми - улучшение качества социального обслуживания, сохранение и продление социальной активности и долголетия пожилых людей, увеличение клиентской востребованности КЦСОН по социальному обслуживанию, повышение имиджа организации и статуса отрасли в целом.

Использованные источники:

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МЕСТО МОДИФИЦИРОВАННОЙ ХОЛЕЦИСТЭКТОМИИ В ХИРУРГИИ ХРОНИЧЕСКОГО КАЛЬКУЛЕЗНОГО ХОЛЕЦИСТИТА

***Аннотация:** Авторами проанализированы результаты хирургического лечения 1929 пациентов с хроническим калькулезным холециститом (ХКХ). Пациенты были разделены на две группы: группу сравнения (776 пациентов, 2016–2018 гг.) и основную группу (1153 пациента, 2019–2021 гг.). Группа сравнения включала 75 пациентов с традиционной холецистэктомией (ТХЭ), 536 с лапароскопической холецистэктомией (ЛХЭ) и 165 с холецистэктомией из мини-доступа. Основная группа состояла из 76 пациентов с ТХЭ, 715 с ЛХЭ, 362 с модифицированным минимально инвазивным доступом. Авторы резюмируют, что модифицированный способ холецистэктомии из мини-доступа является надежной альтернативой лапароскопической холецистэктомии, особенно при наличии противопоказаний.*

***Ключевые слова.** желчнокаменная болезнь, холецистэктомия, мини-доступ.*

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PLACE OF MODIFIED CHOLECYSTECTOMY IN SURGERY OF CHRONIC CALCULUS CHOLECYSTITIS

Annotation: *The authors analyzed the results of surgical treatment of 1929 patients with chronic calculous cholecystitis (CCC). The patients were divided into two groups: a comparison group (776 patients, 2016–2018) and a main group (1153 patients, 2019–2021). The comparison group included 75 patients with traditional cholecystectomy (TCE), 536 with laparoscopic cholecystectomy (LCE), and 165 with cholecystectomy through a mini-access. The main group consisted of 76 patients with TCE, 715 with LCE, 362 with a modified minimally invasive access. The authors summarize that the modified method of cholecystectomy through a mini-access is a reliable alternative to laparoscopic cholecystectomy, especially in the presence of contraindications.*

Keywords. *cholelithiasis, cholecystectomy, mini-access.*

Актуальность. Желчнокаменная болезнь (ЖКБ), занимая третье место в общей структуре заболеваний после сердечно сосудистых заболеваний и сахарного диабета, по сей день является одной из важной медицинской и социальной проблемой, которая оказывает существенное влияние на жизнедеятельность населения и нередко, омрачается развитием жизнеугрожающих осложнений, а также ростом частоты оперативных вмешательств [3;10;11;12].

Используются различные методы, такие традиционная лапаротомия, лапароскопическая холецистэктомия (ЛХЭ), минилапаротомные операции. Однако до сих пор нет единого стандарта лечения данной категории больных и по итогу выбор одного метода над другим, основывается на предпочтениях хирурга и традициях клиники [1;5;7;8;9;11]. В связи с этим, проблема диагностики и хирургического лечения ХКХ имеет не только медицинское, но и важное социально-экономическое значение, а клинические исследования, касающиеся оптимизации и совершенствования методов холецистэктомии (ХЭ) являются одними из наиболее актуальных в современной хирургии [2;4;6].

Цель исследования. улучшение результатов хирургического лечения хронического калькулезного холецистита, путем усовершенствования холецистэктомии из минидоступа.

Материалы и методы. Исследование охватывает 1929 пациентов с хроническим калькулезным холециститом (ХКХ), которые были планово прооперированы в 3-м хирургическом отделении клиники АндГосМИ с 2016 по 2021 годы. В соответствии с поставленными задачами, пациенты были разделены на две группы: **группа сравнения** (776 пациентов, 40,3%): включало 776 пациентов, прооперированных в период с 2016 по 2018 годы. Эти данные были использованы для ретроспективного анализа, что позволило выявить основные тенденции и подходы в лечении ХКХ до внедрения новых методик.

Основная группа (1153 пациента, 59,7%): охватывало 1153 пациентов, прооперированных в период с 2019 по 2021 годы. В этой группе были применены усовершенствованные хирургические методики, включая новые технические приемы и оптимизированную хирургическую тактику. Это позволило оценить эффективность и безопасность внедренных инноваций, а также сравнить результаты с группой сравнения.

В группе сравнения, включающей 776 пациентов, традиционная холецистэктомия (ТХЭ) была выполнена у 75 (9,6%) больных, лапароскопическая холецистэктомия (ЛХЭ) - у 536 (69,1%), а ХЭ из мини-доступа - у 165 (21,3%).

В основной группе, состоящей из 1153 пациентов, ТХЭ была проведена у 76 (6,6%) больных, ЛХЭ — у 715 (62,0%), а ХЭ из мини-доступа - у 165 (21,3%)., включая 362 пациента (31,4%) с использованием модифицированного минимально инвазивного доступа.

В обеих группах преобладали пациенты молодого возраста (18–44 лет), составляя 379 (48,8%) и 535 (46,4%) соответственно. В группе сравнения пациенты среднего возраста (45–59 лет) составили 211 (27,2%), а в основной группе - 356 (30,9%). Пациенты старше 60 лет составили 128 (16,5%) в группе сравнения и 182 (15,8%) в основной группе. Возрастная группа 75 лет и старше включала 58 (7,5%) и 80 (6,9%) пациентов соответственно.

Такие «возрастные» особенности усугубляют сложность хирургического лечения больных с ЖКБ, вследствие выраженной полиморбидности этой возрастной группы. Также установлено, что чаще болеют лица женского пола (в группе сравнения - 81,6%; в основной - 82,5%, с соотношением 4:1).

Процесс обследования состоял из общепринятых и специальных методов лучевой диагностики: ультразвуковое сканирование гепатобилиарной зоны (УЗИ) и рентгенологические исследования (по показаниям: пероральная холецистография; внутривенная холангиохолецистография; эндоскопическая ретроградная панкреатикохолангиография), а также фиброэзофагогастродуоденоскопии и МРТ.

Ретроспективный анализ результатов хирургического лечения в группе сравнения показал, что допущены ряд тактических и технических упущений. В частности, это:

- 1) частое применение право подрёберного доступа, сопровождающегося пересечением правой прямой мышцы живота, нередко являлось причиной развития послеоперационной грыжи;
- 2) не учитывались характер изменений в ЖП, локализация и диаметр конкрементов;
- 3) при лигировании и мобилизации культи ЖП применяли капроновую нить, что явилось причиной развития желчного (перитонита) свища в послеоперационном периоде;
- 4) стремление к малотравматичному доступу при ЛХЭ являлось

нередкой причиной конверсии;

5) при наличии сморщенного ЖП применена ЛХЭ, что явилось причиной развития кровотечения из ложа печени.

6) ХЭ из мини-доступа применялась в начальном без предварительной оценки телосложения больного.

7) при наложении швов на кожу применялись многоразовые иглы, что явилось причиной развития гнойно-септических осложнений.

8) применение множества дооперационных диагностических комплексов, далеко не всегда давали принципиально новую информацию. Вместе с тем, значительно увеличивают продолжительность дооперационного обследования, утомляют больных и иногда являются мотивом отказа пациентов от настоятельно необходимого хирургического лечения, что ведет к конфликту между диентологическим аспектом проблемы диагностики и практической целесообразностью использования многочисленных методов.

Ретроспективный анализ упущений в группе сравнения, позволил нам модифицировать способ ХЭ из мини-доступа, что в целом позволило оптимизировать хирургическую тактику.

Задачей изобретения являлось повышение эффективности ХЭ из мини-доступа у пациентов различного телосложения при уменьшении травматичности, достижения косметичности рубца и сокращение времени операции. Техническим результатом является универсальность разреза для различного телосложения и расположения ЖП (рис. 1. а, б; 2. а, б).

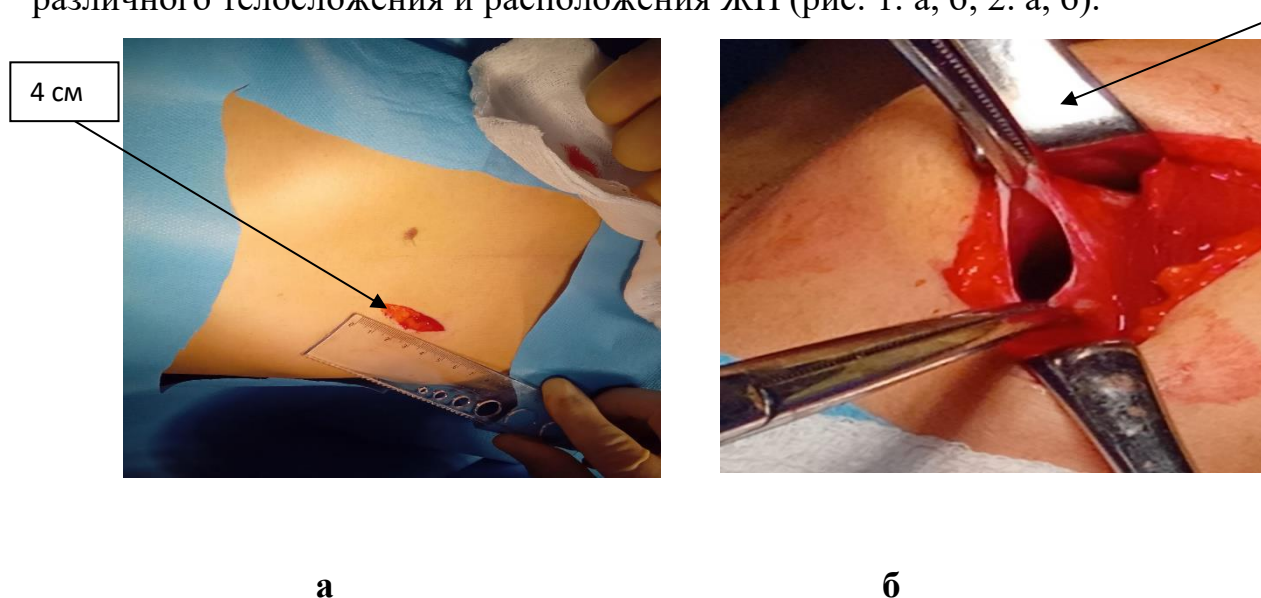


Рисунок 1. Этапы модифицированной холецистэктомии. а) разрез кожи с подкожно-жировой клетчаткой; б) вскрытие брюшины.

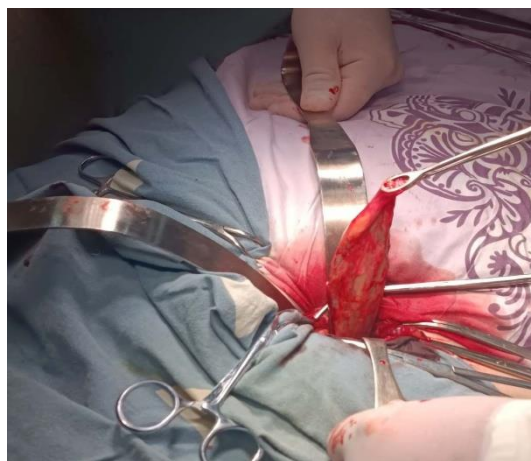
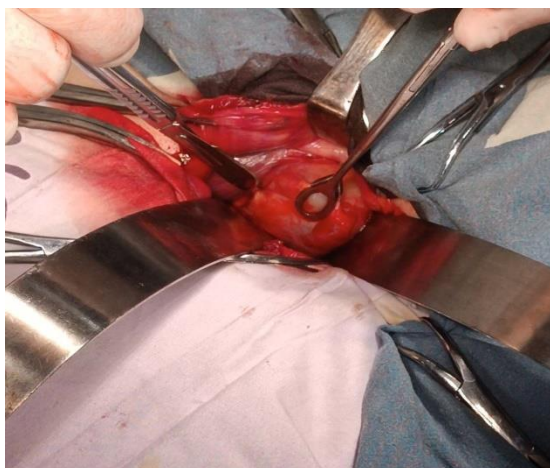


Рисунок 2. Этапы модифицированной холецистэктомии. а) Захват дна ЖП после введения салфеток Купера; б) Вид ЖП после мобилизации, перед лигированием его шейки.

Длительность операции при хроническом холецистите от 18 до 25 минут. Предлагаемый способ не известен и соответствует критериям «новизна» и «изобретательский уровень». Способ может быть использован при оперативных вмешательствах на ЖП, проводимых с использованием предложенных ретракторов, следовательно, «промышленно применим».

Таким образом, обеспечивается универсальность разреза для различного телосложения и расположения ЖП, а также уменьшении травматичности, косметичность рубца и снижение развитие гнойно-септических осложнений. Кроме того, в способе впервые используются хирургические инструменты (ретракторы шириной 2 см, длиной 25 см), что значительно выгоднее в плане финансовых затрат по сравнению с лапароскопическими и традиционными методами операции, снижается травматичность операции за счет сохранения целостности нервных окончаний, правой прямой и косых мышцы живота, небольшой, и косопоперечный разрез (до 4 см) и пластические швы дают лучший косметический эффект, а также снижают продолжительность операции.

Результаты и обсуждения. Для оценки ближайших результатов, исследуемые больные в зависимости от характера осложнений разделены на 3 подгруппы. 1. Осложнения, непосредственно связанные с методом операции (ятрогенные повреждения и послеоперационные осложнения, характерные для вмешательства на ЖП и общем ЖПр). 2. Гнойно-септические (раневые) осложнения. 3. Послеоперационные осложнения общего характера (возникающие при всех видах оперативных вмешательствах).

В процессе исследования, в основной группе частота ятрогенных повреждений по отношению к группе сравнения уменьшилось на 12,1% (14,4% до 2,3%), послеоперационные осложнения связанные с оперативным вмешательством - на 5,7% (с 6,3% до 0,6%) и раневые (гнойно-септические) – на 3,65% (с 4,0 до 0,35%), что также позволило увеличить долю больных с

отсутствием послеоперационных осложнений - с 89,7% до 99,0%, снизить частоту летальности с 1,3 до 0,2% и конверсий после ЛХЭ с 7,5 до 0,5%, а также устранить число реопераций с 2,0 до 0,1% ($p=0,005$).

Таким образом, проведенным научно-практическим исследованием определена роль и место модифицированной ХЭ из мини доступа (в наших исследованиях ХЭ из мини-доступа выполнена - в группе сравнения у 21,3% и в основной – у 31,4%), отличающаяся высокой клинической эффективностью, особенно у больных при наличии противопоказаний к ЛХЭ, являясь при этом, не конкурирующими, а взаимно дополняющими способами хирургического лечения ХХХ.

Выводы. При выполнении холецистэктомии по поводу хронического калькулезного холецистита, высокая частота послеоперационных осложнений и летальность часто связаны с тактическими и техническими ошибками. В группе сравнения послеоперационные осложнения, связанные непосредственно с оперативным вмешательством, наблюдались в 6,3% случаев, летальность составила 1,3%, конверсии после лапароскопических холецистэктомий – 7,5%, а реоперации потребовались в 2,0% случаев.

Однако модифицированный способ холецистэктомии из мини-доступа обладает рядом преимуществ, которые делают его более предпочтительным в некоторых клинических ситуациях. Этот метод отличается технической простотой и доступностью, что позволяет минимизировать риск осложнений. Кроме того, универсальность доступа при различном телосложении и расположении желчного пузыря делает его эффективным для пациентов с противопоказаниями к лапароскопической холецистэктомии.

Таким образом, модифицированный способ холецистэктомии из мини-доступа является надежной альтернативой лапароскопической холецистэктомии, особенно при наличии противопоказаний. Его применение может значительно снизить частоту послеоперационных осложнений и летальность, обеспечивая при этом высокий уровень безопасности и эффективности хирургического вмешательства.

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КОНКУРЕНТОСПОСОБНОСТЬ КОМПАНИИ КАК ИНСТРУМЕНТ УКРЕПЛЕНИЯ ЕЁ ЭКОНОМИЧЕСКОЙ БЕЗОПАСНОСТИ

Аннотация: В условиях современного рынка и стремительных изменений в экономике предприятия должны периодически анализировать свою работу, учитывая показатели, относящиеся к финансированию, сокращению расходов и затрат, планированию, а также различным логистическим и технологическим элементам. Все эти действия направлены на улучшение конкурентоспособности с целью усиления позиций на рынке. Эта статья посвящена конкурентоспособности как инструменту повышения экономической безопасности компании.

Ключевые слова: экономическая безопасность, конкурентоспособность, инструмент обеспечения экономической безопасности предприятия.

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INDICATORS OF THE USE OF FIXED ASSETS TO ASSESS THE IMPACT ON ECONOMIC SECURITY

Abstract: In the conditions of the modern market and rapid changes in the economy, enterprises must periodically analyze their work, taking into account indicators related to financing, cost and expense reduction, planning, as well as various logistical and technological elements. All these actions are aimed at improving competitiveness in order to strengthen positions in the market. This article is devoted to competitiveness as a tool for increasing the economic security of a company.

Keywords: economic security, competitiveness, tool for ensuring the economic security of an enterprise.

Главная задача любой компании – сохранять конкурентоспособность. Продукция и услуги, представленные на рынке, должны постоянно демонстрировать высокое качество и соответствовать актуальным

требованиям, что достигается благодаря продуманной стратегии компании [1].

В условиях рыночной экономики конкурентная среда выполняет важную роль, ограничивая силу влияния крупных производителей на уровень прибыли. Это препятствует возможности как покупателей, так и продавцов существенно манипулировать ценами на товары.

Конкурентоспособность компании - это многогранное понятие, не имеющее однозначного определения. В его основе лежит идея соперничества, которое традиционно ассоциировалось с противостоянием двух или более субъектов.

Конкурентоспособность компании можно определить как способность эффективно производить и реализовывать товары и услуги в условиях постоянной конкуренции с другими участниками рынка. При этом конкурентоспособность конкретной организации непосредственно связана с её экономической безопасностью, которая является важным фактором для успешного ведения хозяйственной деятельности [2].

Формирование уникальных рыночных позиций играет ключевую роль в обеспечении устойчивого и продуктивного функционирования предприятия. Конкурентное превосходство позволяет компании обойти конкурентов и достичь больших финансовых результатов, чем у них.

Основания конкурентного преимущества заключаются в продуктивности и продуманной тактике. Обычно такая тактика основывается на исключительности и оригинальности продукта, бренде фирмы, либо лидирующих технологиях [3].

Преимущества конкуренции способствуют повышению стоимости продукции, рациональному использованию ресурсов, расширению клиентской базы и усилению привязанности потребителей к марке. Благодаря широкому спектру отличительных сторон предприятие способно улучшить управление своими процессами производства и управления ресурсами, что укрепляет его финансовую устойчивость и обеспечивает способность преодолевать экономические спады и прогрессировать в непростых обстоятельствах.

Таким образом, вопросы повышения конкурентоспособности, управления рисками и укрепления экономической безопасности тесно взаимосвязаны и требуют комплексного подхода. Конкуренция, являясь стимулом развития, одновременно порождает риски. При игнорировании этих рисков они могут трансформироваться в угрозы, негативно влияя на конкурентоспособность предприятия. Эффективная система экономической безопасности предполагает всестороннее внимание ко всем её элементам, особенно к вопросу конкурентоспособности, поскольку ослабление одного из них неизбежно влечёт за собой снижение эффективности других.

Таким образом, конкурентоспособность компании можно рассматривать как инструмент укрепления её экономической безопасности.

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ПЕДАГОГИЧЕСКАЯ ТЕХНИКА ВАЖНЫЙ ФАКТОР ОСУЩЕСТВЛЕНИЯ ЦЕЛИ ОБРАЗОВАНИЯ

***Аннотация.** Педагогическая техника является составной частью педагогического мастерства. Она выступает как форма организации поведения учителя и тем самым оказывает плодотворное воздействие на качество обучения.*

***Ключевые слова.** Педагогическая техника, артикуляция, искусство общения, конформизм, сочувствие, механизмы внимания, эмоциональное состояние, техника речи, педагогическое творчество, методическое творчество, тон речи, педагогическое воздействие.*

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PEDAGOGICAL TECHNIQUE IS AN IMPORTANT FACTOR IN THE IMPLEMENTATION OF THE GOALS OF EDUCATION

***Annotation.** The pedagogical technology is a component part pedagogical skill. She emerges as the form to organizations of the behavior of the teacher and hereunder renders the seminal influence on quality of the education.*

***Keywords.** The Pedagogical technology, articulation, art of the contact, conformism, empathy, mechanisms of attention, emotional condition, technology speech, pedagogical creative activity, methodical creative activity, tone speech, pedagogical influence.*

Усовершенствование качества современного образования является приоритетным направлением, так как это требует от учителей высокого профессионализма и педагогического мастерства. В свою очередь мастерство формируется в результате профессиональных знаний, способностей и практического педагогического опыта.

Мастерство – это необходимое или приобретенное для какого-то вида труда или профессии искусство, мастерство, творческое умение [5].

В современном образовании педагогическая техника считается составной частью педагогического мастерства, ибо она проявляется в эффективной организации учителем учебного процесса.

Еще в 20-е годы XX в. возникло понятие “педагогическая техника”, и с тех пор она исследуется многими педагогами и психологами (В.А.Кан-Калик, Ю.И.Турчанинова, А.А.Крупенин, И.М.Крохина, Н.Д.Никандров, А.А.Леонтьев, Л.И.Рувинский, А.В.Мудрик, С.В.Кондратьева и др.).

Педагогическая техника – это совокупность навыков и опыта, она применяется учителем в процессе педагогического воздействия.

Педагогическая техника – это комплекс умений, позволяющих преподавателю видеть, слышать и чувствовать своих воспитанников. Выдающийся педагог А.С.Макаренко писал: “Воспитатель должен уметь организовывать, ходить, шутить, быть веселым, сердитым... себя так вести, чтобы каждое движение его воспитывало” [2, с.179].

Г.М.Коджаспирова считает, что педагогическая техника – это комплекс общепедагогических умений и навыков педагога, обеспечивающих владение им собственным психофизиологическим состоянием, настроением, эмоциями, телом, речью и организацию педагогически целесообразного общения, т.е. оптимальное поведение педагога и его эффективное взаимодействие с воспитанниками в различных педагогических ситуациях [1, с.364].

Л.Ф.Пшеничная заявляет, что техника – совокупность приемов. Ее средства – речь и невербальные средства общения. В понятие “педагогическая техника” принято включать две группы компонентов.

Первая группа связана с умением педагога управлять своим поведением: владение своим организмом (мимика, пантомимика; управление эмоциями, настроением (снятие излишнего психического напряжения, создание творческого самочувствия); социально-перцептивные способности (внимание, наблюдательность, воображение); техника речи (дыхание, постановка голоса, дикция, темп речи).

Вторая группа компонентов – с умением воздействовать на личность и коллектив, и раскрывает технологическую сторону процесса воспитания и обучения: дидактические, организаторские, конструктивные, коммуникативные умения; технологические приемы предъявления требований, управления педагогическим общением, организации коллективных творческих дел и пр. [3, с.208].

Все сказанное подчеркивает, что педагогическая техника – важнейший инструмент педагога.

Основные составные части педагогической техники являются следующие.

- Сходство в поведении. В процессе организации учебного занятия приспособление со всеми учениками класса. Это обеспечивает успеха интерактивной деятельности.

- **Быть эмоционально снисходительным.** В процессе урока встречается разные психологические и эмоциональные ситуации. Если эти негативные состояния едва заметно проявляется, то делать вид что вы не видите; если это заметно – в сдержанном состоянии надо решать эту проблему и пройти к анализу темы урока.

- **Сочувствие.** Настроение учеников имеют важную роль в успешной организации урока. Поэтому перед началом и в процессе урока контролировать настроение каждого отдельно взятого ученика, если потребуется их поддержка, сопереживание имеет важное образовательное значение.



- **Готовность к проблемным ситуациям.** В ходе организации совместного общения встречается разные педагогические ситуации. При проблемных ситуациях надо их решать легко и без сложных влияний.

- **Демократический стиль общения.** Процесс урока осуществляется только при помощи педагогического общения, поэтому педагогическое общение надо организовать в демократическом стиле.

- **Умение управлять внимание себя и учеников.** Быть осведомленным о механизмах внимания.

При постоянном воздействии различных раздражителей человеческое сознание в точности и сразу не может воспринять все эти объекты, некоторые воспринимаются – точно, а другие – едва ощущаются. Из окружающего мира человек всегда выделяет себе интересного. Значит, всякая деятельность требует выделения какого-то объекта и обращения на него внимания.

Для организации урока на высоком уровне следующие позитивные психологические качества как разделение внимания или их контроль, перенос внимания очень важны.

Внимательно наблюдая учеников можно уточнить уровни восприятия ими учебного материала, а также быть информированным о стиле работы и учебной деятельности. Это можно уточнить и взглянув на учеников. Надо уметь уточнить из внешнего вида эмоциональное состояние учеников.

То есть исходя из индивидуальных особенностей ученика можно уточнить...

- спокойный?
- встревоженный?
- волнующий?
- радостный?
- грустный и т.д.

В педагогических действиях чувства темпа, то есть в движениях выбор эффективного темпа мышления необходим. Дает положительный эффект способность умело показывать движения, переживания и настроения. Важно объективно оценивать эмоциональное состояние ученика. Сопереживание, то есть положительное эмоциональное состояние ученика проявляется как гарант педагогических достижений.

Организация коммуникации при помощи мимики. Мимика должна отвечать педагогическим требованиям и должна освещать суть поставленной задачи. Она должна усилить педагогическую деятельность и направленность учителя. Пантомимика должна естественно усилить материал урока словесно объясняемой учителем. Надо обладать культурой техники речи. Речь из требований фонетики, стиля, разговора, акцента должна быть на высоком уровне. Она должна быть точной и ясной.

В педагогической технике управление учителем своих действий и движений имеет важное значение, в это входит:

а) управление своего тела; норма применения мимики и пантомимики, образовательные понятия выражаемые словесно, сила звука, динамика, темп, начало и конец речи;

б) эффективное управление своими эмоциями и настроением, умение избавиться от лишних нервных нагрузок при выражении настроения и переживания;

в) социально-перцептивные способности; в это входит внимание, в процессе урока умение из выраженных эмоций узнать мысли каждого ученика;

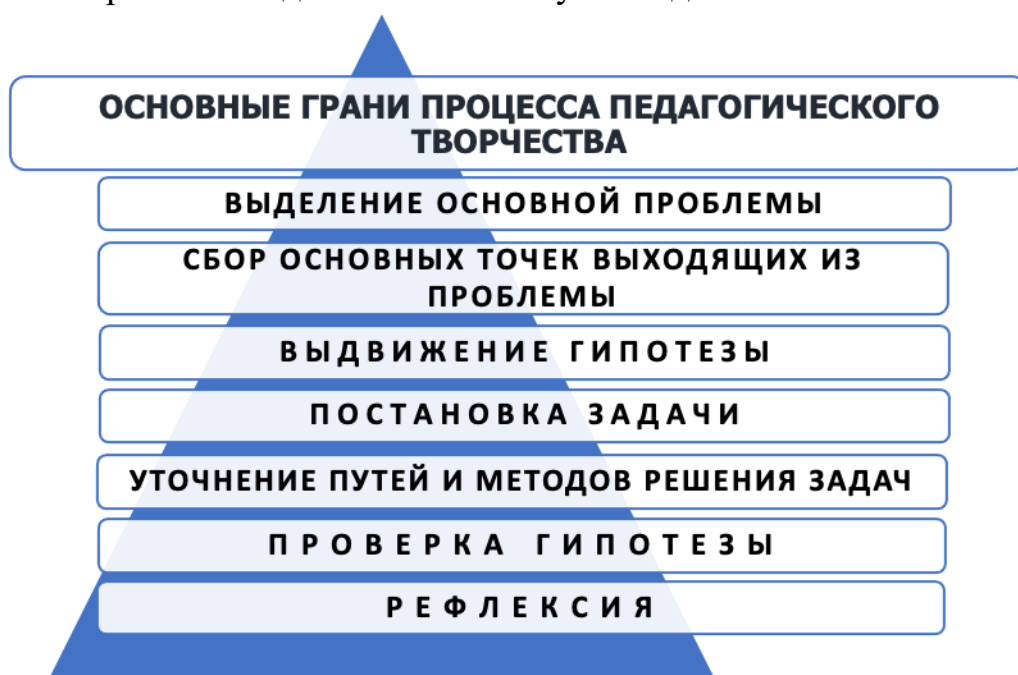
г) техника речи; в это входит дыхание, приспособлять высоту и тон своего голоса относительно объёму аудитории и слушателям, стиль произношения, то есть при речи умение изменять тон голоса, темп речи, то есть быстрый или медленный темп речи, применение паузы при изложении смысла темы [6].

Путь творческой деятельности учителя, это значить в учебный процесс всегда вводить что-то новое. Выполнение этого задания сначала формируется в представлении учителя а потом превращается в известный процесс.

Педагогическое творчество - это новость которое ранее было неизвестным, а потом, при специальной направленной деятельности уточненное. Основные грани педагогического творчества:

- а) методическое творчество;
- б) коммуникативное творчество;
- с) творчество обращенное на усовершенствование самого себя.

Имеется разные грани процесса педагогического творчества, именно они направляются для обеспечения успеха деятельности.



Учитель педагогически воздействуя ученикам, готовит технологический проект учебно-воспитательного процесса. Сюда входит организация педагогических работ, технологические методы поставляемые на дидактические, организаторские, конструктивные и коммуникативные требования и другие.

Педагогическая техника дает возможность учителю выбора стиля общения при работе с учениками. Стиль общения, стиль отношения к ученикам, правильный выбор дикции, мимики все это входит в понятие педагогическая техника.

Учитель должен постоянно искать оптимальные пути входа в душу своих учеников, обращать внимание своему интеллекту и культуре, постоянно проверять свой уровень соответствия требованиям педагогического мастерства и насколько он может выполнять профессиональные задачи.

Учитель не только учит своих учеников, он постоянно воздействует своими практическими действиями и моралью. Его интеллект и культура, правдивость и человечность принимается со стороны учеников как эталон. Учитель должен изучать не только отдельных учеников или группы, но и составить планы развития на будущее.

Практические действия учителя проявляется в решении ряда задач, которых можно успешно выполнять при эффективном применении профессиональных знаний. Учитель должен четко представить себе чего он хочет достичь для развития и формирования ученика на данном этапе развития.

Будущий учитель именно в вузе должен прочно освоит систему знаний. Для достижения педагогического мастерства кроме педагогики нужно глубоко освоить знания по педагогическую психологию, общую психологию, педагогическое мастерство. Учителю целесообразно знать в совершенстве одну из иностранных языков, компьютерную технику.

Иногда молодые учителя сталкиваются с такими проблемами, как:

- 1) проблемы при обращении с учениками или родителями;
- 2) при педагогически сложных ситуациях отсутствия сдержанности;
- 3) сильное проявление неуверенности при педагогическом общении;
- 4) неровная, неуверенная речь;
- 5) иногда чрезмерная требовательность и строгость;
- 6) боязнь постоянной вежливости;
- 7) разговаривать в процессе урока очень быстро, медленно, очень громко или тихо.
- 8) в процессе урока делают лишние движения или замирают на одном месте, иногда не знают куда спрятать руки.

К недостаткам речи относится: монотонно, то есть неизменным голосом скучное и одинаковое изложение темы урока, из требования аудитории разговаривать очень громко или тихо, несоответствии тона голоса, отсутствие или слишком много применение паузы, неточное произношение артикуляции; должная деятельность которая для произношения звука речи губы, язык, нёбо, деятельность голосовые трубочки для произношения слова и т.д. [4].

Данные недостатки могут негативно препятствовать для эффективного влияния ученикам. Очень важно избавиться из таких недостатков во время студенчества. Этого можно достичь путем повтора специальных упражнений.

При подготовке к уроку если студент испытывает в себе неуверенность, волнение, испуг, для достижения физической и психологической свободы можно проводит нижеследующую упражнению релаксацию.

1) Я спокоен, уверенно провожу урок, ученики охотно слушают меня. Я на уроке чувствую себя свободным. Я тщательно готовился к уроку. Урок проходит очень интересно. Я хорошо закончу урок. Быт со мной для учеников очень интересно. Я верю в себя. Я умею управлять собой. Настроение у меня хорошее, учить детей очень интересно. Ученики уважают меня, выполняют мои требования. Работа на уроке мне нравится, я учитель.

2) Пантомимика – это движение тела, рук и ног. Она дает возможность акцентированию основной мысли и его отделению, олицетворяет яркие образы. Учитель должен делать упражнение для того чтобы держатся правильно перед учениками, все движения своей простотой и своего рода грацией должны вызвать внимание учеников. Не допускаются таким движениям и поступкам как колебание назад-вперед, провести тяжесть

организма с одной ноги на другую, опираться на спинке стула, крутить рукой какие-то предметы, чесать голову, скрести уши, вытирать нос и др. Движения тела учителя должно быть в пределах, надо избежать чрезмерных сотрясений и резких движений.

3) Мимика – это выражение настроения, мысли и чувства посредством мускулов лица. Иногда выражение лица учителя и его взгляд острее слова действует на учеников. Жест руки и мимика усиливает эмоциональную значимость информации, обеспечивает его более прочного освоения. Ученики тонко чувствуют настроение и отношение учителя. Поэтому взгляд учителя как выражает, так и должно скрывать его чувства. Учитель во время урока не должен показывать своими эмоциями семейные хлопоты и недоразумения. Пешая ходьба, отдых, чтение книг помогает устранить разных стрессовых ситуаций. Выражение лица и движения должны направляться только целью урока и улучшению учебно-воспитательного процесса.

Эстетика учителя проявляется в выражении лица, выдержанном движении, в подлинности жеста и внимательности к ученику. Морщение лица, беспорядочность в движениях, иногда искусственность жестов при общении, при управлении коллектива класса не рекомендуется. Даже, учитель когда входит в класс, его приветствие, как ходит в классе – все эти факторы своеобразно влияют на ученика.

Учителя можно сказать сильным и уверенным в себя, когда он выдержанный, вежливый, ощущает динамику развития успеваемости, хорошо понимает эмоциональное состояние каждого ученика, преподносит знания в простой форме.

В практике для усвоения педагогической техники нужны нижеследующие достоинства:

1. Управление собой: управление эмоционального состояния, физическое здоровье, социальная ответственность, техника речи.
2. Взаимное сотрудничество с людьми: организованность, коммуникативные и оценочные навыки.

Опираясь на образовательные методики и научно-педагогических выводов исследователей можно сказать, что образование на сегодняшний день должна организоваться не на “Педагогическое воздействие”, а на “взаимном сотрудничестве”. Педагогическая техника учителя в этом имеет решающее значение.

Итак, педагогическая техника является составной частью педагогического мастерства, значит овладение высокой педагогической техникой увеличивает шансы на достижение высоких результатов

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АВТОМАТИЗАЦИЯ УЧЕТА ФИНАНСОВЫХ РЕЗУЛЬТАТОВ: СОВРЕМЕННЫЕ ТЕХНОЛОГИИ И РЕШЕНИЯ

***Аннотация:** Статья посвящена анализу роли автоматизации учета финансовых результатов в современном бизнесе. В работе рассматриваются основные преимущества использования современных технологий для учета финансовых результатов. Особое внимание уделяется примерам современных решений для автоматизации учета, включая облачные сервисы, программное обеспечение для бухгалтерского учета и аналитические платформы. Также обсуждаются программные решения для автоматизации учета финансовых результатов.*

***Ключевые слова:** автоматизация, финансовый учет, современные технологии, облачные сервисы, бухгалтерское программное обеспечение, аналитические платформы, точность данных, ускорение отчетности, доступность информации.*

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AUTOMATION OF ACCOUNTING OF FINANCIAL RESULTS: MODERN TECHNOLOGIES AND SOLUTIONS

***Annotation:** The article is devoted to the analysis of the role of automation of accounting for financial results in modern business. The paper considers the main advantages of using modern technologies to account for financial results. Special attention is paid to examples of modern accounting automation solutions, including cloud services, accounting software, and analytical platforms. Software solutions for automating accounting of financial results are also discussed.*

***Keywords:** automation, financial accounting, modern technologies, cloud services, accounting software, analytical platforms, data accuracy, accelerated reporting, information availability.*

В условиях современного рынка, где скорость принятия решений и точность анализа данных становятся ключевыми факторами успеха, автоматизация учета финансовых результатов приобретает особую актуальность. Автоматизированные системы позволяют предприятиям значительно повысить эффективность управления финансами, сократить время на обработку данных и минимизировать риски, связанные с человеческими ошибками.

Современные технологии автоматизации учета финансовых результатов предлагают широкий спектр решений, от простых программ для ведения бухгалтерского учета до комплексных систем, интегрированных с другими бизнес-процессами. Эти системы не только упрощают процесс учета, но и предоставляют глубокий анализ финансовых показателей, что позволяет руководству принимать обоснованные решения на основе актуальных данных.

Внедрение автоматизации учета финансовых результатов способствует повышению прозрачности финансовых операций, улучшению контроля над расходами и доходами, а также оптимизации налоговых обязательств. Это, в свою очередь, ведет к повышению общей финансовой дисциплины и улучшению финансового состояния предприятия.

Среди современных технологий и решений, используемых для автоматизации учета финансовых результатов, можно выделить облачные сервисы, системы бизнес-аналитики, а также платформы для интеграции данных из различных источников. Эти инструменты позволяют предприятиям гибко адаптироваться к изменяющимся условиям рынка, оперативно реагировать на новые возможности и вызовы, а также обеспечивать высокий уровень финансовой устойчивости и конкурентоспособности.

Автоматизация учета финансовых результатов – это использование программных решений и технологий для сбора, обработки и анализа финансовых данных без или с минимальным участием человека.

Среди ключевых преимуществ автоматизации учета финансовых результатов можно выделить:

1. Автоматизированные системы минимизируют вероятность ошибок, возникающих вследствие человеческого вмешательства, и обеспечивают высокую достоверность финансовой отчетности.
2. Автоматизация позволяет быстрее формировать отчеты и проводить анализ, что высвобождает время для стратегического планирования и принятия решений.
3. Интеграция автоматизированных систем с другими корпоративными приложениями улучшает взаимодействие между различными подразделениями и ускоряет обмен информацией.
4. Автоматические системы учета упрощают соблюдение нормативных актов, касающихся бухгалтерского учета и налогообложения.

5. За счет сокращения рутинных операций и уменьшения числа ошибок уменьшается потребность в большом штате специалистов, что экономит деньги.

Остановимся и рассмотрим современные технологии, используемые для автоматизации учета:

1. Искусственный интеллект (ИИ) и машинное обучение.

ИИ и машинное обучение позволяют компаниям прогнозировать финансовые результаты на основе исторических данных, автоматически выявлять аномалии в транзакциях и предоставлять рекомендации по улучшению финансовых процессов. Эти технологии находят широкое применение в сфере финансового учета, поскольку они могут значительно упростить процесс анализа данных и выявления тенденций.

2. Роботизированная автоматизация процессов (RPA).

RPA используется для автоматизации рутинных и повторяющихся задач, таких как ввод данных, обработка счетов или контроль за выполнением платежей. RPA существенно сокращает временные затраты на выполнение этих операций и уменьшает количество ошибок.

3. Облачные технологии.

Облачные решения обеспечивают доступ к финансовым данным из любой точки мира, что особенно ценно для международных компаний с распределенными структурами. Они также предоставляют возможности для масштабирования и быстрого развертывания приложений.

4. Интеграция систем управленческого учета.

Интеграция данных из различных областей, таких как закупки, производство, логистика и продажи, в единую информационную среду позволяет получить полное представление о состоянии дел в компании. Это открывает новые горизонты для анализа и оптимизации бизнес-процессов.

Для автоматизации учета и анализа финансовых показателей применяются различные программные решения:

1. 1С: Бухгалтерия – это прежде всего инструмент бухгалтера, с помощью которого происходит отражение фактов хозяйственной деятельности, их последующий сбор для составления отчетности и отправки в контролирующие органы. Для первичного анализа финансовых результатов, можно сформировать оборотно-сальдовую ведомость – это бухгалтерский регистр, в котором отражаются остатки по счетам на начало и конец, а также обороты за период. На основе данных ОСВ составляются бухгалтерский баланс и отчет о финансовых результатах.

2. «БИТ.ФИНАНС». Программа предназначена для комплексного ведения финансового учета, управления бюджетом и анализа финансовых показателей. Решение ориентировано на крупные компании и предлагает широкие возможности для настройки под конкретные требования клиента.

3. «ПланФакт». Сервис разработан специально для малого бизнеса, который начинает использовать средства автоматизации. Среди

возможностей программы – интеграция с банковскими системами, учет и статистика финансовых операций, а также платежный календарь.

4. «КУБ24». Этот сервис предназначен для мониторинга дебиторской задолженности, работы с бюджетами, интеграции с системой 1С и проведения мультивалютного учета. «КУБ24» подходит для средних и крупных организаций, которым необходимы мощные инструменты для управления финансами.

5. «БитФинанс». Решение предлагает планирование бюджета движения денежных средств (БДДС), управление договорами и затратами, интеграцию с 1С и поддержку международных стандартов финансовой отчетности (МСФО).

Автоматизация учета финансовых результатов становится неотъемлемым элементом современной экономики. Современные технологии, такие как ИИ, RPA и облачные решения, открывают перед компаниями новые возможности для повышения эффективности, снижения рисков и улучшения качества управленческих решений. Интеграция различных систем и использование специализированных программных продуктов позволяют оптимизировать учетные процессы и достичь устойчивого роста бизнеса.

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РОЛЬ КОНТРОЛЯ ФИНАНСОВЫХ РЕЗУЛЬТАТОВ В ОПТИМИЗАЦИИ УПРАВЛЕНЧЕСКИХ РЕШЕНИЙ

***Аннотация:** Статья посвящена анализу роли контроля финансовых результатов в процессе оптимизации управленческих решений. В работе рассматриваются основные методы и инструменты контроля финансовых показателей, их влияние на эффективность управления предприятием и пути улучшения финансовых результатов через корректировку управленческих стратегий. Особое внимание уделяется взаимосвязи между качеством контроля финансовых результатов и уровнем принятия обоснованных управленческих решений, которые способствуют устойчивому развитию и повышению конкурентоспособности компании.*

***Ключевые слова:** контроль финансовых результатов, оптимизация управленческих решений, методы контроля, финансовые показатели, управление предприятием, конкурентоспособность, устойчивое развитие.*

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THE ROLE OF FINANCIAL PERFORMANCE MONITORING IN OPTIMIZING MANAGEMENT DECISIONS

***Annotation:** The article is devoted to the analysis of the role of financial performance control in the process of optimizing management decisions. The paper discusses the main methods and tools for monitoring financial indicators, their impact on the effectiveness of enterprise management and ways to improve financial results through the adjustment of management strategies. Special attention is paid to the relationship between the quality of financial performance control and the level of informed management decisions that contribute to the sustainable development and competitiveness of the company.*

***Keywords:** control of financial results, optimization of management decisions, control methods, financial indicators, enterprise management, competitiveness, sustainable development.*

В условиях современной экономики, где конкуренция становится все более жесткой, а рынки – динамичными и непредсказуемыми, эффективное управление финансовыми результатами приобретает первостепенное значение для успешного функционирования предприятий. Контроль финансовых результатов выступает ключевым инструментом в арсенале менеджеров, позволяя своевременно выявлять отклонения от плановых показателей и принимать корректирующие меры. В этой статье мы рассмотрим, как контроль финансовых результатов влияет на процесс оптимизации управленческих решений и способствует достижению стратегических целей организации.

Контроль финансовых результатов представляет собой систематический процесс сбора, анализа и интерпретации данных о финансовых показателях деятельности предприятия [2]. Он позволяет оценить эффективность использования ресурсов, выявить слабые места в бизнес-процессах и определить потенциальные возможности для роста и развития. В условиях неопределенности и быстроменяющейся внешней среды контроль финансовых результатов становится неотъемлемой частью управленческого процесса, обеспечивая руководство необходимой информацией для принятия взвешенных и обоснованных решений.

Оптимизация управленческих решений на основе контроля финансовых результатов предполагает не только реагирование на текущие проблемы и отклонения, но и про активное управление, направленное на предотвращение потенциальных рисков и максимизацию возможностей [2]. В статье будут рассмотрены методы и инструменты контроля финансовых результатов, их влияние на качество управленческих решений и пути повышения эффективности управления предприятием через улучшение системы финансового контроля.

Контроль финансовых результатов включает в себя мониторинг и оценку ключевых показателей, таких как прибыльность, рентабельность, ликвидность и платежеспособность [3]. Эти показатели позволяют оценить текущее состояние бизнеса и выявить возможные риски и проблемы. Своевременное обнаружение отклонений помогает руководству принимать меры до того, как ситуация станет критической.

Одним из основных инструментов контроля является бюджетирование. Бюджет представляет собой план доходов и расходов на определенный период времени [3]. Сравнение фактических показателей с бюджетом позволяет определить степень выполнения планов и выявить причины возможных отклонений. Это дает возможность оперативно вносить изменения в стратегию и тактику управления предприятием.

Контроль финансовых результатов включает в себя сбор, анализ и интерпретацию данных о финансовых показателях предприятия. Для этого используются различные методы и инструменты, такие как [5]:

1. Бухгалтерская отчетность.

Данный инструмент является ключевым источником информации о финансовом состоянии предприятия. Она позволяет оценить доходы, расходы, прибыль, убытки, активы и обязательства компании. Включает баланс, отчет о прибылях и убытках, отчет о движении денежных средств.

2. Финансовые коэффициенты.

К ним относятся показатели, которые рассчитываются на основе бухгалтерской отчетности. Они позволяют сравнить финансовые результаты предприятия с показателями других компаний или с собственными результатами за предыдущие периоды. Включают: коэффициенты ликвидности, рентабельности, оборачиваемости активов и пр.

3. Анализ трендов.

Данный метод позволяет выявить тенденции изменения финансовых показателей во времени. Он помогает прогнозировать будущие результаты и принимать соответствующие управленческие решения. К ним относятся чаще всего горизонтальный и вертикальный анализы.

4. Сравнительный анализ.

Метод, основанный на сравнении финансовых показателей анализируемой организации с конкурентами или отраслевыми значениями, принятых на рынке.

Помимо этих методов, также можно отнести еще такие инструменты, как: ABC-анализ и SWOT-анализ [6].

Использование этих методов позволяет получить комплексную картину финансового состояния предприятия и принять обоснованные управленческие решения.

Контроль финансовых результатов играет важную роль в повышении эффективности управления предприятием. Он позволяет [4]:

1. Своевременно выявлять проблемы и риски – благодаря регулярному анализу финансовых показателей руководство может оперативно реагировать на возникающие проблемы и принимать меры по их устранению.

2. Оценивать эффективность управленческих решений – контроль финансовых результатов позволяет оценить, насколько принятые решения способствуют достижению поставленных целей и задач.

3. Корректировать стратегию развития – на основе анализа финансовых показателей руководство может корректировать стратегию развития предприятия, чтобы повысить его конкурентоспособность и устойчивость.

Для улучшения финансовых результатов предприятия необходимо корректировать управленческие стратегии с учетом данных контроля финансовых результатов. Это может включать в себя [5]:

1. Оптимизацию расходов – анализ структуры расходов позволяет выявить возможности для их сокращения без ущерба для качества продукции или услуг.

2. Повышение эффективности использования активов – анализ активов предприятия позволяет выявить неэффективно используемые активы и принять меры по их оптимизации.

3. Развитие новых направлений бизнеса – на основе анализа финансовых показателей можно выявить перспективные направления для развития бизнеса и разработать стратегию их реализации.

Таким образом, контроль финансовых результатов является неотъемлемой частью процесса управления предприятием. Он позволяет руководству получать актуальную информацию о состоянии бизнеса, оценивать эффективность принятых решений и своевременно корректировать стратегию развития. Для улучшения финансовых результатов необходимо активно использовать данные контроля финансовых результатов при принятии управленческих решений и корректировке стратегий развития предприятия.

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ОЦЕНКА ЭФФЕКТИВНОСТИ ФУНКЦИОНИРОВАНИЯ РЕГИОНАЛЬНОЙ ИННОВАЦИОННОЙ СИСТЕМЫ

***Аннотация.** В статье рассматриваются показатели, позволяющие оценивать состояние и динамику развития региональной инновационной системы. Даны рекомендации по формированию трехуровневой системы соответствующих индикаторов.*

***Ключевые слова:** региональная инновационная система, факторы, индикаторы, валовый региональный продукт*

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ASSESSMENT OF THE EFFICIENCY OF THE REGIONAL INNOVATION SYSTEM

***Abstract.** The article examines indicators that allow assessing the state and dynamics of development of the regional innovation system. Recommendations are given for the formation of a three-level system of relevant indicators.*

***Key words:** regional innovation system, factors, indicators, gross regional product.*

В настоящее время для эффективного функционирования инновационной системы как регионального, так и национального уровня для обеспечения должного уровня экономической безопасности территории необходимо грамотно оценивать состояние региональной инновационной системы (РИС) для своевременного выявления возможных рисков и угроз, а также диагностики состояния системы.

Трёхуровневая система индикаторов - это система, основанная на уровнях, позволяющий провести анализ и оценку состояния выбранной сферы посредством распределения индикаторов сферы по трём уровням. Система подразделяется на следующие уровни:

- индикаторы для оценки рискообращующих факторов;
- индикаторы для оценки остроты кризисной ситуации;
- индикаторы для оценки ущерба.

Предлагаемый вариант трёхуровневой системы для дифференциации индикаторов по отобранным группам приведен в таблице 2.

Количество инновационных предприятий отражает способность территории к производству и воспроизводству определенного количества инноваций за определенный промежуток времени. Чем больше инновационных предприятий осуществляет эффективное производство инноваций и новых технологий, тем больший объем этих самых инноваций может пойти на потенциальный экспорт.

Уровень инновационной активности организаций отражает соотношение хозяйствующих субъектов, занятых в сфере инноваций к общему количеству обследуемых хозяйствующих субъектов за определенный период. Что позволяет определить процентное соотношение и сравнить его с аналогичными периодами и иными предприятиями/организациями. Данный индикатор напрямую коррелирует с предыдущим индикатором [1].

Индекс физического объема ВВП (ВРП) - показывает соотношение объемов ВВП (ВРП) текущего и базового периода в одних и тех же ценах.

Доля инвестиций в основной капитал отражает степень заинтересованности инвесторов во вложениях, а также косвенно характеризует состояния инвестиционного климата как государства, так и его отдельно взятого субъекта.

Таблица 1

Трёхуровневая система индикаторов оценки региональной инновационной системы

Индикатор	Пороговое значение
Индикаторы для оценки рискообразующих факторов	
Количество инновационных предприятий, %	-
Удельный вес инновационных предприятий в общем объеме малых предприятий, %	-

Количество исследователей на 10000 экономически активного населения, человек	-
Валовые внутренние затраты на ИиР, в % к ВВП	-
Удельный вес внутренних текущих затрат на оборудование, %	-
Количество человек с высшим образованием на 1000 человек населения	-
Количество бизнес-инкубаторов на исследуемой территории, ед.	
Количество технопарков на исследуемой территории, ед.	
Количество центров инноваций социальной сферы, ед.	
Количество центров разработки наноматериалов, ед.	
Уровень инновационной активности организаций, %	
Индекс физического объема ВВП, %	
Используемые передовые производственные технологии, ед.	
Степень износа основных фондов, %	
Доля инвестиций в основной капитал в ВВП, %	
Валовые внутренние затраты на ИиР, в % к ВВП	
Разработанные передовые производственные технологии, ед.	
Доля инвестиций в науку в общем объеме инвестиций, %	-
Удельный вес инновационной продукции, в % к ВВП	-
Индикаторы, характеризующие остроту кризисной ситуации	
Удельный вес отгруженной инновационной продукции в общем объеме отгруженного производства, %	Не менее 5
Удельный вес новой продукции в общем объеме производства, %	Не менее 8
Доля инновационных товаров, работ, услуг в общем объеме экспорта товаров, работ, услуг предприятий промышленного производства, %	Не менее 25
Доля организаций, осуществляющих технологические инновации, %	Не менее 2,5
Интегральный индекс инновационного развития региона	1
Индикаторы для оценки ущерба	
Темп роста ВРП, %	3-5
Индекс развития человеческого потенциала	Не менее 0,800

Валовые внутренние затраты на исследования и разработки означает способность организации финансировать собственные исследования, а также отражает степень её вовлеченности в нематериальные активы.

Разработанные передовые производственные технологии - отражает способность хозяйствующего субъекта или территории в совокупности производить принципиально новые технологии и разработки. Чем выше разница разработанных передовых технологий с используемым, тем больше импортных мощностей используется при их генерировании.

Доля инвестиций в науку отражает степень вовлеченности руководства как отдельного хозяйствующего субъекта, так и их совокупности в регионе во вложениях в научную, исследовательскую и инновационную деятельность с целью повышения доли инновационных разработок и внедрения их как можно большего количества в производство.

Удельный вес инновационной продукции, в % к ВВП (ВРП) показывает количество разработанной, отгруженной и подготавливаемой к экспорту продукции в общем объеме ВВП (ВРП).

Для индикаторов, характеризующих рискообразующие факторы не определяются пороговые значения ввиду отсутствия их ключевой роли в проведении индикативного анализа с применением зонной теории. Однако, данные индикаторы будут задействованы в расчетах для ключевого индикатора из группы для оценки «остроты кризисной ситуации» - интегрального индекса инновационного развития. Интегральный индекс инновационного развития - это обобщённый показатель для измерения уровня задействования и распространенности инноваций как на национальном, так и на региональном уровне.

Эффективность воспроизводства новых технологий напрямую коррелирует со способностью территории воспроизводить новые знания и проводить инновационные процессы. Для оценки способности исследуемого объекта мы будем использовать такой индикатор, как интегральный инновационного развития, который будет являться основополагающим индикатором для объективной характеристики остроты кризисной ситуации, сложившейся на исследуемой территории. Иными словами, те государства, которые, урегулировав начальную стадию экономического развития, инвестируют знания, демонстрируют высокие и стабильные темпы роста как на региональном, так и на национальном уровне [2].

Индикаторы добавлены для составления наиболее объективной картины состояния научной и инновационной сферы территории, и его способности к развитию.

Для проведения эффективного анализа непосредственно инновационной составляющей, и, инновационной системы региона, в частности, рекомендуется использоваться индикаторы, предоставленные Татаркиным А. И. и Уральской школы, поскольку сам учёный и последователи данной школы делают уклон на анализ научно-технического и инновационного потенциала исследуемого объекта.

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АСПЕКТЫ ИННОВАЦИОННОЙ ДЕЯТЕЛЬНОСТИ ПРОМЫШЛЕННЫХ ПРЕДПРИЯТИЙ

***Аннотация.** В статье рассматривается актуальность формирования модели управления инновационной деятельностью предприятия, некоторые особенности управления различными видами инноваций, приводятся факторы, влияющие на реализацию его инновационной деятельности.*

***Ключевые слова:** модель, инновации, инновационная деятельность, производство, факторы*

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ASPECTS OF INNOVATIVE ACTIVITIES OF INDUSTRIAL ENTERPRISES

***Abstract.** The article examines the relevance of the formation of a model for managing the enterprise's innovative activities, some features of managing various types of innovations, and provides factors influencing the implementation of its innovative activities.*

***Key words:** model, innovation, innovative activity, production, factors*

В процессе технологических инноваций бизнес использует внутренние и внешние дополнительные инновационные ресурсы для достижения показателей инновационного развития, то есть компании могут реализовать коммерциализацию инновационных продуктов с помощью внутренних технологических каналов и внешних. Это называется типом инновационной модели, которая динамически сотрудничает с несколькими партнерами с разных точек зрения на каждом этапе инновационной цепочки [1]. По мере того, как степень открытости инноваций продолжает расти, все больше и больше компаний начинают использовать полностью открытую инновационную модель. Целесообразным представляется создать инновационную модель взаимовыгодной модели с такими партнерами, как потребители, научно-исследовательские учреждения, университеты, поставщики, дистрибьюторы и даже конкуренты, обмениваясь инновационными ресурсами, взаимной выгодой и взаимностью. Учитывая опыт ведущих ученых в исследуемой сфере считаем необходимым выделить классификационную группу инноваций по уровню их открытости, поделив на закрытые инновации, кооперативные инновации, открытые инновации и инновации сетевой организации.

В соответствии с текущей практикой открытости бизнеса к инновациям и сосредоточенности академического сообщества на теориях открытых инноваций, модели полностью открытых инноваций можно разделить на сетевые инновации и инновационные экосистемы, то есть с точки зрения сетевой системы и экосистемы, рассматривается эволюционная модель, которая становится все более открытой инновацией.

Для того, чтобы быстро реализовать коммерциализацию идей, управление инновационной деятельностью предприятия должно параллельно вводить несколько измерений, таких как стратегия, организация, ресурсы, культура (система) и т.д. В целом, инновации требуют «вертикального и горизонтального управления», горизонтальное управление требует интеграции видения и творчества, исследований и разработок, производства и продаж, а вертикальное управление требует синергии стратегии, организации, ресурсов и культурных (институциональных) систем мышления.

Чтобы достичь высокоэффективного управления инновациями, предприятию необходимо разработать собственную инновационную стратегию, укрепить свою способность к стратегическому управлению и стратегической инновационной способности, а также реализовать идеальное соответствие и хорошее взаимодействие между стратегией предприятия и технологическими инновациями, что является важным условием для повышения эффективности и результативности управления инновационной деятельностью предприятия. В то же время, основываясь на собственном развитии и внутренней и внешней инновационной среде, в которой находится предприятие, оно постоянно усиливает инновационные трансформации в организации предприятия обеспечивая качественную платформу для создания добавленной стоимости предприятия. В системе открытых

инноваций предприятия не только полагаются на ограниченные внутренние ресурсы для достижения инноваций, но особенно важной стала возможность получать внешнюю информацию, средства, таланты, бренды, интеллектуальную собственность и другие инновационные ресурсы. Инновационную культуру называют «обратной стороной медали технологических инноваций». Чтобы добиться эффективного управления инновациями, предприятия должны обратить внимание на четыре аспекта инновационной культуры: ценности, институциональные системы, нормы поведения и физические носители.

Для эффективной системы управления инновационной деятельностью предприятия должно комплексно учитывать факторы влияния на весь процесс инновационной деятельности предприятия. Факторы воздействия в основном включают следующие шесть пунктов. Во-первых, различное управление портфелем инновационных проектов и уровень и характеристики инноваций, участвующих в процессе управления проектом; во-вторых, технологическая инновационная среда стадии и этапы развития технологий предприятия; в-третьих, постоянно меняющийся потребительский спрос, высокая волатильность все более сложной и персонализированной рыночной среды; в-четвертых, макросреда инноваций, такая как политика и регулирование, социальная культура и политические силы, особенно многонациональные предприятия; в-пятых, конкурентная среда, такая как поставщики, дистрибьюторы, конкуренты и потенциальные участники, косвенно повлияет на производительность управления корпоративными инновациями; в-шестых, внутренняя корпоративная среда, такая как стратегия, организационная структура, система управления, система заработной платы, система стимулирования и система управления информацией, будет напрямую влиять на эффективность управления инновациями предприятия.

Управление общими инновациями предприятия аккумулирует разновидности инноваций: стратегические, управленческие, организационные, культурные, технологические, рыночные и институциональные. Среди них связь между измерениями внутренних элементов общей инновации предприятия описывается следующим образом: ключевым является достижение технологических инноваций; совместные инновации являются вспомогательным средством; Стратегические инновации являются ориентиром; рыночные инновации являются эффективным путем; управленческие инновации являются основой, а организационные инновации являются благоприятной гарантией, концепция и культурные инновации являются предшественниками, а институциональные инновации являются движущей силой; временные и пространственные измерения комплексных инноваций: инновации полного рабочего дня, инновации полного процесса, сетевые инновации и инновации цепочки создания стоимости; типичные измерения комплексных инноваций: инновация продукта или услуги, инновация технологического процесса, инновация организационной структуры, инновация бизнес-модели и т. д; методические измерения

комплексной инновации: самостоятельная инновация, внедрение инновации, кооперационная инновация и другие [2].

Значение комплексного управления инновациями понимается как стремление предприятия создать ценность, сосредоточившись на повышении основной конкурентоспособности, и под руководством стратегии оно осуществляет совместные инновации, объединяя технологии, организацию, рынок, менеджмент, культуру и системы, и с помощью определенного механизма управления инновациями и подхода предприятие стремится внедрять инновации для всего персонала, инновации на полный рабочий день, глобальные инновации на предприятии [2].

Следовательно, изобретательство и творчество являются лишь начальной стадией инноваций, а процесс коммерциализации на завершающей стадии является важнейшей частью всего инновационного процесса. Нельзя назвать успешной инновацией, если оригинальные технологические изобретения, продукты или услуги не могут быть выведены на рынок. Благодаря формуле инноваций: инновации = изобретение + развитие + коммерциализация, происходит Управление инновационным развитием предприятия.

Таким образом, управление инновационной деятельностью должно быть направлено, прежде всего, на обеспечение роста инновационной активности предприятия. В этой связи своевременное решение проблем управления инновационной деятельностью методами и практикой, актуальными для каждого предприятия, является одним из важнейших условий эффективности и конкурентоспособности предприятий на конкурентных рынках.

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СОВРЕМЕННЫЕ ПОДХОДЫ К ВОССТАНОВЛЕНИЮ ЭКОСИСТЕМ ПРИАРАЛЬЯ

***Аннотация:** В статье рассматриваются основные научные направления и практические подходы к оптимизации природной среды Приаралья в условиях катастрофического усыхания Аральского моря и интенсивного опустынивания. На основе анализа работ ряда ученых систематизированы предложения по восстановлению экосистем региона, включая обводнение дельты Амударьи, развитие рыбного хозяйства, защитное лесоразведение и рациональное использование водных ресурсов. Выявлены как перспективные, так и недостаточно обоснованные меры, подчеркивается необходимость комплексного подхода с учетом местных геосистемных условий.*

***Ключевые слова:** деградации земель, опустынивание, засоленности почв, геосистема, оптимизации природной среды, Приаралья.*

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MODERN APPROACHES TO THE RESTORATION OF THE ARAL SEA REGION ECOSYSTEMS

***Abstract:** The article examines the main scientific directions and practical approaches to optimizing the natural environment of the Aral region under conditions of the catastrophic desiccation of the Aral sea and intense desertification. Based on the analysis of studies by various scholars, proposals for the restoration of the region's ecosystems are systematized, including the irrigation*

of the Amudarya delta, the development of fisheries, protective afforestation, and the rational use of water resources. Both promising and insufficiently substantiated measures are identified, emphasizing the need for a comprehensive approach that takes into account local geosystem conditions.

Keywords: *land degradation, desertification, soil salinization, geosystem, optimization of the natural environment, Aral sea region.*

Введение. Катастрофическое снижение уровня Аральского моря, начавшееся в 60-х годах XX века, стало одной из крупнейших экологических трагедий современности. Этот процесс, вызванный интенсивным забором воды из питающих море рек — Амударьи и Сырдарьи — для нужд ирригационного земледелия, привел к резкому сокращению водного зеркала, утрате биоразнообразия, деградации земель и опустыниванию обширных территорий Приаралья. С этого времени регион превратился в зону экологического кризиса, где наблюдаются такие явления, как повышение засоленности почв, выдувание солей и песка с осушенного дна моря, а также ухудшение условий жизни местного населения.

Экологические изменения в Приаралье сопровождались социально-экономическими последствиями: упадком рыболовства, сокращением пастбищных угодий и ростом заболеваемости среди населения из-за ухудшения качества воздуха и воды. Уже к 70-м годам проблема стала предметом активного обсуждения в научных кругах, что стимулировало появление различных подходов к ее решению. Предлагались как глобальные меры, например, стабилизация уровня моря за счет переброски вод из удаленных источников, так и локальные инициативы, направленные на смягчение последствий кризиса в отдельных частях региона. Однако разнообразие предложений сопровождалось их неоднородностью: одни меры отличались высокой научной проработкой, другие оставались на уровне гипотез, лишенных достаточного обоснования.

Научное сообщество столкнулось с рядом вызовов, включая недостаток данных о динамике экологических процессов, сложность прогнозирования долгосрочных последствий и ограниченность ресурсов для реализации масштабных проектов. Несмотря на это, начиная с конца 70-х годов, начали формироваться ценные идеи, которые легли в основу современных подходов к восстановлению экосистем Приаралья. Эти предложения охватывают широкий спектр направлений: от обводнения дельты Амударьи и создания искусственных водоемов до фитомелиорации и оптимизации водопользования. Вместе с тем, анализ показывает, что многие из них требуют доработки с учетом специфики местных геосистемных условий, таких как рельеф, климат и гидрологические особенности.

Цель данной статьи — систематизировать существующие научные подходы к оптимизации природной среды Приаралья, оценить их сильные и слабые стороны, а также обозначить перспективные направления для дальнейших исследований. Особое внимание уделено работам ученых, чьи

идеи имеют практическое значение и могут быть интегрированы в комплексные программы восстановления региона. В условиях продолжающегося экологического кризиса разработка научно обоснованных и реализуемых решений остается критически важной задачей, способной не только смягчить последствия усыхания Арала, но и обеспечить устойчивое развитие Приаралья в будущем.

Обзор литературы. Проблема экологического кризиса в Приаралье привлекла внимание ученых еще в 70-х годах XX века, когда последствия усыхания Аральского моря стали очевидными и начали поступать первые прогнозы о его воздействии на окружающую среду. Одним из пионеров в этой области стал В.С. Ковалев, который активно выступал за предотвращение снижения уровня моря путем сброса коллекторно-дренажных стоков (КДС) из низовий и оазисов среднего течения Амударьи [4]. Его предложения отличались комплексным подходом, охватывая водохозяйственные и мелиоративные аспекты, однако не содержали детальных решений для обводнения опустынивающихся массивов дельты, что снижало их практическую применимость. Впоследствии Ковалев продолжил развитие своих идей, уделяя внимание вопросам орошения, однако его работа «Орошение и Арал» [4] во многом повторяет ранее опубликованные тезисы.

К.И. Лапин и соавторы сосредоточились на минимизации негативных последствий усыхания моря в Южном Приаралье, предлагая комплекс мер, включая развитие прудового и озерного рыбного хозяйства как компенсацию утраты морского промысла, сохранение курортных зон, освоение земель дельты Амударьи и защитное лесоразведение [6]. Их подход выделяется вниманием к социально-экономическим аспектам, однако конкретные механизмы реализации остаются недостаточно проработанными. В то же время Рафиков А.А. и Тетюхин Г.Ф. разработали физико-географические основы мелиоративных мероприятий, акцентируя внимание на обводнении древесно-кустарниковых тугаев, пастбищ озерно-болотных и пустынных комплексов, а также создании лесных полос для предотвращения дефляции [7]. Их работа отличается научной глубиной и учетом природных особенностей региона.

И.П. Герасимов и соавторы внесли значительный вклад в анализ экологических последствий обмеления моря и опустынивания дельтовых равнин [2]. Они выделили как общие задачи — ослабление неблагоприятных изменений окружающей среды и рациональное развитие хозяйства региона, — так и частные, включая сохранение генофонда растительности и животного мира. Их предложения сопровождалась классификацией мероприятий на неотложные (научно-исследовательские, водохозяйственные) и перспективные, что придало работе стратегический характер. Якубов М.А. и Курбанбаев Р.Е. сосредоточились на практических аспектах, предлагая рыбохозяйственные и сельскохозяйственные меры в дельте Амударьи, такие как обводнение озер и протоков для развития животноводства и ирригации

[9]. Их рекомендации имеют прикладное значение, особенно в контексте проектирования технико-экономических обоснований (ТЭО).

Дополнительный вклад внесли В.М. Котляков, который подчеркивал необходимость экономии воды через совершенствование технологий орошения (например, капельное орошение и облицовка каналов) [5], и Духовный В.А. с Разаковым Р.М., предложившие создание защитного водного барьера на юге Приаралья объемом 12,2 км³ для восстановления гидроморфного режима почв и развития рыбоводства [3]. Акрамов З.М. и Рафиков А.А. детализировали вопросы обводнения тугайных и пустынных экосистем, а также борьбы с дефляцией, предлагая строительство ирригационных каналов и каскада водоемов [1]. Таким образом, литературный обзор демонстрирует эволюцию научной мысли от общих идей к более конкретным решениям, хотя многие из них требуют дальнейшей детализации.

Методология. Анализ основан на обобщении опубликованных научных работ, посвященных экологическим проблемам Приаралья. Использованы методы системного анализа для оценки эффективности предложенных мер с учетом их научной обоснованности, практической применимости и соответствия местным условиям. Рассмотрены как ретроспективные данные (с 70-х годов XX века), так и современные подходы к решению проблемы.

Результаты и обсуждение. Рафиков А.А. и Тетюхин Г.Ф. подчеркивают важность регулярного стока для обводнения тугаев, пастбищ и озерно-болотных комплексов, предлагая рациональное использование водных ресурсов и создание лесных полос [7]. Их идеи находят развитие в работе Якубова М.А. и Курбанбаева Р.Е., которые акцентируют внимание на использовании местных и перебрасываемых водных ресурсов для развития животноводства и ирригации [9]. Акрамов З.М. и Рафиков А.А. дополняют этот подход, предлагая строительство ирригационных каналов и каскада водоемов для равномерного распределения воды в западной и центральной частях дельты [1]. Однако отсутствие детальных инженерных решений и оценки затрат ограничивает практическую реализацию этих идей.

Лапин К.И. и соавторы предлагают создание прудового и озерного рыболовства как альтернативу утраченному морскому промыслу, а также развитие искусственных пастбищ в аридной зоне [6]. Духовный В.А. и Разаков Р.М. детализируют этот подход, обосновывая создание водного барьера объемом 12,2 км³ на юге Приаралья с акваторией 300–400 тыс. га, что позволит восстановить полугидроморфный режим почв и поддерживать рыбоводство и ондатроводство [3]. Они также предлагают зону лиманного орошения (300–350 тыс. га) для выращивания камыша и кормовых культур, что способствует возрождению отгонного животноводства. Однако реализация таких проектов требует значительных инвестиций и координации между регионами.

Герасимов И.П. и соавторы рассматривают лесоразведение как ключевую меру борьбы с антропогенным опустыниванием, подчеркивая его роль в предотвращении дефляции и сохранении биоразнообразия [2]. Акрамов З.М. и Рафиков А.А. развивают эту идею, предлагая создание лесных полос вдоль водоемов, дорог и населенных пунктов с использованием засухо- и солеустойчивых видов деревьев [1]. Хосровянц И.Л. дополняет концепцию фитомелиорацией осушенного дна моря и дельт рек, что улучшает микроклимат и способствует рекреации [8]. Практическая эффективность таких мер подтверждена в других регионах Узбекистана, однако их масштабирование в Приаралье требует дополнительных исследований.

Котляков В.М. акцентирует внимание на экономии воды через модернизацию оросительных систем, таких как капельное орошение (экономия до 75% влаги) и облицовка каналов, что может сохранить до половины водных запасов [5]. Духовный В.А. и Разаков Р.М. подчеркивают, что экологический кризис Приаралья нельзя сводить только к дефициту воды, предлагая комплексный подход, включающий возвратные поливы дренажными водами и замкнутые технологические циклы [3]. Эти меры особенно актуальны в условиях нестабильного стока Амударьи, который варьируется от 0–5 км³ в маловодные годы до 20 км³ в многоводные.

Обсуждение результатов показывает, что предложенные меры имеют как сильные стороны (комплексность, учет местных условий в ряде случаев), так и слабости (недостаточная детализация, отсутствие экономических расчетов). Например, идея создания каскада водоемов, предложенная Акрамовым и Рафиковым [6], перспективна для борьбы с выдуванием песка и развития рыболовства, но требует моделирования и оценки экологических рисков.

Выводы. Анализ современных подходов к восстановлению экосистем Приаралья демонстрирует широкий спектр научных и практических мер, направленных на смягчение последствий экологического кризиса. Обводнение дельты Амударьи, развитие рыбного хозяйства, защитное лесоразведение и рациональное использование водных ресурсов представляют собой ключевые направления, поддерживаемые большинством исследователей. Однако многие предложения остаются на уровне общих концепций, требующих детальной проработки с учетом гидрологических, климатических и социально-экономических особенностей региона.

Перспективными являются комплексные решения, такие как создание каскада искусственных водоемов, фитомелиорация осушенного дна моря и внедрение современных технологий орошения. Эти меры способны не только стабилизировать экологическую ситуацию, но и обеспечить устойчивое развитие Приаралья, включая восстановление пастбищ, рыболовства и условий для жизни населения. Вместе с тем, их реализация сталкивается с рядом ограничений: недостаток финансирования, сложность координации между странами бассейна Арала и необходимость долгосрочных прогнозов.

Для дальнейшего прогресса требуется усиление научной базы, включая проведение полевых исследований, моделирование экологических процессов и разработку технико-экономических обоснований. Особое внимание следует уделить интеграции локальных и региональных подходов, чтобы обеспечить сбалансированное сочетание краткосрочных мер (например, обводнение озер) и долгосрочных стратегий (стабилизация уровня моря). Таким образом, восстановление экосистем Приаралья остается сложной, но достижимой задачей при условии объединения научных усилий и практических действий.

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ХАРАКТЕР ВЕГЕТАТИВНЫХ ДИСФУНКЦИЙ У ДЕТЕЙ С ЮВЕНИЛЬНЫМ ИДИОПАТИЧЕСКИМ АРТРИТОМ

Аннотация. Ювенильный идиопатический артрит сопровождается не только физическими страданиями детей, но и существенными изменениями психо-эмоциональной сферы, обусловленными дисфункцией вегетативной нервной системы. Непрерывно прогрессирующее течение ЮИА приводит к инвалидизации ребёнка не только в плане физического состояния, но и к частым проявлениям эмоциональной нестабильности, что приводит к нарушению социальной адаптации.

Ключевые слова: ювенильный идиопатический артрит, полиартикулярный вариант, олигоартикулярный вариант, вегетативная дисфункция, головная боль, эмоциональная нестабильность.

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NATURE OF AUTONOMIC DYSFUNCTIONS IN CHILDREN WITH JUVENILE IDIOPATHIC ARTHRITIS

Annotation. Juvenile idiopathic arthritis is accompanied not only by physical suffering in children, but also by significant changes in the psycho-emotional sphere

caused by dysfunction of the autonomic nervous system. The continuously progressing course of JIA leads to the child's disability not only in terms of physical condition, but also to frequent manifestations of emotional instability, which leads to a violation of social adaptation.

Keywords: *juvenile idiopathic arthritis, polyarticular variant, oligoarticular variant, autonomic dysfunction, headache, emotional instability.*

Введение. Среди наиболее значимых заболеваний костно-суставной системы среди детей и подростков является ювенильный идиопатический артрит – прогрессирующее воспалительное заболевание суставов с системным проявлением или без них, с неясной этиологией и аутоиммунным патогенезом.[1,7,12]

Воспалительные заболевания суставов развиваются в любом возрасте и симптомы поражения могут возникать постепенно или развиваться остро и в случае хронизации процесса могут привести к инвалидизации ребенка, нарушая рост, развитие и социальную адаптацию. [2,5,10]

Характеризуясь прогрессивным течением, а также деструктивными нарушениями суставов, ювенильный идиопатический артрит (ЮИА) сопровождается не только физическими страданиями детей, но и существенными изменениями психо-эмоциональной сферы, обусловленными дисфункцией вегетативной нервной системы. [4,8,13]

Вегетативная дисфункция – это состояние функциональной нестабильности, вследствие различных причин и, в том числе, социально-средового или психоэмоционального характера. [8,9]

Детский возраст является сложным этапом, в период которого организм ребёнка постепенно достигает биологической зрелости. На протяжении всего периода детства происходят нервно-психические и эндокринно-гуморальные сдвиги, определяющие рост, морфо-функциональную трансформацию органов и систем. И это предъявляет организму ребёнка высокие адаптационные требования, обуславливая повышенную ранимость и склонность к функциональным нарушениям и даже пограничной патологии. [3,6,9]

Непрерывно прогрессирующее течение ЮИА приводит к инвалидизации ребёнка не только в плане физического состояния, но и к частым проявлениям эмоциональной нестабильности, что приводит к нарушению социальной адаптации. Состояние взаимоотношений этих детей с ближайшим окружением, а также их личностные переживания диктуют необходимость широкого изучения особенностей психоэмоциональной сферы. [4,8,11]

Дальнейшее изучение этой проблемы у детей с ЮИА целесообразно, так как даёт возможность ревматологам выбрать оптимальную тактику комплексного лечения данной категории детей.

Цель исследования. Изучить характер вегетативных дисфункций у детей с ювенильным идиопатическим артритом

Объём и методы исследования. Работа выполнена на базе Областного детского многопрофильного медицинского центра города Андижана. Результаты исследования основаны на данных клинико-инструментального обследования детей с ревматоидным артритом, находившихся на лечении в кардиоревматологическом отделении. Под наблюдением находилось 40 детей, которым проводилось традиционное ревматологическое обследование по общепринятой методике, обращая особое внимание на качественную характеристику каждого признака. Оценка суставных поражений включала: осмотр, пальпацию и функциональные расстройства суставов. Кроме этого для постановки диагноза ревматоидного артрита, а также оценки общей воспалительной активности мы использовали результаты клинических и биохимических показателей крови, а степень морфологических изменений в суставах мы оценивали на основании данных рентгенографии.

Всех детей мы распределили на две возрастные группы. Первая группа включала детей младшего школьного возраста (7-10 лет) – 55% и во вторую группу вошли дети старше 10 лет (11-18 лет) – 45%. По половой принадлежности преобладали девочки – 57,5%, причём это наиболее выражено во II группе.

Результаты работы. Характеристики клинических проявлений выделены отдельно в каждой возрастной группе.

Первая группа детей с ЮИА представлена преимущественно суставной формой (81,8%), причём чаще встречался олигоартикулярный вариант (66,7%), преимущественно с поражением суставов нижних конечностей – коленных (58,3%) и сочетание коленных и голеностопных суставов (41,7%). Воспалительная реакция в коленных суставах сопровождалась значительной экссудацией, которая вызывала резкую болезненность и ограничение подвижности в нём.

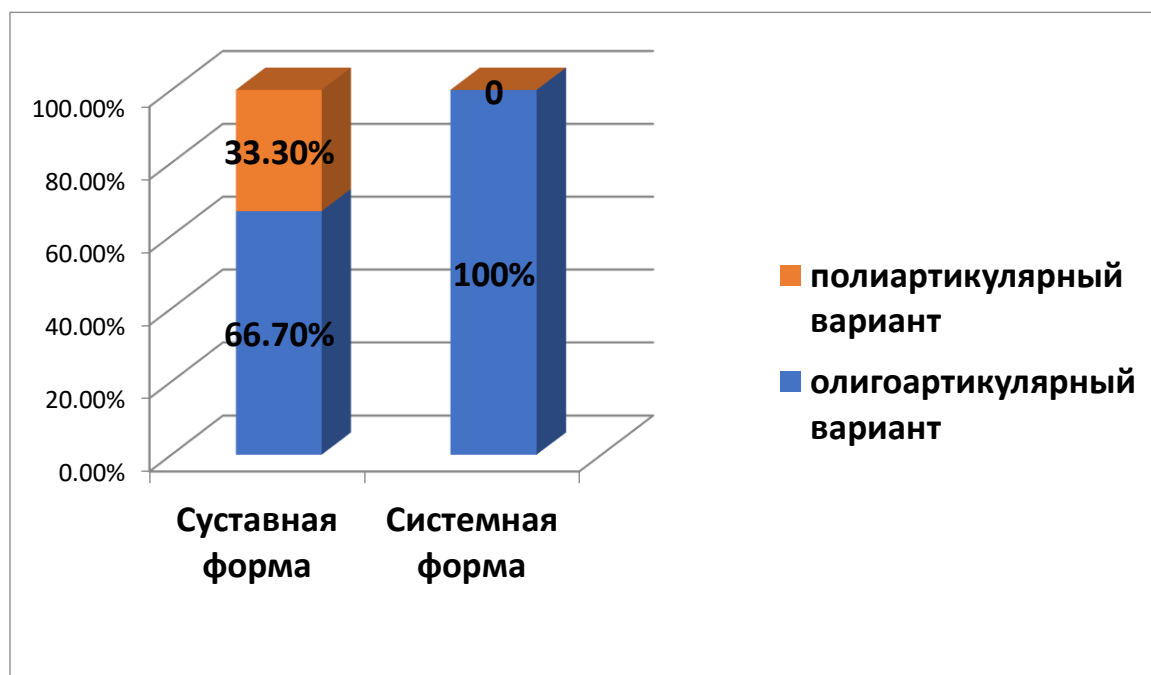
Фото 1. Больная С., 9 лет. Диагноз – ИЮА, II степень активности, олигоартикулярный вариант.



Утренняя скованность и деформация суставов была характерна для детей с полиартикулярной формой заболевания. Поражение суставов стопы отмечено у 2-х детей (33,3%); суставов кисти (16,7%) - у одного ребёнка и сочетанное поражение стопы и кисти – у трёх детей (50%). Лабораторная активность у детей с суставной формой оценена как умеренная, а степень повреждения костной структуры, по данным рентгенологического заключения соответствовали I (25%) и II степени (75%) стадиям при олигоартикулярной форме и с одинаковой частотой (50% - II степени и 50% III стадиям) при полиартикулярном варианте.

Системная форма ювенильного артрита в этой возрастной группе представлена аллерго-септическим вариантом (18,2%), серопозитивным по ревматоидному фактору. Состояние детей при поступлении расценено как тяжёлое. Ведущим клиническим симптомом у всех детей явилась лихорадка, которая носила постоянный характер в течении первого месяца болезни, а в последующие периоды болезни температура поднималась в вечерние или ночные часы до фебрильных цифр, а её самостоятельное снижение сопровождалось обильным потоотделением. Данный характер течения лихорадки был более выражен у детей, ранее длительно получавших глюкокортикоидную терапию. Гепатомегалия имела место у всех детей. У одного ребёнка гепатомегалия сопровождалась повышением показателей печёночных ферментов (АлТ и АсТ) в сыворотке крови, что дало основание для постановки диагноза иммунокомплексного гепатита. Суставной синдром представлен артралгией и сформированным артритом коленных суставов со II (50%) и III (50%) стадиями рентгенологических поражений костной структуры. Из висцеральных поражений имели место изменения со стороны сердечно-сосудистой системы: тахикардия, глухость сердечных тонов, систолический шум в области верхушки сердца. На ЭКГ диагностирована высокая электрическая активность левого желудочка. Высокие клинические и биохимические показатели крови послужили основанием постановки III степени активности в данной возрастной группе детей.

Рисунок 1. Частота суставных вариантов у детей 1 группы.



Вторая группа (18 детей) представлена в возрастном диапазоне 11-18 лет. Дети с длительностью ювенильного артрита более 5 лет составили 55,6%. Частота суставной формы заболевания в наших исследованиях представлена наибольшим удельным весом (83,3%), где ведущую позицию занимал полиартрикулярный вариант (60%) с быстрым прогрессированием процесса.

Фото 2. Больная У., 12 лет. Диагноз – ИЮА, III степень активности, полиартрикулярный вариант.

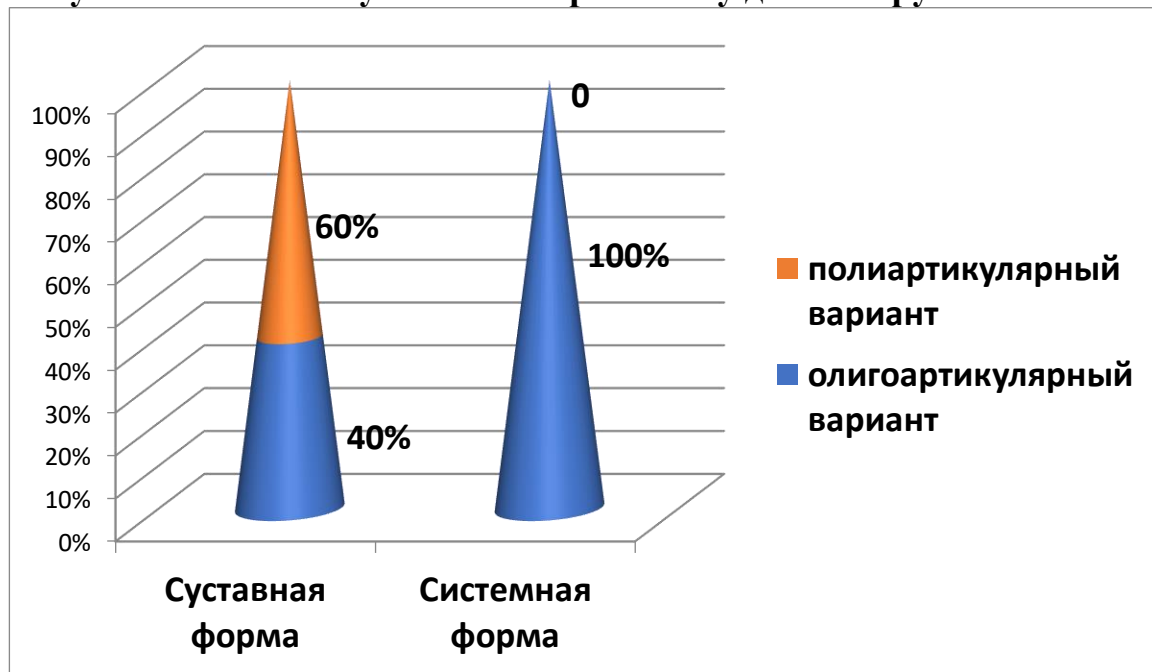


У детей данной возрастной группы при поступлении в стационар на первый план выступало поражение голеностопных, проксимальных пястнофаланговых, межфаланговых, лучезапястных и коленных суставов. У 2-х детей (13,3%) нами выявлена улькарная девиация пальцев в сочетании с

лучевой девиацией запястья и у одного ребёнка вальгусная деформация голени. По результатам рентгенологического обследования суставов у одного ребёнка определена I стадия костных изменений (6,7%); у 40% детей – II стадия; у 33,3% – III стадия и 20% детей с IV стадией рентгенологических изменений. В наших исследованиях рентгенологические изменения суставов были более выражены в «преобладающей руке» и суставов стопы, что можно объяснить большой физической нагрузкой на них. Особо следует выделить группу детей (40%) с поражением глаз в форме иридоциклита, при этом один ребёнок ещё до манифестации ювенильного артрита лечился у окулиста с применением кортикостероидов.

Состояние детей с системной формой (16,7%) ювенильного артрита при поступлении на стационарное лечение оценивалось как тяжёлое. Ведущим клиническим проявлением системности ювенильного артрита явилась лихорадка. Суставной синдром представлен поражением коленных и у одного ребёнка и голеностопных суставов выраженным экссудативным компонентом и III степенью рентгенологических изменений в них. Лимфоаденопатия и гепатомегалия присутствовала у всех детей. Поражение сердца в этой группе детей сопровождалось одышкой, тахикардией, приглушенностью сердечных тонов, систолическим шумом в области верхушки сердца, расширением границ относительной тупости влево. На ЭКГ диагностирована внутрижелудочковая блокада, а на ЭхоКГ – дилатация левого желудочка.

Рисунок 2. Частота суставных вариантов у детей 2 группы

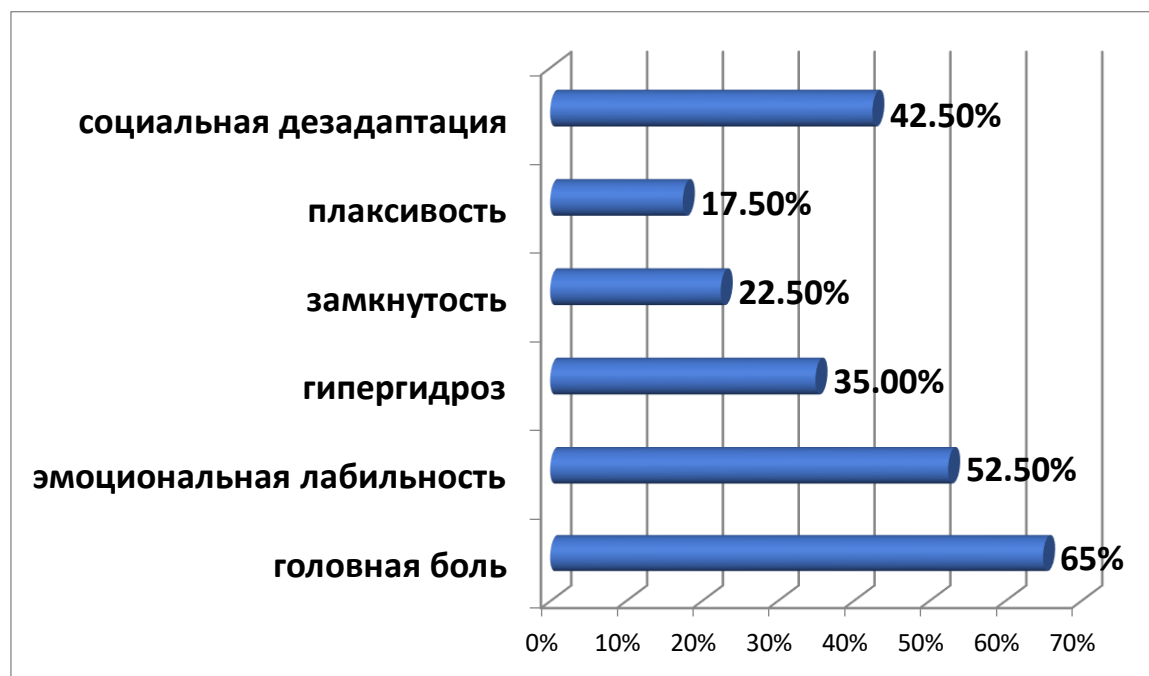


Тяжесть течения системного варианта ювенильного артрита в этой группе детей подтверждена высокой лабораторной активностью.

Из большого количества жалоб у всех обследованных нами детей, связанных с вегетативной дисфункцией, мы выделили наиболее часто встречающиеся: головная боль, повышенная потливость, эмоциональная

лабильность, плаксивость, социальная дезадаптация (отсутствие постоянных друзей, нарушение контакта со сверстниками), замкнутость.

Рисунок 3. Частота симптомов вегетативной дисфункции у детей с ЮИА.



Как показал анализ жалоб – головная боль является одной из наиболее частых. В отличие от симптомов поражения суставов степень её выраженности относительно невелика. В то же время длительное течение головных болей и связанные с ними астеновегетативные нарушения, могут оказывать неблагоприятное влияние на активность детей с идиопатическим артритом, их социальную адаптацию и даже на качество жизни.

Головная боль встречалась у 86,4% детей I и 77,8% в II возрастных группах, с длительностью заболевания более 3-х лет. В ходе проведения сравнительного анализа установлена взаимосвязь длительности головных болей и формы ювенильного артрита. Наиболее выраженная цефалгия по длительности и интенсивности нами выявлена у детей с полиартикулярным вариантом не зависимо от возрастной принадлежности.

Головная боль у всех детей с системным вариантом ЮИА (7 детей) была обусловлено повышением АД, которое мы связывали с длительной гормональной терапией и интоксикацией. Для купирования головных болей требовалось дополнительное медикаментозное вмешательство.

Среди детей с суставным вариантом ювенильного артрита (33 детей) наиболее частой жалобой на головную боль было выявлено при полиартикулярном варианте (15 детей – 45,5%). При анализе данных РЭГ у 9 детей (60%) было отмечено нарушение венозного оттока; у 4 (26,6%) – извитость артерий; у 2 детей (13,4%) – спазм артерий. Повышение АД на фоне головной боли было диагностировано у 2-х детей 15 и 16 лет, с продолжительностью ювенильного артрита более 5 лет, с

быстро прогрессирующим течением и длительной глюкокортикостероидной терапией.

Самую редкую жалобу на головную боль предъявляли дети с олигоартикулярным вариантом, составившие 38,8% от общего числа детей с данным вариантом течения ювенильного артрита. Головная боль в этой группе детей была обусловлена эмоциональной лабильностью, не сопровождалась подъемом АД и не требовала медикаментозного вмешательства.

Эмоциональная лабильность встречалась более, чем у половины обследованных нами детей (52,5%), причем преимущественно у девочек. Эмоциональная нестабильность выражалась повышенной возбудимостью, плаксивостью, нарушением сна, гипергидрозом.

Дети первой возрастной группы (7-10 лет) легче вступали в контакт при беседе с ними, однако быстро наступали приступы раздражительности, они замыкались в себе, что особенно было выражено у больных с системным и полиартикулярным вариантами, имеющими функциональную недостаточность суставов II и III степени.

Несколько большие трудности в общении мы испытывали при беседе с детьми второй возрастной группы (11-16 лет). Они были более замкнуты, неохотно отвечали на вопросы. Раздражительность и небольшую агрессивность проявляли мальчики (33,3%) 15-16 лет, имеющие физическую неполноценность за счёт деформации суставов. Девочки (58,3%) отмечались вспыльчивостью и быстрой сменой настроения. Социальная дезадаптация детей чаще встречалась в этой возрастной группе.

Около 1/3 детей I и II возрастных групп (32,5%) и их родители отметили снижение успеваемости в школе, что по-видимому может быть обусловлено как вследствие неблагоприятного воздействия самого заболевания, так и частых и длительных госпитализаций.

Заключение. Таким образом, среди обследованных нами детей с ЮИА чаще встречалась суставная форма (82,5%), а по гендерной принадлежности преобладали представительницы женского пола (65%). Ведущим проявлением вегетативных расстройств у детей с ювенильным артритом явилась головная боль (65%) предъявляемая детьми I (86,6%) и II (77,8%) возрастных групп, преимущественно с полиартикулярным вариантом, обусловленная сосудистыми нарушениями, подтвержденными результатами РЭГ.

Эмоциональная лабильность в I группе детей с ЮИА проявлялась повышенной возбудимостью, плаксивостью, гипергидрозом и раздражительностью; в II группе – вспыльчивостью, агрессивностью и социальной дезадаптацией.

Вывод. Своевременное выявление и коррекция психоэмоциональных расстройств – важный аспект в комплексном лечении детей с ЮА.

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СРАВНИТЕЛЬНЫЙ АНАЛИЗ ИЗМЕНЕНИЙ В УЗЛАХ СОЛНЕЧНОГО СПЛЕТЕНИЯ ПРИ ПЕРЕРЕЗКЕ БРЫЖЕЕЧНЫХ И ЧРЕВНЫХ НЕРВОВ

Резюме: В статье изучены нейронного состава узлов солнечного сплетения и его связей. В части опытов у кошек производилась двусторонняя перерезка чревных нервов, основная масса нервных волокон которых направляется к солнечному сплетению. Транснейрональной дегенерации нервных клеток солнечного сплетения, которая возникла в них как реакция на потерю перичеселлюлярных связей — синапсов после перерезки преганглионарных волокон. Это показывает, что значительная часть нейронов солнечного сплетения получает преганглионарные волокна по чревным нервам.

Ключевые слова: кошки, солнечного сплетения, нервных клеток, планиметр, цитометрия, гематоксилином и эозином, толуйдиновым синим.

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COMPARATIVE ANALYSIS OF CHANGES IN THE SOLAR PLEXUS NODES AFTER TRANSITION OF MESENTERIC AND CELIAC NERVES

Abstract: The article studies the neural composition of the solar plexus nodes and its connections. In some experiments, cats underwent bilateral transection of the celiac nerves, the bulk of whose nerve fibers are directed to the solar plexus. Transneuronal degeneration of the nerve cells of the solar plexus, which arose in them as a reaction to the loss of pericellular connections - synapses after transection of the preganglionic fibers. This shows that a significant part of the solar plexus neurons receive preganglionic fibers through the celiac nerves.

Key words: cats, solar plexus, nerve cells, planimeter, cytometry, hematoxylin and eosin, toluidine blue.

Введение. В литературе неоднократно указывалось на необходимость изучения узлов солнечного сплетения в связи с тем, что последние являются не только одним из главных источников иннервации органов брюшной и тазовой полостей, но участвуют, по-видимому, в иннервации некоторых

органов грудной полости [1,4]. Особую важность чревное сплетение приобретает еще и потому, что помимо нервных клеток с известными функциями, здесь имеются крупные ганглиозные скопления, физиологическое значение которых до сих пор полностью не выяснено. Большинство гистологических работ по солнечному сплетению посвящено описанию нервно-волокнутого состава его узлов, в частности, рецепторного аппарата [2,3]. Отдельные работы, выполненные с применением экспериментального метода, касаются в основном афферентной иннервации солнечного сплетения и не уделяют достаточного внимания его нейронам [5,6].

Цель исследования. Изучить нейронного состава узлов солнечного сплетения и его связей, реакция на потерю перичеселлюлярных связей — синапсов после перерезки преганглионарных волокон.

Материалы и методы исследования. Для изучения нейронного состава узлов солнечного сплетения и его связей в настоящей работе на 25 взрослых кошках были поставлены две серии опытов:

1) перерезка чревных нервов выше узлов солнечного сплетения; 2) перерезка нервов ниже узлов солнечного сплетения. В качестве основного теста были использованы морфологические проявления ретроградной и транснаксональной дегенерации нейронов после этих операций. Для уточнения этих данных на препаратах, окрашенных гематоксилином и эозином, производилась цитометрия нервных клеток с помощью планиметра. В каждом срезе измерялось 200 клеток. Кроме того, на серийных срезах узлов толщиной 8- 9 м, окрашенных толуйдиновым синим, подсчитывалось количество ретроградно измененных клеток. Контролем служили узлы солнечного сплетения 10 практически здоровых кошек.

Результаты исследования. Перерезка симпатических нервов выше узлов солнечного сплетения. В части опытов у кошек производилась двусторонняя перерезка чревных нервов, основная масса нервных волокон которых направляется к солнечному сплетению. Через 48 часов после спланхнотомий в солнечном сплетении происходит массовая дегенерация пресинаптических нервных волокон и дегенерация синаптического аппарата на части нервных клеток чревных узлов. Перерезка чревных нервов приводит также к ряду структурных нарушений в телах нервных клеток. На препаратах, окрашенных толуйдиновым синим видно, что через 8—15 дней после операции во многих нейронах обнаруживается хроматолит, который начинается с периферии клетки и постепенно распространяется к ее центру. Об уменьшении размеров клеток свидетельствуют цитометрические данные и обработка цифрового материала методом вариационной статистики. Как показывают результаты наших измерений, у интактных животных имеется очень большая вариабельность размеров нервных клеток. Однако, среди их многообразия можно выделить 3 группы клеток размерами: 1) 1-30 планиметрических единиц; 2) 31-60 планиметрических единиц; 3) 61—100 планиметрических единиц. Наибольшее количество клеток в норме (93 из

200) имеет размеры 31 —45 планиметрических единиц. Через 10—15 дней после двусторонней спланхнотомии отмечается значительное увеличение количества клеток меньшего размера. Так, через 14 дней после перерезки чревных нервов основная масса нейронов солнечного сплетения (118 из 200) оказалась размерами 16—30 единиц планиметра. Из сравнения размеров нервных клеток экспериментальных и контрольных животных следует, что перерезка чревных нервов приводит через 14 дней к уменьшению их в 2 раза. Таким образом, цитометрические данные, полученные в работе, совпадают с результатами визуальных наблюдений и служат объективным доказательством феномена транснейрональной дегенерации нервных клеток солнечного сплетения, которая возникла в них как реакция на потерю перичеселлюлярных связей — синапсов после перерезки преганглионарных волокон. Ретроградная дегенерация нейронов чревных узлов при спланхнотомии свидетельствует о том, что трофические центры некоторых центростремительных волокон чревных нервов находятся в солнечном сплетении. Перерезка симпатических нервов ниже узлов солнечного сплетения. В этой серии опытов мы перерезали у кошек различное количество нервных веточек (от одной до пяти), проходящих в брыжейке. Через 36-48 часов после операции в узлах солнечного сплетения импрегнационным методом обнаружилась дегенерация тонких мягкотных нервных волокон. Через 8-10 дней после перерезки брыжеечных нервов многие нейроны солнечного сплетения оказались ретроградно измененными. Такие клетки имели слегка набухший вид, в них почти полностью исчезало вещество Ниссля, сохраняясь в небольшом количестве лишь на периферии клетки или около ядра. Значительное количество ретроградно измененных, в основном, крупных нейронов солнечного сплетения (14-27%) после перерезки брыжеечных нервов свидетельствует о том, что в составе этих нервов проходят многочисленные аксоны нервных клеток солнечного сплетения. Небольшое количество нейронов в данной серии опытов было транснейронально измененным. Этот факт мы объясняем тем, что в составе брыжеечных нервов, по-видимому, проходят не только центробежные, но также и центростремительные нервные волокна. Следует отметить, что в 1-ой и во 2-ой сериях опытов кроме ретроградно и транснейронально измененных нейронов были отмечены также неизмененные нервные клетки с сохраненными синапсами, определить природу которых в данной работе не представляется возможным.

Вывод. Полученные данные показывают, что солнечное сплетение является сложно организованным рефлекторным центром. Нейриты клеток его узлов проходят не только в нисходящем направлении в составе брыжеечных нервов, но также и в восходящем - в составе чревных нервов.

Ретроградная дегенерация значительного количества нейронов солнечного сплетения после перерезки нервов в брыжейке тонкого кишечника свидетельствует о том, что эти клетки, наряду с нейронами Мейсснеровского и Ауэрбаховского сплетений представляют собой дополнительный источник

двигательной иннервации тонкого кишечника и могут быть классифицированы как клетки 1-го типа по Догелю.

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ВЛИЯНИЕ ГЕМОКОАГУЛИРУЮЩИХ ФАКТОРОВ ПРЕДСТАТЕЛЬНОЙ ЖЕЛЕЗЫ И ЕЕ АДЕНОМЫ НА СВЕРТЫВАЮЩУЮ СИСТЕМУ КРОВИ

Резюме: В статье изучены тромбопластические и фибринолитические свойства экстрактов 45 предстательных желёз человека, взятых у трупов, 20 аденом простаты, удалённых во время операции. Как показали результаты поставленных экспериментов, экстракты простаты существенно повышают степень тромботеста, укорачивают время рекальцификации бестромбоцитной плазмы, способствуют утилизации протромбина, причём это действие сохраняется до разведения в 10.000 раз. Полученные данные свидетельствуют о том, что ткань простаты и её аденомы содержат весьма активные тромбопластические и фибринолитические агенты, а также естественные антикоагулянты.

Ключевые слова: предстательных желёз человека, аденом простаты, тромботеста, гепаринизированной плазмы, фибринолиз,

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INFLUENCE OF HEMOCOAGULATING FACTORS OF THE PROSTATE GLAND AND ITS ADENOMA ON THE BLOOD COAGULATION SYSTEM

Abstract: In the article We studied the thromboplastic and fibrinolytic properties of extracts of 45 human prostate glands taken from corpses, 20 prostate adenomas removed during surgery. As the results of the experiments showed, prostate extracts significantly increase the degree of thromboses, shorten the time of recalcification of platelet-free plasma, promote the utilization of prothrombin, and this effect is maintained until diluted 10,000 times. The obtained data indicate that prostate tissue and its adenomas contain very active thromboplastic and fibrinolytic agents, as well as natural anticoagulants.

Key words: human prostate glands, prostate adenomas, thrombotest, heparinized plasma, fibrinolysis,

Введение. За последнее время тканевым гемо коагулирующим соединениям придается важное значение в патогенезе фибриногенемических

кровотечении, которые осложняют травматические операции на лёгких, сердце, предстательной железе и других органах. Однако гемокоагулирующие и фибринолитические свойства предстательной железы изучены недостаточно, а о свойствах аденомы мы вообще не встретили сообщений в доступной литературе, что и явилось предпосылкой для наших исследований.

Цель исследования. Изучить тромбопластические и фибринолитические свойства экстрактов предстательных желёз человека, взятых у трупов и аденом простаты, удалённых во время операции.

Материалы и методы исследования. Нами изучены тромбопластические и фибринолитические свойства экстрактов 45 предстательных желёз человека, взятых у трупов, 20 аденом простаты, удалённых во время операции. Экстракты готовили из расчёта 1 г ткани на 9 мл физиологического раствора (концентрация 1:10), а при необходимости разводили в 100, 1000 и более раз. Фибринолитические и тромбопластические свойства изучались общепринятыми способами. Результаты исследований обработаны методом вариационной статистики для связанных между собой наблюдений.

Результаты исследования. Известно, что степень тромботеста, время рекальцификаций бестромбоцитной и гепаринизированной плазмы, потребление протромбина отражают тромбопластическую активность крови. Как показали результаты поставленных экспериментов, экстракты простаты существенно повышают степень тромботеста, укорачивают время рекальцификации бестромбоцитной плазмы, способствуют утилизации протромбина, причём это действие сохраняется до разведения в 10.000 раз. Одновременно экстракты сокращают время рекальцификации гепаринизированной плазмы на 90% по сравнению с контролем. Следует отметить, что тромбопластическая активность ткани простаты относительно невелика по сравнению с экстрактами дециму и плаценты, которые сохраняют тромбопластическую активность до разведения их в 100.000—320.000 раз. Интересно было выяснить, какова тромбопластическая активность аденомы предстательной железы. Экстракты простаты удлиняют протромбиновое время плазмы с дефицитом Ас-глобулина на 48%. Гомогенаты аденоматозных узлов тормозят образование фибрина в плазме с дефицитом Ас — глобулина на 55% по сравнению с контролем, но результаты статистически не достоверны. Такое действие экстрактов, возможно, объясняется наличием антикоагулянтов в простате и её аденоме. О содержании антикоагулянтов в экстрактах свидетельствует их влияние на тромбиновое время плазмы и 1% раствора фибриногена. После добавления гомогената предстательной железы тромбиновое время удлиняется на 106% по сравнению с контролем, а в 12 опытах из 36 сгусток не образовался даже по истечении 300 секунд. Образование сгустка в 1% растворе фибриногена под влиянием экстрактов простаты затормаживается на 25%. Экстракты аденомы простаты удлиняют тромбиновое время плазмы незначительно, но существенно задерживают образование фибрина в 1%-ом растворе фибриногена. Данный факт говорит о

том, что антикоагулянтные свойства ткани предстательной железы частично обусловлены гепарином или гепариноидами. Однако толуидиновый синий не доводит тромбиновое время до контрольных величин, что указывает на наличие в экстрактах и антикоагулянтов иного характера. Нами установлено, что экстракты простаты и доброкачественных образований предстательной железы замедляют растворение сгустка, в котором превращение фибрин-полимера в фибрин «I» ингибировано монойодацетатом, соответственно на 24% и 48% по сравнению с контролем. Это свидетельствует о наличии в ткани предстательной железы и её аденомы фермента, подобного плазменной фибриназе. Данное соединение повышает устойчивость фибрина к плазмину, оказывая тем самым косвенное влияние на эффективность фибринолиза. Полученные данные свидетельствуют о том, что ткань простаты и её аденомы содержат весьма активные тромбопластические и фибринолитические агенты, а также естественные антикоагулянты. Какова же роль тканевых факторов свёртывания крови и тканевых фибринолитических агентов в возникновении нарушений гемокоагуляции при оперативных вмешательствах на предстательной железе. Доказано, что травматизация тканей во время операции приводит к освобождению их гемокоагулирующих и фибринолитических веществ в кровоток, вследствие чего возникают нарушения гемокоагуляции. Результаты наших исследований показывают, что гемокоагулирующие субстанции изученных тканей более устойчивы к разведению, чем фибринолитические, причём тромбопластическая активность аденомы выше, фибринолитическая активность ниже, чем в неизменённой простате. Поэтому, при проникновении в кровоток, будет доминировать действие тромбопластических соединений и нарушение свертывания крови при этом развивается по механизму тромбгеморрагического синдрома, который заключается в возникновении кровоточивости вслед за внутрисосудистым свёртыванием.

Вывод. Исследована ткань предстательной железы 45 трупов и 20 аденом простаты, удалённых во время операции. Установлено, что предстательная железа и её аденома содержит комплекс гемокоагулирующих и фибринолитических соединений. Одновременно с активаторами фибринолиза в ткани предстательной железы и аденомы находятся и ингибиторы. Анализ гемокоагулирующих и фибринолитических свойств простаты и аденомы позволяет полагать, что при проникновении в кровоток тканевого «сока» нарушения гемостаза формируются по механизму тромбгеморрагического синдрома.

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ТЕРРИТОРИАЛЬНЫЙ СОСТАВ И ТУРИСТСКО-РЕКРЕАЦИОННЫЙ ПОТЕНЦИАЛ ИСТОРИКО-КУЛЬТУРНЫХ ТУРИСТСКИХ ОБЪЕКТОВ КАШКАДАРЬИНСКОЙ ОБЛАСТИ

Аннотация: В статье рассматриваются географические аспекты, способствующие поддержанию баланса между сохранением историко-культурного наследия и развитием туризма, определение туристско-рекреационного потенциала, научные мнения ученых по использованию объектов историко-культурного наследия. В статье также приводятся сведения о территориальном составе и туристско-рекреационном потенциале историко-культурных туристских дестинаций Кашкадарьинской области, археологическом туризме, территориальном составе объектов материального и культурного наследия, часто посещаемых туристами региона.

Ключевые слова: Археология, архитектура, горные районы, пустынные регионы, монументальные памятники, музеи, этнографические центры, достопримечательности, Дельфы, Великая Китайская стена, Варанаси, Сигирия.

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TERRITORIAL COMPOSITION AND TOURIST-RECREATIONAL POTENTIAL OF HISTORICAL-CULTURAL TOURIST SITES OF KASHKADARYA REGION

Abstract: The article examines the geographical aspects that contribute to maintaining a balance between the preservation of historical and cultural heritage

and the development of tourism, the definition of tourism and recreational potential, and scientific opinions of scientists on the use of historical and cultural heritage sites. The article also provides information on the territorial composition and tourism and recreational potential of historical and cultural tourist destinations in the Kashkadarya region, archaeological tourism, and the territorial composition of material and cultural heritage sites frequently visited by tourists in the region.

Keywords: *Archaeology, architecture, mountainous regions, desert regions, monumental sites, museums, ethnographic centers, attractions, Delphi, Great Wall of China, Varanasi, Sigiriya.*

Прежде всего, при изучении территориального состава историко-культурных объектов туризма необходимо учитывать несколько ключевых аспектов, которые помогут выявить особенности, привлекающие внимание туристов, а также помогут соблюсти баланс между сохранением культурного наследия и развитием туризма:

1. Географическое положение историко-культурных объектов. Во-первых, определите центральные и периферийные местоположения в регионе. Это поможет вам понять, какие объекты находятся в центре туристического потока, а какие расположены вокруг него. Во-вторых, воздействие природных факторов на доступность историко-культурных объектов (например, горные районы, реки, леса и т. д.) может сделать это посещение затруднительным или, наоборот, привлекательным.

Горные и пустынные регионы: горы часто ассоциируются с уникальными историческими памятниками и культурными объектами. Например, древние крепости, монастыри, храмовые комплексы или поселения, расположенные в горной местности, могут привлекать туристов не только своей исторической ценностью, но и красотой своих природных ландшафтов. В горных районах также активно развиваются экотуризм и активный отдых (пешие походы, альпинизм, горнолыжный спорт), что способствует привлечению туристов к историческим местам. Пустынные ландшафты, таинственные места, странные ландшафты и необычная дикая природа могут сделать экотуризм привлекательным, а пустынные регионы также богаты древними культурами, археологическими памятниками и историческими достопримечательностями. Например, Мачу-Пикчу (Перу) в горах, Петра (Иордания) в пустынях, Долина царей (Египет) и другие.

Реки и водоразделы: Реки часто играют важную роль в истории регионов, особенно если они являются важными торговыми или культурными артериями. Исторические города и деревни, расположенные вдоль рек, могут привлечь туристов, интересующихся историей торговли, судоходства или просто природными красотами, например, речными круизами. Скалы вдоль рек Рейн и Луара в Европе, пирамиды на берегах реки Нил, руины Карфагена в Тунисе и другие.

Леса и природные территории: Леса, заповедники и природные парки часто содержат археологические и культурные памятники. Например, леса

могут быть древними святилищами, кладбищами или скрытыми поселениями, что делает их популярным местом для археологических экспедиций и путешествий по следам древних цивилизаций. Например, цивилизация майя, культура инков (Мексика), Шварцвальд (Германия), Джерсийский лес (Франция) и другие.

Изолированность объектов: Некоторые исторические и культурные объекты расположены в труднодоступных местах, что делает их особенно привлекательными для туристов, ищущих уникальные и неизведанные маршруты. Например, древние храмы в горных районах или заброшенные города, спрятанные в лесах, привлекают любителей приключений и тех, кто ищет не только исторических знаний, но и незабываемых впечатлений.

Экстремальные условия: Исторические места, расположенные в экстремальных природных условиях, таких как пустыни, высокогорья или труднодоступные леса, могут стать объектами специального туризма (экспедиционного, приключенческого, научного). Нельзя отрицать важность размещения исторических и культурных памятников в сфере туризма. Географические особенности, такие как горы, реки, леса и пустыни, не только определяют историческую значимость этих мест, но и оказывают существенное влияние на их туристическую привлекательность, развитие инфраструктуры и возможности устойчивого туризма. Природные ландшафты создают уникальные условия для развития культурного, экологического, активного и приключенческого видов туризма.

2. Типология объектов: деление историко-культурных объектов на категории (археологические памятники, архитектурные памятники, монументальные памятники, музеи, этнографические центры и т. д.) и характеристика объектов по их исторической значимости, например, памятники культуры, связанные с определенными историческими событиями и т. д.

3. Историческая и культурная значимость: оценка исторического контекста каждого объекта, понимание его значимости (роли) в истории региона, страны или мира и изучение того, как объект вписывается в историю местных традиций, обычаев, культурных и религиозных практик. Дельфы (Греция), Великая Китайская стена (Китай), Варанаси (Индия), Сигирия (Шри-Ланка) и другие. Например, храм Аполлона в Дельфах, Греция. Дельфы были центром религиозной жизни Древней Греции, а расположенный там храм Аполлона играл важную роль в религиозных и политических событиях того времени, поскольку в нем находился знаменитый «оракул» (место оракулов), где совещались политики и правители. Оценка значения храма в греческой и мировой истории включает в себя его влияние на религиозную и культурную жизнь древнегреческого общества.

4. Состояние объектов: оценка современного состояния историко-культурных объектов – насколько они сохранились и какие работы необходимо провести для их сохранения, а также изучение влияния

негативных факторов (эрозия, землетрясения, загрязнение окружающей среды и т. д.) на сохранность исторических памятников.

Оценка состояния историко-культурных объектов включает несколько этапов, направленных на определение их естественного состояния, степени утраты, ухудшения состояния и основных угроз их сохранности: Естественное состояние: оценка внешнего облика и конструктивных особенностей объекта. Сюда входит обследование строительных материалов (каменные блоки, кирпич, дерево и т. д.), состояние фасадов, крыш, декоративных элементов, а также анализ внутренних помещений (например, храмов, дворцов и других зданий).

Уровень сохранности: оценка степени, в которой объект сохраняет свои первоначальные формы и элементы. Например, были ли утрачены оригинальные архитектурные элементы (статуи, картины, архитектурные детали и т. д.)? Важно оценить, насколько объект был изменен в прошлом, а также какие его части сохранились в своем первоначальном виде.

Доступность и удобство использования: Очень важно учитывать, как объект будет использоваться в современном мире, например, будет ли он туристической достопримечательностью или религиозным, культурным или образовательным центром.

5. Инфраструктура туризма: важны наличие транспортных связей и уровень удобства для туристов, развитость инфраструктуры (гостиницы, рестораны, информационные центры, указатели, доступность для людей с ограниченными возможностями), а также изучение влияния туризма на местные сообщества и экосистемы.

6. Культурные особенности региона: учитываются специфические особенности региона с точки зрения связи историко-культурных объектов с местной народной культурой и традициями (народные промыслы, фольклор, гастрономия и т.д.), традиционной архитектурой, искусством и обычаями.

7. Международное значение: влияние исторических и культурных объектов на мировое культурное наследие, например, объекты, включенные в Список всемирного наследия ЮНЕСКО, могут иметь особое туристическое значение. Важным является также сотрудничество с международными культурными и образовательными учреждениями, участие в глобальных проектах и инициативах.

8. Маркетинг и реклама: разработка стратегий продвижения объектов через различные каналы (социальные сети, туристические сайты, фестивали и т.д.) и анализ аудитории (местное население, иностранные туристы, культурные или образовательные поездки).

9. Экологические и социальные аспекты: оценка воздействия туризма на окружающую среду и местные сообщества, применение принципов устойчивого туризма, взаимодействие с местными сообществами и вовлечение их в процесс сохранения объектов.

10. Культурный туризм: особое значение имеет привлечение туристов посредством культурных и исторических мероприятий, таких как фестивали, (живые) реконструкции исторических событий и выставки.

Специализированный историко-культурный туризм в развитии туризма характеризуется подробными тематическими турами. Например, специализированный архитектурный тур знакомит туристов с архитектурными особенностями региона и более подробно, в то время как этнографический тур знакомит туристов с культурными особенностями, традициями, повседневной жизнью и кухней народа или народов региона или страны [1]. Поэтому при изучении территориального состава историко-культурных объектов необходимо учитывать не только их историко-культурную ценность, но и их существование, состояние, влияние на регион, а также методы их эффективного продвижения и охраны.

Прежде чем изучать туристско-рекреационный потенциал различных регионов или территорий, важное научное и практическое значение имеет определение их современного содержания, структуры и географических аспектов развития. Во-первых, когда мы говорим о понятии потенциала, то подчеркиваем, что в различных источниках оно имеет скорее значение ресурса, возможности, средства или чего-то, что может быть использовано для решения определенной цели или задачи [12]. В то же время следует отметить, что в большинстве случаев сущность понятия потенциала невозможно представить без материальной основы.

Существующая литература отражает различные взгляды на туристический или рекреационный потенциал регионов. В частности, по мнению В.И.Кружалина и др., под рекреационным ресурсным потенциалом регионов понимается территориальная сбалансированность и состояние рекреационных (природных, культурно-исторических) ресурсов, активизирующих и обеспечивающих развитие рекреации [7]. Под туристско-рекреационным потенциалом регионов авторы понимают туристско-рекреационные ресурсы, направленные на удовлетворение потребностей населения в туристско-рекреационной деятельности и их территориальную совместимость.

А.И.Зайцева изучает модели использования объектов историко-культурного наследия в познавательном туризме [6]. Автор описывает основные модели, исторические факты их возникновения, приводит конкретные примеры их использования. Было подчеркнуто, что правильное использование таких объектов будет способствовать их сохранению и принесет экономическую выгоду за счет привлечения туристов.

В целом историко-культурные объекты и природное наследие следует подразделять на следующие типы [9]: исторические здания и ансамбли; священные исторические места; монастырские комплексы и постройки; комплексы недвижимости; садово-парковое хозяйство; археологические памятники; национальные заповедники; исторические пейзажи.

Кашкадарьинская область расположена в юго-западной части Узбекистана и отличается богатством объектов историко-культурного наследия. В регионе имеется ряд исторических, археологических, архитектурных и культурных памятников, которые в основном известны своими древними историческими событиями, архитектурными памятниками и возможностями для развития современного туризма. На территории нашей страны находится более 8000 историко-культурных объектов, из которых 7 природных и исторических объектов в настоящее время включены в Список всемирного наследия ЮНЕСКО [14]. К ним относятся Ичан-Кала (Внутренняя цитадель), город Хива (1990), исторический центр Бухары (1993), исторический центр Шахрисабза (2000), Самарканд - перекресток культур (2001), Западный Тянь-Шань (2016), Туранские степи в умеренном поясе (2023), а также Шелковый путь: коридор Зарафшан-Каракумы (2023).

В Список всемирного наследия ЮНЕСКО включены природные и искусственные объекты, которые, по мнению экспертов ЮНЕСКО, имеют культурное, историческое или экологическое значение. По состоянию на 2024 год в список Всемирного наследия входит 1223 объекта из 168 стран [15]. Из них 952 объекта культурного назначения, 231 объект природного назначения и 40 объектов смешанного назначения.

Таким образом, потенциал сельских районов в плане материального и культурного наследия (археологические, архитектурные, монументально-художественные памятники, достопримечательные места) тесно связан с их местоположением, природой, густой или редкой плотностью населения и особенно с их богатым историческим прошлым, древним освоением земель и расселением населения. Например, Китабо-Шахрисабзская группа районов (Яккабагский, Шахрисабзский, Китабский районы), имеющие благоприятные природно-географические условия, многообразны и густонаселены с древнейших времен, имеют большое количество памятников материального и культурного наследия, тогда как, напротив, вновь освоенные сельские районы региона (Нишанский, Мубаракский, Миришкорский) отличаются малочисленностью и многообразием [4]. Известный ученый профессор А. Солиев также высоко оценивает «тот факт, что в Шахрисабзском, Китабском и Яккабагском районах есть много святынь и мест паломничества», а «как туристическая достопримечательность древний Шахрисабз является родиной великого воина Амира Темура» [10].

По состоянию на январь 2019 года на территории Кашкадарьинской области зарегистрировано 1311 памятников (объектов) культурного и исторического наследия (16,3% от территории Узбекистана). Из них 1041 - археологические памятники, 200 - архитектурные памятники, 43 - памятники монументального искусства, 27 - достопримечательные места. Они расположены в различных городских и сельских районах региона [4]. По данным на 2024 год, на территории области зарегистрировано 1496 (17,7% от общей площади Узбекистана) памятников (объектов) культурного и исторического наследия. Из них 1215 - археологические памятники, 211-

архитектурные памятники, 37 - памятники монументального искусства, 30 - достопримечательности и 4 - музеи (таблица - 2.1.1).

Таблица-2.1.1.

**Уровень обеспеченности историко-культурными объектами
Кашкадарьинской области**

№	Регионы	Всего объект ов культу рного наслед ия	Археолог ические памятник и	Памятники архитектур ы	Достопр имечате льности	Памятни ки монумента льного искусств а	Количе ство музеев
1	г. Карши	61	28	24	1	6	2
2	г. Шахрисабз	66	27	29	2	6	2
<i>районы:</i>							
3	Шахрисабзский	185	160	23	2	-	-
4	Яккабагский	237	195	38	2	2	-
5	Китабский	305	280	17	5	3	-
6	Каршинский	133	114	15	4	-	-
7	Гузарский	109	94	9	3	3	-
8	Касбинский	93	79	11	2	3	-
9	Касанский	91	75	13	1	2	-
10	Чиракчинский	71	55	11	2	3	-
11	Камашинский	66	59	3	3	1	-
12	Дехканабадский	38	32	4	1	1	-
13	Миришкорский	18	9	6	1	2	-
14	Мубарекский	8	2	3	1	2	-
15	Кокдалинский	8	3	5	-	-	-
16	Нишанский	7	3	1	-	3	-
По области:		1496	1215	211	30	37	4

Таблица составлена авторами на основе данных Кашкадарьинского областного управления туризма.

Как было отмечено выше, количество объектов культурного наследия в Кашкадарьинской области составляет 1496, из них 19 имеют международное, 982 - республиканское и 495 - местное значение. На территории Кашкадарьинской области находится 1 историко-культурный объект (исторический центр города Шахрисабз), включенный в список Всемирного наследия ЮНЕСКО [5]. Среди туристических объектов материального и культурного наследия региона наибольшее количество составляют археологические памятники (1215). Большинство из них состоят из холмов разных эпох, а также замков, памятников, руин старых домов многого и другого. Археологический потенциал Кашкадарьинской области делится на 4 группы: районы с очень высоким потенциалом - Китабский, Яккабагский,

Шахрисабзский районы, районы с высоким потенциалом - Каршинский и Гузарский районы, районы со средним потенциалом - Касбинский, Касанский, Камашинский, Чиракчинский, Дехканабадский районы и районы с низким потенциалом - г.Карши, г.Шахрисабз, Миришкорский, Кокдалинский, Нишанский и Мубарекский районы (рисунок 2.1.1).

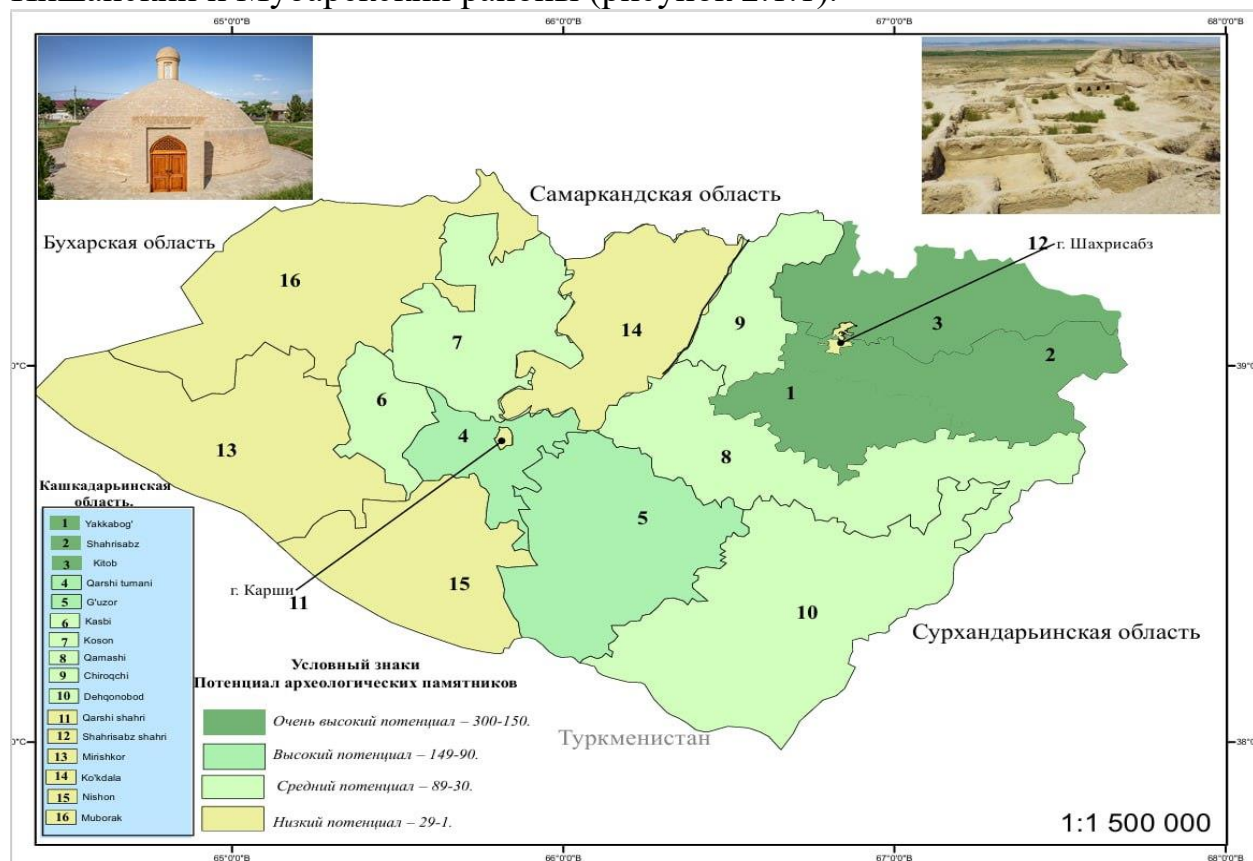


Рисунок 2.1.1. Карта-схема археологического потенциала Кашкадарьинской области

Как было отмечено выше, по количеству таких туристических ресурсов лидируют районы Китаб (Китабский замок (VII-VIII вв.), Каландартепа (VIII в.), Арслонтепа 98 в.), Чоштепа (VIII-X вв.), Ахунтепа (IV-VIII вв.) и др.), Яккабаг (Кургантепа 05-6 вв.), Каровултепа-1 (V-VI вв.), Дуньотепа (X-XII вв.), Ханымкургантепа (X-XII вв.) и др.), Шахрисабз (Омонтепа, Кырккызтепа, Муминтепа, Акдарыотепа и др.), а Миришкорский, Мубаракский, Кокдалинский и Нишанский районы занимают более низкие позиции.

Археологический туризм (archeological tourism) - интерес к археологии страны, посещение древних памятников, мест раскопок, участие в археологических экспедициях [11]. В последние годы все большее распространение получает сравнительно молодое направление историко-культурного туризма - археологический туризм [2]. В широком смысле археологический туризм подразумевает посещение археологических памятников и связанных с ними музейных экспозиций с целью изучения культуры древних обществ посредством изучения археологии как

дисциплины [13]. Культурное наследие - это наследие исторического развития цивилизации, накопленное на определенной территории. Каждая эпоха оставляет свой след, который обнаруживается в культурных слоях во время археологических раскопок. Практически любой регион может быть интересен для экскурсионного туризма. Однако в местах, где люди жили долгое время, следы материальной культуры сохранились лучше [3].

Число существующих архитектурных памятников в регионе составляет 211, включая мечети, медресе, старые крепостные стены, мавзолеи, склепы и мосты. В этом отношении лидируют Яккабагский район (38) (усыпальница Шоди Шейха Вали (XVI-XVII вв.), усыпальница Махмудхана Аулии (IX в.), мавзолей Ходжабузрук Ата (IV в.), мечеть Имама Абу Юсуфа (IX-XI вв.), мечеть Баба Шоди Шейха (IX-XI вв.), город Шахрисабз (29), город Карши (25) (мост Кашкадарьи (XIV в.), ворота Карши Каля (XIV в.), мечеть Одина Джума (XIV в.), Сардоба (XIV в.), мечеть Кокгумбаз (XV в. и др.), Шахрисабзский район (23) и Китабский (17) районы, слабыми являются Нишанский (1) и Мубаракский (3) районы, расположенные в пустынной зоне Карши. Все остальные занимает сельские районы находятся в промежуточном состоянии. Стоит отметить, что, несмотря на то, что Кашкадарьинская область имеет огромный туристско-рекреационный потенциал, в настоящее время она характеризуется низким уровнем привлекательности для туристской деятельности.

Научный сотрудник Жумаев Х.Х. Кашкадарьинская область разделена на 4 уровня (категории) по городам и районам, с указанием наиболее посещаемых культурно-исторических туристических объектов в регионе (таблица 2.1.2) [4].

Таблица-2.1.2.

Территориальный состав объектов материального и культурного наследия, наиболее часто посещаемых туристами в Кашкадарьинской области

Наименование объектов культурного наследия в Кашкадарьинской области				
№	Регионы	Названия объектов культурного наследия по типу*		
		Архитектура	Достопримечательности	Памятники монументального искусства
Объекты культурного наследия 1-го уровня значимости				
1	г. Карши	Мечети Кук Гумбаз(Р), медресе Бекмира (Р), медресе Киличбоя (Р), мост Кашкадарьи (Р), медресе Абдулазиза (Р), мечеть Одина (Р), Сардоба (Р)	Мемориальный комплекс Абу Убайды ибн аль-Джарраха (Р)	-
2	г.Шахрисабз	Комплекс АкСарай (Р), Комплекс Даруттилават (Р), Мечеть Кук Гумбаз (Р), Мавзолей Гумбази Сайидон (Р), Мавзолей Шейха Шамсиддина Кулола (Р), Комплекс Даруссаодат (Р), Подземная Гробница Амира	Саъд ибн Ваккос ота мақбараси (М), Арслонбоб мақбараси (М)	Памятник Амиру Темура (Р)

		Темура (Р), Мавзолей Джахангира (Р), Мечеть Хазрати Имам (Р), Мечеть Малик Аждар (Р), Мечеть Кунчикар (Р), Средневековая баня (Р), Чорсу Гумбази (Р), Городская стена (М), Мечеть Сувтушар (М), Караван-сарай Коба (М), Медресе Чубен (М)		
3	Яккабагский	Пещера Амира Темура (М), место рождения А. Темура (Р)	Мавзолей Ходжалгарха (Р), Мавзолей Имама Абу Юсуфа (М)	-
4	Касбинский		Мемориальный комплекс султана Мир Хайдара (Р)	-
Объекты культурного наследия 2-го уровня значимости				
5	Китабский	Мечеть шейха Шамсиддина Кулола (М), Мечеть Кайнара (М), Мечеть Кайнарбулак (М),	Хўжа Неъматиллох макбараси (М), Хазрати Султон макбараси (М), Хазрати Башир макбараси (М), Хўжа Илм Кон макбараси (М)	-
6	Чиракчинский	Мавзолей Катта Лангар Ата (Р), Мавзолей Кук Тунли Ата (М), Мавзолей Ак Туяли Ата (М)		Памятник Амиру Темуру и его министрам (Р)
Объекты культурного наследия 3-го уровня значимости				
7	Мубарекский	Мавзолей суфийского Ишана (М)	Муборак Мервазий макбараси (М)	-
8	Миришкорский	Сардаба (М), Мечеть Чор гумбаз (М)	Мавзолей Исак Ата (М)	-
9	Гузарский	Мавзолей Хазрата Ходжабоши Абулайзота (М), Мечеть Ходжи Мухаммада Азама (М), Мавзолей Ходжи Мавлана (М)	Мавзолей Мусафир Ата (М), Мавзолей Мириджанда (М), Мавзолей Кумчоп Ата (М)	Комплекс Тахир Зухра (Р)
Объекты культурного наследия 4-го уровня значимости				
10	Касанский	Мечеть Касан Чор гумбази (Р),	Мемориальный комплекс Хусама Шейха Ата (Р)	-
11	Нишанский	Мавзолей Найман Ата (М)	-	-

12	Дехканабадский	Замок Оксарой (Р)	Мавзолей Ходжаи Пок Ата (Р)	-
13	Камашинский	Мечеть Лангар Ата (Р)	Мавзолей Оглонжон Ата (Р), Мавзолей Мушкул Ата (М)	-

Таблица составлена авторами на основе данных областного департамента туризма и спорта.

*(Р) – относится к республиканской категории, (М) - относится к местной категории.

В частности, в первую группу объектов культурного наследия региона входят города Карши и Шахрисабз, Яккабагский и Касбийский районы, а во вторую группу объектов культурного туризма - Китабский и Чиракчинский районы. Также в группе 3-го уровня лидируют Мубарекский, Миришкорский и Гузарский районы, а в 4-й группе основное место занимают Косонский, Нишанский, Камашинский и Дехканабадский районы. Стоит отметить, что около 40 процентов наиболее посещаемых туристами объектов находятся в городах Карши и Шахрисабз, а также в Яккабагском и Касбинском районах, которые относятся к группе объектов культурного наследия I степени привлекательности. При этом значительная часть туристических объектов, относящихся к республиканской категории, также относится к этой группе..

Результаты данного исследования также показывают, что изучение туристско-рекреационного потенциала нашей страны и Кашкадарьинской области только с использованием объектов историко-культурного наследия показывает, что он имеет большой потенциал. В свою очередь, большое значение имеет рациональное использование историко-культурного туристического потенциала, активное вовлечение его в хозяйственную деятельность, повышение уровня социально-экономического развития регионов.

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КРИТЕРИИ ЗАЩИТЫ СТУДЕНТОВ ОТ ИНВАРИАНТНЫХ УГРОЗ

***Аннотация:** В данной статье анализируются критерии защиты студентов от инвариантных угроз, с которыми они сталкиваются в процессе обучения. Инвариантные угрозы существуют постоянно и могут негативно влиять на личностное развитие, процесс обучения и психологическое состояние студентов. Согласно результатам исследования, эффективное внедрение этих критериев может защитить студентов от инвариантных угроз и способствовать их успеху в образовательном процессе.*

***Ключевые слова:** инвариантные угрозы, информационная безопасность, психологическое давление, социальная дискриминация, проблемы цифровой безопасности, проблемы здоровья и безопасности.*

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CRITERIA FOR PROTECTING STUDENTS AGAINST PERSISTENT THREATS

***Abstract:** This article analyzes the criteria for protecting students from invariant threats they face during the learning process. Invariant threats are constantly present and can negatively impact students' personal development, learning process, and psychological well-being. According to the research findings, effective implementation of these criteria can safeguard students from invariant threats and contribute to their success in the educational process.*

***Keywords:** persistent threats, information security, psychological pressure, social discrimination, digital security issues, health and safety concerns.*

Введение

Инвариантные угрозы - это постоянные и неизменные риски, стоящие перед студентами, которые остаются актуальными, несмотря на изменения в обществе и системе образования. К этим угрозам относятся психологическое давление, социальная дискриминация, информационные атаки, проблемы цифровой безопасности и проблемы, связанные с физической безопасностью. Такие угрозы могут препятствовать получению качественного образования в

образовательных учреждениях, свободному мышлению и личностному развитию [2; С. 71-78].

С развитием цифровых технологий усиливаются проблемы информационных атак и кибербезопасности. Студенты с большей вероятностью сталкиваются с недостоверной или манипулятивной информацией, их личные данные подвергаются риску, и они становятся мишенью для киберпреступлений. Кроме того, нельзя оставлять без внимания проблемы физической безопасности и здоровья. Инфраструктура образовательных учреждений должна быть безопасной для студентов, а санитарно-гигиенические условия должны быть обеспечены на достаточном уровне [7; С. 364-370].

Анализ литературы и методы

В данном исследовании были использованы методы качественного и количественного анализа для выявления инвариантных угроз и определения критериев защиты от них. В процессе исследования применялись такие методы, как анализ научной литературы, анкетирование, интервью и изучение статистических данных. Каждый метод имеет свое значение в выявлении существующих рисков в образовательных учреждениях и разработке мер по их предотвращению.

1. Анализ научной литературы
2. Анкетирование
3. Интервью [3; 279 с.].
4. Статистический анализ

Результаты

Результаты исследования показали, что студенты сталкиваются со следующими инвариантными угрозами:

1. Психологическое давление - стресс в учебном процессе, давление со стороны преподавателей и родителей.
2. Информационные атаки - распространение недостоверной или ложной информации.
3. Социальная дискриминация - давление, основанное на гендерной принадлежности, социальном происхождении или других факторах.
4. Проблемы цифровой безопасности - нарушение конфиденциальности персональных данных и столкновение с рисками кибербезопасности.
5. Проблемы здоровья и безопасности - угрозы, связанные с физической средой и гигиеной.

Для защиты от этих угроз были разработаны следующие критерии:

- Правовая обоснованность - права студентов должны быть законодательно защищены.
- Защитные стратегии образовательного учреждения - должны быть разработаны профилактические меры.
- Система психологической помощи - необходимо создать специальные консультационные центры для студентов.

- Информационная безопасность - создание надежных систем противодействия цифровым угрозам.

- Принцип равенства - равное отношение ко всем студентам [4; стр. 356-361].

Результаты исследования показали, что студенты регулярно сталкиваются с различными инвариантными угрозами, и эти угрозы негативно влияют на их образовательный процесс и личностное развитие. Основными инвариантными угрозами, выявленными в рамках исследования, являются:

1. Факторы психологического давления и стресса 78% студентов заявили, что находятся в состоянии постоянного стресса из-за таких факторов, как академическое давление, высокие требования и страх неудачи [1; стр. 123-126].

2. Социальная дискриминация и неравенство.

Анализ показал, что 35% студентов заявили о том, что подвергались социальной дискриминации. Особенно часто встречаются случаи дифференциации на основе гендерной принадлежности, экономического происхождения и территориальных различий.

3. Информационные атаки и проблемы цифровой безопасности [10; стр. 142-160].

Среди опрошенных студентов 60% заявили, что за последний год столкнулись с информационной манипуляцией или цифровыми угрозами.

4. Угрозы, связанные с физической безопасностью и здоровьем.

5. Недостаточная эффективность защитных механизмов.

Обсуждение

Результаты исследования показали, что инвариантные угрозы, с которыми сталкиваются студенты, многогранны и сложны, они связаны с физическими, психологическими и социальными факторами. Во многих учебных заведениях отсутствует комплексный подход к инвариантным угрозам. Эффективность стратегий защиты студентов часто зависит от материальных и человеческих ресурсов учреждения. Кроме того, студенты не всегда могут защитить себя в некоторых ситуациях из-за того, что они не полностью осведомлены о своих правах.

1. Проблемы психологического давления и стресса [9; 148-157 с.].

2. Проблема социальной дискриминации и неравенства [5; 52-56 с.].

3. Информационная безопасность и цифровые угрозы [8; 30-36 с.].

В последние годы выявлено усиление цифровых угроз среди студентов. В частности, к числу распространенных проблем относятся быстрое распространение ложной информации, киберпреступления и утечки персональных данных.

Заключение

Анализ результатов исследования и международного опыта показал, что для защиты студентов от инвариантных угроз требуется комплексный подход. Необходимо разработать долгосрочные стратегии по снижению

психологического давления, обеспечению социального равенства, повышению информационной безопасности и укреплению физической безопасности.

Таким образом, вопрос защиты студентов от инвариантных угроз требует комплексного подхода. Образовательные учреждения, государственные органы и общество должны работать совместно в этом направлении. Только таким образом можно создать необходимые условия для безопасного, стабильного и эффективного образования молодого поколения.

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АНАЛИЗ РИСКОВ ПРИ РЕИНЖИНИРИНГЕ БИЗНЕС-ПРОЦЕССОВ В АПК

Аннотация: Реинжиниринг бизнес-процессов является мощным инструментом повышения эффективности предприятий агропромышленного комплекса. При этом важно учитывать тот факт, что его реализация связана со значительными рисками. В статье рассматриваются основные риски, которые возникают в процессе внедрения и проведения реинжиниринга в АПК. Сюда входят стратегические, технологические, финансовые, организационные и иные внешние факторы.

Ключевые слова: реинжиниринг, бизнес-процесс, агропромышленный комплекс, риски, оптимизация.

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RISK ANALYSIS IN BUSINESS PROCESS REENGINEERING IN THE AGRO-INDUSTRIAL COMPLEX

Abstract: Business process reengineering is a powerful tool for increasing the efficiency of enterprises in the agro-industrial complex. It is important to take into account the fact that its implementation is associated with significant risks. The article examines the main risks that arise in the process of implementing and conducting reengineering in the agro-industrial complex. These include strategic, technological, financial, organizational and other external factors.

Keywords: reengineering, business process, agro-industrial complex, risks, optimization.

Введение

Реинжиниринг бизнес-процессов (РБП) представляет собой радикальное перепроектирование ключевых процессов предприятия с целью достижения значительных улучшений в производительности, качестве и эффективности. В агропромышленном комплексе (АПК), где традиционно высока доля ручного

труда, устаревших технологий и сложных логистических цепочек, реинжиниринг становится важным инструментом повышения конкурентоспособности. Однако внедрение изменений в АПК сопряжено с рядом специфических рисков, связанных как с отраслевыми особенностями, так и с человеческим фактором. В данной работе проводится анализ ключевых рисков, возникающих при реинжиниринге бизнес-процессов в агропромышленном комплексе, а также предлагаются методы их минимизации.

Методы исследования:

1. Анализ литературы.
2. Качественные методы.
3. Описательный метод.
4. Критический анализ.
5. Метод обобщения.

Реинжиниринг бизнес-процессов (РБП) – это метод фундаментального изменения бизнес-процессов с целью достижения значительных улучшений в ключевых показателях деятельности. В отличие от постепенной оптимизации, РБП предполагает полный отказ от устаревших схем работы и создание новых, более эффективных моделей.

Агропромышленный комплекс – это сложная система, включающая сельское хозяйство, переработку, логистику и сбыт. Его ключевые особенности представлены на рисунке 1.

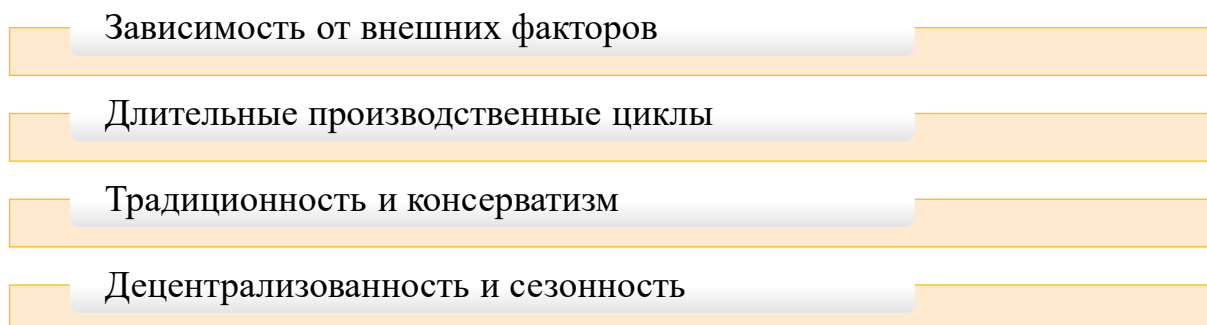


Рисунок 1 – Особенности АПК

Данные факторы влияют на реинжиниринг в АПК, делая его особенно сложным и рискованным. Риски, которые, вероятно, возникнут можно разделить на категории, представленных ниже.

1. Стратегические риски.

1.1 Ошибки в выборе процессов для реинжиниринга. Не каждый процесс требует радикального изменения, неверный выбор может привести к неоправданным затратам.

1.2 Несоответствие изменений стратегии компании. В случае, если новые процессы не согласованы с долгосрочными целями предприятия, снижается конкурентоспособность.

2. Технологические риски.

2.1 Недостаточная готовность ИТ-инфраструктуры. Автоматизация требует современных решений, которые могут быть дорогими и сложными во внедрении.

2.2 Сбои в работе оборудования. Переход на новые технологии может привести к временным остановкам производства.

3. Организационные риски.

3.1 Сопротивление персонала. Работники, которые привыкли к старым методам, могут не принимать изменения и бунтовать.

3.2 Недостаток квалифицированных кадров. Новые процессы требуют повышения квалификации сотрудников. Это приводит к увеличению затрат.

4. Финансовые риски.

4.1 Превышение бюджета. Реинжиниринг требует больших объемов инвестиций.

4.2 Недостижение ожидаемой окупаемости. Возникновение убытков при несоблюдении намеченного плана.

5. Внешние риски.

5.1 Изменения в законодательстве. Нововведения в нормативах могут привести к неэффективности процессов.

5.2 Колебания рынка. Снижение цен на продукцию ведет к снижению рентабельности реинжиниринга.

Методы управления рисками при реинжиниринге в АПК представлены на рисунке 2.

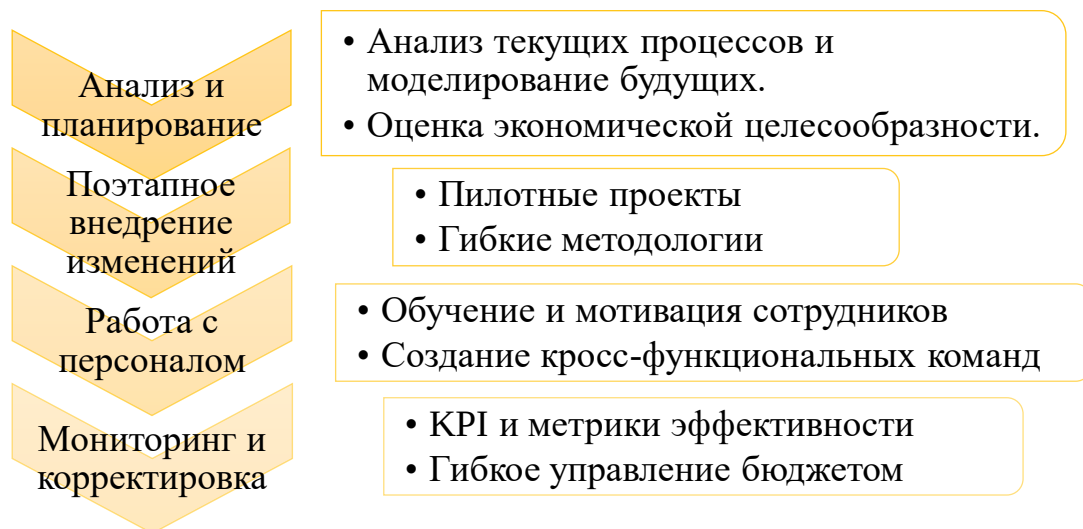


Рисунок 2 – Методы управления рисками при внедрении реинжиниринга

Заключение

Реинжиниринг бизнес-процессов в АПК является действенным инструментом повышения эффективности, но его реализация может вызывать высокие риски. Успех его внедрения зависит от тщательного анализа, грамотного планирования и адаптивного управления. Комплексный подход к минимизации рисков позволит сельскохозяйственным предприятиям достичь значительных конкурентных преимуществ в условиях динамичного рынка.

Использованные источники:

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АТРОФ-МУҲИТНИ МУҲОФАЗА ҚИЛИШ: ХАЛҚАРО ЖИҲАТЛАРИ ВА МИЛЛИЙ УСТУВОРЛИКЛАРИ

***Аннотация.** Мақолада атроф-муҳитни муҳофаза қилишнинг халқаро ва миллий стандартларини шакллантириши ва ривожлантириши муаммолари кўриб чиқилади, барқарор ривожланиш вазифаларини амалга ошириши шароитида Ўзбекистонда атроф-муҳитни муҳофаза қилишни ривожлантиришининг хусусиятлари ва устувор йўналишлари белгилаб берилган.*

***Калит сўзлар.** Барқарор ривожланиш, атроф-муҳитни муҳофаза қилиш, халқаро қонунчилик, минтақавий ҳамкорлик, миллий устуворликлар.*

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ENVIRONMENTAL PROTECTION: INTERNATIONAL ASPECTS AND NATIONAL PRIORITIES

***Abstract.** The article examines the problems of formation and development of international and national environmental protection standards, identifies the features and priority areas for the development of environmental protection in Uzbekistan in the context of implementing sustainable development objectives.*

***Key words:** Sustainable development, environmental protection, international legislation, regional cooperation, national priorities.*

Бугунги кунда Ўзбекистонда атроф-муҳитни муҳофаза қилиш, табиий ресурслардан оқилона фойдаланиш, санитария ва экологик ҳолатни яхшилашни таъминлаш соҳасида изчил ишлар олиб борилмоқда.

Атроф-муҳит муҳофазаси ниҳоятда муҳим эканлиги барча учун аён бўлиб, яшаш учун табиатни асрашимиз, табиий ресурсларни оқилона бошқаришимиз, улардан тежамкорлик билан фойдаланишимиз зарурлиги эътироф этилмоқда.

Атроф-табиий муҳитни муҳофаза қилишнинг халқаро ва миллий стандартларини яратиш ва такомиллаштириш муҳим вазифалардан бири

бўлиб қолмоқда. Албатта, атроф-табiiй муҳитни муҳофаза қилишда халқаро экологик ҳамкорлик жуда муҳим аҳамият касб этади, бунда - ер юзидаги барча мамлакатлар томонидан табиат муҳофазасига доир халқаро келишув - шартнома, конвенциялар тузиш, халқаро экологик меёрларни ишлаб чиқиш ва уларга риоя этилишини такозо этади.

Атроф-табiiй муҳитни муҳофаза қилишда халқаро доирада қўйилган қадамлардан биринчиси 1913 йилда Бернда (Швейцария) 18 та давлат иштирокида "Табиатни муҳофаза қилиш" бўйича халқаро конференция ўтказиш бўлди [1]. 1923 йилда эса Парижда биринчи халқаро табиатни муҳофаза қилиш конгресси бўлиб ўтди [2].

Экология соҳасидаги халқаро ҳамкорлик БМТ Уставининг тегишли қоидалари, Инсон ҳуқуқлари умумжаҳон декларацияси (1948) [3]. Бирлашган Миллатлар Ташкилотининг инсон муҳити бўйича конференцияси декларацияси [4].

Атроф-муҳит муаммолари бўйича Стокгольм конференцияси [5], Трансчегаравий атроф-муҳитга таъсирни баҳолаш тўғрисидаги конвенция (1981) [6], Биологик хилма-хиллик тўғрисидаги конвенция (1992) [7] ва бошқа актлар ва битимларга асосланади.

Аксарият мамлакатларда экология соҳасидаги миллий қонунчилик тизими халқаро экологик ҳуқуқ нормалари билан боғланган. Табiiй ресурслардан фойдаланиш, атроф-муҳитни муҳофаза қилиш ва экологик хавфсизликни таъминлаш бўйича муносабатларни тартибга солишда миллий қонунчилик энг муҳим ролга эга.

Миллий экологик қонунчилик тизими одатда табiiй ресурслардан фойдаланишнинг энг муҳим тамойиллари ва шакллари билан белгиловчи, фуқароларнинг экологик ҳуқуқларини, атроф-муҳитни муҳофаза қилиш ва экологик хавфсизликка қўйиладиган талабларни эълон қиладиган экологик ҳуқуқий муносабатларни конституциявий тартибга солишга асосланади.

Шу билан бирга, экологик қонунчиликнинг ушбу миллий тизими БМТ, Европа Иттифоқи даражасидаги халқаро конвенцияларни, давлат ва бошқа давлатлар ўртасидаги икки томонлама ва кўп томонлама шартномаларни давлатнинг қонун чиқарувчи органи томонидан ратификация қилиш орқали халқаро ҳуқуқий тартибга солишни назарда тутди.

Атроф-муҳитни муҳофаза қилиш бўйича 1985 йилги Озон қатламини ҳимоя қилиш конвенцияси (Вена), 1987 йилги Озон қатламини емирувчи бирикмалар бўйича протокол (Монреал), 1989 йилги Хавфли чиқиндиларни чегаралараро ташишни назорат қилиш конвенцияси (Базел), 1992 йилги Биологик ранг-барангликни сақлаш конвенцияси (Рио-де-Жанейро), 1992 йилги Иқлим ўзгариши тўғрисидаги конвенция (Нью-Ёрк) мавжуд [8].

Бу миллий қонунчиликни халқаро ҳуқуқ тамойиллари ва қоидаларига мувофиқлаштириш билан халқаро экологик-ҳуқуқий нормаларнинг устуворлигини таъминлаш имкониятини яратади [9].

Сўнгги ўн йилликларда деярли барча мамлакатларда экологик хавфсизликни таъминлаш масалаларини тартибга солувчи миллий қонунчилик ва атроф-муҳитни муҳофаза қилиш стандартлари ишлаб чиқилди.

БМТнинг 2030 йилгача бўлган даврда Барқарор ривожланиш соҳасидаги 17 та миллий мақсад ва вазифаларининг 13, 14, 15-мақсадлари бевосита атроф-муҳитни муҳофаза қилиш борасидаги вазифалар ва йўналишларни белгилаб берган [10].

Ўзбекистонда атроф-табiiй муҳитни муҳофаза қилишнинг миллий стандартлари доирасида ҳуқуқий – меъёрий база яратилган. Атроф-табiiй муҳитни муҳофаза қилишнинг ҳуқуқий асослари биринчи навбатда Ўзбекистон Республикасининг Конституциясида ўз аксини топган. Конституциянинг 49 моддасида ҳар ким қулай атроф-муҳитга, унинг ҳолати тўғрисидаги ишончли ахборотга эга бўлиш ҳуқуқига эгалиги, давлат барқарор ривожланиш принципига мувофиқ, атроф-муҳитни яхшилаш, тиклаш ва муҳофаза қилиш, экологик мувозанатни сақлаш бўйича чора-тадбирларни амалга ошириши белгилаб қўйилган [11].

Ўзбекистон Республикаси Президентининг 2019 йил 30 октябрдаги “2030 йилгача бўлган даврда Ўзбекистон Республикасининг атроф муҳитни муҳофаза қилиш концепциясини тасдиқлаш тўғрисида”ги фармони қабул қилинган [12]. Фармон доирасида Концепция эришилган натижалар, мақсадли кўрсаткичлар ва атроф-муҳитни муҳофаза қилиш бўйича тегишли даврга мўлжалланган асосий йўналишлардан келиб чиққан ҳолда, Ўзбекистон Республикаси Вазирлар Маҳкамаси томонидан уч йил муддатга алоҳида-алоҳида тасдиқланадиган «йўл хариталари» асосида босқичма-босқич амалга оширилади.

Табиатни муҳофаза қилиш ва табiiй ресурслардан оқилона фойдаланиш соҳасидаги муносабатлар Ўзбекистон Республикасида “Табиатни муҳофаза қилиш тўғрисида”ги Қонуни билан ер, сув, ўрмон, ер ости бойликлари тўғрисидаги, атмосфера ҳавосини, ўсимлик ҳамда ҳайвонот дунёсини муҳофаза қилиш ва фойдаланиш тўғрисидаги ва бошқа қонун ҳужжатлари билан тартибга солинади.

Жаҳон иқтисодиётининг баъзи бир таҳдидлар ва муаммолар қаторида янги ривожланиш моделини шакллантириш билан боғлиқ тадқиқотларда глобал экологик ўзгаришлар ҳисобга олинмоқда. Маълумки, мустабид тизим сиёсати экологик муаммоларга эътибор қаратмади. Бунинг натижасида Орол денгизи фожиаси билан бирга бир қатор экологик таҳдидлар юзага келди .

Ўзбекистон Республикаси ҳудудининг иқлим ва геологик-географик хусусиятлари, шунингдек, иқтисодиёт тармоқларининг инфратузилмаси кўп турдаги фавқулодда вазиятларнинг юзага келиши хавфини (сув омборларининг катта қисми сейсмик хавфли ҳудудларда жойлашганлиги, фавқулодда экологик вазият, шунингдек, экологик офат ҳудудларининг мавжудлиги, трансчегаравий хусусиятга эга фавқулодда вазиятлар хавфининг ортиб бориши, экологик ифлосланиш кўламининг кенгайиши ва бошқалар) тақозо этади.

“2015–2030 йилларда офатлар хавфини камайтириш бўйича сендай хадли дастури”ни Ўзбекистон Республикасида амалга ошириш чора-тадбирлари тўғрисида Ўзбекистон Республикаси Вазирлар Маҳкамасининг 2019 йил 12 апрель 299-сон қарори қабул қилинди [13].

Ўзбекистонда ҳозирда экологик ёндашилган иқтисодиётни ташкил этишда, атроф-муҳитга зарар етказмаган ҳолда ривожланишни бир маромда барқарор ушлаб туриш, шунингдек, “яшил иқтисодиёт”га босқичма-босқич ўтилишини жорий қилиш мақсадида нафақат ички чора-тадбирлар амалга оширилмоқда, балки глобал миқёсда ҳам бир қанча ишлар амалга оширилмоқда. Ўзбекистоннинг Париж битимига қўшилиши муносабати билан “яшил иқтисодиёт”га ўтиш бўйича давлат стратегиясини ишлаб чиқиш шулар жумласидандир. Ушбу стратегиянинг асосий мақсади иқлим ўзгаришига қарши тизимли курашишнинг илғор механизмларини жорий қилиш, яшил иқлим жамғармасининг ресурсларига йўл очиш, иқтисодиётнинг барча соҳаларига, жумладан, ишлаб чиқаришга “яшил технологияларни” жорий қилиш ҳисобланади.

“2019–2030 йиллар даврида Ўзбекистон Республикасининг “яшил иқтисодиёт”га ўтиш стратегиясини тасдиқлаш тўғрисида” ги Ўзбекистон Республикаси Президентининг 2019 йил 4 октябрь ПҚ-4477-сонли қарори қабул қилинди [14].

Табиий ва антропоген таъсири остида атроф-муҳитнинг сифат жиҳатидан глобал ўзгаришларини таҳлил ва башорат қилиш долзарб масалаларга айланиб бормоқда. Унинг натижасида кузатилаётган экологик таҳдидлар ва қалтисликлар моддий бойликларнинг йўқотилишига, уларни қайта тиклаш билан боғлиқ харажатлар эса йилдан-йилга ошиб бормоқда. Экологик қалтисликлар турли касалликларнинг авж олиши, аҳоли саломатлигининг ёмонлашиши, ўлим даражасининг ошиши, кўплаб инсонларнинг миграция қилишга мажбур бўлиши билан ҳам боғланмоқда [15].

Жаҳон Иқтисодий Форумининг экспертлари 2024 “Жаҳон Риск ҳисоботи”да (Давос, Швейцария) глобал хавфлар қаторига экстремал об-ҳаво ўзгариши (мутахассислар умумий сонининг 66 фоизи), дезинформация (53 фоиз), ижтимоий ва сиёсий қутбланиш (46 фоиз) каби омилларни санаб ўтди [16].

Ўзбекистон иқлим ўзгаришига энг заиф давлатлардан бири ҳисобланади. 1880 йилдан буён мамлакатда ўртача йиллик ҳаво ҳарорати 1,6 даражага (13,2 дан 14,8 даражагача) ошиб, жаҳондаги ўртача кўрсаткичдан ошиб кетди.

Мамлакат иқлими иссиқроқ ва қуруқроқ бўлиши кутилмоқда. Тез-тез ва кучли иссиқлик тўлқинлари, қурғоқчилик ва ёғингарчилик шакллариининг ўзгариши кучли ёғингарчилик ва тошқинлар каби экстремал об-ҳаво ходисаларининг кўпайишига олиб келади [17].

Бу борада, иқлим ўзгариши билан бирга атроф-муҳит ифлосланиши туфайли иқтисодий зарарни ҳисоблашнинг аниқ ва ишончли натижасини

таъминлаш долзарб масалалар қаторидан жой олган. Бунинг сабаблари сифатида қуйдагиларни эътироф этиш мумкин: иқтисодий зарар ҳажми кўп омилларга боғлиқлиги, иқтисодий зарар ҳажмига таъсир қиладиган турли статистика кўрсаткичларининг йўқлиги ёки уларни олиш мураккаблиги, иқтисодий зарар ҳажмига таъсир кўрсатадиган омилларни аниқ баҳолашнинг мураккаблиги ва кўпинча имконсизлиги, атроф-муҳит ифлосланиши туфайли келиб чиққан зарар хилининг кўплиги.

Бундай муаммоларнинг ечими сифатида қуйдагиларни келтириб ўтиш мумкин бўлади:

биринчидан, қайта тикланувчи энергоресурсларнинг ривожлантириш стратегияси мамлакатлар ижтимоий-иқтисодий тараққиёти учун муҳим ҳисобланади.

иккинчидан, ноанъанавий энергетика тизимини ривожлантириш орқали иқтисодий самарадорлик муаммоси ечилади; атроф-муҳитга кўрсатилаётган салбий таъсир камайтирилади;

учинчидан, углерод икки оксиди ва унинг эквивалентларини ажратувчи, чекланган энергия манбаларига боғлиқлик камайтирилади;

тўртинчидан, қайта тикланувчи энергоресурслар станциялари иқтисодиётда кичик ва ўрта бизнес учун жуда қулай бўлиб, тоғли ҳудудлардаги шамол ва сув ресурсларидан ҳосил қилинган бундай энергия туфайли ишлаб чиқаришдаги маҳсулот таннарихи 50 фоизга арзонлашади;

бешинчидан, атроф-муҳитни муҳофаза қилиш механизмлари мамлакатлар томонидан экологик хавфсизлик объектларини таҳдидлардан ҳимоя қилишнинг тегишли тизимларини биргаликда жорий этиш орқали доимий равишда такомиллаштирилиши зарур, улар мамлакатлар ва минтақаларнинг экологик манфаатларига таҳдид пайдо бўлишининг олдини олишга қаратилган экологик чора-тадбирлар мажмуини ўз ичига олиши керак.

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ИСКУССТВЕННЫЙ ИНТЕЛЛЕКТ И УПРАВЛЕНИЕ ПЕРСОНАЛОМ

***Аннотация:** Современная концепция управления предприятием предполагает выделение из большого числа функциональных направлений управленческой деятельности того, которое связано с управлением кадровой составляющей производства – персоналом предприятия*

В результате исследования поставлена задача выяснить причины проблем, существующих сегодня в управлении персоналом в организации, и обосновать необходимость использования искусственного интеллекта в этой важнейшей сфере управления.

***Ключевые слова:** персонал, HR-специалист, рекрутер, модель компетенций, профиль должности, искусственный интеллект*

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ARTIFICIAL INTELLIGENCE AND HUMAN RESOURCES MANAGEMENT

***Abstract:** The modern concept of enterprise management involves identifying from a large number of functional areas of management activity the one that is associated with the management of the personnel component of production - the personnel of the enterprise.*

As a result of the study, the task was set to find out the causes of the problems that exist today in personnel management in the organization, and to justify the need to use artificial intelligence in this most important area of management

***Keywords:** personnel, HR-specialist, recruiter, competency model, job profile, artificial intelligence*

.Искусственный интеллект (ИИ) — это имитация процессов человеческого интеллекта машинами, особенно компьютерными системами.

Искусственный интеллект (ИИ) меняет способ ведения дел в каждой отрасли. Будущее HR-индустрии лежит в необычном сочетании цифрового

ИИ и человеческих услуг, которое постоянно создается благодаря разработкам в области технологий машинного обучения.

Термин «искусственный интеллект» применяется, когда машина имитирует «когнитивные» функции, которые люди связывают с другими человеческими умами, такие как «обучение» и «решение проблем»

Хотя ИИ существует уже несколько десятилетий во многих формах и видах, в последнее время он переживает бум из-за огромного количества данных, которые находятся в руках компаний, занимающихся технологиями.

Влияние этого бума на управление человеческими ресурсами, обучение и подбор персонала может быть положительным, но есть также опасения, что машины возьмут на себя человеческие задачи.

ИИ разрушает практически каждую отрасль. Ожидается, что к 2026 году ИИ увеличит стоимость бизнеса до 8,1 триллиона долларов. Индустрия гостеприимства может получить более 100 миллиардов долларов добавленной стоимости к своему доходу, в то время как розничная торговля и производство получают около 285 миллиардов долларов и 575 миллиардов долларов соответственно к 2020 году. HR также может многое выиграть от революции ИИ, будь то сокращение трудоемких процессов с помощью автоматизированных рабочих процессов или поддержка руководителей в принятии стратегических решений.

Где искусственный интеллект в кадровых ресурсах?

Искусственный интеллект хорош ровно настолько, насколько хороши люди, которые говорят ему, что делать. Вот несколько способов использования ИИ в кадровых ресурсах:

Вовлеченность сотрудников:

Некоторые компании используют искусственный интеллект для измерения удовлетворенности сотрудников и отслеживания вовлеченности сотрудников на работе. Идея состоит в том, чтобы собирать данные на постоянной основе, а затем использовать их для улучшения подбора персонала, адаптации, управления и корпоративной культуры.

Управление эффективностью:

Возможно, ИИ в конечном итоге сможет управлять обзорами и оценками эффективности, но пока мы не совсем достигли этого. Для эффективности этих разговоров необходимо реальное человеческое взаимодействие. Однако некоторые компании используют инструменты ИИ для автоматизации определенных задач, связанных с администрированием заработной платы и льгот, чтобы специалисты по кадрам могли сосредоточиться на более стратегических задачах.

Какое будущее у ИИ и человеческих ресурсов?

Будущее у ИИ и человеческих ресурсов светлое. ИИ поможет HR набирать нужных людей за меньшее время и по более низкой цене за найм. Самая важная часть ИИ позволит компаниям лучше узнать своих соискателей.

ИИ позволит работодателям собирать больше информации о соискателях и делать это таким образом, чтобы не создавать плохого опыта

для кандидатов. Фактически, ИИ позволит работодателям создавать отличный опыт для кандидатов.

Объем данных, которые работодатели имеют о соискателях, исторически был довольно ограничен. Помимо резюме и сопроводительных писем, вы можете получить рекомендации от прошлых работодателей, и вы даже можете получить некоторую информацию из профилей в социальных сетях (например, LinkedIn). Но все эти источники предвзяты в зависимости от того, что соискатель решает рассказать о себе.

ИИ расширит объем данных, которые есть у работодателей о кандидатах на работу, потому что он не будет зависеть от того, что соискатель решает рассказать о себе.

ИИ поможет нам понять, насколько хорошо люди на самом деле работают вместе со своими коллегами, насколько им нравится их рабочая среда, насколько они преданы своему делу, насколько они счастливы и насколько им нравится работать со своими коллегами и менеджерами. Но прежде чем мы углубимся в то, что ИИ может сделать для человеческих ресурсов сегодня, давайте рассмотрим слона в комнате: фактор страха.

Искусственный интеллект имеет множество преимуществ для отдела кадров.

Искусственный интеллект имеет множество преимуществ для отдела кадров. Вот некоторые из основных способов, которыми он может помочь:

1. Улучшить процесс найма, уменьшив предвзятость и предоставив более точную информацию.
2. Помочь менеджерам эффективнее управлять и повысить вовлеченность сотрудников.
3. Выявить таланты в вашей организации, которые в противном случае могли бы остаться незамеченными
4. Оптимизировать процессы управления и трудоемкие задачи, такие как расчет заработной платы, льготы и обучение сотрудников.

Искусственный интеллект преобразует будущее работы. Фактически, согласно недавнему опросу Gartner, 53% организаций уже используют ИИ в той или иной форме, а еще 47% планируют сделать это в течение двух лет.

Отдел, который, скорее всего, будет преобразован искусственным интеллектом, — это отдел кадров и его роль в наборе, отборе, обучении и удержании сотрудников.

Однако технология ИИ может использоваться для анализа данных о кандидатах в масштабах, которые не под силу ни одному человеку. Она также позволяет экономить время и деньги, связанные с процессом найма, а также повышать вероятность принятия правильных решений о найме.

Например, системы ИИ могут проверять резюме и формы заявок на основе ключевых слов или квалификаций, таких как владение языком или уровень образования. Такие системы также могут использоваться для выявления закономерностей в данных, связанных с успешными кандидатами, которые могли быть упущены рекрутерами в прошлом. Автоматизация

некоторых аспектов процесса найма освобождает время рекрутеров, чтобы они могли сосредоточиться на других аспектах работы.

Вывод

Часто задаваемый людям вопрос: «заменит ли искусственный интеллект?» В HR это означает, что заменит ли ИИ рекрутера? Ответ — абсолютно нет, и на то есть ряд причин. ИИ может использоваться для улучшения и поддержки работы рекрутеров как крупных, так и мелких. Работодатели могут получить выгоду от использования искусственного интеллекта в процессе подбора персонала и процессах управления персоналом.

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ВОПРОСЫ ПАТРИОТИЧЕСКОГО ВОСПИТАНИЯ ДЕТЕЙ ДОШКОЛЬНОГО ВОЗРАСТА

Аннотация: В современной стратегии развития в центре становится формирование духовно богатой, высоконравственной, образованной и творческой личности. В данной статье рассматриваются вопросы патриотического воспитания детей дошкольного возраста.

Ключевые слова: дошкольный возраст, ребенок, Родной край, родной город, патриотическое воспитание, история, нравственно-патриотическое воспитание детей.

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ISSUES OF PATRIOTIC EDUCATION OF PRESCHOOL CHILDREN

Abstract: Education plays an important role in the spiritual and moral education of society, in particular youth. In the modern development strategy, the focus is on the formation of a spiritually rich, highly moral, educated and creative personality.

Key words: history of Uzbekistan, spirituality, young generation.

В настоящее время проблема патриотического воспитания подрастающего поколения стала наиболее актуальной. За последние годы произошли огромные изменения, как в нашей стране, так и во всем мире. Это касается нравственных ценностей, отношения к происходящим событиям, отношения к истории. У современных детей искажены представления о патриотизме, доброте, великодушии. Изменилось и отношение к Родине. Сегодня материальные ценности доминируют над духовными. Но, как бы ни менялось общество, о воспитании у подрастающего поколения любви к своей стране, гордости за нее нельзя забывать никогда. И если мы хотим, чтобы наши дети полюбили свою страну, свой город, «пропитались» патриотизмом по отношению к ним, нам нужно показать их с привлекательной стороны. Тем более что нам есть чем гордиться. Патриотизм — это проявление любви не только к сильной и красивой, великой и могучей стране, но и к стране, которая переживает не лучшие времена: непонимание, раздор, военные конфликты. Именно в настоящее время воспитание чувства патриотизма, гражданственности, ответственности за судьбу своей страны является одной

из важнейших задач образования. Применительно к ребёнку дошкольного возраста «патриотизм» определяется, как потребность маленького человека участвовать во всех делах на благо семьи, детского сада, родного города, необъятной Родины. Юный патриот должен обладать такими качествами, как сострадание, сочувствие, чувство собственного достоинства и осознание себя частью окружающего мира.

Патриотическое воспитание дошкольников – это не только воспитание любви к родному дому, семье, детскому саду, городу, родной природе, культурному достоянию своего народа, своей нации, толерантного отношения к представителям других национальностей, но и воспитание уважительного отношения к труженику и результатам его труда, родной земле, защитникам Отечества, государственной символике, традициям государства и общенародным праздникам. В детских садах для воспитания нравственно-патриотических чувств у дошкольников используются различные формы детской деятельности.

Воспитать патриотизм в ребенке невозможно без приобщения его к родной культуре. Осознанный интерес к самобытности своего народа имеет большое значение для воспитания нравственности. «Взращивание» культурной личности ребенка происходит постепенно: начинается с простого интереса к чему-либо, и только потом, – пониманием и желанием участвовать самому.

Работа с дошкольниками по патриотическому воспитанию должна учитывать особенности детской психики: кратковременное внимание, интерес ко всему яркому, высокая эмоциональная вовлеченность. На этом основано большинство методических разработок, которые используются в детских дошкольных учреждениях.

Детям нужно рассказывать о самых важных событиях нашего прошлого, о том, какие героические поступки совершали их деды и прадеды во имя сохранения своей Родины, как самоотверженно они защищали родную землю в боях, и как честно трудились для ее процветания в мирное время. Нужно, чтобы дети гордились, что они тоже являются частью такого замечательного народа, и что их семьи напрямую причастны к истории страны.

В основе патриотического воспитания дошкольников лежит развитие нравственных чувств. Именно нравственно-патриотическое воспитание является одним из важнейших элементов общественного сознания, именно в этом основа жизнеспособности любого общества и государства, преемственности поколений. Понимая актуальность данной проблемы на современном этапе, мы считаем, что формирование личности дошкольников невозможно без воспитания у них уважения к нравственным человеческим ценностям. Дошкольный возраст — важнейший период становления личности, когда закладываются предпосылки гражданских качеств, развиваются представления детей о человеке, обществе и культуре. Базовым этапом формирования у детей любви к Родине является накопление ими

социального опыта с помощью непосредственного участия в жизни своего городе, усвоения принятых в нём норм поведения, взаимоотношений, приобщения к миру его культуры.

Любовь ребенка — дошкольника к Родине начинается с отношения к самым близким людям — отцу, матери, бабушке, дедушке, с любви к своему дому, улице, на которой он живет, детскому саду, городу. Именно поэтому мы считаем, что работу по нравственно-патриотическому воспитанию дошкольников целесообразнее начинать с их приобщения к истории и культуре родного края. Если мы не научим ребёнка любить свою страну, кому она будет нужна? Кто будет радоваться её достижениям, и болеть её горестями? Судьба Родины в руках человека, и ждать момента, когда она будет достойна его любви, по крайней мере, не разумно. Родина такова, какой мы её сами делаем. Исходя из того, что согласно Государственной программы «Илк кадам» дошкольной организации республики Узбекистан, одним из принципов дошкольного образования является сотрудничество с семьей, наша деятельность осуществляется в трех направлениях: работа с детьми, работа с родителями, работа с педагогами.

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ФИНАНСОВАЯ УСТОЙЧИВОСТЬ КОМПАНИЙ В УСЛОВИЯХ ЭКОНОМИЧЕСКОЙ ТУРБУЛЕНТНОСТИ: УРОКИ ДЛЯ КАЗАХСТАНА

***Аннотация:** В рамках данного исследования были обоснованы подходы к оценке трехмерного показателя финансовой устойчивости, а также сформулированы рекомендации, направленные на увеличение рыночной стоимости и укрепление долгосрочной финансовой стабильности. Основное внимание уделено уточнению экономического содержания термина «финансовая устойчивость» и анализу состояния финансов авиакомпаний, включая возможные методики для оценки ее стабильности. В работе приводятся рекомендации, позволяющие укрепить финансовую устойчивость и увеличить конкурентоспособность, а также повысить эффективность функционирования авиакомпании.*

***Ключевые слова:** финансовая устойчивость, виды и показатели финансовой устойчивости, конкурентоспособность, трехмерный индекс финансовой устойчивости.*

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FINANCIAL STABILITY OF COMPANIES IN CONDITIONS OF ECONOMIC TURBULENCE: LESSONS FOR KAZAKHSTAN

***Abstract:** This study substantiated approaches to assessing the three-dimensional indicator of financial stability, and formulated recommendations aimed at increasing market value and strengthening long-term financial stability. The main focus is on clarifying the economic content of the term "financial stability" and analyzing the state of the airline's finances, including possible methods for assessing its stability. The paper provides recommendations to strengthen financial stability and increase competitiveness, as well as improve the efficiency of the airline.*

***Keywords:** financial stability, types and indicators of financial stability, competitiveness, three-dimensional index of financial stability.*

Введение

При рыночных условиях ключевым фактором для сохранения компанией устойчивого положения и обеспечения выживания становится ее финансовая устойчивость. Любое предприятие, выступая хозяйствующим субъектом, должно выстраивать такую систему управления своими финансовыми ресурсами, которая даст возможность непрерывно и своевременно выполнять все финансовые обязательства – перед партнерами, государством, акционерами, сотрудниками. Финансовая стабильность выражается в способности предприятия гибко использовать имеющиеся денежные ресурсы и не прерывать собственную операционную деятельность. Для этого необходимо обеспечивать рациональное сочетание собственного и заемного оборотного капитала, поддерживая платежеспособность, независимость от внешних источников и инвестиционную привлекательность.

Материалы и методы

Значимый вклад в разработку вопроса о финансовой устойчивости внесли зарубежные и отечественные ученые: Э.Ф. Бригхэм, Е.Дж. Долан, Г.Н. Джаксыбекова, К.Ш. Дюсембаев, И.О. Бланк, А.Д. Шеремет, В.М. Родионова, М.А. Федотова, Р.С. Сайфуллина, В.Г. Артеменко, М.В. Беллендир, В.М. Колесникова, Г.В. Савицкая, О.О. Терещенко, О.Ю. Мирошник, Г. М. Азаренко, О.Г. Головкин, Л.С. Гурьянова и другие.

По мнению Э.Ф. Бригхэма и Е.Дж. Долана, предприятие можно считать финансово устойчивым, если оно в состоянии за счет собственных ресурсов покрывать инвестиции в активы и при этом своевременно рассчитываться по обязательствам. Следовательно, в основе поддержания финансовой устойчивости лежит эффективное формирование и использование оборотных средств [1].

Согласно позиции Г.Н. Джаксыбековой, финансовый мониторинг ориентирован на отслеживание, оценку и анализ состояния активов, источников их финансирования и экономических показателей в рыночных условиях, что способствует повышению эффективности управления денежными потоками, капиталом и рыночной ценностью компании [2].

К.Ш. Дюсембаев подчеркивает, что финансовая устойчивость прямо определяет конкурентные возможности и деловой потенциал предприятия: она демонстрирует, насколько эффективно соблюдаются интересы самого предприятия и его партнеров при любых типах взаимодействий [3].

В работах А.И. Ковалева и В.П. Привалова финансовая устойчивость характеризуется тем, что организация может управлять собственными оборотными ресурсами и обеспечивать непрерывный процесс хозяйственной деятельности. Критерием устойчивости выступает соотношение собственных и заемных средств [4].

По мнению А.Д. Шеремета и Р.С. Сайфулиной, сущность финансовой устойчивости сводится к такому состоянию расчетов компании, которое обеспечивает ее непрерывную платежеспособность [5].

В.М. Родионова и М.А. Федотов определяют финансовую устойчивость как «отражение постоянного превышения доходов над расходами». Это указывает на такое распоряжение денежными средствами, при котором предприятие способно непрерывно финансировать операционную деятельность и обновление производства. Финансовая устойчивость выступает центральным элементом общей устойчивости компании [6].

В определении В.Г. Артеменко и М.В. Беллендир финансовая устойчивость отражает устойчивое и стабильное превышение доходов над расходами. Она обеспечивает предприятию необходимую свободу в использовании денежных ресурсов, а также способствует непрерывному циклу производства и реализации. В результате финансовая устойчивость формируется на всех этапах хозяйственной деятельности и является ключевой составляющей общей устойчивости предприятия [7].

Согласно трактовке Г.В. Савицкой и О.О. Терещенко, под финансовой устойчивостью понимают такое состояние ресурсов, их распределения и применения, при котором компания, обеспечивая рост прибыли и капитала, сохраняет платежеспособность и кредитоспособность в условиях допустимых рисков.

Таким образом, можно сказать, что финансовая устойчивость проявляется как способность фирмы системно работать и развиваться, обеспечивая платежеспособность и инвестиционную привлекательность в долгосрочном периоде, а также стабильное превышение доходов над расходами в пределах разумного уровня риска.

Методология

На способность предприятия оставаться финансово устойчивым влияет совокупность внутренних и внешних факторов. К внешним можно отнести макроэкономическую и социальную среду, политическую обстановку в стране, уровень платежеспособного спроса, особенности налогообложения, кредитно-финансовую систему, параметры рынка поставщиков и специфику отрасли. Внутренние факторы включают масштаб предприятия, гибкость управления и контроля, соответствие товара или услуги рыночным требованиям, наличие необходимых технологий и квалифицированных кадров, структуру капитала, эффективность операционных и финансовых процессов, а также общий уровень корпоративной культуры [8].

Значительное количество этих факторов обуславливает отсутствие универсального подхода к тому, как следует определять и оценивать уровень финансовой устойчивости компании [9]. Традиционные методики анализа финансовой устойчивости разделяются на три категории:

1. Методы качественной оценки;
2. Методы количественной оценки;
3. Подходы к оценке несостоятельности (банкротства) [9].

Из множества методов, применяемых для изучения финансового состояния при анализе устойчивости, можно назвать временные ряды, регрессионные и многомерные статистические модели, экономико-

математические и нормативные модели, балансовый и сравнительный методы, методы дисконтирования и другие [10].

Экономико-математические инструменты позволяют выявить взаимосвязи и взаимовлияния явлений и объектов, сгруппировать однородные признаки, сформировать модели поведения организации в условиях воздействия разнообразных факторов и спрогнозировать возможные сценарии. Таким образом, математические методы обеспечивают более точную оценку финансовой устойчивости, являясь важным подспорьем для управленческих решений и оптимизации финансового состояния [11].

Следовательно, финансовая устойчивость организации – это основа для ее стабильного положения и долгосрочных стратегических планов. Проведение оперативного анализа устойчивости дает возможность выявлять скрытые резервы, повышать конкурентоспособность и занимать большие доли рынка.

Результаты и их обсуждение

Для детального рассмотрения вопросов управления финансовой устойчивостью в исследовании проанализированы показатели АО «Эйр Астана» – одной из крупнейших авиакомпаний Казахстана, предоставляющей полный спектр услуг, включая пассажирские, грузовые перевозки, лизинг воздушных судов и доставку почты.

По последним данным, воздушный парк «Эйр Астана» насчитывает 34 самолета зарубежного производства со средним возрастом эксплуатации около 8,45 лет. Компания выполняет свыше 60 внутренних и международных рейсов, а штат превышает 4700 квалифицированных сотрудников. С осени 2020 года (ранее – 2014 г.) во главе авиакомпании стоит Питер Фостер, эксперт в авиационном бизнесе с многолетним стажем. АО «Эйр Астана» оформили заказ на Boeing 787, Airbus A320NEO и Embraer 190, что позволило увеличить число воздушных судов до 33 единиц к 2024 году и в дальнейшем планируется довести этот показатель до 43 к 2025 г. [12].

Имущественный потенциал «Эйр Астаны» характеризуют такие показатели, как общая стоимость активов (выросшая в девять раз с начала наблюдений), степень физического износа основных средств (60,4%), морального износа (38%) и загруженность производственных мощностей (64,5%) [13]. В Таблице 1 представлены основные финансовые результаты компании за период 2015–2024 гг. (ранее 2009–2018 гг.).

Таблица 1 – Финансовые показатели деятельности АО «Эйр Астана» за 2015–2024 гг., млн. тенге

Показатели	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Изменения 2024 к 2015
Выручка реализации	82,5	97,5	113,3	130,4	147,1	167,5	163,6	212,5	250,2	289,8	207,5
Темп роста, %	103,6	118,1	116,3	115,1	112,8	113,8	97,7	129,8	117,7	115,8	352,1
Чистая прибыль	7,1	11,4	8,9	9,1	7,8	3,4	10,3	12,8	12,8	1,8	-5,2
Темп роста, %	344,5	160,5	78,0	102,2	85,7	43,5	297,2	123,8	99,8	14,1	26,1
Собственный капитал	21,2	30,1	36,1	42,6	47,2	49,2	27,1	13,0	28,8	34,1	12,8
Темп роста, %	141,9	141,9	119,9	118	110,7	104,2	55,0	48,1	221,3	118,4	160,8
Активы	24,7	49,1	57,3	88,4	136,8	162,2	208,3	190,8	196,6	223,1	198,4
Темп роста, %	71,7	199,1	116,7	154,1	154,8	118,5	128,4	91,6	103,1	115,1	903,6
Обязательства	13,2	19,1	21,8	45,8	89,6	113,1	118,3	177,8	167,8	113,4	1175,7
Темп роста, %	131,2	144,6	114,1	210,1	195,6	126,2	106,0	125,5	115,1	112,6	1429,6

Из таблицы видно, что за десять лет (2015–2024) выручка выросла с 82,5 до 289,8 млн тенге, то есть более чем в 3,5 раза, что отчасти обусловлено увеличением пассажиропотока (с 2201 тыс. чел. в 2015 г. до 4320 тыс. чел. в последующие годы). Однако чистая прибыль за этот период снизилась с 7,1 до 1,8 млн тенге (к 2024 г.). С 2019 по 2021 гг. наблюдалась положительная динамика прибыли (рост до 12,8 млн тенге), но затем в 2024 г. зафиксировано резкое уменьшение на 86%. Среди причин – подорожание авиатоплива (примерно на 33%, или на 19,910 млн тенге), которое занимает свыше 30% себестоимости, а также увеличение расходов на техобслуживание (31,9%, или 7,191 млн тенге) в связи с расширением парка воздушных судов и возникшими техническими сложностями.

Что касается собственного капитала, его общая величина за 2015–2024 гг. возросла с 21,2 до 34,1 млн тенге (в 1,6 раза). Однако есть периоды значительного колебания показателя: к 2021 и 2022 гг. он сократился почти вдвое (с 49,2 до 27,1 и 13,02 млн тенге), затем вновь вырос в 2023 и 2024 гг. Темпы роста обязательств превысили динамику как собственного капитала, так и активов: в среднем активы росли на 25,3% ежегодно, собственный капитал – на 17,9%, тогда как обязательства – на 38,1%. На 1 января 2025 г. активы достигли 223,1 млн тенге, собственный капитал – 34,1 млн тенге, а обязательства – 113,4 млн тенге, что в 3,3 раза больше капитала и указывает на высокую зависимость от заемных ресурсов (лизинговые договоры, ремонт самолетов, выплата дивидендов и пр.).

АО «Эйр Астана», имея репутацию ведущей казахстанской авиакомпания, ориентированной на международное партнерство и конкуренцию, демонстрирует рост имущественных ресурсов и увеличение выручки. При этом снижение кредиторской и дебиторской задолженности свидетельствует об усилиях по оптимизации структуры капитала. Компания стремится погасить около 19,8% долгосрочных долгов, чтобы снизить общую зависимость от заемных средств.

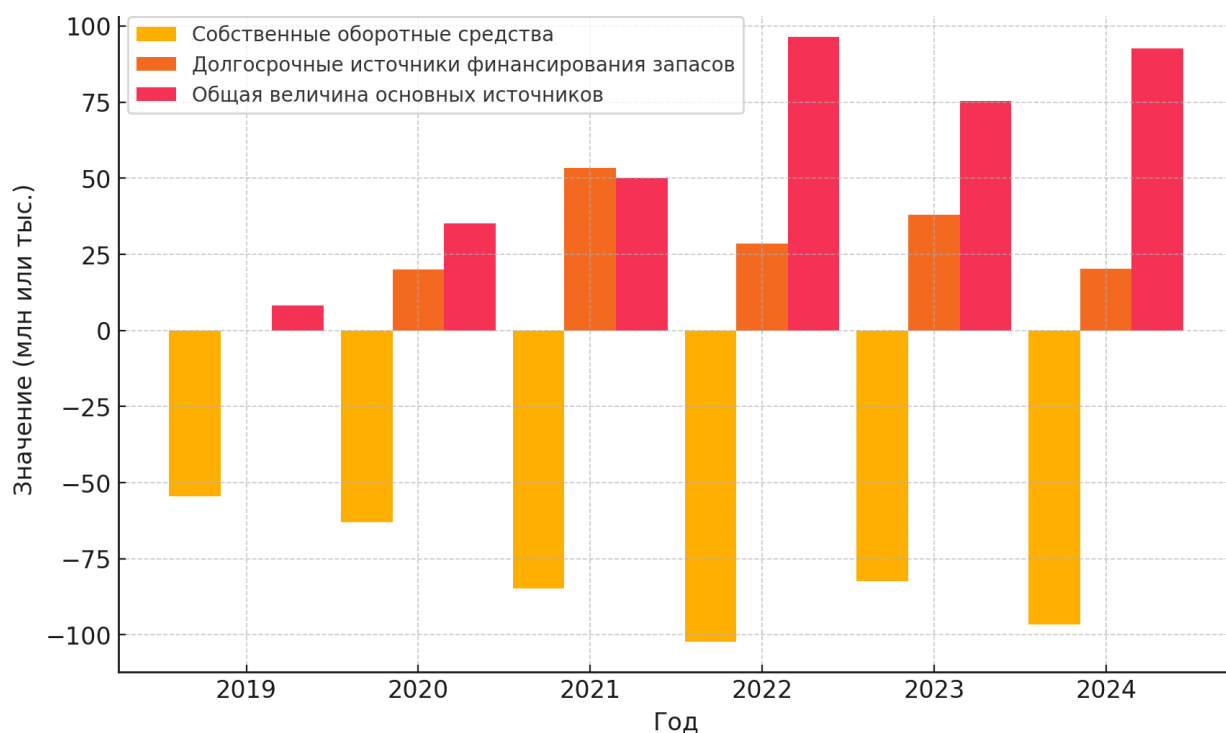
Для оценки финансовой устойчивости применяют различные методы, включая анализ абсолютных показателей и расчет обобщенного трехмерного индикатора. Результаты отражены в таблицах 2 и 3 и на рисунке 1.

Таблица 2 – Определение и типы финансовой устойчивости

Показатели	Определение показателей
Наличие собственных оборотных средств (СОС)	$СОС = \text{Собственный капитал} - \text{Внеоборотные активы}$
Наличие собственных и долгосрочных источников (СДИ)	$СДИ = СОС + \text{Долгосрочные обязательства}$
Общая величина основных источников формирования запасов (ОИЗ)	$ОИЗ = СДИ + \text{Краткосрочные обязательства}$
Трехфакторный показатель	$\Delta СОС = СОС - \text{Запасы}$ $\Delta СДИ = СДИ - \text{Запасы}$ $\Delta ОИЗ = ОИЗ - \text{Запасы}$
Типы финансовой устойчивости	Трехмерная модель
Абсолютная финансовая устойчивость	$M1 = (1;1;1)$
Нормальная финансовая устойчивость	$M2 = (0;1;1)$
Неустойчивое финансовое состояние	$M3 = (0;0;1)$

Таблица 3 – Трехмерный показатель финансовой устойчивости АО «Эйр Астана», млн. тенге

Показатели	2019	2020	2021	2022	2023	2024
	г.	г.	г.	г.	г.	г.
Собственные оборотные средства	-46,1	-53,6	-74,5	-88,6	69,6	-79,2
Собственные и долгосрочные источники финансирования запасов	-46,1	29,4	63,6	42,2	50,9	37,5
Общая величина основных источников формирования запасов	-44,5	59,4	106,7	89,1	98,1	110
Запасы	8,4	13,7	10,3	13,7	12,8	17,3
ΔСОС	-54,4	-67,4	-84,8	-102,4	-82,4	-96,5
ΔСДИ	-54,5	15,6	53,4	28,5	38,1	20,2
ΔОИЗ	53,1	45,6	96,4	75,4	85,3	92,7
Трехмерный показатель типа финансовой устойчивости	(0;0;1)	(0;1;1)	(0;1;1)	(0;1;1)	(0;1;1)	(0;1;1)

**Рисунок 1 – Показатели финансовой устойчивости за 2019–2024 гг.**

Из приведенных данных видно, что в 2019 г. («Эйр Астана») демонстрировала неустойчивое финансовое состояние ($M3=(0;0;1)$), при котором запасы и затраты превышали нормальные источники покрытия, что создавало необходимость привлечения дополнительных ресурсов. Однако в последующий период (с 2020 по 2024 г.) компании удалось восстановиться и достичь нормальной финансовой устойчивости ($M2=(0;1;1)$), при которой для финансирования запасов используются как собственные, так и заемные источники.

Тем не менее недостаток в собственных оборотных средствах у «Эйр Астаны» сохраняется. Это означает, что компании приходится постоянно прибегать к заемным ресурсам. Уровень финансового рычага (leverage) показывает, насколько заемный капитал усиливает риски и возможности доходности: если процент за заем ниже, чем доходность активов, организация может увеличивать прибыль, но при обратной ситуации убытки возрастают [16].

Чем выше соотношение долга к собственному капиталу, тем больше риск для инвесторов и кредиторов. На рисунках 2 и 3 представлены показатели плеча и эффекта финансового рычага АО «Эйр Астана».

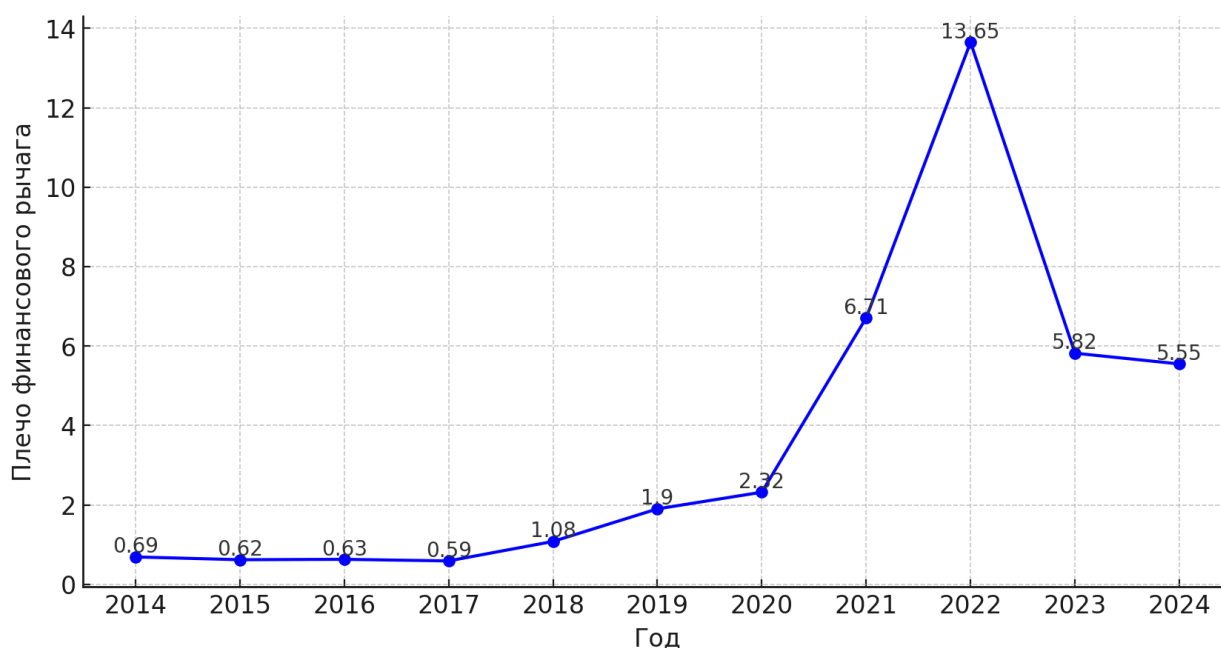


Рисунок 2 – Плечо финансового рычага Компании с 2014 по 2024 гг.

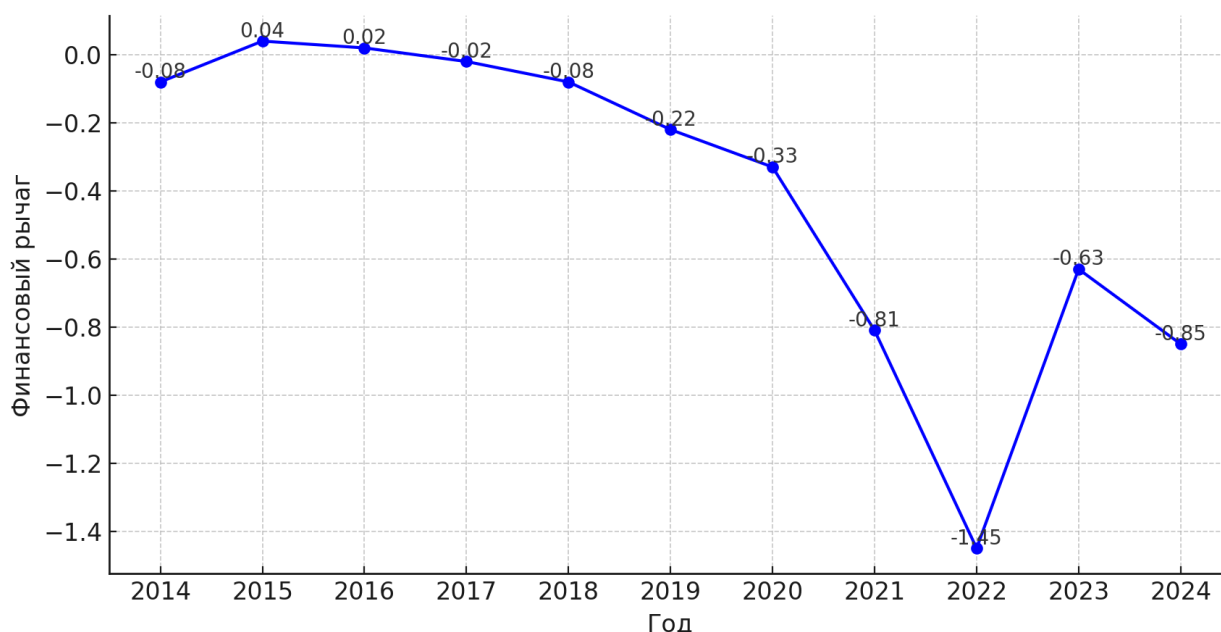


Рисунок 3 – Эффект финансового рычага компании с 2014 по 2024 гг.

Если нормативно допустимое значение плеча финансового рычага обычно не превышает 1–1,5, то в период с 2021 по 2024 гг. соотношение долга и собственных средств в «Эйр Астане» заметно выросло выше единицы. Это указывает на усиление финансовых рисков и возможное снижение рентабельности собственного капитала, поскольку проценты по долгам могут перекрывать прибыль [17–19].

Таким образом, управление устойчивостью в финансовом аспекте заключается в установлении такого объема и структуры ресурсов, которые позволят компании стабильно работать и развиваться. Система мер по оптимизации финансовой устойчивости должна обеспечивать необходимую ликвидность для покрытия текущих затрат, а также достаточную гибкость и безопасность в долгосрочной перспективе [20].

Для анализа финансовой устойчивости часто оценивают показатели маневренности, автономии и другие коэффициенты. Широкое понимание устойчивости подразумевает и способность компании к сохранению положительного финансового результата, и независимость от чрезмерного заемного капитала. В таблице 4 проиллюстрирован расчет интегрального индекса устойчивости, который включает в себя коэффициенты рентабельности активов, оборачиваемости, быстрой ликвидности, автономии и стабильных источников финансирования.

Нормативы для каждого показателя задаются экспертно, а итоговый интегральный индекс рассчитывается по формуле:

$$I_n = \sum_{i=1}^I r_i \cdot p_i$$

где r_i - значение отдельного показателя (приведенное к нормативу), а p_i - весовой коэффициент важности показателя.

Таблица 4 – Построение интегрального индекса финансовой устойчивости АО «Эйр Астана»

Показатели	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Средняя величина	Стандартное отклонение
Коэффициент рентабельности активов	0,1437	0,1460	0,0884	0,0581	0,0358	0,0131	0,0341	0,0444	0,0416	0,0083	0,0613	0,0493
Коэффициент оборачиваемости оборотных средств	4,2127	4,2273	5,2738	3,4152	3,1978	2,6784	1,4618	2,2640	2,3849	2,5462	3,1662	1,1391
Коэффициент быстрой ликвидности	0,5474	0,4312	0,2636	0,8056	0,7614	1,1680	1,8844	1,1688	1,2880	0,8762	0,9194	0,4758
Коэффициент автономии	0,8579	0,6117	0,6308	0,4813	0,3451	0,3003	0,1298	0,0682	0,1466	0,1527	0,3724	0,2642
Финансовая устойчивость (доля стабильных источников)	0,8579	0,6117	0,6308	0,7213	0,7748	0,7672	0,7420	0,6752	0,6389	0,5812	0,7001	0,0871
Интегральный индекс финансовой устойчивости	6,8995	6,2518	7,0854	5,9684	5,6393	5,6481	5,3048	4,9548	5,2617	4,7393	5,7753	0,7424

Согласно итоговому интегральному индексу за 2015–2017 гг. «Эйр Астана» находилась на довольно высоком уровне устойчивости, эффективно используя свои ресурсы. В период 2018–2023 гг. показатель остается в зоне «нормальной устойчивости» (4,1–6), хотя ближе к нижним пределам. В 2024 г. индекс снизился до 4,74, что указывает на необходимость дополнительных мер по повышению прибыли и собственного капитала, а также по сокращению объема задолженностей.

Методологические основы, рассмотренные выше, дают возможность комплексно оценивать устойчивость и выявлять ключевые факторы, влияющие на нее. При этом важно одновременно использовать и качественные, и количественные подходы, чтобы обеспечить сбалансированный анализ положения компании и своевременно разрабатывать действия по стабилизации финансов.

Заключение

Проведенное исследование финансовой устойчивости открывает перспективы для повышения конкурентных преимуществ предприятия. На примере АО «Эйр Астана» можно сделать следующие выводы и рекомендации:

1. Комплексный анализ. Выявление проблем и резервов развития предприятия следует осуществлять в рамках системного подхода, когда каждый элемент рассматривается во взаимосвязи с другими и ориентирован на главную стратегическую цель – рост рыночной стоимости компании.

2. Оценка состояния компании. Согласно трехмерному и интегральному показателям, авиакомпания долгое время находилась в пределах «нормальной устойчивости», однако в ряде случаев отмечаются периоды снижения рентабельности и роста долговой нагрузки, особенно в 2024 г.

3. Структура капитала. С 2021 по 2024 гг. плечо финансового рычага и соотношение долга к собственному капиталу превышали нормативно рекомендуемые уровни, что повышает риски и может негативно сказаться на рентабельности собственного капитала.

4. Оптимизация управления. Для снижения рисков и укрепления устойчивости следует:

— проводить более тщательный мониторинг движения денежных потоков,

— оптимизировать структуру источников финансирования (большой акцент на собственном капитале, продуманный баланс краткосрочных и долгосрочных займов),

— повышать рентабельность активов за счет рационального использования ресурсов.

5. Фокус на прибыльность. Необходима проработка механизмов сокращения издержек (например, издержек на топливо и обслуживание), повышения качества сервиса и развития дополнительных услуг, чтобы избежать систематического снижения прибыли.

6. Долгосрочная стратегия. Важно выстраивать управленческие решения, учитывая влияние внешних факторов (колебания цен на нефть, изменения спроса на авиаперевозки, конкурентную среду), и укреплять внутренние механизмы финансовой гибкости, что позволит компании оставаться устойчивой даже в неблагоприятных рыночных ситуациях.

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РОЛЬ ИННОВАЦИОННЫХ ТЕХНОЛОГИЙ ОЧИСТКИ ВОДЫ В СМЯГЧЕНИИ ЭКОЛОГИЧЕСКИХ ПОСЛЕДСТВИЙ АРАЛЬСКОГО РЕГИОНА

***Аннотация:** Аральский регион на протяжении последних десятилетий стал символом одного из самых масштабных экологических кризисов современности. Усыхание Аральского моря привело к значительным изменениям в климате, почвенном составе и водном балансе региона, что негативно сказалось на здоровье населения и биоразнообразии. Особую обеспокоенность вызывает ухудшение качества воды, обусловленное засолением, загрязнением и недостатком ресурсов для водоочистки. В ответ на эти вызовы в регионе начинают применяться инновационные технологии очистки воды, направленные на восстановление экологического баланса и обеспечение устойчивого водоснабжения. В статье рассматриваются современные методы очистки воды, такие как мембранные технологии, биологические системы, солнечные установки и ионообменные процессы, а также анализируется их потенциал в условиях Аральского региона. Исследование опирается на данные полевых наблюдений, статистические отчёты и научные публикации, подчеркивая необходимость комплексного подхода к решению водной проблемы. Особое внимание уделено вопросам внедрения инноваций в условиях ограниченных ресурсов и необходимости международного сотрудничества.*

***Ключевые слова:** Аральское море, очистка воды, экология, инновационные технологии, устойчивое развитие, Узбекистан, водные ресурсы.*

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THE ROLE OF INNOVATIVE WATER TREATMENT TECHNOLOGIES IN MITIGATION OF ENVIRONMENTAL CONSEQUENCES OF THE ARAL REGION

***Abstract:** Over the past decades, the Aral region has become a symbol of one of the largest environmental crises of our time. The drying up of the Aral Sea has led to significant changes in the climate, soil composition and water balance of the*

region, which has negatively affected public health and biodiversity. Of particular concern is the deterioration of water quality due to salinization, pollution and lack of resources for water treatment. In response to these challenges, innovative water treatment technologies are being used in the region to restore the ecological balance and ensure sustainable water supply. The article discusses modern water purification methods, such as membrane technologies, biological systems, solar installations and ion exchange processes, and analyzes their potential in the Aral region. The study is based on field observations, statistical reports and scientific publications, emphasizing the need for an integrated approach to solving the water problem. Particular attention is paid to the issues of introducing innovations in conditions of limited resources and the need for international cooperation.

Keywords: *Aral Sea, water purification, ecology, innovative technologies, sustainable development, Uzbekistan, water resources.*

Введение

Экологические проблемы Аральского региона уже давно вышли за рамки национального значения и стали объектом международной обеспокоенности. До середины XX века Аральское море занимало четвёртое место в мире по площади среди внутренних водоёмов, играя важную роль в формировании местного климата, поддержании биологического разнообразия и обеспечении водой населения и сельскохозяйственных нужд. Однако интенсивное использование воды из питающих Арал рек – Амударьи и Сырдарьи – в целях орошения привело к стремительному снижению уровня воды в море, что вызвало масштабные экологические последствия.

Сегодня Арал представляет собой систему мелководных солончаков и засоленных пустынь, где экосистема переживает глубокий упадок. Нарушение водного баланса, деградация почв, повышение концентрации пыли и соли в атмосфере, а также загрязнение водных ресурсов стали реальностью, с которой ежедневно сталкиваются местные жители. Особенно острой является проблема обеспечения населения качественной питьевой водой. Многочисленные исследования показывают, что воды в Приаралье содержат повышенные концентрации солей тяжёлых металлов, нитратов и других загрязняющих веществ, что вызывает рост заболеваемости, в том числе болезнями желудочно-кишечного тракта, почек и дыхательной системы.

В этих условиях становится очевидной необходимость поиска эффективных, устойчивых и экономически оправданных решений для очистки и восстановления водных ресурсов. Разработка и внедрение инновационных технологий очистки воды рассматриваются как перспективное направление, способное не только улучшить качество жизни населения, но и способствовать восстановлению экологического равновесия. Наиболее актуальными на сегодняшний день являются технологии мембранной фильтрации, ионообменных процессов, биологической очистки и солнечных дистилляторов. Эти методы находят практическое применение

как в централизованных системах водоснабжения, так и в условиях малых населённых пунктов.

Особенность Аральского региона заключается в его климатических и географических условиях, которые требуют адаптации и модификации существующих технологических решений. Высокая температура воздуха, ограниченность энергетических ресурсов и дефицит финансирования налагают дополнительные требования к устойчивости и экономичности очистных установок. Кроме того, чрезвычайно важно учитывать мнение и участие местного населения при реализации водоочистных проектов, чтобы обеспечить их устойчивость и долгосрочную эффективность.

Актуальность темы определяется не только остротой экологической ситуации в регионе, но и возрастающим интересом к применению инноваций в сфере охраны окружающей среды. Узбекистан, как страна, находящаяся в эпицентре экологических изменений, предпринимает шаги по модернизации водной инфраструктуры и активному привлечению научного потенциала для решения накопленных проблем. Государственные программы, поддержка международных организаций и инициативы частного сектора формируют благоприятные условия для внедрения новых подходов в сфере водоочистки.

Таким образом, исследование роли инновационных технологий в очистке воды в Аральском регионе позволяет не только рассмотреть экологическую проблему с практической точки зрения, но и предложить конкретные пути выхода из кризиса. Это требует междисциплинарного подхода, объединяющего знания в области экологии, инженерии, экономики и социологии. Настоящая статья направлена на анализ существующих инновационных решений, их применимости в условиях Приаралья и выработку рекомендаций по улучшению экологической ситуации посредством современных технологий.

Основная часть

На сегодняшний день в Аральском регионе Узбекистана наблюдается острая нехватка качественной пресной воды, что обусловлено не только климатическими условиями и антропогенными изменениями, но и технологическим отставанием в сфере водоочистки. Для решения этой проблемы особое внимание уделяется внедрению инновационных методов очистки воды, которые отличаются энергоэффективностью, компактностью и возможностью использования в условиях удалённых и малонаселённых районов.

Одним из наиболее эффективных и востребованных направлений является мембранная фильтрация, включая обратный осмос и ультрафильтрацию. Эти технологии позволяют удалять из воды соли, бактерии, вирусы и другие вредные вещества, обеспечивая высокую степень очистки. В контексте Аральского региона, где большая часть источников воды отличается высокой минерализацией, обратный осмос представляет собой особенно актуальное решение. Однако его реализация требует значительных затрат энергии, что ограничивает его применение в некоторых

населённых пунктах, не имеющих стабильного энергоснабжения. В этой связи становятся актуальными гибридные установки, работающие на основе солнечной энергии.

Использование солнечных дистилляторов, или так называемых солнечных водоочистных установок, особенно перспективно в засушливом климате Приаралья. Такие устройства преобразуют солнечную энергию в тепло, которое используется для испарения загрязнённой воды с последующей конденсацией чистой жидкости. Простота конструкции, низкие эксплуатационные затраты и экологическая безопасность делают данный метод приемлемым для небольших сообществ. Кроме того, солнечные технологии могут сочетаться с другими видами очистки, обеспечивая комбинированный эффект.

Биологические методы очистки, основанные на использовании микроорганизмов для разложения органических соединений и удаления загрязняющих веществ, также находят применение в экологически уязвимых районах. Например, искусственные биопруды или биофильтры, заселённые специальными видами бактерий, способны эффективно очищать сточные воды от органики. В условиях Аральского региона они могут быть использованы в сельскохозяйственных поселениях, где нет централизованной канализации и существует необходимость в биологически безопасной утилизации стоков.

Ионообменные технологии используются для удаления из воды тяжёлых металлов и радионуклидов, что особенно актуально в зонах повышенного техногенного загрязнения. Такие технологии могут применяться в системах доочистки питьевой воды, особенно если речь идёт о воде из колодцев и артезианских скважин. Несмотря на их эффективность, ионообменные методы требуют периодической регенерации смол и требуют технического обслуживания, что может быть сложно обеспечить в отдалённых регионах без соответствующего персонала.

Одной из главных проблем внедрения инновационных технологий в Аральском регионе является ограниченное финансирование и нехватка квалифицированных специалистов. В этой связи важным фактором является поддержка со стороны государства и международных организаций. Уже реализованы некоторые пилотные проекты, в рамках которых были установлены солнечные водоочистные станции и мембранные модули в Каракалпакстане. Их успешное применение демонстрирует, что даже в условиях ограниченных ресурсов можно достичь значительного улучшения качества воды и уровня санитарии.

Дополнительным преимуществом инновационных технологий является их масштабируемость и возможность адаптации под конкретные нужды населения. Разработка мобильных установок для экстренного обеспечения водой, использование автоматизированных систем мониторинга качества воды, а также интеграция цифровых платформ для управления очистными

сооружениями открывают новые перспективы для устойчивого развития водной отрасли региона.

Таким образом, внедрение инновационных технологий в очистку воды не только способствует улучшению экологической ситуации в Аральском регионе, но и играет ключевую роль в обеспечении здоровья и благополучия местного населения. Важно продолжать научные исследования, развивать межотраслевое сотрудничество и поддерживать образовательные инициативы, направленные на подготовку специалистов нового поколения в сфере экологии и водных технологий.

Заключение

Экологическая ситуация в Аральском регионе остаётся одной из наиболее острых проблем Центральной Азии, затрагивая как природную среду, так и здоровье и благосостояние населения. Усыхание Аральского моря стало причиной деградации окружающей среды, повышения уровня засоления почв, загрязнения атмосферного воздуха и острого дефицита качественной пресной воды. В этих условиях ключевым направлением является не только восстановление природных ресурсов, но и внедрение современных и эффективных подходов к очистке воды, способных адаптироваться к сложным климатическим и экономическим условиям региона.

Рассмотренные в статье инновационные технологии – мембранная фильтрация, солнечные дистилляторы, биологические методы и ионообменные установки – обладают высокой степенью очистки, универсальностью и возможностью применения как в масштабах отдельных хозяйств, так и на уровне целых населённых пунктов. Каждая из этих технологий имеет свои преимущества и ограничения, однако их комбинированное использование и адаптация под специфические условия Аральского региона открывают реальные перспективы для смягчения последствий экологического кризиса. Особенно важным является применение решений, не требующих больших энергетических затрат и способных функционировать в условиях ограниченного доступа к инфраструктуре.

В то же время эффективное использование технологий невозможно без участия всех заинтересованных сторон. Государственные органы, местные органы управления, научные институты, международные партнёры и, что особенно важно, само население должны быть вовлечены в процессы планирования, реализации и мониторинга очистных мероприятий. Необходимо развивать образовательные программы в области экологии и водных ресурсов, направленные на подготовку специалистов, способных внедрять и обслуживать инновационные технологии в условиях региона. Финансовая поддержка, субсидии и гранты должны стать частью государственной политики по обеспечению водной безопасности.

Кроме того, стоит отметить важность международного сотрудничества и обмена опытом. В ряде стран с аналогичными климатическими и географическими условиями были успешно внедрены низкозатратные и

энергоэффективные технологии очистки воды, которые могут быть адаптированы для условий Узбекистана. Интеграция лучших мировых практик и локальных решений позволит сформировать устойчивую модель управления водными ресурсами, учитывающую как современные вызовы, так и традиции региона.

В контексте устойчивого развития особое значение приобретает экологическое просвещение населения и формирование у жителей осознанного отношения к воде как к ограниченному ресурсу. Эффективность технологических решений во многом зависит от бережного отношения людей к водным ресурсам, соблюдения санитарных норм и готовности к изменениям в повседневной практике водопользования. Поэтому программы по очистке воды должны сопровождаться просветительской деятельностью, направленной на изменение экологического поведения общества.

Таким образом, инновационные технологии очистки воды представляют собой не только инструмент инженерного характера, но и элемент комплексной стратегии по восстановлению экологического баланса Аральского региона. Их внедрение должно сочетаться с мерами по охране окружающей среды, социальным развитием и активной государственной поддержкой. Только в этом случае можно ожидать долгосрочного и устойчивого улучшения качества жизни населения и сохранения природного потенциала региона для будущих поколений.

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ГОСУДАРСТВЕННАЯ ПОДДЕРЖКА КАК МЕХАНИЗМ УСТОЙЧИВОГО РАЗВИТИЯ КРЕСТЬЯНСКИХ (ФЕРМЕРСКИХ) ХОЗЯЙСТВ В ОРЕНБУРГСКОЙ ОБЛАСТИ

***Аннотация:** Крестьянские (фермерские) хозяйства вносят весомый вклад в агропромышленный комплекс Российской Федерации. Оренбургская область занимает около 5% всех сельскохозяйственных угодий, поэтому изучение деятельности КФХ и повышение их эффективности является актуальной темой. В статье рассмотрены численность крестьянских (фермерских) хозяйств Оренбуржья, произведённая ими продукция и её структура, меры поддержки малых форм хозяйствования, осуществляемые Министерством сельского хозяйства Оренбургской области, а также выявлены проблемы эффективности развития КФХ.*

***Ключевые слова:** крестьянские (фермерские) хозяйства, КФХ, растениеводство, животноводство, государственная поддержка, агропромышленный комплекс Оренбуржья.*

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STATE SUPPORT AS A MECHANISM FOR THE SUSTAINABLE DEVELOPMENT OF PEASANT (FARMING) FARMS IN THE ORENBURG REGION

***Abstract:** Peasant (farming) farms make a significant contribution to the agro-industrial complex of the Russian Federation. The Orenburg region occupies about 5% of all agricultural land, so studying the activities of farms and improving*

their efficiency is an urgent topic. The article examines the number of peasant (farm) farms in Orenburg region, the products they produce and their structure, measures to support small businesses implemented by the Ministry of Agriculture of the Orenburg region, and identifies problems with the effectiveness of farm development.

Keywords: *peasant (farming) farms, farms, crop production, animal husbandry, state support, agro-industrial complex of Orenburg region.*

Одним из крупнейших регионов Российской Федерации в составе ПФО является Оренбургская область: на территории субъекта находится около пяти процентов всех российских сельскохозяйственных угодий.

В Оренбургской области преимущественно занимаются сельскохозяйственной деятельностью малые формы хозяйствования: личные подсобные хозяйства (ЛПХ), крестьянские (фермерские) хозяйства (КФХ), сельскохозяйственные потребительские кооперативы (СПоК) и прочие субъекты малого и среднего предпринимательства.

На рисунке 1 представлена динамика количества действующих КФХ в Оренбургской области в 2018-2023 гг. Численность крестьянских (фермерских) хозяйств в анализируемом периоде демонстрировала стабильный прирост. Самый пик количества действующих КФХ приходился на 2022 год, в котором насчитывалось 2156 единиц. Однако в 2023 году произошло некоторое снижение численности действующих КФХ, что составило 2134 единицы [1].

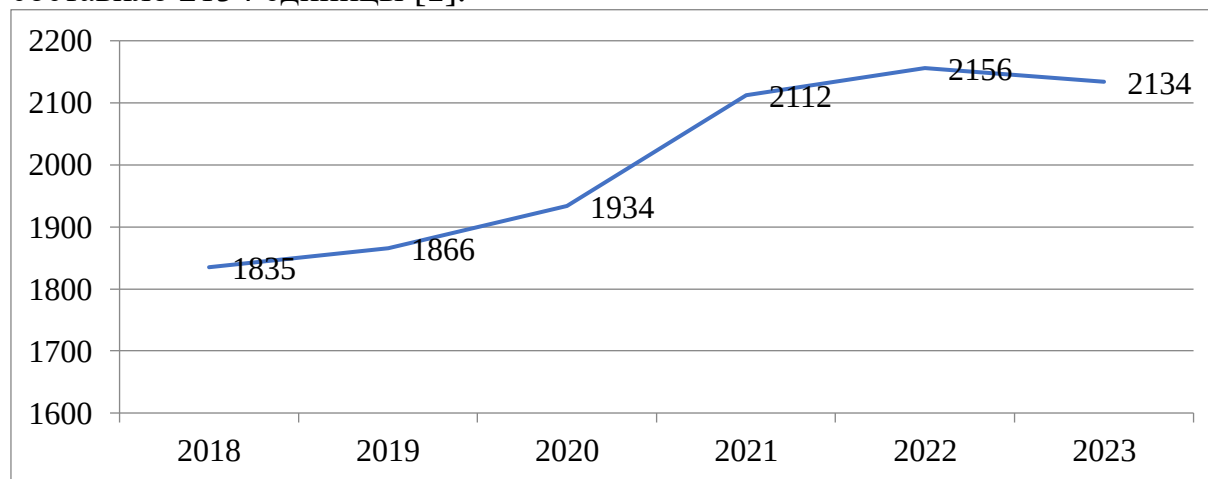


Рисунок 1 – Динамика количества действующих КФХ в Оренбургской области в 2018-2023 гг., ед.

Оренбуржье является одной из главных житниц Российской Федерации, где ежегодно выращивается более 3 млн тонн зерновых культур, в том числе свыше полутора миллионов тонн пшеницы твёрдых и мягких сортов. На рисунке 2 представлена динамика продукции сельского хозяйства, произведенной в КФХ Оренбургской области, в том числе продукции растениеводства и животноводства.

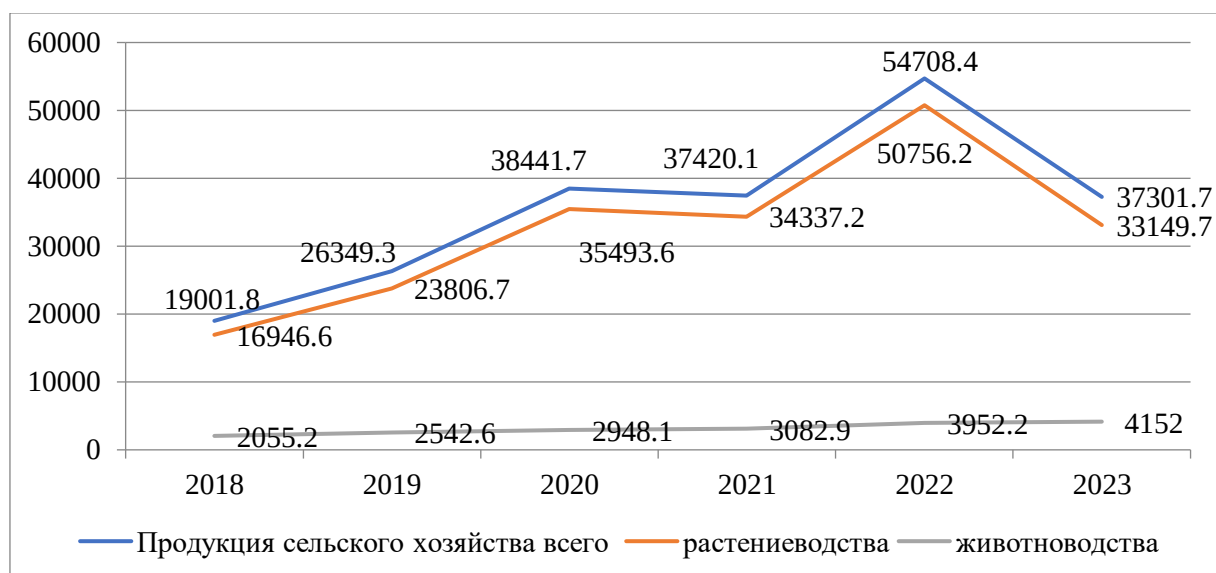


Рисунок 2 – Динамика продукции сельского хозяйства, произведенной в КФХ Оренбургской области, млн руб.

Исходя из анализа приведенных данных, сельскохозяйственной специализацией КФХ в Оренбургской области является растениеводство. Продукция растениеводства производится с нестабильной динамикой: с 2018 по 2020 год динамика была положительной, прирост существенным: в 2019 году – на 40%, в 2020 году – на 49%. В 2021 году продукции растениеводства произведено на 3% меньше, чем в 2020 году, но уже в 2022 году прирост составил 47,8%. В 2023 году уровень производства продукции растениеводства опустился ниже показателей 2022 года [2].

Показатели животноводства имеют стабильную положительную динамику в течение всего анализируемого периода.

По данным Минсельхоза Оренбургской области, валовые сборы и урожайность основных сельскохозяйственных культур по категориям фермерских хозяйств в 2022 году показали половину всех зерновых и зернобобовых культур, а также 49,4 % всех семян подсолнечника и 17,2 % картофеля [3].

Фермерские хозяйства в 2023 году произвели половину зерновых и зернобобовых культур, к тому же 53 % семян подсолнечника и 16,2 %, картофеля.

В целом наблюдается отрицательная динамика урожайности и сборов сельскохозяйственных культур, в том числе произошло снижение зерновых и зернобобовых культур семян подсолнечника. В то же время картофель демонстрирует положительную динамику урожайности.

С учетом производства основных видов животноводческой продукции для фермерского сообщества, в 2022 году фермерские хозяйства произвели 6,7 % скота и птицы на убой, 10,3 % всех видов молока и 0,5 % производства яиц. В 2023 году произошло незначительное увеличение доли фермерских

хозяйств: было забито 6,9 % скота и птицы, произведено 10,4 % всех видов молока [4].

Правительство Оренбургской области уделяет серьезное внимание поддержке субъектов малого предпринимательства. Поддержка всех секторов сельского хозяйства оказывает благоприятное воздействие на экономику области. Она раскрывается не только через прямое увеличение объемов сельскохозяйственной продукции, но и через весомый вклад в развитие сельских территорий.

При финансовой поддержке государства в КФХ становится более доступным:

- создание рабочих места;
- привлечение молодежи к работе на селе;
- снижение социальной напряженности в обществе;
- повышение качества жизни сельского населения.

В Оренбургской области получение гранта на развитие сельского хозяйства, как одну из форм финансовой поддержки от государства, становится не только возможным, но и реальным. Так, в 2023 году 6 семейных хозяйств получили гранты на развитие своей деятельности на 110,6 млн рублей, к тому же крестьянское (фермерское) хозяйство получило грант на развитие материально-технической базы на сумму 6 млн рублей [5].

С 2021 года в грантовую программу были внесены изменения, в том числе отменена помощь в виде грантов для поддержки начинающих фермеров и введен новый вид гранта – «Агропрогресс».

Государственная финансовая поддержка с 2012 года по 2023 год в рамках грантовой программы составила 2,8 млрд рублей (725 грантов), из которых:

- 518 грантов на 999 млн рублей (для начинающих фермеров);
- 188 грантов на 1621,4 млн рублей (развитие семейных ферм);
- 16 грантов на 120,3 млн рублей (для СПоК);

— 3 гранта на 100 млн рублей (фермерские хозяйства) [6].

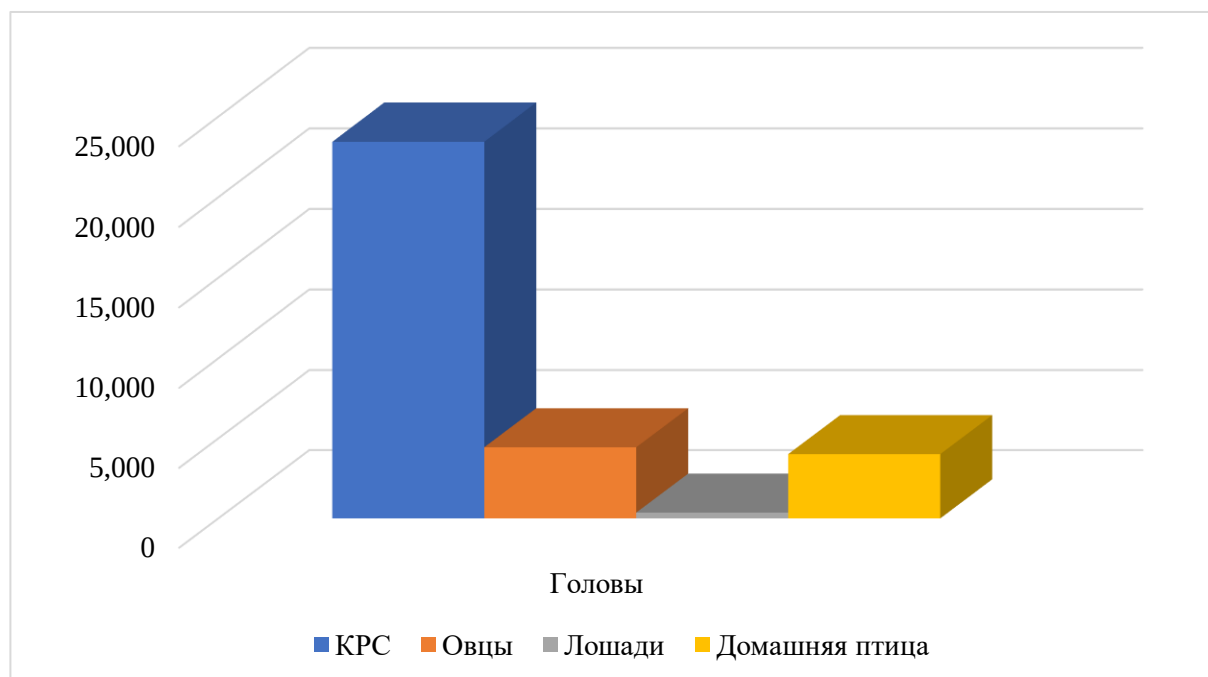


Рисунок 3 – Количество приобретенных голов животноводческими фермами, 2023 г.

Начинающим фермерам и семейным животноводческим фермам была оказана государственная помощь при участии благотворительных организаций, результат оказания поддержки отображен на рисунке 3. В период оказания поддержки была приобретена техника:

- тракторов в количестве 437 ед.;
- зерноуборочных комбайнов в количестве 41 ед.;
- грузовых и легковых автомобилей в количестве 238 ед.;
- другая сельскохозяйственная техника в количестве 1194 ед.

Для эффективной реализации проектов по развитию сельского туризма в 2022 году появился новый вид господдержки сельскохозяйственных товаропроизводителей – «Агротуризм» [7]. Повысить привлекательность сельской местности, а также способствовать развитию сельских территорий, стало возможно путем появления новых и актуальных сельскохозяйственных объектов в регионе. «Агротуризм» поможет предпринимателям расширить свою деятельность и представит возможность получения дохода через иной канал продаж. Активное взаимодействие фермерских хозяйств, органов местного самоуправления и населения способствует плодотворному производству сельхозпродукции. Гранты, направленные на развитие и поддержание туризма в сельской местности, будут вносить большой вклад в развитие социальной сферы сельских территорий путем сохранения и охраны культурного наследия и поддержание местных традиций.

Активная поддержка субъектов малого и среднего предпринимательства осуществляется в рамках государственной программы «Развитие сельского хозяйства и регулирование рынков сельскохозяйственной продукции, сырья и продовольствия в Оренбургской области».

В 2024 году в Оренбуржье было выделено 344 млн рублей на развитие малых форм хозяйствования [8]. Направления распределения бюджетных средств:

- гранты на развитие сельского хозяйства («Агротуризм», «Агропрогресс», «Агrostартап»);
- поддержка потребительских кооперативов;
- компенсация затрат на производство сельскохозяйственной продукции;
- поддержка Центра компетенций в сфере сельскохозяйственной кооперации и поддержки фермеров.

В Оренбургской области на 2025 год запланирован бюджет на развитие всего агропромышленного комплекса в размере 343,3 млн рублей. Помимо вышеупомянутых направлений финансирования, в регионе начнет действовать новый грант «Агромотиватор». Данная мера государственной поддержки разработана и доступна только для ветеранов и участников специальной военной операции, что особенно подчеркивает приоритетность поддержки фермерских хозяйств и развитие агропромышленного комплекса как одной из стратегически значимой отрасли.

В заключении хотелось бы отметить, что исследование мер государственной поддержки сельского хозяйства в Оренбургской области позволило сделать следующие выводы:

1. Динамика численности крестьянских (фермерских) хозяйств в регионе в период 2018-2022 гг. демонстрирует прирост, что данное время является благоприятным для ведения сельскохозяйственной деятельности.

2. По специализации крестьянские (фермерские) хозяйства отдают большее предпочтение растениеводству, на что повлияли климатические условия: регион обеспечивает всю страну производством зерновых и зернобобовых культур, семенами подсолнечника и картофеля. Животноводство в Оренбургской области занимает значительно меньшую долю.

3. Министерство сельского хозяйства Оренбургской области предпринимает значительные шаги для поддержания крестьянских (фермерских) хозяйств: финансовая поддержка в виде субсидий и дотаций; выделение грантов «Агропрогресс», «Агrostартап» и «Агротуризм»; принятие программ для поддержки начинающих фермеров.

4. Проблема развития и поддержки крестьянских (фермерских) хозяйств является введение «Честного знака», требования которого в связи с отсутствием сети Интернет во многих сельских территориях нет возможности

выполнять вовремя; постоянный рост стоимости на семена, удобрения, корма, ремонт запасных частей, топливо и горюче-смазочных материалов.

В настоящее время Минсельхоз работает над решением задач по принятию дополнительных мер стимулирования сельскохозяйственного производства и освоению в сельскохозяйственном производстве новых инвестиционных проектов.

Основной задачей остается выполнение параметров, заложенных в государственной программе «Развитие сельского хозяйства и регулирование рынков сельскохозяйственной продукции, сырья и продовольствия Оренбургской области».

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ПОВЫШЕНИЕ ЭФФЕКТИВНОСТИ УПРАВЛЕНИЯ КРЕСТЬЯНСКИМИ (ФЕРМЕРСКИМИ) ХОЗЯЙСТВАМИ

***Аннотация:** В данной статье рассматриваются меры государственной поддержки крестьянских (фермерских) хозяйств (КФХ) на территории Российской Федерации. В работе приведены и проанализированы статистические данные о достижении ключевых показателей КФХ в общей системе агропромышленного комплекса. В ходе исследования были определены основные причины снижения количества КФХ по стране. При анализе факторов, оказывающих влияние на эффективное управление КФХ, были сформулированы предложения по повышению их эффективности.*

***Ключевые слова:** крестьянское (фермерское) хозяйство, государственная поддержка, агропромышленный комплекс, эффективность управления, субсидии.*

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IMPROVING THE EFFICIENCY OF PEASANT FARM MANAGEMENT

***Abstract:** This article considers the measures of state support of peasant (farm) farms (PFH) in the Russian Federation. The paper presents and analyzes statistical data on the achievement of key indicators of KFH in the general system of agro-industrial complex. In the course of the study the main reasons for the decline in the number of KFHs in the country were identified. In analyzing the factors that influence the effective management of KFHs, proposals to improve their efficiency were formulated.*

Key words: *peasant (farmer) farm, state support, agro-industrial complex, management efficiency, subsidies*

В Российской Федерации аграрный сектор характеризуется большим разнообразием субъектов хозяйственной деятельности. На сегодняшний день в России реализуются меры государственной поддержки экономической деятельности АПК. Объем и порядок предоставления государством поддержки требуют совершенствования, как для крупных сельскохозяйственных производителей, так и для малых форм хозяйствования.

Крестьянские (фермерские) хозяйства, являясь одним из приоритетных субъектов сельского хозяйства, ввиду локального характера своей деятельности и принадлежности к конкретной территории, определяют важное значение для социально-экономического развития сельских территорий. В соответствии с федеральным законом от 11.06.2003 № 74-ФЗ «О крестьянском (фермерском) хозяйстве», КФХ представляет собой объединение граждан, связанных родством и (или) свойством, имеющих в общей собственности имущество и совместно осуществляющих производственную и иную хозяйственную деятельность, основанную на их личном участии [1].

На территории Российской Федерации по состоянию на 1 января 2024 года зарегистрировано 162,26 тыс. крестьянских (фермерских) хозяйств и индивидуальных предпринимателей с основным видом экономической деятельности «Растениеводство и животноводство, охота и предоставление соответствующих услуг в этих областях».

По данным Росстата в 2023 году был собран второй рекордный урожай зерна, который составил 145 млн тонн, что на 12 % выше, чем в среднем за 5 лет. Также Россия обновила рекордные показатели за последние 30 лет в направлении производства плодоовощной продукции КФХ, ИП и другими сельскохозяйственными организациями (см. таблицу 1) [2].

Таблица 1

Объем производства плодоовощной продукции КФХ, ИП и другими сельскохозяйственными организациями в России

	Урожай (млн тонн)	
	2022 г.	2023 г.
картофель	7,3	8,6
овощи	7,3	7,5
плоды и ягоды	1,7	1,9

Предоставление грантов и субсидий КФХ, СХО и СПоК в 2023 году осуществлялось в рамках федерального проекта «Развитие отраслей и

техническая модернизация агропромышленного комплекса». Данные приведены в таблице 2.

Таблица 2

Предоставление грантов и субсидий КФХ, СХО и СПоК в 2023 г. в России

Перечислено сельхозтоваропроизводителям субсидий (млн руб)				% освоения средств	
всего	в т.ч. за счет средств			федерального бюджета	бюджета субъекта РФ
	федерального бюджета	за счет остатка	бюджета субъекта РФ		
9170,84	7 986,32	0,00	1 184,52	5,33	4,74

В направлении стимулирующей субсидии получателями поддержки стали 529 КФХ, 98 кооперативов, 11 СХО, а 65 ЛПХ Республика Бурятия, Чувашская Республика и Оренбургская область, получившие средства из федерального бюджета. Однако, показатель прироста производства продукции в секторе фермерских хозяйств и сельскохозяйственных организаций по итогам 2023 года суммарно составил 0,45 %.

Значительная часть производства отечественной продукции приходится именно на фермерские хозяйства. В связи с этим, актуальной проблемой является уровень их развития в условиях проведения государственной аграрной политики.

В 2024 году размер государственной поддержки, включающий в себя гранты, субсидии, компенсации затрат, льготное кредитование и лизинг сельскохозяйственной техники, составил 558,6 млрд рублей. Особенно стоит обратить внимание на размер поддержки субъектов малого и среднего предпринимательства, который составил 15 млрд рублей, что на 2 млрд рублей больше, чем в 2023 году, а на поддержку крестьянско-фермерских хозяйство было выделено 8 млрд рублей [3].

Бюджетные ассигнования федерального проекта «Развитие отраслей и техническая модернизация агропромышленного комплекса» в 2023 году составили 6,2 млрд рублей, что позволило оказать поддержку в обновлении парка сельскохозяйственной техники. АО «Росагролизинг» по договорам финансовой аренды поставило 15089 единиц новой техники, из числа которых 2113 тракторов и 1757 комбайнов. В основном арендаторами по договору лизинга стали крупные сельхозтоваропроизводители.

Банки заключили с заемщиками - фермерскими хозяйствами 31,5 тыс. кредитных договоров на сумму около на сумму 1 333 364,6 млн рублей, а по льготным краткосрочным кредитам было заключено 23,1 тыс. договоров.

Субъекты малых форм хозяйствования заключили 15,5 тыс. кредитных договоров на сумму 155 150,7 млн рублей, по которым сумма фактически уплаченных субсидий составила 4315,6 млн рублей (18,2 % от общего объема перечисленных субсидий по льготным краткосрочным кредитам) [4].

В настоящее время государственная поддержка в отношении малых форм хозяйствования очень важна, однако имеет недостаточную эффективность по различным причинам. Данная ситуация приводит к значительному снижению доли фермеров-участников государственных программ, направленных на развитие сельского хозяйства.

За последние 3 года всего только четверть фермерских хозяйств смогли оформить государственную поддержку в растениеводстве. Неутешительные выводы следуют также по доступности для фермеров льготных кредитов. Около 10 % крестьянских (фермерских) хозяйств смогли получить субсидии в виде оплаты части процентов за пользование кредитами в банках, в то время как почти 80 % получателями таких субсидий стали крупные и средние хозяйства. В целом на долю крестьянских (фермерских) хозяйств приходится всего 15 % от общего количества оформленных субсидий.

Всего 15 тыс. фермеров, занимающихся разведением крупного рогатого скота, смогли получить поддержку от государства в виде субсидий, что составило 13 % от их общего числа. Проанализировав реестр лиц-получателей дотаций и субсидий, можно сделать вывод, что в большинстве случаев основными получателями государственной поддержки в животноводстве являются средние и крупные субъекты агропромышленного комплекса: на долю крестьянских (фермерских) хозяйств и других малых форм хозяйствования приходится 18,6 % от общего количества оформленных субсидий.

Необходимо не только пересмотреть меры поддержки крестьянским (фермерским) хозяйствам, оказываемые государством, а важно создать систему всесторонней поддержки фермеров для эффективного ведения и управления агробизнесом [5]. Глав КФХ, в первую очередь, волнуют проблемы, вызванные нехваткой земельных и трудовых ресурсов, отсутствием знаний о мерах поддержки и способах ее получения, а также низким уровнем владения навыков в сфере управления.

Сектор крестьянских (фермерских) хозяйств и малых форм хозяйствования в системе агропромышленного комплекса с каждым годом наращивает объемы производства. Но, несмотря на положительную динамику роста, отсутствует детальный анализ организации и условий функционирования данных субъектов сельского хозяйства на территории Российской Федерации, что в свою очередь создает неверное представление об успешном развитии всего АПК. Главные показатели производства в отечественном сельском хозяйстве достигаются благодаря средним и крупным хозяйствам. Доля крестьянских (фермерских) хозяйств в общем объеме производства сельскохозяйственной продукции не соответствует их численному превосходству.

Исходя из анализа данных сельскохозяйственных микропереписей, заметна тенденция снижения количества крестьянских (фермерских) хозяйств, так как за 10 лет их стало в 2 раза меньше КФХ. Основной причиной ухода фермеров является слабая консультационная поддержка КФХ и ЛПХ по возникающим вопросам ведения бизнеса. Небольшие фермерские хозяйства используют только собственные знания менеджмента и опыт, которые зачастую имеют низкий уровень. Руководители фермерских хозяйств недостаточно или вовсе не осведомлены об имеющихся возможностях компенсации затрат на ведение своей деятельности, а также о причитающихся им субсидий (в случае их оформления) [6].

В 2019 году Президент Российской Федерации поставил задачу по созданию поддержки малых форм хозяйствования. И, на данный момент, созданы центры компетенций в сфере сельскохозяйственной кооперации и поддержки фермеров, которые предоставляют консультационные услуги, услуги по сопровождению подготовки документов по государственной поддержке, а также проводят обучающие семинары и вебинары для субъектов малого и среднего предпринимательства. Однако, ввиду того, что центры организованы сравнительно недавно, имеются проблемы, вызванные ограниченностью штата и ресурсов.

Основополагающая причина сокращения количества КФХ кроется в небольшой доходности и избыточном контроле и надзоре со стороны государства на них [7]. Существующих мер государственной поддержки недостаточно для повышения прибыли небольших хозяйств. Одним из направлений устойчивого развития сельских территорий следует рассмотреть объединение фермерских хозяйств семейного типа в единую систему. Культура и традиции в создании агроландшафтов семейных хозяйств послужат дополнительной причиной для привлечения туристов на отдых в сельских территориях, что окажет финансовую поддержку и самому фермеру, и развитию сельского туризма [8]. Производство и реализация натуральной продукции местных семейных ферм также поспособствует привлечению туристов, что, в свою очередь, положительно скажется на развитии социальной, экономической и транспортной инфраструктуры.

Устойчивый рост крестьянских (фермерских) хозяйств невозможен без создания эффективной системы, которая была бы направлена на поддержание стабильного прогресса хозяйствующей деятельности и адаптивности к кризисным ситуациям.

Гарантия долговечности существования КФХ базируется на экономическом, социальном и экологическом аспектах. Она включает в себя: увеличение производства качественной и безопасной продукции для удовлетворения нужд населения; достижение рентабельности производства, достаточной для его расширения; улучшение уровня жизни сельского населения; стабилизацию демографической ситуации и миграционных потоков в сельской местности; предотвращение деградации и потерь обрабатываемых земель и улучшение их плодородия. Стабильность

сельскохозяйственной деятельности на территории всего государства и сохранение природных ресурсов и окружающей среды возможно только при рациональном природопользовании.

Внешние факторы имеют огромное значение для постоянного развития КФХ: возможность получения ресурсов; степень развития внутреннего потребителя; величина и развитость рынков сбыта продукции; ценообразование и налоговое регулирование; климатические особенности конкретных территорий; инвестиционная политика; международные экономические отношения [9].

Стабильность функционирования крестьянских (фермерских) хозяйств зависит от определенных факторов, указанных на рисунке 1.



Рисунок 1 – Факторы стабильного функционирования КФХ

Как отмечалось ранее, для эффективного управления КФХ огромную роль играет государственная поддержка не только в экономическом плане (финансирование и компенсация затрат), но и в социальном, так как поддержка должна оказываться на всех этапах хозяйствующей деятельности малых форм хозяйствования.

В заключении хотелось бы отметить, что при анализе факторов, оказывающие большое влияние на эффективность управления крестьянскими (фермерскими) хозяйствами, были сделаны следующие выводы:

1. Следует пересмотреть механизмы оказания государственной поддержки, а также процедуры их предоставления, сделав более доступными для небольших хозяйств.

2. Необходимо усовершенствовать систему консультационной поддержки посредством введения новых разделов на платформе «Центр компетенций в сфере сельскохозяйственной кооперации и поддержки», направленных на разрешение возникающих вопросов от глав КФХ и самих работников, а также важно распространение информации о возможностях данного центра.

3. Важно дополнить комплекс мер поддержки КФХ, в том числе в рамках существующих мер государственной поддержки Минсельхоза, а также существующих продуктов АО «Россельхозбанк», ПАО «Сбербанк», АО «Росагролизинг».

4. Стоит рассмотреть меру государственной поддержки, которая была бы направлена на создание единой системы хозяйств в сельской местности для привлечения большего количества туристов и развития инфраструктуры для реализации местной фермерской продукции.

Доступность получения государственной поддержки всеми формами хозяйствования в агропромышленном комплексе необходима для повышения эффективности производства сельскохозяйственной продукции и обеспечения продовольственной безопасности государства.

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РЕИНЖИНИРИНГ МЕТОДОМ ИНТЕГРАЦИИ

***Аннотация:** В данной статье исследуется метод реинжиниринга бизнес-процессов, который базируется на интеграции разных систем и технологий. Приводятся принципы, этапы и вероятные результаты внедрения данного инструмента. Целью статьи является анализирование теоретических и практических нюансов реинжиниринга методом интеграции, который поможет оценить его результативность в деятельности компаний.*

***Ключевые слова:** реинжиниринг, бизнес-процесс, интеграция, эффективность, изменение.*

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REENGINEERING BY INTEGRATION METHOD

***Abstract:** This article examines the method of business process reengineering, which is based on the integration of different systems and technologies. The principles, stages and probable results of implementing this tool are given. The purpose of the article is to analyze the theoretical and practical nuances of reengineering by the integration method, which will help to evaluate its effectiveness in the activities of companies.*

***Keywords:** reengineering, business process, integration, efficiency, change.*

Введение

В настоящее время ведение бизнеса нуждается в регулярном совершенствовании и повышении эффективности всех имеющихся бизнес-процессов. Большинство компаний используют устаревшие методы, которые имеют низкую результативности. В таких случаях действенным инструментом является реинжиниринг бизнес-процессов. Метод интеграции в реинжиниринге может помочь в достижении поставленных целей.

Методы исследования:

- Обзор и анализ литературы.
- Сравнительный анализ.
- Эмпирические методы.
- Прогностические методы.
- Метод обобщения.

Реинжиниринг методом интеграции дает возможность скомпоновать несколько различных процессов с целью сокращения ненужного распределения, количества работников и излишних коммуникаций между ними.

При проведении интеграционного метода реинжиниринга происходит объединение разнообразных аспектов. Например, информационных систем, данных и организационных структур.

С целью использования данного метода образуют интеграционную платформу. Она дает возможность эксплуатировать механизмы проведения обмена данными, а также взаимосвязей между программными компонентами. Это позволит оказывать влияние на выбранный фактор без появления изменений в иных, связанных с ним.

Стоит учитывать, что процесс внедрения реинжиниринга хоть и радикален, но все же требует значительных затрат времени. В процессе планирования важно подготовиться к этому для того, чтобы минимизировать риски.

Основные этапы внедрения реинжиниринга методом интеграции представлены на рисунке 1.



Рисунок 1 – Этапы введения реинжиниринга методом интеграции

Исследуемый подход является действенным. Он оказывает влияние на снижение транзакционных издержек, что положительно сказывается на объеме прибыли компаний. Также увеличивается скорость принятия решений, это позволяет сократить временные издержки и повысить эффективность. Избавление от дублирования функций дает возможность снизить уровень затрат различных уровней.

Для того, чтобы приведенные преимущества реализовались в полной мере, нужно обеспечить гибкость инновационных и информационных технологий, поддержку со стороны руководства, проявляющуюся в повышении квалификации сотрудников, и регулярно предоставлять доступ ко всей имеющейся информации.

По прогнозным оценкам реинжиниринг методом интеграции будет стандартом для большей части организаций. На зарубежном рынке данный инструмент активно используется, что доказывает вероятность использования на отечественном рынке в перспективе. Перспективы развития приведены на рисунке 2.

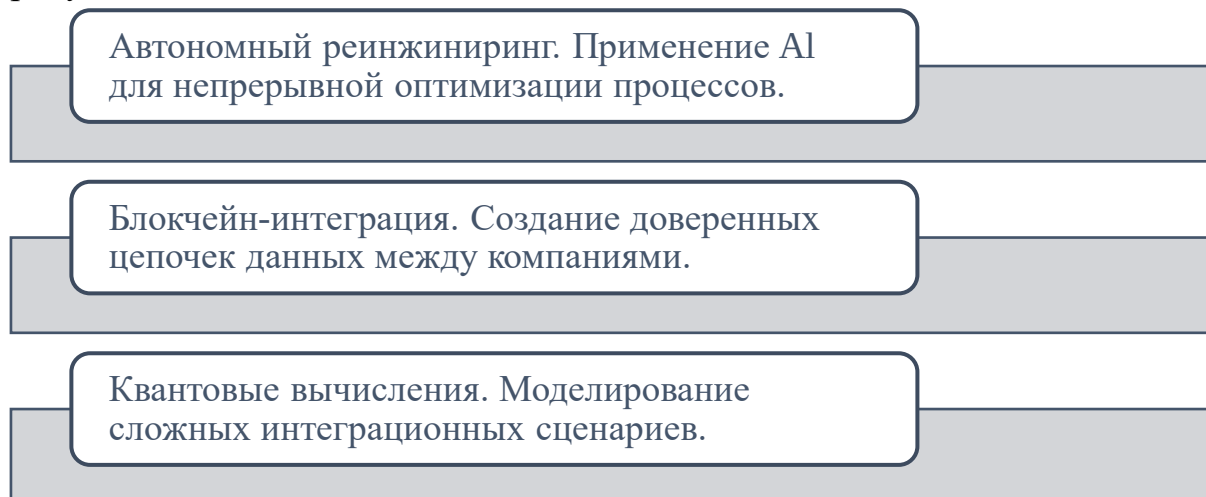


Рисунок 2 – Перспективы развития

Заключение

Реинжиниринг методом интеграции является эффективным инструментом изменения деятельности предприятия. Он влечет за собой некоторые проблемы, однако стоит заранее к ним быть готовыми, чтобы не дать им усугубить результаты процессов. При этом все положительные эффекты оказывают существенное влияние на результаты деятельности компаний. Ключевыми факторами успеха являются комплексный подход, гибкость и ориентация на данные в режиме реального времени.

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ФОРМИРОВАНИЕ НАУЧНО-ИССЛЕДОВАТЕЛЬСКИХ НАВЫКОВ СТУДЕНТОВ ПЕРВОГО КУРСА МЕДИЦИНСКОГО ВУЗА

***Аннотация:** в статье автор акцентирует внимание на необходимость проведения самостоятельных работ студентов в виде научно-исследовательской деятельности, которая послужит развитию навыков креативности, самостоятельности и принятия решения в нестандартных ситуациях.*

***Ключевые слова:** научно-исследовательская деятельность, студенты медвуза, учебно-познавательная работа, профессиональное развитие, практические навыки.*

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FORMATION OF SCIENTIFIC RESEARCH SKILLS OF FIRST- YEAR STUDENTS OF MEDICAL UNIVERSITY

***Abstract:** in the article, the author focuses on the need for independent work of students in the form of research activities, which will serve to develop the skills of creativity, independence and decision-making in non-standard situations.*

***Keywords:** research activities, medical students, educational and cognitive work, professional development, practical skills.*

Одним из важнейших направлений подготовки будущих медицинских работников является учебно-познавательная и научно-исследовательская деятельность студентов. Это одно из главных условий достижения высокого качества подготовки студентов-медиков для дальнейшей работы с пациентами, участие в научной и исследовательской деятельности.

Научно-исследовательская работа студентов 1 курса медицинского вуза основана на принципах самостоятельности, заинтересованности, направлена на развитие и углубление творческих и профессиональных качеств. Именно на начальном этапе обучения закладываются основы дальнейшей научно-исследовательской работы на старших курсах, а также практическое применение полученных знаний при написании выпускной квалификационной работы.

В начале изучения предметных курсов «Латинский язык и медико-фармацевтическая терминология», «Узбекский язык», «Русский язык» студентам предлагаются темы для научного исследования. Выполняются первые научные работы (учебные рефераты). Студенты должны уделить основное внимание самостоятельному изучению научной литературы, глубоко изучить интересующую их тему, получить новые сведения о последних достижениях в исследуемой области. Преподаватель ведёт активное подключение студентов к научному творчеству, самостоятельной научно-познавательной деятельности. Тематика рефератов и докладов определяется с учетом развития науки. Определяющим принципом в распределении между студентами тем рефератов, докладов, курсовых работ является принцип добровольности, который позволяет самостоятельно корректировать некоторые темы самими студентами. В связи с этим перед преподавателем стоит очень важная задача – выработать у каждого студента навыки научно-исследовательской работы. Для этого обязательно участие студентов в научно-познавательной деятельности, выступление с учебным рефератом на занятии, а затем и с подготовленным докладом-презентацией в научно-практической конференции.

В зависимости от значимости результатов исследования для личностного развития студента классифицируются виды исследовательской деятельности. При этом цель исследовательской деятельности обучающихся заключается в получении новых знаний, которые они могут самостоятельно открыть; она требует определения степени новизны и значимости этих знаний для каждого субъекта образования. Это позволяет различать «научно-исследовательскую» и «учебно-исследовательскую» деятельность.

Научно-исследовательская деятельность студентов, являясь особым видом познавательной деятельности, ориентирована на получение новых научных знаний.

Учебно-исследовательская деятельность ориентирована на образовательный результат и развитие учебно-исследовательских компетенций студентов. Основная функция учебно-исследовательской деятельности – стимулирование познавательной активности обучающихся и развитие их стремления к научному познанию, а также трансформации себя и окружающего мира.

Таким образом, «научно-исследовательская» и «учебно-исследовательская» деятельность тесно связаны, но не идентичны [1].

Опираясь на данные анализа научно-исследовательских работ в последние несколько лет, можно отметить, что предпочтение отдается темам, связанным с развитием коммуникационных навыков, исследованиям в области психолингвистики и паралингвистики, практическому применению моделей речевой коммуникации в работе врача.

На первом этапе подготовки учебного реферата преподаватель совместно со студентами формулирует темы, которые должны обладать новизной и актуальностью, определяет цели, выстраивает план работы,

объявляет студентам список рекомендуемой литературы, представляет форму защиты научной работы. Сообщаются основные требования к выполнению и оформлению рефератов, которые непосредственно касаются как формы, так и содержания, в частности, использования при написании определенных лексических, графических средств.

В рамках темы «Функциональные стили узбекского языка. Научный стиль» практического курса «Узбекский язык» подготовке реферата и доклада уделяется особое внимание. Рассматриваются виды рефератов: информативный, индикативный или реферат-резюме, реферат-обзор. Последний включает в себя моменты, характерные как для информативного, так и для индикативного рефератов. Подробно рассматриваются пункты, связанные с требованиями к реферату как к сжатому изложению сути научной работы. Акцентируется внимание на языке изложения вторичного документа, который должен быть предельно лаконичным, иметь большую информативную насыщенность. Материал подается в форме констатации или описания фактов, без искажений и субъективных оценок. «Краткость достигается за счёт использования терминологической лексики, а также применения нетекстовых средств лаконизации языка (таблиц, схем, иллюстраций, графики). Термины и словосочетания, часто употребляющиеся в реферате, могут заменяться аббревиатурами и сокращениями» [2].

Структура реферата строится по определенной схеме:

- 1) Вступление, или заголовочная часть;
- 2) Описание, или собственно реферативная часть;
- 3) Заключительная часть, содержащая выводы.

Во вступлении даётся характеристика исходных данных статьи: название, актуальность темы, раскрытие смысла статьи; научные источники, определение характера статьи. Описание, или собственно реферативная часть, включает в себя указание на композицию исходного текста, краткое содержание основных перечисленных вопросов и проблем, затронутых в статье, результаты исследования, анализ одного или нескольких вопросов, являющихся, по мнению референта, основными, изложение позиции автора. Реферат включает справочную часть, в которой указывается количество иллюстраций, таблиц, библиография. Заключительная часть содержит выводы автора статьи и примечание референта о значении статьи, его оценку полноты и своевременности рассмотрения проблемы.

Для написания реферата рекомендуется использовать несколько первоисточников. Список использованной литературы отразит широту кругозора студента и его способность к данной теме. Важное значение придается обучению студентов умению грамотно выполнять ссылки на научные источники, оформлять библиографический список, проводить обобщения, делать выводы.

На втором этапе подготовки происходит непосредственное написание реферата и его оформление, составление библиографии, выполнение

иллюстративного материала на отдельных листах (слайдах), разработка презентации.

Содержание курса дисциплины «Узбекский язык» отвечает запросам научно-исследовательской работы студентов. Темы научно-исследовательских работ по латинскому языку и русскому языку пользуются у студентов неизменным интересом, так как являются первым серьезным шагом на пути исследовательских работ вообще.

Подготовка студентов к научно-практической конференции-энергоемкий и затратный по времени процесс, на который приходится до трех-четырех месяцев. В это время проводятся консультации, осуществляется внеаудиторное сотрудничество преподавателя и студента.

Защита научно-исследовательской работы проходит в форме доклада и презентации на конференции. Здесь важны не только результаты исследования, но и то, в какой языковой обработке представлена работа. Оценивается степень овладения материалом, лаконичность изложения и грамотность речи докладчика, его владение вниманием аудитории, уверенность и умение совладать с естественным для такой ситуации волнением. Ход выступления и вопросы фиксируются присутствующими, что позволяет еще раз убедиться в важности письменной формы исследования и его грамотного оформления. Участники конференции задают докладчику вопросы по теме выступления. На «легкие» вопросы докладчик отвечает сразу. На «трудные» – после просмотра литературы и консультации преподавателя. После обсуждения докладов и вопросов аудитории, жюри оценивает все выступления в научном и познавательном плане, отмечает положительные моменты, дает советы по дальнейшему использованию материала.

Нередко первое научное исследование студента становится основой для проведения им дальнейшей работы в заданном направлении или написании первой научной статьи. Реализованная в комплексе научно-исследовательская работа становится стимулом для личностного и профессионального роста студента и положительным примером для других.

Таким образом, проведение учебно-познавательной и научно-исследовательской деятельности студентов помогает в полной мере выполнить одно из главных условий высокого качества подготовки будущих медицинских работников.

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РЕИНЖИНИРИНГ БИЗНЕС-ПРОЦЕССОВ: КОГДА И ЗАЧЕМ ОН НЕОБХОДИМ ВАШЕЙ КОМПАНИИ

***Аннотация:** В статье рассматривается концепция реинжиниринга бизнес-процессов (BPR), предложенная Майклом Хаммером, как метод радикального улучшения ключевых показателей эффективности компании. Описываются признаки, указывающие на необходимость пересмотра бизнес-процессов, такие как снижение прибыльности и рост недовольства клиентов. Статья подчеркивает, что BPR нацелен на оптимизацию работы, снижение затрат и повышение качества, а также предполагает перестройку организации, технологий и персонала.*

***Ключевые слова:** Реинжиниринг бизнес-процессов (BPR), Майкл Хаммер, радикальный пересмотр, фундаментальное переосмысление, перестройка, бизнес-процессы, показатели эффективности*

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BUSINESS PROCESS REENGINEERING: WHEN AND WHY YOUR COMPANY NEEDS IT

***Abstract:** The article discusses the concept of business process reengineering (BPR), proposed by Michael Hammer, as a method for radically improving key performance indicators of a company. The signs indicating the need to review business processes, such as declining profitability and growing customer dissatisfaction, are described. The article emphasizes that BPR is aimed at optimizing work, reducing costs and improving quality, and also involves restructuring the organization, technology and personnel.*

***Keywords:** Business process reengineering (BPR), Michael Hammer, radical revision, fundamental rethinking, restructuring, business processes, performance indicators*

Введение

В современном быстро меняющемся бизнес-ландшафте, где конкуренция становится всё более ожесточенной, а ожидания клиентов растут, компании постоянно ищут способы оставаться конкурентоспособными. В этой гонке за выживание простого улучшения существующих процессов часто оказывается недостаточно. Когда производительность падает, затраты растут, а клиенты уходят к конкурентам, настает время для более радикальных мер. В этой статье мы рассмотрим реинжиниринг бизнес-процессов (BPR) - мощную стратегию, способную кардинально преобразить вашу компанию. Мы разберем, что именно представляет собой BPR, когда он становится необходимостью, и как определить, что вашей организации пора переосмыслить свою операционную модель.

Методы исследования:

1. **Обзор литературы**
2. **Анализ кейсов**
3. **Сравнительный анализ**

Майкл Хаммер, бывший профессор Массачусетского технологического института, представил реинжиниринг бизнес-процессов (BPR) в 1990-х годах. Он считал, что для того, чтобы идти в ногу с быстрыми изменениями на рынках и в технологиях, происходящими в то десятилетие, необходим «радикальный пересмотр» бизнес-процессов.

Хаммер определил BPR как «фундаментальное переосмысление и радикальную перестройку бизнес-процессов для достижения значительных улучшений в важнейших современных показателях эффективности таких как стоимость, качество, обслуживание и скорость».

BPR фокусируется на том, как важные бизнес-элементы связаны друг с другом. Он также показывает, как они взаимодействуют или противостоят друг другу, исходя из структуры взаимоотношений. Проще говоря, это улучшение бизнес-процессов. Мы также можем рассматривать это как эффективное управление процессами!

Для достижения наилучших результатов необходимо сотрудничество между подразделениями компании, людьми, технологиями, стратегиями и другими ресурсами. Это поможет им достичь целей организации.

Реинжиниринг бизнес-процессов по-настоящему меняет 4 основные бизнес-дисциплины: организацию, технологии, стратегию и персонал. Потребность в реинжиниринге возникает в нескольких случаях.

Как понять, что пришло время для перестройки бизнеса? Бизнес-процессы необходимо регулярно пересматривать, чтобы определить, требуется ли реинжиниринг. Почему бизнес-процессы необходимо регулярно пересматривать?

- Где-то в рамках бизнес-процесса сотрудники установили устоявшийся статус-кво. Эти сотрудники могут обладать знаниями и обязанностями, которые делают их незаменимыми для организации.

- Ваши конкуренты могут отбирать у вас клиентов из-за ошибок в бизнес-процессах вашей организации.

- Несмотря на значительный рост бизнеса, прибыль бизнеса падает.

Если в вашей компании наблюдаются какие-либо из вышеперечисленных признаков, это говорит о необходимости пересмотра процессов. Следующий вопрос заключается в том, как часто требуется пересмотр процессов. Если возникает какая-либо из вышеперечисленных ситуаций, значит, пришло время для реинжиниринга процессов. Организации, в которых работают аналитики процессов, часто проводят частые проверки процессов. Как определить, какой процесс нуждается в реинжиниринге? В зависимости от проблемы необходимо пересмотреть соответствующий процесс. К распространённым проблемам, требующим реинжиниринга процессов, относятся:

- Рост числа жалоб клиентов и запросов о возврате средств
- Увеличение стресса персонала, споров и текучести кадров
- Сбои в бизнес-операциях после увольнения опытных сотрудников или ухода в длительный отпуск
- Быстро падающая прибыльность
- Частые перебои в движении денежных средств
- Повышение уровня запасов
- Невозможность своевременно выполнять заказы клиентов
- Закрывание бухгалтерских книг занимает много времени
- Отслеживание потенциальных клиентов происходит не быстро

Компании, столкнувшиеся с одной или несколькими из вышеперечисленных проблем, должны рассмотреть возможность реорганизации своих процессов.

Почему компании используют реинжиниринг бизнес-процессов?

Причина заключается в том, что компании используют реинжиниринг бизнес-процессов для повышения эффективности ключевых процессов, влияющих на производительность бизнеса. Вот основные причины, по которым компании прибегают к реинжинирингу:

Сокращение затрат и времени цикла за счёт исключения непродуктивных действий и организации работы в наиболее эффективной среде.

Реорганизация рабочей силы по командам для снижения потребности в нескольких уровнях управления, ускорения информационных потоков и устранения ошибок и повторной работы, возникающих из-за многократной передачи задач.

Повышение качества продукции и услуг за счёт стандартизации и автоматизации работы для сокращения количества ошибок и предоставления сотрудникам возможности сосредоточиться на более важных задачах. Автоматизация также снижает фрагментацию работы и обеспечивает чёткое распределение ответственности за процессы.

Заключение

В заключение, реинжиниринг бизнес-процессов, предложенный Майклом Хаммером, остается мощным инструментом для компаний, стремящихся к радикальным улучшениям. Хотя концепция BPR возникла в 1990-х годах, ее принципы остаются актуальными и сегодня, когда предприятия сталкиваются с необходимостью адаптации к быстро меняющимся рынкам и технологиям. Признаки неэффективности, такие как снижение прибыльности, рост жалоб клиентов и стресс персонала, должны служить сигналом для пересмотра процессов. BPR, направленный на сокращение затрат, повышение качества и улучшение обслуживания клиентов, предполагает фундаментальное переосмысление и перестройку ключевых бизнес-операций. Организациям, столкнувшимся с проблемами, стоит рассмотреть возможность реинжиниринга, чтобы не просто выжить, но и процветать в условиях современной конкуренции.

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ВЫБОР МЕЖДУНАРОДНЫХ РЫНКОВ И АДАПТАЦИЯ МАРКЕТИНГОВЫХ СТРАТЕГИЙ ДЛЯ LI NING

Аннотация: В условиях глобализации и усиления международной конкуренции китайские компании стремятся укреплять свои позиции на зарубежных рынках. Компания Li-Ning, один из ведущих китайских брендов в области спортивной одежды и обуви, представляет собой яркий пример успешной международной экспансии. В данной статье рассматривается разработка стратегии и бизнес-плана для выхода компании Li-Ning на иностранный рынок. Анализируются ключевые факторы, влияющие на принятие решений, успешные кейсы компании на международных рынках, а также проблемы и вызовы, с которыми сталкивается Li-Ning при расширении своего присутствия за рубежом. В статье также даются рекомендации по улучшению существующей стратегии и подготовке бизнес-плана для дальнейшей экспансии.

Ключевые слова: компания Li-Ning; выход на иностранный рынок; стратегия международной экспансии; бизнес-план; маркетинг; глобализация

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DEVELOPMENT OF STRATEGY AND BUSINESS PLAN FOR LI- NING'S ENTRY INTO FOREIGN MARKETS

Abstract: In the context of globalization and increasing international competition, Chinese companies are striving to strengthen their positions in foreign markets. Li-Ning, one of the leading Chinese brands in the sportswear and footwear sector, serves as a prominent example of successful international expansion. This article discusses the development of a strategy and business plan for Li-Ning's entry into foreign markets. It analyzes the key factors influencing decision-making, successful cases of the company in international markets, as well as the problems and challenges Li-Ning faces in expanding its presence abroad. The article also

provides recommendations for improving the existing strategy and preparing a business plan for further expansion

Keywords: *Li-Ning company; foreign market entry; international expansion strategy; business plan; marketing; globalization.*

В условиях глобализации китайские бренды стремительно выходят на мировую арену. Компания Li-Ning, являющаяся ведущим игроком на китайском рынке спортивных товаров, с момента своего основания активно стремится объединить китайские элементы с мировой модой, создавая бренд, обладающий международным влиянием. В последние годы компания ускорила процесс интернационализации, разработав эффективную стратегию и бизнес-план для выхода на зарубежные рынки, успешно осваивая новые международные рынки и превращая себя из национального бренда в международный.

1. Теоретическая основа разработки стратегии и бизнес-плана выхода компании Li-Ning на иностранный рынок

1.1. Стратегические цели выхода на иностранный рынок

Компания Li-Ning нацелена на успешное освоение зарубежных рынков с целью расширения своего присутствия на международной арене. Основные стратегические цели включают повышение узнаваемости бренда на глобальном уровне, увеличение доли рынка в разных регионах и укрепление позиций на новых рынках. Компания стремится передать мировому потребителю элементы китайской культуры и уникальный подход к дизайну спортивных товаров. Li-Ning видит в международной экспансии не только коммерческую выгоду, но и возможность для укрепления имиджа бренда как инновационного и конкурентоспособного на мировом рынке.

1.2 Процесс разработки бизнес-плана для выхода на зарубежные рынки
Процесс выхода компании Li-Ning на международные рынки представляет собой многозадачный и многоплановый процесс, который требует тщательной подготовки и учета разнообразных факторов. Важнейшими этапами разработки бизнес-плана являются маркетинговые исследования, анализ конкурентов, позиционирование бренда, разработка каналов сбыта, планирование рекламных и PR-кампаний. Учитывая культурные и экономические особенности различных стран, Li-Ning разрабатывает дифференцированные стратегии входа, которые включают локализацию продуктов, адаптацию к потребностям и предпочтениям местных потребителей. Роль ключевого аспекта в бизнес-плане играет точная оценка рисков и возможностей, а также эффективное использование международного опыта в маркетинге и управлении.

1.3. Этапы выхода компании Li-Ning на международные рынки

Процесс выхода на международные рынки можно разделить на несколько этапов:

Этап 1: Подготовка и исследование рынка. На данном этапе компания Li-Ning активно исследует международные рынки, изучая предпочтения потребителей, конкурентную среду, локальные тренды и потенциальные возможности.

Этап 2: Расширение и рост. Компания начинает активно внедрять свои продукты на новых рынках, открывая представительства, магазины и электронные платформы для увеличения доступности своих товаров. Этот этап включает в себя активное продвижение бренда с использованием цифровых и традиционных маркетинговых каналов.

Этап 3: Закрепление позиций и локализация. На этом этапе Li-Ning начинает интегрировать свои процессы в локальные рынки, адаптируя не только продукты, но и бизнес-практики к особенностям разных стран. Компания активно сотрудничает с местными партнерами, проводит совместные маркетинговые кампании и поддерживает долгосрочные связи с клиентами.

2. Стратегическая практика разработки стратегии и бизнес-плана выхода на международные рынки

2.1. Достижения компании Li-Ning в области интернационализации

Компания Li-Ning демонстрирует высокий уровень интернационализации, успешно закрепив свои позиции на рынках Азии, Европы и США. Примечательно, что Li-Ning активно инвестирует в международные исследования, что позволяет создавать продукты, соответствующие требованиям разных культур и потребительских сегментов. Высокий темп интернационализации проявляется в укреплении бренда и стабильном росте продаж, что служит основой для дальнейшего расширения.

2.2. Стратегия завоевания международных рынков

Основные принципы стратегии выхода Li-Ning на зарубежные рынки включают:

Культурная интеграция. Компания активно использует элементы китайской культуры и восточную эстетику в своих продуктах и маркетинговых материалах, что привлекает внимание международных потребителей, ищущих уникальные и экзотичные товары.

Дифференциация продуктов. В зависимости от предпочтений разных стран компания разрабатывает различные линейки продукции, ориентированные на потребности конкретных рынков. Это включает в себя как технологические инновации, так и местные предпочтения в дизайне.

Партнерства с международными брендами. Li-Ning активно сотрудничает с известными мировыми брендами и дизайнерами, что способствует обмену опытом и усилению конкурентных позиций на международной арене.

2.3. Оценка эффективности стратегии выхода на международные рынки

Анализ показал, что стратегия выхода на зарубежные рынки приносит компании Li-Ning заметные успехи. Увеличение узнаваемости бренда, рост продаж и укрепление репутации на международной арене являются основными результатами. Однако, несмотря на достигнутые успехи, компания сталкивается с возрастающей конкуренцией и изменяющимися условиями на зарубежных рынках, что требует постоянной корректировки стратегии.

3. Рекомендации по улучшению стратегии выхода на зарубежные рынки

3.1. Использование современных технологий для улучшения стратегии выхода

В условиях глобализации и цифровой трансформации Li-Ning может значительно усилить свою стратегию, интегрируя новые технологии. Анализ больших данных, искусственный интеллект и машинное обучение позволят компании более точно оценивать потребности клиентов, а также улучшить персонализацию продуктов и маркетинговых стратегий. Использование платформ электр

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АНАЛИЗ ВОЗМОЖНОСТЕЙ ДЛЯ ГЛОБАЛЬНОЙ ЭКСПАНСИИ БРЕНДА LI NING НА ОСНОВЕ РЫНОЧНЫХ ТРЕНДОВ

Аннотация: В условиях глобализации и усиления международной конкуренции китайские компании стремятся укреплять свои позиции на зарубежных рынках. Компания Li-Ning, один из ведущих китайских брендов в области спортивной одежды и обуви, представляет собой яркий пример успешной международной экспансии. В данной статье рассматривается разработка стратегии и бизнес-плана для выхода компании Li-Ning на иностранный рынок. Анализируются ключевые факторы, влияющие на принятие решений, успешные кейсы компании на международных рынках, а также проблемы и вызовы, с которыми сталкивается Li-Ning при расширении своего присутствия за рубежом. В статье также даются рекомендации по улучшению существующей стратегии и подготовке бизнес-плана для дальнейшей экспансии.

Ключевые слова: Маркетинговая стратегия Социальные сети Партнерства с спортсменами Исследование рынка Логистика и дистрибуция

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DEVELOPMENT OF STRATEGY AND BUSINESS PLAN FOR THE INTERNATIONAL EXPANSION OF LI NING

Abstract: Abstract: In the context of globalization and increasing international competition, Chinese companies are striving to strengthen their positions in foreign markets. Li-Ning, one of the leading Chinese brands in the field of sportswear and footwear, serves as a vivid example of successful international expansion. This article examines the development of a strategy and business plan for Li-Ning's entry into foreign markets. It analyzes key factors influencing decision-making, successful cases of the company in international markets, as well as the challenges and issues Li-Ning faces in expanding its presence abroad. The article also provides recommendations for improving the existing strategy and preparing a business plan for further expansion.

Keywords: *Marketing Strategy, Social Media, Partnerships with Athletes, Market Research, Logistics and Distribution.*

В условиях глобализации китайские бренды стремительно выходят на мировую арену. Компания Li-Ning, являющаяся ведущим игроком на китайском рынке спортивных товаров, с момента своего основания активно стремится объединить китайские элементы с мировой модой, создавая бренд с международным влиянием. В последние годы компания ускорила процесс интернационализации, разработав эффективную стратегию и бизнес-план для выхода на зарубежные рынки, успешно осваивая новые международные рынки и превращая себя из национального бренда в международный.

Данная статья посвящена разработке стратегии и бизнес-плана для международной экспансии компании Li-Ning. В статье анализируются ключевые факторы, влияющие на процесс принятия решений, успешный опыт компании на международных рынках, а также проблемы и вызовы, с которыми сталкивается Li-Ning при расширении своего присутствия за рубежом. В статье также приводятся рекомендации по совершенствованию существующей стратегии и подготовке бизнес-плана для дальнейшего успешного расширения бренда на международных рынках.

1. Анализ текущей ситуации и возможностей для международной экспансии

1.1. Стратегические цели выхода на иностранный рынок

Компания уже имеет опыт работы в странах Азии, таких как Юго-Восточная Азия, и заключила партнерские соглашения с крупными спортивными организациями. В числе сильных сторон Li Ning можно выделить высокое качество продукции, инновативные разработки и доступные цены. Эти факторы могут сыграть ключевую роль в конкуренции с западными гигантами рынка, такими как Nike и Adidas.

1.2 Риски и конкуренция

Основными конкурентами на международных рынках являются такие бренды, как Nike, Adidas, Puma и Under Armour. Эти компании имеют сильные бренды и налаженную сеть сбыта. Важно учитывать высокую степень конкуренции и возможные барьеры в виде культурных различий и экономической нестабильности.

2. Стратегия международной экспансии.

2.1. Выбор целевых рынков

Для начала Li Ning должна сосредоточиться на расширении присутствия в странах с развитыми спортивными культурами, таких как США, Германия и Великобритания, а также в развивающихся рынках, таких как Индия и Бразилия. В этих странах наблюдается растущий интерес к спорту и здоровому образу жизни, что открывает новые возможности для бренда.

2.2. Адаптация продукции и бренда

Продукция компании должна быть адаптирована под потребности и предпочтения местных потребителей. Например, в странах Европы и США особое внимание уделяется экологичности материалов и технологиям в спортивной одежде. Также важно учесть местные тренды и стили, чтобы удовлетворить требования разных групп покупателей.

2.3. Маркетинговая стратегия

Маркетинговая стратегия

Для эффективного продвижения на новых рынках необходимо разработать стратегию маркетинга, которая будет включать рекламные кампании, ориентированные на местные рынки, а также активную работу в социальных сетях и сотрудничество с известными спортсменами. Важно создавать брендовую идентичность, которая будет ассоциироваться с качеством, инновациями и активным образом жизни.

3. Бизнес-план международной экспансии Разработка бизнес-плана является неотъемлемой частью стратегии международной экспансии. Он должен включать несколько ключевых элементов:

3.1. Исследование рынка

Перед выходом на новый рынок компания должна провести тщательное исследование для понимания потребностей целевой аудитории, анализа конкурентной среды и оценки потенциальных рисков. Важно понять, какие продукты будут наиболее востребованы и какие маркетинговые стратегии принесут наибольший успех.

3.2 Маркетинговые и рекламные кампании

Для продвижения бренда на международных рынках необходимо разрабатывать локализованные рекламные кампании, которые будут учитывать особенности культур и предпочтений местных потребителей. Важными каналами продвижения являются социальные сети, партнерства с локальными спортсменами и спортивными событиями, а также традиционные рекламные каналы.

3.3 Логистика и дистрибуция

Логистика — ключевая составляющая успешной экспансии. Li Ning необходимо наладить сеть поставок и партнерств с местными дистрибьюторами для эффективной доставки товаров на новые рынки. Это может включать открытие складов, партнерство с международными логистическими компаниями или использование онлайн-каналов для прямых поставок.

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ГЛОБАЛЬНАЯ СТРАТЕГИЯ РОСТА ДЛЯ LI NING: ВЫХОД НА НОВЫЕ РЫНКИ И АДАПТАЦИЯ К ЛОКАЛЬНЫМ УСЛОВИЯМ

Аннотация: Компания Li Ning, известный китайский производитель спортивной одежды и обуви, стремится расширить своё присутствие на международных рынках. Успешная международная экспансия требует тщательного планирования, анализа внешней среды и принятия стратегических решений, направленных на укрепление бренда в глобальном масштабе. В данном контексте особое внимание стоит уделить разработке стратегии выхода на новые рынки, построению узнаваемости бренда, а также оценке финансовых и операционных рисков. Ниже рассмотрены ключевые аспекты, которые должны быть учтены при разработке стратегии международной экспансии компании Li Ning.

Ключевые слова: Анализ внешней среды Выбор целевых рынков Анализ рынка Полиэтничность и локальные предпочтения Стратегия выхода на международные рынки

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DEVELOPMENT OF A STRATEGY AND BUSINESS PLAN FOR LI NING TO ENTER INTERNATIONAL MARKETS

Annotation: Li Ning, a well-known Chinese manufacturer of sportswear and footwear, aims to expand its presence in international markets. Successful international expansion requires careful planning, external environment analysis, and strategic decisions aimed at strengthening the brand on a global scale. In this context, special attention should be given to the development of a market entry strategy, building brand awareness, and assessing financial and operational risks. Below are the key aspects that should be considered when developing an international expansion strategy for Li Ning.

Keywords: External environment analysis, target market selection, market analysis, multiethnicity and local preferences, international market entry strategy.

В условиях глобализации и усиления конкуренции китайские бренды стремятся расширить своё присутствие на международных рынках. Компания Li-Ning, будучи одним из ведущих производителей спортивных товаров в Китае, активно реализует стратегию интернационализации, стремясь стать международным брендом, объединяя элементы китайской культуры с мировыми модными тенденциями. В данной статье рассматривается процесс разработки стратегии и бизнес-плана для успешного выхода компании Li-Ning на зарубежные рынки.

1. АНАЛИЗ ВНЕШНЕЙ СРЕДЫ И ВЫБОР ЦЕЛЕВЫХ РЫНКОВ

1.1. Анализ рынка

Первый шаг в разработке стратегии экспансии — это исследование спортивной индустрии в разных странах. Необходимо оценить рост рынка, потребительские предпочтения, конкуренцию и динамику спроса на спортивные товары.

1.2 Полиэтничность и локальные предпочтения

Разные страны могут иметь свои предпочтения в спортивных товарах, и необходимо учитывать локальные культурные особенности при адаптации продукции. Например, европейские и американские рынки могут быть заинтересованы в инновационных материалах и дизайне продукции, в то время как рынки Юго-Восточной Азии могут предъявлять более высокие требования к доступности и цене.

2. Выбор стратегии выхода на международные рынки

2.1. Франчайзинг

Для выхода на рынки с низким риском и быстрым масштабированием Li Ning может использовать франчайзинг. Это позволит минимизировать капитальные вложения и ускорить процесс вхождения на новые рынки.

2.2. Партнёрства и совместные предприятия

В странах с высокими барьерами для входа или с большим уровнем конкуренции компания может рассмотреть стратегию партнерства с локальными игроками для минимизации рисков и адаптации продукции под местные требования.

2.3. Прямые инвестиции

Для стратегически важных рынков или стран с высокими возможностями роста Li Ning может рассмотреть прямые инвестиции для полного контроля над производством и дистрибуцией.

3. Маркетинговая стратегия и адаптация бренда

3.1. Адаптация продуктов и рекламных кампаний

Маркетинговая кампания должна быть ориентирована на конкретные потребности и предпочтения потребителей в разных странах. Продукция может потребовать локализации, например, изменение дизайна или использование местных символов в рекламных материалах.

3.2. Усиление узнаваемости бренда

Для того чтобы Li Ning стал известен за пределами Китая, необходимо инвестировать в рекламные кампании, спонсорство спортивных событий, а также сотрудничество с известными спортсменами, что поможет повысить доверие к бренду.

3.3. Ценовая стратегия

Важно установить правильный ценовой сегмент, который будет учитывать покупательную способность на разных рынках, а также правильно позиционировать продукцию относительно конкурентов.

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СОВРЕМЕННЫЕ МЕТОДЫ И ТЕХНОЛОГИИ ПРЕПОДАВАНИЯ РУССКОГО ЯЗЫКА В ВУЗЕ

***Аннотация:** в статье автор указывает на важность того, что преподавателю важно знать новейшие методы преподавания иностранного языка, специальные учебные техники и приемы, чтобы оптимально подобрать тот или иной метод преподавания в соответствии с уровнем знаний, потребностей, интересов студентов.*

***Ключевые слова:** современные методы преподавания, технологии обучения, преподавание русского языка, обучение в вузе.*

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MODERN METHODS AND TECHNOLOGIES OF TEACHING RUSSIAN LANGUAGE IN UNIVERSITY

***Abstract:** in the article, the author points out the importance of the fact that it is important for a teacher to know the latest methods of teaching a foreign language, special teaching techniques and methods in order to optimally select one or another teaching method in accordance with the level of knowledge, needs, and interests of students.*

***Keywords:** modern teaching methods, teaching technologies, teaching Russian, studying at a university.*

Потребности нашего государства в высококвалифицированных специалистах, способных к установлению деловых контактов и делового сотрудничества, специалистах, владеющих русским языком на профессиональном уровне, находят отражение в рабочих учебных программах вузов страны. Русский язык сегодня является не просто частью культуры определенной нации, но это и залог успеха, будущей удачной карьеры студентов. Достижение высокого уровня владения русским языком невозможно без фундаментальной языковой подготовки в высшей школе. В большинстве вузов страны студенты овладевают по крайней мере двумя языками, в нашем случае, русским и английским. Преподавателю важно знать новейшие методы преподавания языка, специальные учебные техники и приёмы, чтобы оптимально подобрать тот или иной метод преподавания в

соответствии с уровнем знаний, потребностей, интересов студентов. Ведь методы обучения не являются «алгоритмизированными единицами», их рациональное и мотивированное использование на уроках русского языка требует креативного подхода со стороны преподавателя, ведь «педагогика является наукой и искусством одновременно, поэтому и подход к выбору методов обучения должна основываться на творчестве педагога» [2].

Целью данной статьи является обзор современных тенденций развития методов преподавания русского языка в вузе. Что же вкладывают учёные в понятие «метод»? Методы обучения – это «упорядоченные способы деятельности учителя и учащихся, направленные на эффективное развитие обязательств учебно-воспитательных задач» [1]. Метод обучения выступает «инструментом деятельности учителя для выполнения руководящей функции – обучение». Реализация метода обучения осуществляется через использование ряда приемов обучения, различных подходов и рабочих техник. «Приёмы обучения – совокупность конкретных учебных ситуаций, способствующих достижению промежуточной (вспомогательной) цели конкретного метода». К сожалению, в преподавательской практике учителя языков часто применяют проверенные временем стандартные учебные методы.

Иногда процесс преподавания языка, как это ни прискорбно, продолжает оставаться «несколько осовремененным вариантом» грамматико-переводного метода. Требования же к уроку русского языка как иностранного со временем меняются, разрабатываются новейшие методы обучения. На современном этапе развития науки в Узбекистане можно определённо сказать, что времена, когда достаточным доказательством освоения языка было умение переводить с одного языка и наоборот неаутентичных текстов уже прошли. Сегодня происходит реформирование учебного процесса в вузах Узбекистана в соответствии с общеевропейскими требованиями к качеству образования: информатизация образовательного пространства, интеграционные процессы в современном отечественном образовании, налаживания вузами сотрудничества с зарубежными учебными заведениями в сфере учебной и научной деятельности, студенческие международные обмены, возможность получения второго высшего образования и обучение по магистерским программам за рубежом.

В условиях реформирования высшей школы должны меняться также и образовательные технологии преподавания языков. Само языковое образование тоже постепенно модернизируется путём внедрения модульно-рейтинговой системы обучения языкам, междисциплинарная интеграция, демократизация и экономизация образования включает составляющие преподавания иностранных языков. Все это ставит к преподаванию языка в вузах новые требования.

Целью обучения русскому языку в высшей школе на современном этапе является овладение студентами коммуникативными компетенциями, которые позволят реализовать их знания, умения, навыки для решения конкретных

коммуникативных задач в реальных жизненных ситуациях. Русский язык как иностранный язык выступает как средство коммуникации, общения с представителями других наций, так что в образовании продолжает развиваться культурологический или интеркультурный подход в обучении в рамках концепции «диалога культур», с целью формирования полимерной грамотности студентов.

Итак, по нашему мнению, в современном вузе не должно быть места для таких процессов, как зазубривание, бездумное заучивание текстов, не имеющих практической ценности для будущей профессиональной деятельности студентов. Студенты должны быть подготовлены на основе качественного современного аутентичного учебного материала к сознательному использованию русского языка в дальнейшей жизни и работе. Ведь хорошее знание русского языка будет оставаться в дальнейшем одним из ведущих требований работодателей. В этом плане именно на вузы возлагается ответственность в качественном обеспечении студентов комплексом языковых знаний, умений, навыков, это требует, прежде всего, от учебного заведения систематически создавать условия для повышения квалификации своих педагогических работников, обеспечить заведение надлежащей материально-технической базой. Качественная языковая подготовка студентов невозможна без использования современных образовательных технологий [4].

Современные технологии в образовании — это профессионально-ориентированное обучение языку, занятость в обучении, применение информационных и телекоммуникационных технологий, работа с учебными компьютерными программами по языкам (система мультимедиа), дистанционные технологии в обучении языкам, создание презентаций в программе PowerPoint, использование ресурсов интернета, обучение русскому языку в компьютерной среде (форумы, блоги, электронная почта), новейшие тестовые технологии (создание банка диагностических материалов по курсу учебного предмета «Русский язык» для проведения компьютерного тестирования с целью контроля ЗУН студентов). На данном этапе развития методической науки основными методами обучения языкам является коммуникативный и конструктивистский методы [3].

Коммуникативный метод. Учебная цель: овладение коммуникативной компетенцией. Учебное содержание: тексты должны показывать конфликты, которые побуждают студента к высказыванию собственного мнения. Управление обучением осуществляется не через грамматику, а направляется коммуникативными интенциями (намерениями). Студент оказывается в центре обучения.

Конструктивистский метод. Учебная цель: в основе метода находится собственно активное обучение студентов. Задача преподавателя не научить, а способствовать учебному процессу. Урок выступает ориентированным на действие.

Примером конструктивистского метода может служить проектное обучение. В методике различают традиционные и альтернативные методы обучения. Под понятием альтернативные методы группируется целый ряд различных подходов, приемов, способов передачи языка.

Существуют такие альтернативные методы, как метод полной физической реакции (Total Physical Response), суггестивный метод, драматико-педагогический метод, молчаливый метод, групповой метод. К инновационным методам обучения можно отнести: обучение с компьютерной поддержкой (CALL), метод сценария (story line method), метод симуляций, метод карусели, метод обучения по станциям, метод групповых пазлов, метод ролевой игры, метод «Кейс-стади» (работа над проблемными ситуациями, студенты рассматривают проблему, анализируют ситуацию, представляют свои идеи и варианты решения проблемы в ходе дискуссии).

Метод сценария (story line method). Данный метод основан на сочетании запланированных учебных смыслов. Получая «импульсы» от учителя (так называемые ключевые вопросы), студенты делают свой вклад в создание истории. Этот метод обходится без текстовых учебников. Речь идет о креативном планировании, подборе гипотезы, переживаниях, систематизации и презентации работы. Спроектированная история содержит также элементы из драмы и ролевой игры. Учитель задаёт лишь рамки действия и представляет отдельные эпизоды. Студенты ставят свои вопросы и находят сами на них ответы.

Метод обучения по станциям. Учебная техника, при которой студенты выполняют работу над учебным материалом, который упорядочен в виде станций (студенты получают рабочие планы с обязательными и выборочными задачами). При обучении по станциям у учащихся есть возможность выбора по распределению времени, последовательности выполнения задач и социальной формы, используемый при индивидуальной, парной и групповой работе). Таким образом, студенты при использовании данного метода учатся планировать своё время, учатся самооценке, анализу собственного учебного успеха, планированию и проведению этапов работы. Работа по станциям позволяет осуществлять дифференциацию по способностям, интересам студентов, по степени сложности задачи.

Метод симуляций. Особенно в обучении русскому языку студентов медвузов можно с успехом применять метод симуляций. Симуляция предоставляет возможность студентам попробовать себя в определенной роли – руководителя, президента компании, дает возможность исследовать систему работы данного предприятия. Перед участниками игры ставят определенные задачи — достичь прироста прибыли фирмы, заключить договор, выгодно продать акции компании и тому подобное.

Симуляции характеризуются высокой степенью заинтересованности участников, вполне погружаются игру, воплощаются в свою роль, болеют за результат работы, поскольку от командной работы, скорости принятия решений зависит общий результат игры. Благодаря симуляции формируется

навык стратегического планирования студентов, развивается умение работать в команде, проводить переговоры, убеждать делового партнера. Симуляции упорядочивают знания учащихся, готовят их к необходимости принятия в будущей деятельности быстрых и мотивированных решений.

Метод ролевой игры. Ролевая игра является активным методом обучения, средством развития коммуникативных способностей студента. Ролевая игра связана с интересами студентов, является средством эмоциональной заинтересованности, мотивации учебной деятельности. Ролевая игра выступает активным способом обучения практическому владению русским языком и помогает преодолеть языковые барьеры студентов, значительно повышает объём их речевой практики.

Из всего вышесказанного следует сделать вывод, что для преподавателя сегодня важно постоянно совершенствовать свои знания о методах обучения языкам, внедрять в свою преподавательскую практику новейшие образовательные концепции.

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РЕШЕНИЕ ЗАДАЧ С ПРИМЕНЕНИЕМ АЛГОРИТМИЧЕСКОГО ПРЕДПИСАНИЯ

Аннотация: В данной работе рассматриваются методы решения задач с использованием алгоритмического предписания. Особое внимание уделено разработке пошаговых инструкций, которые способствуют систематизации решения задач и развитию алгоритмического мышления. Представленные подходы направлены на упрощение сложных процессов и повышение эффективности обучения. Работа может быть полезна для преподавателей, студентов и всех, кто интересуется внедрением алгоритмов в образовательный процесс.

Ключевые слова. Алгоритмическое предписание, решение задач, алгоритмическое мышление, пошаговые инструкции, образовательные процессы, эффективность обучения.

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PROBLEM SOLVING USING ALGORITHMIC PRESCRIPTION

Abstract: This paper examines methods for solving problems using algorithmic prescription. Particular attention is paid to the development of step-by-step instructions that facilitate the systematization of problem solving and the development of algorithmic thinking. The presented approaches are aimed at simplifying complex processes and increasing the effectiveness of learning. The work can be useful for teachers, students and anyone interested in implementing algorithms in the educational process.

Keywords. Algorithmic prescription, problem solving, algorithmic thinking, step-by-step instructions, educational processes, learning effectiveness.

Информатизация общества— это объективный процесс, связанный с повышением роли и степени воздействия интеллектуальных видов деятельности на все стороны жизни человечества.

Главным двигателем этого необходимого процесса дающего жизнь такому интеллектуальному движению общества является человек, вооруженный современной техникой оперативного получения, накопления и обработки любой требуемой информации. Перед обществом, таким образом, встаёт не менее трудная задача воспитания и подготовки принципиально нового человека, способного функционировать в информационно – обогащенном обществе.

Она обязывает перестроить коренным образом всю систему народного образования, включить в себя принципиально новые информационные технологии обучения, изменив формы и методы постановки учебного процесса, способствующих качественной подготовке будущих специалистов во всех звеньях народного хозяйства. Естественно, что это задача не одного – двух лет, а рассчитана на многие годы и решаться она будет, параллельно с ходом научно – технического общества.

Известно, что сейчас есть уже все необходимые условия для процесса информатизации учебного процесса во многих его аспектах. Основным шагом должен быть трудоемкий процесс формирования алгоритмического стиля мышления как самими преподавателями, так и студентами.

Мы знаем, что активность, творческая инициатива студентов достигаются в процессе самостоятельной учебной работы, которая обеспечивает сознательное и прочное усвоение материала, способствует развитию познавательных способностей студентов и вооружает их умением самостоятельно добывать знания и применять эти знания на практике. Наиболее распространенный вид самостоятельной учебной работы – решение задач. То или другое правило, та или иная формула окончательно становятся ясными в процессе решения задач.

В конкретной задаче, правило и формула приобретают практическую значимость и определенность.

Решение задач развивает логическое мышление студентов и приучает их к самостоятельной умственной работе. Приступая к решению задачи, студент обдумывает все данные условия, определяет величины, которые надо определить, вспоминает известные ему формулы, при помощи которых связывает известные и неизвестные величины в форме графического построения или математических уравнений.

Расшифровывая построения или решая уравнения, он определяет искомые ответы.

Для решения задач или примеров одного или того же класса (или типовых задач или примеров) применяются одинаковые закономерности и способы. Поэтому представляется возможным для решения задач выработать алгоритмическое предписание – алгоритм». Под алгоритмом обычно понимают точное общепонятное предписание о выполнении в определенной последовательности элементарных операций для решения любой из задач, принадлежащих к некоторому «классу или типу».

В физике, где имеем дело с абстрактными объектами, к алгоритму следует предъявить такие строгие требования, как: 1) однозначность, единообразие, указаний в смысле их понимания и выполнения; 2) применимость для различных задач одного типа; 3) результативность, т.е. направленность к получению однозначного исходного ответа. Но здесь нужно отметить, что строгая однозначность, единообразие указаний во многих случаях ведет к бездумности. Поэтому проектируемые нами предписания не всегда полностью отвечают требованию строгой однозначности.

Короче говоря, обучающий алгоритм в нашем понимании служит для управления практическими и умственными действиями студента, но ни в коей мере не заменяет эти действия.

Первая трудность заключается в выборе метода подачи алгоритма решения задач. В одних случаях алгоритм решения выдавался студентами сразу после объяснения нового материала и тут же задавалась контрольная задача для самостоятельного решения. В других случаях после объяснения нового материала производился разбор решения типовой задачи, затем, преподаватель совместно с студентами группы в виде беседы вырабатывали алгоритм решения задач данного типа.

Алгоритм вносит четкую организацию в работу обучающегося, систематизирует его умственные действия и способствует рациональному решению задач данного типа. Следует подчеркнуть, что особенно эффективен алгоритм тогда, когда студенты принимают участие в его составлении.

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РАЗРАБОТКА ЭЛЕКТРОННЫХ УЧЕБНЫХ МАТЕРИАЛОВ В КУРСЕ ОБЩЕЙ ФИЗИКИ

Аннотация: Разработка электронных учебных материалов для курса общей физики направлена на модернизацию образовательного процесса и повышение его эффективности. В работе рассматриваются методы создания интерактивных мультимедийных материалов, которые позволяют студентам лучше усваивать сложные физические концепции и законы.

Ключевые слова. Электронные учебные материалы, общая физика, интерактивное обучение, мультимедийные ресурсы, педагогические технологии

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DEVELOPMENT OF ELECTRONIC TEACHING MATERIALS IN THE COURSE OF GENERAL PHYSICS

Abstract: The development of electronic educational materials for the course of general physics is aimed at modernizing the educational process and increasing its efficiency. The paper examines methods for creating interactive multimedia materials that allow students to better master complex physical concepts and laws.

Key words: Electronic educational materials, general physics, interactive learning, multimedia resources, pedagogical technologies

Использование новых информационных технологий в учебно-воспитательном процессе позволяет нам реализовать свои педагогические идеи, представить их вниманию коллег и получить оперативный отклик, а учащимся дает возможность самостоятельно выбирать образовательную траекторию – последовательность и темп изучения тем, систему тренировочных заданий и задач, способы контроля знаний. Так реализуется важнейшее требование современного образования – выработка у субъектов образовательного процесса индивидуального стиля деятельности, культуры самоопределения, происходит их личностное развитие.

В последнее время все большее внимание уделяется внедрению в традиционную систему образования достижений в области информационных технологий. Компьютеризация образовательных учреждений способствует широкому использованию электронных учебных материалов (ЭУМ) и Интернет-ресурсов в учебном процессе. Применение ЭУМ и Интернет-ресурсов оправдано только в тех случаях, в которых они дают существенное преимущество по сравнению с традиционными формами обучения.

Используя информационные технологии на уроке можно организовать индивидуальное интерактивное обучение учащихся; использовать электронные ресурсы, особенно анимации; компьютерные модели и виртуальные лаборатории для демонстраций; проводить компьютерные лабораторные работы с использованием компьютерных моделей или виртуальных лабораторий; организовать исследовательскую и проектную деятельность учащихся; проводить контроль знаний учащихся с использованием компьютерных программ или технологий дистанционного обучения.

Современный урок невозможен без использования информационных и телекоммуникационных технологий. Особенно это касается предметов естественно-научного цикла, т.к. именно они формируют единую картину мира.

Использование информационных технологий на уроках физики помогает достичь педагогических целей:

- развитие личности обучающегося, подготовка его к самостоятельной продуктивной деятельности в условиях современного информационного общества: развитие мышления, эстетическое воспитание, формирование умений принимать правильное решение или предлагать варианты в сложной ситуации, развитие умений осуществлять экспериментально-исследовательскую деятельность;

- реализация социального заказа, обусловленного информатизацией современного общества;

- интенсификация образовательного процесса во всех уровнях системы непрерывного образования;

- повышение эффективности и качества образовательного процесса за счет реализации возможностей ЭУМ;

- активизация познавательной деятельности с использованием ЭУМ;

- реализация идей открытого образования на основе использования сетевых технологий.

Использование информационных технологий помогает преподавателю расширить возможности творческого поиска и организации совместной деятельности с учащимися.

При обучении физике в средней школе преподаватель обычно сталкивается со следующими трудностями:

- учащиеся не могут представить некоторые явления такие, как явления микромира и мира с астрономическими размерами;

-изучение некоторого физического материала затрудняется незнанием учащимися математического аппарата, с помощью которого материал может быть изучен на высоком теоретическом уровне (например, незнание основ дифференциального и интегрального исчисления при рассмотрении раздела механики).

Обычно подобные вещи на уроках физики изучаются либо на низком научном уровне, либо объясняются "на пальцах", либо вообще не изучаются, что, безусловно, сказывается на уровне подготовки учеников. Поэтому использование информационных технологий поможет педагогу в организации образовательного процесса и станет его неотъемлемой частью.

Работа с мультимедийными пособиями дает возможность разнообразить формы работы на уроке за счет одновременного использования иллюстративного, статистического, методического, а также аудио- и видеоматериала.

Такая работа может осуществляться на разных этапах урока как:

- форма проверки домашнего задания;
- способ создания проблемной ситуации;
- способ объяснения нового материала;
- форма закрепления изученного;
- способ проверки знаний в процессе урока.

С появлением мультимедийных материалов (интерактивных CD-дисков) по физике (вместе с новыми компьютерными классами) открылась возможность включения в урок фрагментов видеолекций, организации практикумов и лабораторных работ. Инновационные учебные задания позволяют обучаемому освоить различные способы поиска неизвестных значений, использовать полученные результаты для установления закономерной связи между физическими величинами, а также – для прогноза возможных практических эффектов и подготовки к реальному физическому эксперименту.

Информационно-коммуникационные технологии значительно расширяют круг поиска дополнительной информации при подготовке к уроку. Через поисковые системы Интернета находятся биографические материалы, фотодокументы, иллюстрации. Безусловно, многие работы требуют проверки, редакторской правки, но фрагменты статей могут пригодиться при разработке дидактических материалов к уроку, подсказать и форму урока.

Во всех случаях ИКТ выполняют функцию "посредника", "который вносит существенные изменения в коммуникацию человека с окружающим миром". В результате учитель и ученик не только овладевают информационными технологиями, но и учатся отбирать, оценивать и применять наиболее ценные образовательные ресурсы, а также создавать собственные.

Физическая наука всегда лежит в первооснове всех достижений человеческой цивилизации, компьютерная техника и Интернет не исключение. Однако зачастую складывается парадоксальная ситуация, когда

«сапожник остается без сапог». Речь о том, что процесс информатизации физического образования и физических исследований должен достичь высокого уровня, тем более что для этого есть все предпосылки.

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СРАВНИТЕЛЬНЫЙ АНАЛИЗ МЕТОДОВ ОЦЕНКИ СЕЛЕ- ПАВОДКОВОГО РИСКА ДЛЯ ГОРНЫХ И ПРЕДГОРНЫХ АВТОДОРОГ УЗБЕКИСТАНА

***Аннотация:** в статье проведен сравнительный анализ трех основных групп методов оценки селе-паводкового риска – полуколичественных балльных оценок, ГИС-моделирования и гидрологических расчетов – с точки зрения их применимости и информативности для горных и предгорных автодорог Узбекистана. Рассмотрены принципы, возможности и ограничения каждого подхода в условиях типичной для региона доступности данных и сложности природных процессов. На основе анализа обосновывается целесообразность применения комплексного, многоуровневого подхода к оценке риска для эффективного планирования защитных мероприятий и обеспечения безопасности транспортной инфраструктуры.*

***Ключевые слова:** селе-паводковый риск, оценка риска, транспортные коммуникации, горные дороги, полуколичественный метод, ГИС-моделирование, гидрологические расчеты, управление рисками, Узбекистан.*

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COMPARATIVE ANALYSIS OF DEBRIS FLOW AND FLASH FLOOD RISK ASSESSMENT METHODS FOR MOUNTAINOUS AND FOOTHILL ROADS IN UZBEKISTAN

***Abstract:** this article presents a comparative analysis of three main groups of debris flow and flash flood risk assessment methods—semi-quantitative scoring systems, GIS-based modeling, and hydrological calculations—in terms of their applicability and informativeness for mountainous and foothill roads in Uzbekistan. The principles, capabilities, and limitations of each approach are examined in the context of the region's typical data availability and the complexity of natural processes. Based on the analysis, the study substantiates the feasibility of applying an integrated, multi-level approach to risk assessment to support the effective planning of protective measures and to ensure the safety of transport infrastructure.*

Keywords: debris flow and flash flood risk, risk assessment, transport infrastructure, mountain roads, semi-quantitative method, GIS modeling, hydrological calculations, risk management, Uzbekistan.

Введение

Транспортная инфраструктура, в особенности сеть автомобильных дорог, играет ключевую роль в социально-экономическом развитии Узбекистана. Значительная часть территории страны, особенно в предгорных и горных районах Ферганской долины, Ташкентской, Джизакской, Самаркандской, Кашкадарьинской и Сурхандарьинской областей, подвержена воздействию опасных селе-паводковых явлений [1]. Эти процессы представляют серьезную угрозу для безопасности движения, сохранности дорожного полотна, мостов и других сооружений, приводя к значительным экономическим потерям и, в некоторых случаях, к человеческим жертвам. Усиливающиеся проявления экстремальных гидрометеорологических явлений на фоне изменения климата [2] делают задачу адекватной оценки и снижения селе-паводковых рисков для автодорог особенно актуальной. Решение этой задачи напрямую связано с реализацией государственных мер по защите населения и территорий от чрезвычайных ситуаций (ПП-426 [3]) и обеспечению устойчивого развития инфраструктуры в рамках перехода к «зеленой» экономике (ПП-436 [4]).

Оценка рисков природных опасностей является сложной междисциплинарной проблемой. В международной практике и в исследованиях, проводимых в Узбекистане [1, 5, 6], применяются различные методические подходы. Полуколичественные методы, часто основанные на балльной оценке факторов опасности и уязвимости [7, 8], позволяют проводить относительно быструю оценку и ранжирование рисков на больших территориях или протяженных объектах, что ценно при ограниченных ресурсах и данных. Геоинформационные системы (ГИС) предоставляют мощные инструменты для пространственного анализа факторов риска, картирования зон потенциальной опасности и визуализации результатов [9, 10, 11]. Гидрологические и гидравлические расчеты остаются основой для количественной оценки параметров селе-паводковых потоков (расходы, объемы, скорости), необходимых для проектирования инженерных защитных сооружений [12, 13, 14, 15]. Каждый из этих подходов имеет свои сильные и слабые стороны.

Несмотря на наличие различных методик, для эффективного управления рисками в конкретных условиях Узбекистана, характеризующихся спецификой горных ландшафтов, неравномерностью сети наблюдений и доступности данных, важен сравнительный анализ применимости и информативности этих подходов. Необходимо понимать, какой метод или их комбинация является наиболее адекватной для решения различных практических задач – от стратегического планирования и зонирования до проектирования конкретных защитных мер на локальных

участках. Отсутствие такого сопоставительного анализа затрудняет выбор оптимальной методологии оценки риска.

Целью данного исследования является сравнительный анализ концептуальных возможностей и ограничений полуколичественных методов, ГИС-моделирования и гидрологических расчетов для оценки селе-паводкового риска применительно к типичным условиям горных и предгорных автодорог Узбекистана. **Задачи исследования:**

1. Охарактеризовать принципы применения полуколичественных балльных оценок для идентификации и ранжирования селеопасных участков дорог.

2. Описать возможности ГИС-моделирования для выявления и картирования зон потенциального воздействия селе-паводковых потоков.

3. Изложить основы гидрологических расчетов для количественной оценки параметров селе-паводковых потоков.

4. Провести концептуальное сравнение типов информации и уровней детальности результатов, получаемых различными методами.

5. Оценить относительные преимущества и недостатки каждого подхода в контексте типичной доступности данных и практических задач управления рисками в Узбекистане.

Материалы и методы

Исследование носит аналитический характер и основано на обзоре и сопоставлении существующих методических подходов к оценке селе-паводкового риска. Анализ проводился применительно к типовым ситуациям на горных и предгорных автодорогах Узбекистана, таким как пересечение дороги с селевым руслом, прохождение трассы у подножия или по склону, подверженному эрозии или оползневым процессам. Рассматривались общие принципы использования стандартных исходных данных, доступных в Узбекистане: топографические, геологические, почвенные карты, данные ЦМР (SRTM, ALOS PALSAR), климатические и гидрологические данные (Узгидромет), материалы полевых обследований.

Краткая характеристика рассматриваемых групп методов:

1. Полуколичественный метод базируется на присвоении баллов различным факторам, влияющим на возникновение селей (литология, крутизна, эрозия, растительность, климат и др.) и на возможные последствия (тип дороги, интенсивность движения, наличие объектов). Суммирование или перемножение баллов позволяет получить индекс или категорию риска для обследуемого участка [6, 7, 8].

2. ГИС-моделирование включает пространственный анализ рельефа (уклоны, экспозиции, кривизна), автоматизированное выделение гидрографической сети и водосборов, моделирование зон аккумуляции стока, оверлейный анализ с картой дорожной сети для выявления конфликтных точек и зон [9, 10, 11]. Могут использоваться как базовые инструменты ГИС, так и специализированные модули или модели.

3. Гидрологические расчеты основаны на расчете стокообразующих осадков заданной повторяемости, определении параметров водосбора (площадь, уклон, тип поверхности) и применении формул стока (рациональная формула, метод предельной интенсивности, региональные зависимости) для оценки пика дождевого паводка ($Q_{\text{водн}}$). Оценка селевого расхода ($Q_{\text{сель}}$) требует введения дополнительных параметров или коэффициентов, отражающих вовлечение твердого материала (например, коэффициент селеностности Ψ) [12, 13, 14].

Результаты

Применение трех групп методов к типичным селеопасным участкам горных и предгорных дорог Узбекистана позволяет получать результаты разного характера и уровня детальности.

Полуколичественная оценка для участка дороги, пересекающего селеактивное русло, позволяет присвоить ему определенную категорию риска (например, "Высокий", "Средний", "Низкий") на основе интегральной оценки множества факторов. Это дает возможность сравнивать и ранжировать различные участки по степени опасности для планирования очередности защитных мероприятий или мониторинга.

ГИС-моделирование для того же участка позволяет визуализировать зону возможного воздействия селевого потока на дорогу – определить примерную ширину пересечения, выявить участки возможного подмыва насыпи или отложения наносов. Для участка дороги, проходящего вдоль склона, ГИС позволяет выделить зоны с критическими уклонами или признаками неустойчивости, представляющие угрозу обвалов или оползней на дорогу.

Гидрологические расчеты для водосбора, формирующего селевой поток, пересекающий дорогу, дают количественную оценку пикового расхода селя ($Q_{\text{сель}}$) определенной вероятности превышения (например, 1%, 5%). Эта величина является ключевой для проектирования водопропускного сооружения (моста, трубы) или селезащитной дамбы.

Концептуальное сравнение типов результатов для типовых ситуаций представлено в Таблицах 1 и 2.

Таблица 1.

Результаты оценки риска для участка пересечения дороги с селевым руслом

Метод оценки	Пример результата	Характер информации
Полуколичественный	Участку присвоена категория риска (напр., "Средний")	Качественная/ранговая оценка
ГИС-моделирование	Карта зоны потенциального воздействия на дорогу	Пространственная локализация угрозы
Гидрологические расчеты	Расчетное значение пикового расхода селя (напр., $Q_{\text{сель}}$ 1%)	Количественный параметр потока

Таблица 2.

Результаты оценки риска для участка дороги под/на крутом склоне

Метод оценки	Пример результата	Характер информации
Полуколичественный	Участку присвоена категория риска (по факторам склоновых процессов)	Качественная/ранговая оценка
ГИС-моделирование	Карта зон с критической крутизной/неустойчивостью склона, примыкающих к дороге	Пространственная локализация угрозы
Гидрологические расчеты	Оценка потенциального объема осыпи/оползня (требуется геомеханических расчетов) или стока	Количественный параметр (объем/Q)

Обсуждение

Сравнение подходов показывает их взаимодополняемость. Полуколичественные методы эффективны для первичной оценки и приоритизации на больших территориях или при недостатке детальных данных, но их результаты субъективны и имеют низкое пространственное разрешение. ГИС-моделирование незаменимо для пространственного анализа, визуализации и выявления зон потенциального воздействия, но его точность зависит от качества исходных данных (ЦМР) и адекватности используемых алгоритмов. Гидрологические расчеты предоставляют необходимые количественные данные для инженерного проектирования, но характеризуются высокой неопределенностью, особенно в части селевых параметров в условиях дефицита наблюдений, характерного для многих горных районов Узбекистана.

Обобщенные преимущества и недостатки методов в контексте Узбекистана приведены в Таблице 3.

Таблица 3.

Сравнительная оценка методов оценки селе-паводкового риска в условиях Узбекистана

Метод	Преимущества	Недостатки	Потребности в данных	Применимость в Узбекистане
Полуколичественный	Быстрота, возможность учета полевых данных/эксперты, комплексность	Субъективность в баллах без калибровки, низкая пространственная точность,	Карты, полевые обследования, общие сведения о селепроявлениях, эксперты	Высокая; подходит для скрининга, предварительной оценки, зонирования по степени риска на больших

	факторов, ранжирование	сложность формализации		территориях или протяженных объектах
ГИС- моделирование	Наглядность, пространственны й анализ, интеграция разных данных, повторяемость базовых расчетов	Зависимость от качества ЦМР, упрощение реальных процессов, потребность в ПО и специалистах	ЦМР, карты, данные по дороге, ГИС- ПО	Высокая; незаменим для визуализации, выявления зон влияния, предварительного планирования; точность зависит от данных и моделей
Гидрологические расчеты	Количественные параметры (Q) для проектирования, физическая основа	Высокая неопределенно сть входных данных (осадки, сток, параметры селя), трудоемкость, часто локальность	Гидро-мет данные, морфометрия, методики расчета, (желательно) полевые	Необходим для инженерного проектирования; требует улучшения сети наблюдений и разработки/адапта ции региональных методик

Для условий Узбекистана, где необходимо оценивать риски на протяженной сети горных и предгорных дорог при зачастую ограниченных данных, наиболее рациональным представляется многоуровневый (иерархический) подход.

Уровень сети/региона – использование ГИС-технологий для выявления потенциально опасных зон (пересечения с водотоками, крутые склоны) и их первичной классификации по геоморфологическим признакам.

Уровень участка – применение полуколичественных методов на выявленных потенциально опасных участках для их ранжирования по степени риска на основе полевых обследований и доступных данных.

Уровень объекта (для участков высокого/среднего риска) – проведение детальных инженерно-геологических и гидрологических изысканий и выполнение количественных расчетов для проектирования конкретных защитных сооружений.

Такой подход позволяет эффективно распределять ресурсы, фокусируя детальные исследования на наиболее критичных участках, и обеспечивает получение информации, необходимой как для стратегического планирования, так и для конкретных инженерных решений.

Заключение

Сравнительный анализ полуколичественных методов, ГИС-моделирования и гидрологических расчетов показывает, что каждый из этих подходов играет свою роль в системе оценки селе-паводкового риска для горных и предгорных автодорог Узбекистана. Их эффективность и информативность зависят от конкретной задачи (региональная оценка, ранжирование, проектирование), масштаба исследования и доступности данных.

В условиях Узбекистана оптимальным является комплексное, иерархическое применение этих методов. Широкое использование ГИС и полуколичественных оценок для выявления и приоритизации опасных участков в сочетании с детальными гидрологическими расчетами на наиболее критичных объектах позволяет создать научно обоснованную базу для управления рисками и планирования защитных мероприятий. Дальнейшее развитие системы оценки требует совершенствования методик, адаптированных к местным условиям, улучшения мониторинга опасных процессов и расширения базы данных гидрометеорологических наблюдений в горной зоне.

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ПОДГОТОВКА СТУДЕНТОВ К САМОСТОЯТЕЛЬНОМУ ОБУЧЕНИЮ С ПОМОЩЬЮ СОВРЕМЕННЫХ ИНСТРУМЕНТОВ

Аннотация. В условиях стремительного развития цифровых технологий и трансформации образовательной среды особенно важным становится формирование у студентов навыков самостоятельного обучения. Данная статья рассматривает теоретические и практические аспекты подготовки студентов к самостоятельному обучению с использованием современных инструментов: цифровых платформ, интерактивных ресурсов, мобильных приложений, облачных сервисов и средств обратной связи. Раскрываются педагогические условия, способствующие повышению учебной мотивации, самодисциплины и цифровой грамотности учащихся. Особое внимание уделено роли преподавателя как фасилитатора и навигатора в цифровой образовательной среде.

Ключевые слова: самостоятельное обучение, цифровые инструменты, образовательные технологии, цифровая среда, мотивация, самодисциплина, педагогическая поддержка, студентоцентрированное обучение.

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PREPARATION OF STUDENTS FOR INDEPENDENT EDUCATION USING MODERN TOOLS

Annotation. In the context of the rapid development of digital technologies and the transformation of the educational environment, the formation of students' skills in independent learning becomes especially important. This article examines the theoretical and practical aspects of preparing students for independent education using modern tools: digital platforms, interactive resources, mobile applications, cloud services, and feedback tools. The pedagogical conditions that contribute to increasing students' educational motivation, self-discipline, and digital literacy are revealed. Particular attention is paid to the role of the teacher as a facilitator and navigator in the digital educational environment.

Keywords: independent learning, digital tools, educational technologies, digital environment, motivation, self-discipline, pedagogical support, student-centered learning.

Введение

Современное образование все чаще ориентируется на самостоятельность обучающихся, предполагая, что студенты должны уметь не только воспринимать знания, но и добывать, осмысливать и применять их в практической деятельности. Эта трансформация требует от студентов высокого уровня саморегуляции, мотивации и навыков управления временем.

Одновременно с этим появляются новые возможности благодаря цифровым инструментам, которые позволяют эффективно организовать самостоятельное обучение. Важно, чтобы преподаватели не просто вводили цифровые ресурсы, но и формировали у студентов готовность к их осмысленному использованию.

Материалы и методы

Самостоятельное обучение (self-directed learning) — это процесс, при котором студент сам определяет цели, выбирает ресурсы, определяет темп и способы освоения материала. Оно базируется на таких ключевых компетенциях, как саморефлексия, самоорганизация, способность ставить цели и принимать решения.

В условиях стремительно изменяющейся информации и динамичного рынка труда самостоятельное обучение становится не просто полезным, а необходимым условием профессионального роста и адаптации выпускника.

Результаты и обсуждение

Среди цифровых инструментов, способствующих самостоятельному обучению студентов, можно выделить следующие [1]:

Образовательные платформы и LMS (Learning Management Systems): Moodle, Google Classroom, Microsoft Teams и др. позволяют управлять обучением, отслеживать прогресс, взаимодействовать с преподавателями.

Интерактивные ресурсы и онлайн-курсы (MOOC): Coursera, Khan Academy, Stepik и др.

Мобильные приложения: Quizlet, Duolingo, Notion, Anki и пр.

Облачные сервисы: Google Drive, OneDrive, Dropbox — для совместной работы, хранения материалов, обмена файлами.

Инструменты обратной связи и самооценки: Google Forms, Mentimeter, Kahoot и пр., способствуют интерактивности и рефлексии.

Каждый из этих инструментов предоставляет возможности для гибкости, доступности и персонализации учебного процесса.

Успешное формирование самостоятельности требует соблюдения ряда педагогических условий:

Создание мотивационной среды: важно демонстрировать студентам значимость самостоятельного обучения для их будущей профессии.

Поддержка и фасилитация со стороны преподавателя: переход от директивной к наставнической роли.

Развитие навыков самооценки и рефлексии: ведение портфолио, дневников, участие в обсуждениях.

Постепенное расширение автономии: от заданий с четкими инструкциями к проектной и исследовательской деятельности.

Использование смешанного обучения (blended learning): сочетание очного и онлайн форматов.

Преподаватель выступает как тьютор, фасилитатор, координатор. Его задачи [2]:

- формировать цифровую культуру;
- создавать пространство доверия и поддержки;
- давать регулярную обратную связь;
- поощрять инициативу и самостоятельные решения;
- оценивать не только результат, но и процесс учебной деятельности.

Важно развивать у студентов метакогнитивные способности — умение думать о собственном мышлении, анализировать учебные действия и стратегии.

Преимущества и трудности внедрения цифровых инструментов
Преимущества:

- индивидуализация обучения;
- доступ к материалам в любое время;
- развитие цифровых навыков;
- интерактивность и вовлеченность.

Трудности [3]:

- цифровая перегрузка;
- низкий уровень самоорганизации у некоторых студентов;
- потребность в цифровой грамотности;
- технические ограничения.

Решение этих проблем возможно через методическую поддержку, цифровую адаптацию и постоянную педагогическую рефлексию.

Современные технологии открывают широкие возможности для персонализированного (индивидуализированного) обучения. Системы адаптивного обучения используют алгоритмы для анализа поведения студента и автоматической подстройки учебного контента под его уровень, темп и стиль обучения. Такие системы позволяют:

определять пробелы в знаниях и предлагать индивидуальные маршруты;

- оптимизировать нагрузку;
- повышать вовлеченность студента в процесс обучения.

Примеры таких систем включают платформы как Smart Sparrow, Knewton, Coursera Plus с AI-алгоритмами подбора курсов.

Онлайн-сообщества (на платформах Discord, Telegram, Reddit, Stack Overflow и др.) играют важную роль в формировании учебной самостоятельности. Они позволяют студентам:

- получать помощь и обмениваться опытом;
- развивать критическое мышление через обсуждение тем;
- учиться в формате peer-to-peer.

Кроме того, участие в таких сообществах способствует формированию цифровой идентичности и профессиональных сетей.

Микрообучение предполагает использование коротких, концентрированных модулей информации (видео, квизы, flashcards), которые легко усваиваются и доступны в мобильных приложениях. Это особенно эффективно для студентов, совмещающих учебу с работой. "Just-in-time learning" помогает [4]:

быстро получать нужные знания в нужный момент;

экономить время;

формировать привычку к регулярному самообучению.

Заключение

Подготовка студентов к самостоятельному обучению с помощью современных инструментов является неотъемлемой частью современной образовательной парадигмы. Эффективное использование цифровых ресурсов возможно лишь при наличии педагогической поддержки, правильно выстроенной методики и стремления самого студента к саморазвитию. Развитие этой области требует постоянного обновления подходов, гибкости и открытости к инновациям со стороны всех участников образовательного процесса.

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ЭПИГЕНЕТИЧЕСКИЕ МЕХАНИЗМЫ В ПАТОГЕНЕЗЕ АУТОИММУННЫХ ЗАБОЛЕВАНИЙ

Аннотация: Аутоиммунные заболевания (АИЗ) представляют собой группу патологий, связанных с нарушением иммунологической толерантности и развитием хронического воспаления. В последние годы эпигенетические механизмы, такие как метилирование ДНК, модификации гистонов и регуляция генов некодирующими РНК, привлекли внимание как важные факторы, влияющие на патогенез АИЗ. Эти процессы могут изменять экспрессию ключевых иммунных генов, способствуя развитию и прогрессированию аутоиммунных реакций. Исследования показывают, что эпигенетические изменения могут быть вызваны факторами окружающей среды, такими как инфекции, стресс и питание, что делает их потенциальными мишенями для терапевтического вмешательства. В данной статье рассматриваются современные данные о роли эпигенетических механизмов в развитии АИЗ, их диагностическое значение и перспективы эпигенетической терапии.

Ключевые слова: эпигенетика, аутоиммунные заболевания, метилирование ДНК, модификации гистонов, некодирующие РНК, иммунная регуляция, воспаление, эпигенетическая терапия.

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EPIGENETIC MECHANISMS IN THE PATHOGENESIS OF AUTOIMMUNE DISEASES

Abstract: Autoimmune diseases (AIDs) are a group of pathologies associated with impaired immunological tolerance and the development of chronic inflammation. In recent years, epigenetic mechanisms such as DNA methylation, histone modifications, and gene regulation by non-coding RNAs have attracted attention as important factors influencing the pathogenesis of AIDs. These processes can alter the expression of key immune genes, contributing to the development and progression of autoimmune reactions. Studies show that epigenetic changes can be induced by environmental factors such as infections, stress, and nutrition, making them potential targets for therapeutic intervention. This article reviews current data on the role of epigenetic mechanisms in the development of AIDs, their diagnostic value, and prospects for epigenetic therapy.

Keywords: *epigenetics, autoimmune diseases, DNA methylation, histone modifications, non-coding RNAs, immune regulation, inflammation, epigenetic therapy.*

Введение

Аутоиммунные заболевания (АИЗ) представляют собой гетерогенную группу патологий, характеризующихся дисрегуляцией иммунной системы, приводящей к атаке собственных тканей организма. Эти заболевания включают системную красную волчанку (СКВ), ревматоидный артрит (РА), рассеянный склероз (РС), сахарный диабет 1 типа (СД1) и многие другие. Несмотря на значительные успехи в изучении генетических факторов, предрасполагающих к развитию АИЗ, выявленные мутации не всегда объясняют вариабельность их проявлений и течения.

В последние годы особое внимание уделяется эпигенетическим механизмам, которые регулируют экспрессию генов без изменения их последовательности. К основным эпигенетическим модификациям относятся метилирование ДНК, посттрансляционные модификации гистонов и регуляция генов некодирующими РНК. Эти процессы могут быть индуцированы факторами окружающей среды, включая инфекции, стресс, питание и воздействие токсинов, что объясняет их динамический характер и потенциальную обратимость.

Целью данной статьи является обзор современных данных о роли эпигенетических изменений в патогенезе аутоиммунных заболеваний, их влиянии на иммунный ответ и возможностях эпигенетической терапии.

Метилирование ДНК является ключевым механизмом эпигенетической регуляции, при котором метильные группы добавляются к цитозину в CpG-динуклеотидах, что приводит к угнетению экспрессии генов. Изменения в метилировании ДНК были выявлены при различных АИЗ:

- При системной красной волчанке (СКВ) наблюдается гипометилирование генов, участвующих в активации Т-лимфоцитов (CD40LG, ITGAL), что способствует усиленной иммунной реакции.

- При ревматоидном артрите (РА) измененное метилирование некоторых генов воспаления (TNF- α , IL-6) способствует поддержанию хронического воспалительного процесса.

- Модификации гистонов в регуляции аутоиммунитета-Гистоны играют важную роль в упаковке ДНК, а их посттрансляционные модификации (ацетилирование, метилирование, фосфорилирование) регулируют доступность ДНК для транскрипции.

- Повышенное ацетилирование гистонов в промоторных областях провоспалительных генов (например, IL-17, IFN- γ) способствует их гиперэкспрессии при псориазе и рассеянном склерозе.

- Изменения в метилировании гистонов могут приводить к подавлению регуляторных генов иммунного ответа, что способствует развитию аутоиммунных реакций.

МикроРНК (miRNA) и длинные некодирующие РНК (lncRNA) являются важными эпигенетическими регуляторами иммунного ответа:

- miR-146a и miR-155 участвуют в регуляции воспалительных путей через воздействие на NF-κB, и их дисбаланс отмечается при ревматоидном артрите и СКВ.

- LncRNA HOTAIR и NEAT1 регулируют экспрессию провоспалительных цитокинов, усиливая патологический процесс при аутоиммунных заболеваниях.

Понимание эпигенетических механизмов открывает возможности для новых стратегий лечения АИЗ:

- Ингибиторы ДНК-метилтрансфераз (DNMTi) могут использоваться для восстановления нормального метилирования ДНК.

- Гистондеацетилазные ингибиторы (HDACi) показали эффективность в модуляции воспалительного ответа.

- miRNA-таргетированная терапия рассматривается как перспективное направление для коррекции дисрегуляции иммунного ответа.

Заключение

Эпигенетические механизмы играют ключевую роль в патогенезе аутоиммунных заболеваний, модулируя экспрессию генов, вовлеченных в иммунный ответ и воспаление. Нарушения в метилировании ДНК, посттрансляционных модификациях гистонов и экспрессии некодирующих РНК способствуют поддержанию хронического аутоиммунного процесса и могут объяснять вариабельность клинических проявлений АИЗ.

Понимание эпигенетических изменений открывает новые перспективы в диагностике и терапии аутоиммунных заболеваний. Эпигенетические маркеры могут быть использованы для ранней диагностики и мониторинга активности заболевания, а терапевтические стратегии, направленные на восстановление нормального эпигенетического профиля, представляют собой перспективное направление в персонализированной медицине.

Будущие исследования должны быть направлены на изучение механизмов взаимодействия различных эпигенетических факторов, их потенциального использования в качестве биомаркеров и разработку новых терапевтических подходов, основанных на эпигенетической регуляции.

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ПЕДАГОГИЧЕСКИЕ ОСОБЕННОСТИ УЧЕБНЫХ ПРОЕКТОВ В ПОВЫШЕНИИ КАЧЕСТВА ОБРАЗОВАНИЯ В ВЫСШИХ УЧЕБНЫХ ЗАВЕДЕНИЯХ

***Аннотация:** В статье рассматриваются педагогические особенности использования учебных проектов как инструмента повышения качества образования в высших учебных заведениях. Анализируются ключевые аспекты проектной деятельности, ее влияние на формирование профессиональных компетенций студентов, развитие критического мышления и способности к самообучению.*

***Ключевые слова:** учебные проекты, качество образования, высшие учебные заведения, проектная деятельность, профессиональные компетенции, критическое мышление, мотивация студентов, педагогические технологии, междисциплинарность, самостоятельность.*

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PEDAGOGICAL FEATURES OF TRAINING PROJECTS IN IMPROVING THE QUALITY OF EDUCATION IN HIGHER EDUCATIONAL INSTITUTIONS

***Annotation:** The article examines the pedagogical features of using educational projects as a tool for improving the quality of education in higher education institutions. Key aspects of project activity, its impact on the formation of students' professional competencies, the development of critical thinking, and the ability to self-learn are analyzed.*

***Keywords:** educational projects, quality of education, higher education institutions, project activity, professional competencies, critical thinking, student motivation, pedagogical technologies, interdisciplinary approach, independence.*

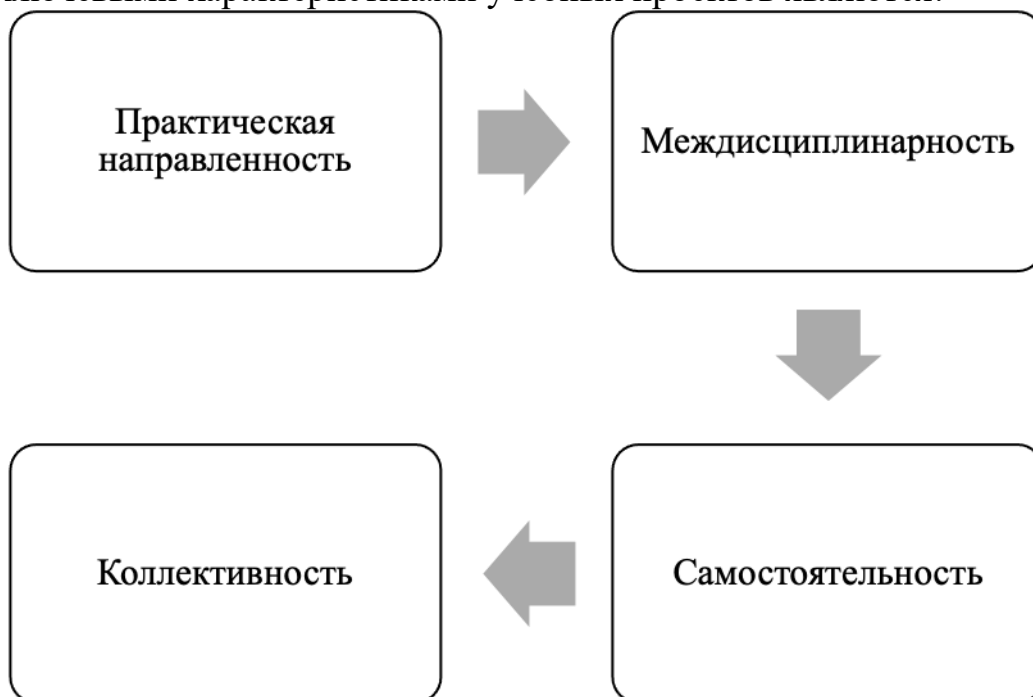
Современные требования к высшему образованию предполагают не только передачу знаний, но и формирование у студентов навыков, необходимых для успешной профессиональной деятельности. В условиях быстро меняющегося мира и развития технологий актуальным становится вопрос о повышении качества образования через внедрение инновационных педагогических подходов. Одним из таких подходов является использование учебных проектов, которые позволяют студентам применять теоретические знания на практике, развивать исследовательские и коммуникативные навыки.

Учебный проект представляет собой самостоятельную, целенаправленную деятельность студентов, направленную на решение конкретной задачи или проблемы. В основе проектной деятельности лежат принципы проблемного обучения, которые предполагают активное вовлечение студентов в процесс поиска и анализа информации, разработки решений и их реализации.

Исследование педагогических особенностей учебных проектов и их роли в повышении качества образования в высших учебных заведениях является актуальной темой в современной педагогической науке. Этой проблематикой занимались как отечественные, так и зарубежные ученые. Например, John Dewey в книге "Демократия и образование" подчеркивает важность практического опыта в образовании.[6] Он утверждает, что проекты помогают студентам учиться через действие. William Kilpatrick в статье "The Project Method" описывает, как проекты могут быть использованы для развития у студентов навыков решения реальных проблем.[7] David Kolb в книге "Experiential Learning: Experience as the Source of Learning and Development" описывает, как проекты позволяют студентам учиться через опыт и рефлекссию.[8] Thomas Marks в статье "Project-Based Learning in Higher Education" анализирует, как проекты помогают студентам развивать профессиональные навыки.[9] Heidi Hayes Jacobs в книге "Interdisciplinary Curriculum: Design and Implementation" рассматривает, как проекты могут быть использованы для интеграции знаний из различных дисциплин.[10] В.В. Гузеев в своей книге "Метод проектов как технология формирования ключевых компетенций" рассматривает, как проектная деятельность способствует развитию у студентов навыков самостоятельной работы, критического мышления и умения решать сложные задачи.[1] Е.С. Полат в работе "Современные педагогические и информационные технологии в системе образования" анализирует, как учебные проекты способствуют формированию у студентов профессиональных компетенций и повышают их мотивацию к обучению.[2] А.И. Савенков в книге "Методика исследовательского обучения" рассматривает, как проекты способствуют развитию у студентов креативности, самостоятельности и умения работать с информацией.[3] И.А. Зимняя в работе "Ключевые компетенции как результативно-целевая основа компетентностного подхода в образовании" подчеркивает, что проекты помогают студентам развивать навыки, необходимые для успешной профессиональной деятельности.[4] Л.И.

Петрова в книге "Инновационные педагогические технологии в образовании" анализирует, как проектная деятельность влияет на качество образования и подготовку студентов к реальным профессиональным задачам.[5]

Ключевыми характеристиками учебных проектов являются:



1. **Практическая направленность** – проекты ориентированы на решение реальных задач, что способствует более глубокому пониманию изучаемого материала.

2. **Междисциплинарность** – проекты часто требуют интеграции знаний из различных областей, что развивает системное мышление.

3. **Самостоятельность** – студенты самостоятельно планируют свою работу, что способствует развитию ответственности и самоорганизации.

4. **Коллективность** – многие проекты выполняются в группах, что развивает навыки командной работы и коммуникации.

Использование учебных проектов в высших учебных заведениях способствует повышению качества образования за счет:[11]

1. **Формирования профессиональных компетенций** – проекты позволяют студентам приобретать опыт, необходимый для будущей профессиональной деятельности.

2. **Развития критического мышления** – в процессе работы над проектами студенты учатся анализировать информацию, выявлять проблемы и находить эффективные решения.

3. **Стимулирования мотивации** – возможность работать над реальными задачами повышает интерес студентов к обучению.

4. **Интеграции теории и практики** – проекты позволяют применять теоретические знания в практических условиях, что способствует их более глубокому усвоению.

Организация учебных проектов требует от преподавателя не только глубоких знаний в предметной области, но и владения методиками проектного обучения. Ключевые аспекты организации проектной деятельности включают:

1. Постановка целей и задач – четкое определение целей проекта и ожидаемых результатов.

2. Планирование – разработка плана работы, распределение ролей и обязанностей среди участников проекта.

3. Сопровождение – постоянная поддержка и консультирование студентов на всех этапах выполнения проекта.

4. Оценка результатов – использование критериев, позволяющих объективно оценить результаты работы студентов.

Для успешной интеграции учебных проектов в образовательный процесс необходимо:

1. Разработка учебных программ – включение проектной деятельности в учебные планы и программы дисциплин.

2. Создание условий – обеспечение студентов необходимыми ресурсами (материалами, оборудованием, доступом к информации).

3. Подготовка преподавателей – обучение преподавателей методикам проектного обучения и современным технологиям.

4. Мониторинг и обратная связь – регулярное отслеживание результатов проектной деятельности и внесение корректировок в процесс обучения.

Учебные проекты являются эффективным инструментом повышения качества образования в высших учебных заведениях. Они способствуют формированию профессиональных компетенций, развитию критического мышления и мотивации студентов. Однако успешная реализация проектной деятельности требует тщательной организации и поддержки со стороны преподавателей. Интеграция учебных проектов в образовательный процесс позволяет не только повысить качество образования, но и подготовить студентов к успешной профессиональной деятельности в условиях современного мира.

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ВЛИЯНИЕ ГИДРОТЕХНИЧЕСКИХ СООРУЖЕНИЙ НА ЛАНДШАФТ КАШКАДАРЬИНСКОГО ОАЗИСА

***Аннотация:** В статье проведен глубокий научный анализ воздействия гидротехнических сооружений, построенных в бассейне реки Кашкадарья, на окружающую среду, а также разработаны научные выводы и предложения по необходимости проведения гидромелиоративных мероприятий и их внедрению в практику. Приведены рекомендации по мелиоративным характеристикам орошаемых земель, включая меры по предотвращению засоления почвы.*

***Ключевые слова:** гидротехнические сооружения, ирригация, гидромелиорация, коллектор, магистральный канал, засоление почвы, агротехнические мероприятия.*

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IMPACT OF HYDROTECHNICAL STRUCTURES ON THE LANDSCAPE OF THE KASHKADARYA OASIS

***Abstract:** The article presents scientific conclusions and recommendations based on an in-depth analysis of the environmental impact of hydraulic structures built in the Kashkadarya oasis. It provides proposals for necessary hydromeliorative*

measures to be developed and implemented in practice. Suggestions are given regarding the reclamation properties of irrigated lands, including measures to prevent soil salinization.

Keywords: *hydraulic structures, irrigation, hydromelioration, collector, main canal, soil salinization, agrotechnical measures. irrigation*

Введение. В стратегии действий по развитию Республики Узбекистан на 2017–2021 годы определены важнейшие задачи, направленные на обеспечение продовольственной безопасности за счет дальнейшего развития сельского хозяйства. В частности, особое внимание уделяется улучшению мелиоративного состояния орошаемых земель, развитию сети мелиоративных и ирригационных объектов, внедрению интенсивных методов ведения сельского хозяйства, прежде всего современных агротехнологий, способствующих экономии водных и земельных ресурсов. В целях реализации данных задач разработаны дорожные карты. В нашей республике, в частности в Кашкадарьинском оазисе, где земледелие высоко развито, ведутся активные работы по их осуществлению.

В своем научном исследовании мы рассматриваем устранение ошибок при эксплуатации ирригационных сооружений Кашкадарьинского оазиса, а также оптимизацию экологического состояния ландшафтов. Кашкадарьинский оазис с древних времен является регионом с развитым сельским хозяйством и высоким уровнем земледелия. Однако степень его водообеспечения крайне низка: естественные запасы воды покрывают лишь 15–20% потребностей. Основными природными источниками водных ресурсов являются река Кашкадарья и ее притоки.

Основная часть. За последние 70 лет в оазисе началось освоение земель, пригодных для орошаемого земледелия. С целью улучшения ирригационной системы и дополнительного водоснабжения было построено 13 водохранилищ, Каршинский магистральный канал (КМК) с системой оросительных каналов и коллекторов. Это привело к резкому развитию орошаемого земледелия в регионе. Развитие орошаемого земледелия оказало значительное влияние на ландшафт оазиса, вызвав трансформацию природных ландшафтов в антропогенные. Изменение ландшафтов вокруг водоемов привело к формированию агроирригационных ландшафтов. Формирование и характер антропогенных ландшафтов определяются природными и социальными факторами, такими как рост населения, интенсификация использования земель и нарушение природного баланса, что, в свою очередь, привело к экологическим дисбалансам. В результате нарушения естественного равновесия и пропорциональности ландшафтов на их месте начали формироваться управляемые антропогенные ландшафты [1].

Площадь сельскохозяйственных земель, используемых в Кашкадарьинском оазисе, составляет 2 856 779 гектаров, из которых пашни занимают 672 171 гектар. Почти 70% пашни, то есть 416 987 гектаров,

составляют орошаемые земли. Распределение сельскохозяйственных земель в оазисе представлено в следующей таблице.

Формирование и развитие агроирригационных ландшафтов в оазисе имеет свои особенности. Антропогенные изменения ландшафтов на орошаемых землях происходят в определенной последовательности: сначала изменяются биотические компоненты, такие как почва, гидрологический режим, климат и рельеф. Таким образом, в процессе хозяйственной деятельности человек изменяет практически все компоненты ландшафта, за исключением его геологического основания [3].

Основные формы мезорельефа, подвергшиеся трансформации в результате орошения, включают аллювиальные и куполовидные равнины, речные долины, террасы, дельты, конусообразные наносные образования. В зависимости от литологического состава горных пород и агротехнических методов орошения можно выделить формы ирригационной эрозии или ирригационно-аккумулятивного микрорельефа. Строительство и эксплуатация ирригационных каналов также приводят к образованию различных форм ирригационно-аккумулятивного рельефа.

Гидрологический режим орошаемых земель подвергается радикальным изменениям. Возведение гидротехнических сооружений, использование подземных вод, а также повышение уровня грунтовых вод в процессе орошения являются одними из ключевых факторов формирования специфических ландшафтов. Орошение также изменяет рельеф, гидрогеологические условия и процессы почвообразования, что, в свою очередь, ведет к трансформации почв. Физико-химические свойства почв и микробиологические процессы ускоряются, что приводит к разложению органических веществ. Особенно интенсивно этот процесс происходит при широком применении минеральных удобрений, что способствует повышению щелочности почв.

Кроме того, подъем уровня грунтовых вод из-за орошения способствует усилению процессов засоления почв. По данным М.А. Панкова (1974), в Каршинской степи скорость подъема уровня грунтовых вод составляет:

30–40 см в год на древнеорошаемых землях,

до 1 метра в год на вновь осваиваемых орошаемых землях.

В закрытых гидрогеологических системах Каршинской степи, где в почвенно-грунтовых слоях содержится большое количество солей, минерализация грунтовых вод в зоне бурых почв увеличивается от 1–3 г/л до 5–25 г/л [5].

На орошаемых землях происходит значительное изменение естественного растительного покрова. Трансформация почвообразовательных процессов, формирование нового микрорельефа, а также изменение литогенного основания ландшафта кардинально изменяют экологические условия для растительности. В районах, где развито орошаемое земледелие, природные биоценозы замещаются агробиоценозами,

включающими прибрежную растительность, защитные лесополосы и другие виды культурных растений.

Изменения касаются также и животного мира, особенно вблизи орошаемых земель. Исходные условия обитания животных нарушаются: разрушаются убежища, исчезают укрытия, в результате чего часть животных погибает из-за ухудшения экологических условий, другие приспособляются или мигрируют в новые, неосвоенные районы.

Таким образом, изменения в компонентах ландшафта приводят к формированию нового экологического равновесия, которое отличается от первоначальных природных ландшафтов, но сохраняет некоторые общие черты. В итоге формируется агроирригационный ландшафт [4].

Рост площади агроирригационных ландшафтов в Кашкадарьинском оазисе пропорционально увеличивает площадь земель, требующих улучшения мелиоративного состояния. В процессе эксплуатации орошаемых земель не всегда учитывается их подверженность различным неблагоприятным процессам, что оказывает негативное влияние на сельскохозяйственное производство. В частности, вторичное засоление, ирригационная эрозия, дефляция, процессы суффозии приводят к увеличению площадей деградированных земель. Это обстоятельство требует проведения комплекса мелиоративных мероприятий для оптимизации использования агроирригационных ландшафтов.

По мере увеличения площади орошаемых земель в Кашкадарьинском оазисе растет и площадь вторично засоленных земель. Например, в 1965 году площадь орошаемых земель в Кашкадарьинской области составляла 154,9 тыс. га, из которых только 21,5 тыс. га подвергались засолению в различной степени. В настоящее время приблизительно половина существующих орошаемых земель подвержена засолению в той или иной степени.

Эрозионные процессы на орошаемых землях также усиливаются и оказывают негативное влияние на состояние агроирригационных ландшафтов. Ирригационная эрозия приводит к ухудшению водно-физических и агрономико-химических свойств почвы, что способствует истощению ее плодородия. В результате этих процессов содержание гумуса, азота и других питательных веществ снижается, что вынуждает использовать минеральные удобрения в больших объемах.

Выводы. Для достижения экологической устойчивости при эксплуатации водохозяйственных сооружений необходимо соблюдать гидротехнические нормы, повышать коэффициент полезного действия водохранилищ, реконструировать каналы и коллекторы, заменяя грунтовые арыки на бетонные каналы. Рациональное использование водных ресурсов, внедрение водосберегающих технологий в сельском хозяйстве позволит улучшить водообеспеченность земель, повысить эффективность сельскохозяйственного производства, сохранить экологическое равновесие и повысить устойчивость ландшафтов. В свою очередь, эффективное использование гидротехнических сооружений будет способствовать

экологической стабильности и повышению продуктивности агроирригационных земель.

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НАЛОГОВАЯ СФЕРА КАК СОСТАВЛЯЮЩАЯ ЭКОНОМИЧЕСКОЙ БЕЗОПАСНОСТИ ПРЕДПРИЯТИЯ

***Аннотация:** статья посвящена исследованию роли налоговой сферы в обеспечении экономической безопасности предприятия. Рассматриваются ключевые аспекты управления налоговыми рисками, их влияние на финансовую стабильность и устойчивость бизнеса. Используются методы экономического анализа и моделирования для разработки рекомендаций по оптимизации налогового планирования. Представленные выводы ориентированы на повышение эффективности налоговой политики предприятия, что способствует укреплению его экономической безопасности.*

***Ключевые слова:** экономическая безопасность, налоги, риски, налоговая сфера, безопасность предприятия.*

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THE TAX SPHERE AS A COMPONENT OF THE ECONOMIC SECURITY OF THE ENTERPRISE

***Annotation:** The article is devoted to the study of the role of the tax sphere in ensuring the economic security of the enterprise. The key aspects of tax risk management and their impact on financial stability and business sustainability are considered. Methods of economic analysis and modeling are used to develop recommendations for optimizing tax planning. The presented conclusions are aimed at improving the effectiveness of the company's tax policy, which contributes to strengthening its economic security.*

***Keywords:** economic security, taxes, risks, tax sphere, enterprise security.*

В условиях рыночной экономики особое значение приобретает проблема обеспечения экономической безопасности как на государственном уровне, так и на уровне отдельных предприятий.

В современном мире, где внешние угрозы становятся всё более ощутимыми, а инфляция стремительно растёт, предприятия сталкиваются с

проблемой неплатёжеспособности. Это может привести к невозможности уплаты налогов в установленные сроки и по установленным ставкам.

В связи с этим исследования в области налоговой безопасности предприятий становятся особенно актуальными. Она является одной из ключевых составляющих экономической безопасности каждого предприятия.

Учёные предлагают различные меры по снижению влияния налоговых факторов, но не всегда они согласованы и интегрированы в общую систему обеспечения экономической безопасности предприятия. Также остаются недостаточно разработанными вопросы определения сущности и разработки системы мер по обеспечению налоговой безопасности предприятий.

В настоящее время не существует чёткого и исчерпывающего определения термина «налоговая безопасность».

Для обеспечения налоговой безопасности можно выделить несколько уровней:

- Налоговая безопасность налогоплательщика.
- Региональная налоговая безопасность.
- Национальная налоговая безопасность.
- Международная налоговая безопасность.

Налоги играют важную роль в функционировании всех субъектов хозяйствования, являясь активным инструментом регулирования экономики.

Кормишкина Л. А. в своей работе отмечает, что налоговую безопасность следует рассматривать как самостоятельный объект исследования, оценивая достаточность налоговых поступлений в бюджеты всех уровней и влияние налоговой нагрузки на результаты деятельности отдельных субъектов хозяйствования.

Сбалансированное обеспечение достаточных поступлений при умеренном налоговом давлении определяет эффективность экономики в целом.

Налоговая безопасность налогоплательщика тесно связана с налоговой безопасностью предприятия.

Непомнящий Е. Г. даёт следующее определение: «Налоговая безопасность предприятия — это состояние защищённости деятельности предприятия от всех видов угроз, как внешних, так и внутренних, при котором обеспечивается стабильное функционирование и прогрессивное развитие предприятия, достигаемое максимально эффективным использованием имеющихся ресурсов и быстрой адаптацией к изменяющимся условиям среды».

Таким образом, налоговая безопасность предприятия представляет собой финансово-экономическое положение налогоплательщика, которое позволяет минимизировать налоговые риски. При этом хозяйствующий субъект полностью и своевременно уплачивает начисленные налоги, а исполнительные и законодательные органы обеспечивают предусмотренную законом защиту налогоплательщика.

В процессе хозяйственной деятельности любой субъект сталкивается с внутренними и внешними угрозами и рисками, которые могут нарушить его стабильное функционирование, решение поставленных задач и достижение целей. Сложность систематизации рисков заключается в их разнообразии. Помимо общих рисков существуют специфические виды, связанные с хозяйственной деятельностью, с личностью предпринимателя и с недостатком информации о состоянии внешней среды.

Основной проблемой организации налоговой безопасности предприятий является низкий уровень налоговой культуры. В сложных условиях государство должно поддерживать высокий уровень налоговой безопасности страны, что поможет субъектам хозяйствования осуществлять эффективную налоговую политику по управлению налоговыми рисками.

Частые изменения в налоговой политике государства создают для предприятий новые налоговые риски, к которым они должны быстро адаптироваться и эффективно управлять. Эту функцию выполняют внутренние налоговые подразделения. Однако для управления налоговыми рисками, имеющими непредсказуемый характер, а также для оценки вероятности их возникновения и степени влияния на экономическую безопасность предприятия целесообразно применять средства экспертных оценок.

Суть метода заключается в получении информации о каком-либо объекте или процессе на основе мнений и суждений экспертов. Экспертные оценки могут быть использованы для решения различных задач, таких как прогнозирование развития событий, оценка рисков, выбор оптимального варианта решения проблемы, разработка стратегии развития предприятия и т. д.

Налоговые риски оказывают значительное влияние на состояние экономической безопасности предприятия, поэтому их следует контролировать, регулярно прогнозировать, выявлять, оценивать и оптимизировать. Их избежание или устранение требует формирования и применения взвешенной налоговой политики, а также внедрения действенных мер и эффективных инструментов по снижению их негативного влияния. Это позволит максимизировать прибыль или минимизировать убытки в случае их возникновения.

Эффективная налоговая политика и стратегическое налоговое планирование позволяют минимизировать налоговые риски, обеспечивая при этом полную и своевременную уплату налогов. Налоговая безопасность является неотъемлемой составляющей экономической безопасности каждого предприятия, и её обеспечение требует комплексных исследований и разработок.

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ВОПРОСЫ ПОВЫШЕНИЯ ЭФФЕКТИВНОСТИ ДЕЯТЕЛЬНОСТИ ПРЕДПРИЯТИЙ СФЕРЫ УСЛУГ НА ОСНОВЕ ВНЕДРЕНИЯ ЦИФРОВЫХ ТЕХНОЛОГИЙ (НА ПРИМЕРЕ САМАРКАНДСКОЙ ОБЛАСТИ)

***Аннотация.** Цифровизация сферы услуг становится ключевым фактором повышения конкурентоспособности предприятий и устойчивого развития региональной экономики. В условиях растущего спроса на высококачественные сервисы внедрение цифровых технологий позволяет оптимизировать бизнес-процессы, улучшить клиентский опыт и повысить производительность труда. В данной статье рассматриваются основные направления цифровизации сферы услуг в Самаркандской области, анализируются текущие тенденции, выявляются ключевые проблемы и предлагаются инновационные решения для повышения эффективности деятельности предприятий. Основное внимание уделено использованию Big Data, облачных технологий, CRM-систем и онлайн-сервисов для управления бизнесом в сфере услуг.*

***Ключевые слова:** цифровизация, сфера услуг, искусственный интеллект, Big Data, CRM-системы, региональная экономика, бизнес-модели, автоматизация процессов, цифровая трансформация.*

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ISSUES OF IMPROVING THE EFFICIENCY OF SERVICE SECTOR ENTERPRISES THROUGH THE IMPLEMENTATION OF DIGITAL TECHNOLOGIES (BASED ON THE EXAMPLE OF THE SAMARKAND REGION)

***Annotation:** Digitalization of the service sector has become a key factor in enhancing the competitiveness of enterprises and ensuring the sustainable development of the regional economy. Amid increasing demand for high-quality services, the implementation of digital technologies enables the optimization of business processes, improvement of customer experience, and enhancement of labor productivity. This article examines the main directions of digitalization in the service sector of the Samarkand region, analyzes current trends, identifies key challenges, and offers innovative solutions to improve the efficiency of enterprises. Particular attention is paid to the use of Big Data, cloud technologies, CRM systems, and online services for business management in the service sector.*

Keywords: *digitalization, service sector, artificial intelligence, Big Data, CRM systems, regional economy, business models, process automation, digital transformation.*

Введение

Современные предприятия сферы услуг сталкиваются с новыми вызовами в условиях цифровой трансформации. Конкурентоспособность и динамичное развитие сервисных компаний напрямую зависят от внедрения инновационных решений и цифровых технологий. В последние годы в Самаркандской области наблюдается активный рост сервисного сектора, однако его эффективность остается ниже, чем в развитых странах, что обусловлено рядом факторов:

Недостаточный уровень цифровизации бизнес-процессов в сфере услуг.

Ограниченный доступ к современным технологиям и IT-инфраструктуре.

Отсутствие эффективных механизмов взаимодействия с клиентами через цифровые каналы.

Низкий уровень автоматизации маркетинговых и логистических процессов.

В связи с этим необходима глубокая цифровая модернизация предприятий, работающих в сфере услуг, что позволит не только повысить их эффективность, но и создать условия для устойчивого экономического роста региона.

Данная статья направлена на изучение перспектив внедрения цифровых технологий в сферу услуг Самаркандской области и анализ их влияния на производительность предприятий.

Материалы и методы

Для достижения целей исследования были использованы следующие методы:

Аналитический метод – анализ существующих тенденций цифровизации сферы услуг.

Сравнительный метод – изучение международного опыта внедрения цифровых технологий в сферу услуг и его применение к условиям Самаркандской области.

Экономико-статистический метод – анализ показателей производительности предприятий, уровня цифровизации и влияния технологий на бизнес-процессы.

Экспертное интервью – сбор данных у владельцев и руководителей предприятий, работающих в сфере услуг, с целью выявления проблем и перспектив цифровизации.

Результаты и обсуждение

Цифровизация оказывает существенное влияние на все аспекты деятельности предприятий сферы услуг, включая управление, маркетинг, логистику, клиентский сервис и внутренние бизнес-процессы. Основные

преимущества цифровых технологий в сфере услуг представлены в следующей таблице:

Направление	Цифровые технологии	Результаты внедрения
Автоматизация процессов	ERP-системы, CRM-системы	Снижение издержек, оптимизация управления ресурсами
Клиентский сервис	Chatbots, AI-аналитика	Улучшение качества обслуживания, персонализация услуг
Маркетинг	Big Data, digital marketing	Повышение продаж за счет анализа поведения клиентов
Логистика	GPS-трекеры, блокчейн	Сокращение времени доставки, снижение логистических затрат
Финансовый учет	Онлайн-банкинг, финтех-решения	Прозрачность финансовых операций, удобство платежей

Исследование показало, что в Самаркандской области уровень цифровизации сферы услуг отстает от средних показателей по странам с развитой экономикой. Основные проблемы включают:

Ограниченный доступ к современной IT-инфраструктуре.

Низкий уровень автоматизации маркетинговых и логистических процессов.

Недостаточная цифровая грамотность сотрудников предприятий.

Ограниченное использование аналитических данных для принятия управленческих решений.

Для устранения вышеуказанных проблем и повышения эффективности работы предприятий предлагаются следующие решения:

Создание центра цифровой трансформации в Самаркандской области, который будет оказывать консультационные услуги по внедрению IT-решений в бизнес.

Развитие электронной коммерции и онлайн-платежей, что позволит предприятиям увеличить охват аудитории и упростить процессы взаимодействия с клиентами.

Внедрение облачных технологий и CRM-систем, которые позволят предприятиям автоматизировать процессы и повысить эффективность взаимодействия с клиентами.

Обучение сотрудников цифровым компетенциям, включая анализ данных, работу с онлайн-сервисами и использование искусственного интеллекта в бизнесе.

Государственная поддержка цифровизации предприятий в форме грантов и налоговых льгот для компаний, внедряющих инновационные решения.

Заключение

Цифровая трансформация предприятий сферы услуг в Самаркандской области является ключевым фактором их устойчивого развития и повышения

конкурентоспособности. Внедрение современных IT-решений позволяет автоматизировать бизнес-процессы, повысить качество клиентского обслуживания и сократить издержки.

Результаты исследования показывают, что основными препятствиями на пути цифровизации являются ограниченный доступ к технологиям, недостаток квалифицированных кадров и низкая осведомленность предпринимателей о возможностях цифровых решений. Решение этих проблем требует комплексного подхода, включающего государственную поддержку, обучение персонала и внедрение передовых цифровых платформ.

Таким образом, цифровизация сферы услуг должна стать приоритетным направлением экономического развития региона, способствуя повышению уровня жизни и улучшению делового климата.

Рекомендации

Разработать стратегию цифровой трансформации сферы услуг в Самаркандской области.

Организовать образовательные программы по цифровой грамотности для предпринимателей и сотрудников.

Внедрить стимулирующие меры (гранты, субсидии, налоговые льготы) для предприятий, инвестирующих в цифровизацию.

Развивать онлайн-платформы для взаимодействия между клиентами и предприятиями сферы услуг.

Создать цифровую экосистему, включающую e-commerce, финтех-решения и AI-аналитику.

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ҲАДИСЛАР АСОСИДА ШАКЛЛАНГАН МАҚОЛЛАРНИНГ ЛИНГВОМАДАНИЙ ХУСУСИЯТЛАРИ

***Аннотация:** Ушбу мақолада ҳадислар асосида шаклланган мақоллар ҳамда уларнинг моҳияти акс эттирилган. Мақолларда сўз қиммати алоҳида ёрқин ифодаланади. Чунки мақоллардаги сўзларни бошқаси билан алмаштириши, бирон сўз қўйиши мумкин эмас. Улар миллий тил таркибида қолиплашган ҳолда намоён бўлади.*

***Калим сўзлар:** Ҳадис, Мақол, Имом Бухорий, Қуръон, Қадимий ёзма манбалар, Баҳоуддин Нақшбанд*

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LINGUISTIC FEATURES OF PROVERBS FORMED ON THE BASIS OF HADITHS

***Annotation:** this article reflects Proverbs formed on the basis of hadiths, as well as their essence. In Proverbs, the value of the word is expressed separately brightly. Because it is impossible to replace words in Proverbs with another, to add any words. They appear molded in the composition of the national language.*

***Keywords:** hadith, proverb, Imam Bukhari, Quran, ancient written sources, Bahauddin Naqshband*

Оламлар Роббиси Аллоҳга ҳамд бўлсин, Пайғамбаримиз Муҳаммад соллаллоҳу алайҳи ва саллам, оила-аъзолари, асҳоблари ҳамда қиёматгача уларга яхшилик ила эргашган зотларга саловат ва саломлар бўлсин. Амма баъд:

Ҳозирги вақтда ҳаётимизнинг барча соҳалари, жумладан маънавий-маърифий жабҳаси ҳам инновацион ғоялар асосига қурилган янгиланишлар босқичидан ўтмоқда. Бунда соф табиат дини бўлган ислом маърифати ва маданияти, тарихи, илмий меросини ўрганиш, ислом тамаддуни ривожига мовароуннаҳрлик олимларнинг тутган ўрни ва уларнинг илмий қарашларини замонавий ракурсдан қайта тадқиқ этиш давлат сиёсати даражасига кўтарилди. Ўзбекистон Республикаси Президенти Ш.М.Мирзиёев ташаббуси ва раҳбарлиги остида Имом Бухорий халқаро илмий-тадқиқот маркази, Ўзбекистон ислом цивилизацияси маркази, Самарқандда Калом ва Ҳадис

мактаблари, Фарғонада – Марғиноний илмий марказида ислом ҳуқуқи мактаби, Бухорода – Баҳоуддин Нақшбанд марказида тасаввуф, Қашқадарёда – Абу Муин Насафий марказида ақида илми мактабининг ташкил этилиши, Бухоро Мир Араб мадрасасига олий таълим муассаси мақомининг берилиши, Тошкент ислом университети негизида Ўзбекистон халқаро ислом академиясининг ташкил қилиниши ҳам шу мақсадга хизмат қилади. Биргина ислом фикҳи йўналишида Ўзбекистон мусулмонлари идораси Фарғона вилояти вакиллиги қошида очилган Ислом ҳуқуқи мактабида тингловчиларга Бурҳониддин Марғиноний ҳамда Ҳанафий мазҳабининг мўътабар фикҳий асарлари чуқур ўргатилмоқда, қолаверса, соҳага оид асарлар устида илмий-тадқиқот ишлари олиб борилмоқда. Диёримиздан етишиб чиққан фақиҳлар ва муфаккиҳларнинг дурдона асарлари ҳамда уларнинг илмий қийматини янги авлодларга етказиб бериш йўлида самарали тадқиқот ишлари бошлаб юборилган.

Ҳадис ислом фалсафасининг мантиқий давоми сифатида ўзининг моҳиятига кўра, инсонни ахлоқий етукликка, маънавий баркамолликка, руҳий ва жисмоний покликка чорловчи инсоний фазилатларни шакллантиради, глобаллашув жараёнида мафкуравий иммунитетни ҳосил қилишга ёрдам беради. Ҳадисларнинг “ахлоқий кодекс” сифатида комил инсонни тарбиялашда, диний ақидапарастлик, жоҳиллик ва оммавий маданиятга қарши курашда муқаддас ислом динимиз, ҳамда ҳадислардаги илмга чорловчи ғоялар муҳим маънавий қуроли эканлиги алоҳида таъкидланади.

Пайғамбаримиз соллаллоҳу алайҳи ва саллам аввалда барча саҳобаларни ҳадисни ёзиб боришдан қайтарганлар. У зот: “Мендан ёзиб олманглар. Ким мендан Қуръондан бошқасини ёзиб олган бўлса, уни ўчирсин”, деб марҳамат қилганлар[1]. Сўнгра Пайғамбаримиз соллаллоҳу алайҳи ва саллам Абдуллоҳ ибн Амр ибн Ос розияллоҳу анҳу каби баъзи саҳобаларга ҳадисни ёзишга изн берганлар. У киши шундай ривоят қилади: Мен ёдлаб олишим учун Расулуллоҳ соллаллоҳу алайҳи ва салламдан эшитган барча нарсани ёзиб олар эдим. Қурайш мени бундан қайтариб: Сен Расулуллоҳ соллаллоҳу алайҳи ва салламдан эшитган барча нарсани ёзиб олаверасанми? У зот ҳам инсон бўлсалар, ғазаб ва розилик ҳолатида гапирадилар, дейишди. Мен ёзиб юришдан ўзимни тийдим. Сўнг Расулуллоҳ соллаллоҳу алайҳи ва салламга бу ҳақида айтдим. У зот соллаллоҳу алайҳи ва саллам бармоқлари билан оғизларига ишора қилиб: Ёзавер, нафсим Унинг қўлида бўлган зотга қасамки бу ердан фақат ҳақ (сўз) чиқади, дедилар[2]. У кишининг саҳифаларининг исми “Содиқо” бўлган. Бунга сабаб – Аллоҳ билувчи – Пайғамбаримизнинг қуйидаги хавфсирашлари бўлган:

Қуръондан баъзи нарсаларнинг зое бўлиб кетиши. Чунки ёзишни биладиганлар кам бўлган. Шу сабаб Абдуллоҳ ибн Амрни ҳадисни ёзиб бориш билан хослаганлар. Саҳоба розияллоҳу анҳумларнинг суннат сабабли Қуръондан чалғиб қолишлари. Шу сабаб Пайғамбаримиз уларга Қуръон улуғроқ эканини билдириб қўйганлар. Қуръон ёки унинг айрим сўзлари бўлсада бошқа нарсалар билан аралашиб кетиши. Бунга ёзиш воситаларининг

озлиги сабаб бўлган. Пайғамбаримиз соллаллоҳу алайҳи ва саллам Абдуллоҳ томонидан бу нарсага хотиржам бўлгач, унга изн бердилар. Сўнг Пайғамбаримиз соллаллоҳу алайҳи ва саллам барча ёзиш истагида бўлганларга рухсат бердилар. Балки гоҳида ёзишга буюрдилар ҳам.

Мақол деб халқнинг ижтимоий-тарихий, ҳаётӣ-маиший тажрибаси умумлашган бадий, образли мулоҳазалардан иборат ҳикматли сўзларга айтилади. Мақол ўзбек тилида мақол, тожикларда зарбулмасал, русларда пословица, арабларда (жонли сўзлашувда) нақл, туркларда ата сўзи атамаси билан юритилади. Мақол атамси арабча [قول] – қавлун – гапирмоқ, айтмоқ сўзидан олинган.

Мақолларда сўз қиммати алоҳида ёрқин ифодаланади. Чунки мақоллардаги сўзларни бошқаси билан алмаштириш, бирон сўз қўшиш мумкин эмас. Улар миллий тил таркибида қолиплашган ҳолда намоён бўлади. Бу жанр дунёдаги ҳамма халқлар оғзаки ижодида бор бўлиб, ҳажм, шакл, яратилиши мақсадига кўра муштарак ҳисобланади. Ҳатто номланишида ҳам яқинлик аниқ сезилади.

Жумладан, арабларда “қавлун” – гап, сўз маъносини ифодаласа, тожикларнинг “зарбулмасал” атамаларида мисол келтириш, руслар “пословица”сида сўзлар билан фикрни ифодалаш, турклардаги “ота сўзи”да эса аждодлар фикрини эслаш маъноси етакчи. Маҳмуд Кошғарийнинг “Девону луғотит турк” асарида ҳам “сав” атамаси оталар сўзини эслаш тарзида келтирилган. Аҳмад Яссавий шеърида шундай келади: “Ал ҳаёю минал иймон” – Расул айтди”, яъни Ҳадисдан олинган парча: “Ҳаё иймондан нишонадур”, - дейилади. Аҳмад Югнакий “Ҳибату-л-хақойиқ” достонида “Вале кийсанг атлас, унутма бўзинг” мисрасини ёзади. Бу мисра “Бой бўлсанг, чоригингни унутма” ҳикматли сўзига мос келади. Маҳмуд Кошғарий “Девону луғоти-т-турк” тадқиқотида дала сафарларида ёзиб олган 268 мақол матнини келтирган. Бу намуналар қаторида бироз ўзгариш билан яшаётган қуйидагиларни учратамиз: “Отуғ узгуч бирла ўчурмас” – Ўт аланга билан ўчирилмас; “Тоғ тоққа қавушмас, киши кишига қавушар” – “Тоғ тоғ билан учрашмас, одам одам билан учрашар”. Айни пайтда “Ўт теса, ағиз куймас” – ўт деган билан оғиз куймайди; “Тулки ўз инига урса, узуз ўлур” – тулки ўз инига қараб ҳурса, кўтир бўлади қабила бугунги кунда унутилган. Улар ўрнига “Қолва деган билан оғиз чучимас”, “Ватанига тош отган ватангадо бўлади” деган мақоллар қўлланмоқда.

Ҳозирги кунимизда ишлатилаётган айрим мақоллар ҳадислар асосида шаккланган. Хусан, “...Ҳадислар ҳам мақолларнинг пайдо бўлиши ва тараққиётида маълум даражада таъсир кўрсатган, аниқроғи, ҳадислар жонли сўзлашув жараёнида қайта ишланиб, янада ихчамлашиб, образлилик касб этган ҳолда хилма-хил мақоллар шаклида фаолроқ қўллана бошлаган. Масалан: Ҳазрати Ойша айтдилар: “Мен ўжар, бўйин бермайдиган тевага минган эдим, Расулуллоҳ уни урганимни кўриб: “Мулоим бўл, кимда мулоимлик бўлса, ҳусн ва камолотга эришади ва кимда мулоимлик хислати бўлмаса, у айбли ва нуқсонли бўлади”, – дедилар”. Мақоллар: Яхши гап билан

илон инидан чиқади. Ёмон гап билан пичоқ қинидан чиқади. Жўяли гапга туя ҳам чўқади.

Ҳозирги кунимизда исломшунос ҳамда ҳадисшунос олимлар ушбу мавзу бўйича кўпгина илмий изланишлар олиб бормоқдалар.

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АНАЛИЗ СИСТЕМЫ МОТИВАЦИИ ГРАЖДАНСКОГО ПЕРСОНАЛА В КОНТЕКСТЕ ПРИКАЗА МИНИСТЕРСТВА ОБОРОНЫ РФ № 595

Аннотация: В статье рассматриваются особенности регулирования оплаты труда и мотивации гражданского персонала в структурах Министерства обороны Российской Федерации на основе анализа Приказа Министерства обороны РФ от 30 сентября 2024 года № 595 «О системе оплаты труда гражданского персонала (работников) воинских частей и организаций Вооружённых Сил Российской Федерации». Особое внимание уделяется проблеме низких базовых окладов, а также влиянию подобной системы на уровень мотивации, текучесть кадров и профессиональную лояльность сотрудников. Представлены выводы о снижении эффективности стимулирующих выплат при их использовании для доведения заработной платы до уровня МРОТ и предложены направления совершенствования нормативного регулирования системы оплаты труда в оборонной сфере.

Ключевые слова: мотивация труда, гражданский персонал, Министерство обороны, Приказ № 595, заработная плата, стимулирующие выплаты, МРОТ.

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ANALYSIS OF THE CIVILIAN PERSONNEL MOTIVATION SYSTEM IN THE CONTEXT OF ORDER NO. 595 OF THE MINISTRY OF DEFENSE OF THE RUSSIAN FEDERATION

Annotation: The article examines the specifics of wage regulation and labor motivation for civilian personnel within the structures of the Ministry of Defense of the Russian Federation, based on the analysis of Order No. 595 of the Ministry of Defense of the Russian Federation dated September 30, 2024, "On the system of remuneration for civilian personnel (employees) of military units and organizations of the Armed Forces of the Russian Federation". Special attention is paid to the

issue of low base salaries and their impact on employee motivation, staff turnover, and professional loyalty. The study concludes that the effectiveness of incentive payments is significantly reduced when they are used merely to raise wages to the minimum statutory level (minimum wage). The article proposes directions for improving the regulatory framework of the remuneration system in the defense sector.

Key words: labor motivation, civilian personnel, Ministry of Defense, Order No. 595, wages, incentive payments, minimum wage.

Актуальность и предмет исследования

В современных социально-экономических условиях кадровая стабильность и мотивация сотрудников являются определяющими факторами эффективной деятельности любой организации, в том числе воинских частей и структур Министерства обороны Российской Федерации (МО РФ). Гражданский персонал, работающий в военных учреждениях, обеспечивает широкий спектр функций: от административно-хозяйственного обслуживания до научно-технической и медицинской поддержки. При этом систему оплаты труда гражданских работников в МО РФ регламентирует Приказ № 595, призванный установить единые принципы и механизмы формирования должностных окладов, надбавок, компенсаций и премий.

Однако, как показывают практика и статистика обращений работников, низкий уровень базовых окладов сохраняется даже после внесения обновлений в Приказ № 595. При повышающемся МРОТ (минимальном размере оплаты труда) многие стимулирующие надбавки и премии фактически превращаются в способ «дотягивания» зарплаты до установленного законодательством минимума. В результате теряется их основная мотивационная функция - поощрять и стимулировать сотрудников к профессиональному росту и более эффективной работе.

Основная проблема

Ключевым противоречием в действующей системе является дисбаланс между формальными положениями Приказа № 595 (которые декларируют стимулирование за счёт различных надбавок и компенсаций) и реальной ситуацией, когда низкие базовые оклады вынуждают использовать премии главным образом для достижения уровня МРОТ. Такой подход демотивирует сотрудников, снижает привлекательность работы в МО РФ для молодых специалистов и вызывает дополнительную нагрузку на кадровый потенциал воинских частей.

Цель и задачи исследования

Целью данной работы является научный анализ структуры и содержания Приказа № 595 с учётом его фактического влияния на формирование и развитие системы оплаты труда гражданского персонала ВС РФ. Для достижения цели сформулированы следующие задачи:

1. Оценить нормативно-правовые и экономические основания Приказа № 595: сравнить декларируемую систему оплаты труда с реальным уровнем вознаграждения работников.

2. Изучить механизм формирования должностных окладов и надбавок, выявить основные проблемы при применении на практике.

3. Проанализировать влияние низких окладов на мотивацию и текучесть кадров.

4. Предложить направления совершенствования нормативной базы и практики применения для повышения эффективности и конкурентоспособности оплаты труда в МО РФ.

Таким образом, актуальность работы обусловлена необходимостью устранить внутренние противоречия в системе оплаты труда и обеспечить достойный уровень заработной платы гражданского персонала, что будет способствовать укреплению кадрового состава и улучшению качества выполнения задач в воинских частях.

Методы

1. Анализ нормативных документов

Основу исследования составил анализ текста Приказа № 595, с учётом положений Трудового кодекса РФ, ряда федеральных законов, а также других ведомственных актов, регламентирующих оплату труда в государственных учреждениях. Для выявления коллизий и несоответствий применялся сравнительно-правовой метод, позволяющий сопоставлять формулировки и правовые нормы различных документов.

2. Контент-анализ текстовых материалов

В рамках контент-анализа изучались официальные пояснительные записки к Приказу № 595, типовые методические рекомендации по начислению надбавок и премий, а также сборник гипотетических примеров расчёта заработной платы. Особое внимание уделялось тем пунктам, которые регламентируют стимулирующие выплаты и их применение для достижения уровня МРОТ.

3. Статистический анализ кадровых данных

Для оценки влияния низких базовых окладов на мотивацию сотрудников были использованы данные о текучести кадров в ряде подразделений МО РФ, где числится значительная доля гражданского персонала. Основные показатели (процент увольнений, уровень вакансий, средняя продолжительность работы) сопоставлялись с величиной должностных окладов и выплат.

4. Метод кейсов (Case Study)

Для лучшего понимания реального применения Приказа № 595 проанализированы кейсы (конкретные ситуации), описанные в открытых источниках. Один из наиболее наглядных случаев — доведение оклада «Начальника отдела» до уровня МРОТ в Москве за счёт совокупных надбавок и премий.

Результаты

1. Структура Приказа № 595 и его положения

Приказ № 595 детализирует:

- Базовые оклады для разных должностных категорий (инженеры, техники, слесари, медицинский персонал, работники культурных и образовательных учреждений при МО РФ и др.);
- Стимулирующие надбавки (за выслугу лет, сложность и интенсивность труда, качество и результативность работы, региональный коэффициент);
- Компенсационные выплаты (за особые условия труда, выполнение дополнительных обязанностей, работу в неблагоприятных климатических или экологических условиях);
- Премияльные (периодические выплаты, зависящие от достижения ключевых показателей и экономии фонда оплаты труда в конкретном подразделении).

Формально данный приказ создаёт гибкую основу для материального стимулирования, учитывая квалификацию, личный вклад и сложности выполняемых работ. Однако базовый оклад, закреплённый документом для многих категорий, особенно технического и административного персонала, остаётся на крайне низком уровне.

2. Пример доведения зарплаты до МРОТ

Типичной иллюстрацией является ситуация с должностью «Начальник отдела» при базовом окладе 13 260 руб. (гипотетические данные для Москвы). При этом МРОТ в 2025 году для Москвы установлен на уровне 32 916 руб. [5]. В результате:

- Разница между базовым окладом и МРОТ превышает 19 000 руб.
- Эта разница восполняется надбавками за выслугу лет, сложность и напряжённость, качественный труд и региональным коэффициентом, пример показан в таблице 1.

Таблица 1 - Формирование заработной платы, окладная часть и премии

№ п/п	Статья начисления	Сумма (руб.)
1	Базовый должностной оклад	13 260
2	Надбавка за выслугу лет (20%)	2 652
3	Надбавка за сложность и напряженность (50%)	6 630
4	Премия за качество и интенсивность (60%)	7 956
5	Региональная надбавка (Москва, 20%)	2 652
ИТОГО (до налогообложения)		33 150

- Хотя суммарная начисленная зарплата формально поднимается чуть выше уровня МРОТ (примерно 33 150 руб. до вычета налогов), её «премиальная» часть фактически превращается в «обязательную» для соответствия законодательным требованиям.

- В итоге базовый оклад составляет лишь около 40% всех начислений, что делает общую сумму крайне зависимой от премий и надбавок.

Схожая проблема наблюдается на должностях инженеров, техников и младшего персонала: низкие оклады вынуждают использовать стимулирующие выплаты не для реального поощрения профессионализма, а для компенсации базового недостатка в заработной плате.

3. Влияние на мотивацию и кадровую стабильность

Статистические показатели текучести кадров в учреждениях МО РФ, где большинство сотрудников - гражданские специалисты, свидетельствуют о следующем:

- Сотрудники с востребованными на рынке компетенциями (IT-специалисты, инженеры-системотехники, медицинские работники высокой квалификации) нередко предпочитают искать более конкурентную оплату труда вне МО РФ.

- Молодые выпускники профильных вузов, попадая в систему с низким окладом, зачастую рассматривают работу в военных организациях как временный этап, ожидая предложений из коммерческого сектора.

- В условиях, когда «премия» становится лишь способом доведения зарплаты до МРОТ, теряется стимул к проявлению инициативы или профессиональному росту: сотрудник не видит, что результативность или дополнительная нагрузка будет вознаграждена сверх «обязательного минимума».

4. Формальное и реальное стимулирование

На бумаге Приказ № 595 действительно содержит ряд норм, которые можно расценивать как попытку дифференцировать сотрудников по степени вклада и квалификации (надбавки за сложность, интенсивность, качество). Однако их реальная эффективность сомнительна, поскольку:

- преобладающий объём стимулирующих выплат в рамках действующей системы оплаты труда направляется не на дифференцированное вознаграждение за трудовую инициативу и результативность, а на компенсацию дефицита базовой заработной платы. Такая практика подменяет суть системы стимулирования, формируя лишь формальное соответствие установленному законодательством уровню минимальной оплаты труда, тем самым снижая эффективность мотивационного механизма в целом;

- при формировании премиального фонда исходят из «экономии на вакантных ставках» - это порождает дисбаланс нагрузки между наличным персоналом и повышает риск «выгорания»;

- корпоративная культура в подразделениях нередко страдает из-за восприятия премий не как вознаграждения за выдающиеся результаты, а как способа обеспечить «законную» выплату до уровня МРОТ.

Обсуждение (Интерпретация результатов)

Выявленные несоответствия между декларируемыми принципами и фактической практикой говорят о том, что Приказ № 595 отражает в целом позитивную тенденцию к систематизации оплаты труда, но не решает коренную проблему чрезвычайно низкого уровня базовых окладов для большинства должностей гражданского персонала. В такой ситуации любые надбавки и премии утрачивают свой непосредственный стимулирующий смысл: они воспринимаются работниками как «обязательная» часть зарплаты, не зависящая от их реального вклада.

Данное противоречие выходит за рамки исключительно внутреннего вопроса кадровой политики МО РФ. Оно затрагивает взаимоотношения между государством и работниками бюджетной сферы, так как уровень оплаты труда в МО РФ должен быть сопоставим с рыночными предложениями для аналогичных профессий. В противном случае военные учреждения будут вынуждены сталкиваться с дефицитом квалифицированных кадров, а также терять уже имеющихся сотрудников, не удовлетворённых уровнем и прозрачностью оплаты.

Отмечается наличие явления, условно обозначаемого как «псевдостимулирование», при котором механизм премирования утрачивает своё исходное назначение - поощрение за высокую производительность, инициативу и внедрение инновационных решений. Вместо этого средства, предназначенные для стимулирования, фактически перераспределяются с целью компенсации разрыва между низким базовым окладом и установленным минимальным уровнем оплаты труда. Подобная подмена функций премиального фонда особенно негативно сказывается на подразделениях, где необходимы дефицитные квалификации и специфические компетенции, включая специалистов в области медицины и информационной безопасности.

Заключение

1. Низкие базовые оклады в рамках Приказа № 595 вынуждают использовать стимулирующие выплаты для достижения уровня МРОТ, а не для поощрения высококвалифицированного или инициативного труда.

2. Ограниченная эффективность премирования: надбавки и премии перестают быть настоящим стимулом, так как большая часть сотрудников не выходит за рамки «минимального» уровня оплаты.

3. Нестабильность заработной платы: доля переменных выплат нередко превышает половину общего дохода сотрудника, что формирует непредсказуемость заработка и не повышает лояльность работников.

4. Риск кадрового дефицита: особенно в специализациях, актуальных на рынке, где работники могут найти более конкурентоспособные предложения.

Практическая значимость исследования заключается в формировании рекомендаций по корректировке структуры оплаты труда: повышение базовых окладов, пересмотр системы формирования премиального фонда, внедрение прозрачных критериев квалификационной дифференциации.

Научная новизна состоит в комплексном рассмотрении Приказа № 595 как инструмента государственной кадровой политики, сочетающего экономические, правовые и социальные аспекты.

Рекомендации

1. Пересмотр базовых окладов. Для ключевых категорий гражданских работников (инженеры, медицинский персонал, технические специалисты) следует установить уровень окладов, позволяющий привлечь и удержать квалифицированные кадры без необходимости «дотягивать» до МРОТ за счёт премий.

2. Прозрачные механизмы стимулирования. Разработать чёткие критерии и методики оценки эффективности, чтобы премиальные выплаты зависели от реального вклада сотрудника и достигнутых результатов, а не выполняли «страховочную» функцию.

3. Дифференциация по регионам. Учитывать различия в уровне жизни и стоимости труда в разных субъектах РФ. Действующая система региональных надбавок, как показывает практика, зачастую недостаточна, и её методологию нужно совершенствовать.

4. Переход к долгосрочным программам развития. Дополнить систему оплаты труда мерами по профессиональному росту и развитию персонала (повышение квалификации, карьерные лифты, научные и технические гранты), чтобы гарантировать сотрудникам материальное и профессиональное вознаграждение за дополнительные достижения.

Направления дальнейших исследований

- Анализ эффективности конкретных проектов повышения заработных плат, реализация которых может проводиться в качестве пилотных в отдельных воинских частях.

- Социологические исследования уровня удовлетворённости гражданских работников МО РФ, а также факторов, влияющих на их текучесть и выбор места работы.

В целом, Приказ № 595 в его текущем виде закладывает формальные основы единой системы оплаты труда гражданского персонала, однако не решает фундаментальную проблему низких окладов и, как следствие, необходимости «аварийного» использования премий для обеспечения минимально допустимого уровня зарплаты. Это негативно отражается на мотивации, стабильности кадрового состава и эффективности работы военных учреждений. Глубокая модернизация приказа с учётом современных условий рынка труда и социально-экономических реалий представляется насущной задачей, от решения которой напрямую зависит качество функционирования оборонной сферы РФ.

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К ВОПРОСУ О ФОРМИРОВАНИИ МУНИЦИПАЛЬНОГО СТРОИТЕЛЬНОГО КОМПЛЕКСА

***Аннотация:** В статье рассмотрены вопросы становления строительного бизнеса взаимоотношения, с государственной власти и формирование муниципального строительного комплекса. На сложность этих отношений влияет и сложная экономическая обстановка в стране, и цифровизация общества, регламент ценовой политики. Таким образом, значительная часть строительного бизнеса приобретает «закрытый» от гражданского общества производственный процесс, превращается в корпоративное, монопольное, монологическое хозяйство, используемое в растущем противоречии с интересами и потребностями как органов власти, так и институтов гражданского общества.*

***Ключевые слова:** субъекты строительного процесса, муниципальная власть, строительный комплекс, особенности эффективного управления в строительстве*

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ON THE QUESTION OF FORMING A MUNICIPAL CONSTRUCTION COMPLEX

***Abstract:** The article examines the issues of the formation of the construction business, relationships with government authorities and the formation of a municipal construction complex. The complexity of these relations is influenced by the difficult economic situation in the country, the digitalization of society, and the regulation of pricing policy. Thus, a significant part of the construction business acquires a production process "closed" from civil society, turns into a corporate, monopolistic, monologue economy used in growing contradiction with the interests and needs of both government bodies and civil society institutions.*

***Keywords:** subjects of the construction process, municipal authorities, construction complex, features of effective management in construction*

Строительство – одна из ведущих отраслей народного хозяйства России, где решаются жизненно важные задачи структурной перестройки материальной базы всего производственного потенциала страны и развития непроизводственной сферы. От эффективности функционирования строительного комплекса во многом зависят как темпы выхода из кризиса, так и конкурентоспособность отечественной экономики [16].

Строительство представляет собой отдельную самостоятельную отрасль экономики страны, которая предназначена для ввода в действие новых, а также реконструкции, расширения, ремонта и технического перевооружения действующих объектов производственного и непроизводственного назначения. Определяющая роль отрасли строительство заключается в создании условий для динамичного развития экономики страны.

Строительный комплекс сегодня – это множество самостоятельно хозяйствующих субъектов, обладающих своими специфическими особенностями и не связанных с системными целями. В рамках недостаточно развитого строительного рынка, при отсутствии нормальной конкуренции, когда подавляющая часть строительных подрядов получается, минуя тендеры (торги), не происходит никакого естественного при совершенной конкуренции выравнивания условий функционирования и общественных требований к подрядчикам. Это определяет существенные как региональные, так и внутрирегиональные различия в уровнях цен, обязательствах сторон и других факторов [13].

Функционирование и все преобразования строительного комплекса объективно происходят в реальных временных интервалах. Можно выделить следующие пять качественно разных состояний:

- 1 состояние - доперестроечное (до 1988-1990гг.);
- 2 состояние - переходное, неустойчивое (1990-1994гг.);
- 3 состояние - нецивилизованно-рыночное (1994-2001 гг.);
- 4 состояние - цивилизованно-рыночное (2001-2008 гг.);
- 5 состояние - посткатастрофическое (2008-2029). [10]

Невероятно трудные преобразования в строительном комплексе были осложнены общим кризисным состоянием отечественной экономики, спадом инвестиционной деятельности, высокими темпами инфляции, кризисом неплатежей и т.д. Сокращение более чем в 3 раза спроса на продукцию, инфляция, съедающая оборотные средства, порочная амортизационная политика и многое другое предопределили состояние производственного аппарата отрасли, уровень занятости и направленность действий хозяйствующих субъектов в этой сфере[11].

Нынешнее состояние - третья позиция - характеризуется, с одной стороны, началом преобладания негосударственных форм собственности в строительном комплексе, а с другой - отсутствием действительной конкуренции на строительном рынке.

Структура и мощности строительного комплекса как одной из важнейших отраслей городского хозяйства зависят от типа и размера муниципального образования. Минимально необходимый местный строительный комплекс может включать [11]:

- предприятия по добыче местных строительных материалов (песок, гравий, щебень);
- производство строительного бетона, кирпича, асфальта и т.д.;
- предприятия механизации и транспорта;
- организации, осуществляющие строительные, монтажные и иные работы.

Многоотраслевой строительный комплекс существует лишь в крупных муниципальных образованиях. Строительство как технологический процесс сопровождается инвестиционным процессом поэтапного вложения денежных средств. Поэтому строительство можно рассматривать как инвестиционно-строительный процесс. В этом процессе на территории муниципального образования задействован большой круг субъектов. Часть из них непосредственно участвует в строительном процессе, другая – формирует обслуживающую инфраструктуру, напрямую или косвенно участвующую в создании строительной продукции. Муниципальное образование является пользователем объектов строительной деятельности, а при осуществлении строительства за счет бюджетных средств выступает также в роли инвестора и заказчика.

Капитальное строительство – совокупность всех видов деятельности, обеспечивающая осуществление инвестиционного процесса от предпроектной стадии до ввода объекта в эксплуатацию. В состав этой отрасли входят организации, выполняющие строительные и монтажные работы по возведению новых зданий, сооружений и других объектов народного хозяйства, расширению, техническому перевооружению и реконструкции действующих предприятий, проектно-изыскательские организации, обслуживающие строительство, также как и органы управления, министерства, ведомства и т. д. Сложность изучения экономических аспектов капитального строительства заключается в многообразии организационных и хозяйственных форм процесса строительного производства, большом количестве участников, имеющих различные функциональные цели и задачи, существенной зависимости процесса строительного производства от естественных природных условий.

В процессе строительного производства участвуют инвестор – заказчик – проектировщик – подрядчик – специализированные строительные организации [16].

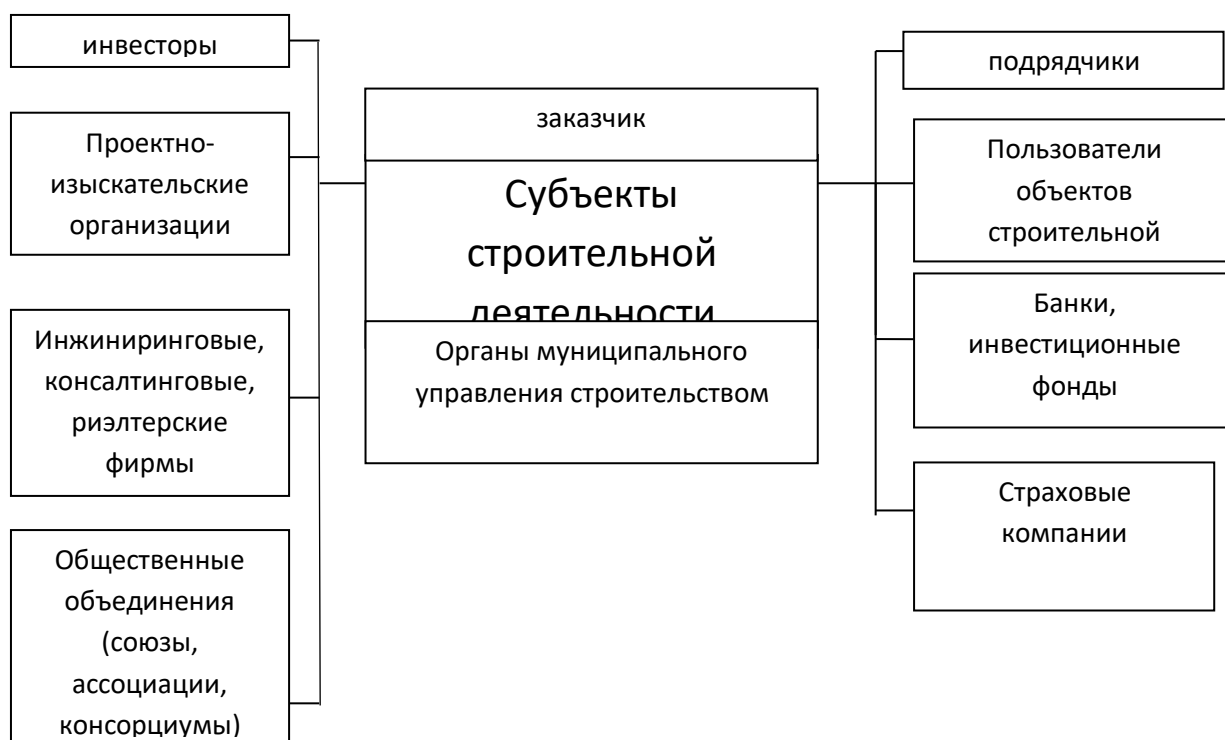


Рисунок 1 - Субъекты строительного процесса на территории муниципального образования

В роли подрядчиков отдельных этапов строительной деятельности выступают научно-исследовательские, проектно-изыскательские, строительные, монтажные и иные организации, поставщики оборудования, строительных материалов и конструкций, пуско-наладочные и другие организации, участвующие в инвестиционном процессе. Из числа подрядных организаций заказчиком назначается генеральный подрядчик, ответственный за организацию строительного процесса и сдачу в эксплуатацию законченного строительного объекта. Генподрядчик привлекает для выполнения отдельных видов строительных, монтажных и иных работ субподрядные организации. Подрядчики могут располагаться как на территории муниципального образования, так и за его пределами, особенно субподрядные организации, специализированные на отдельных видах работ. Технологическое и иное сложное оборудование для строящегося объекта обычно заказывается и поставляется на строительную площадку непосредственно заказчиком строительства, однако он может поручить эту работу генподрядчику [12].

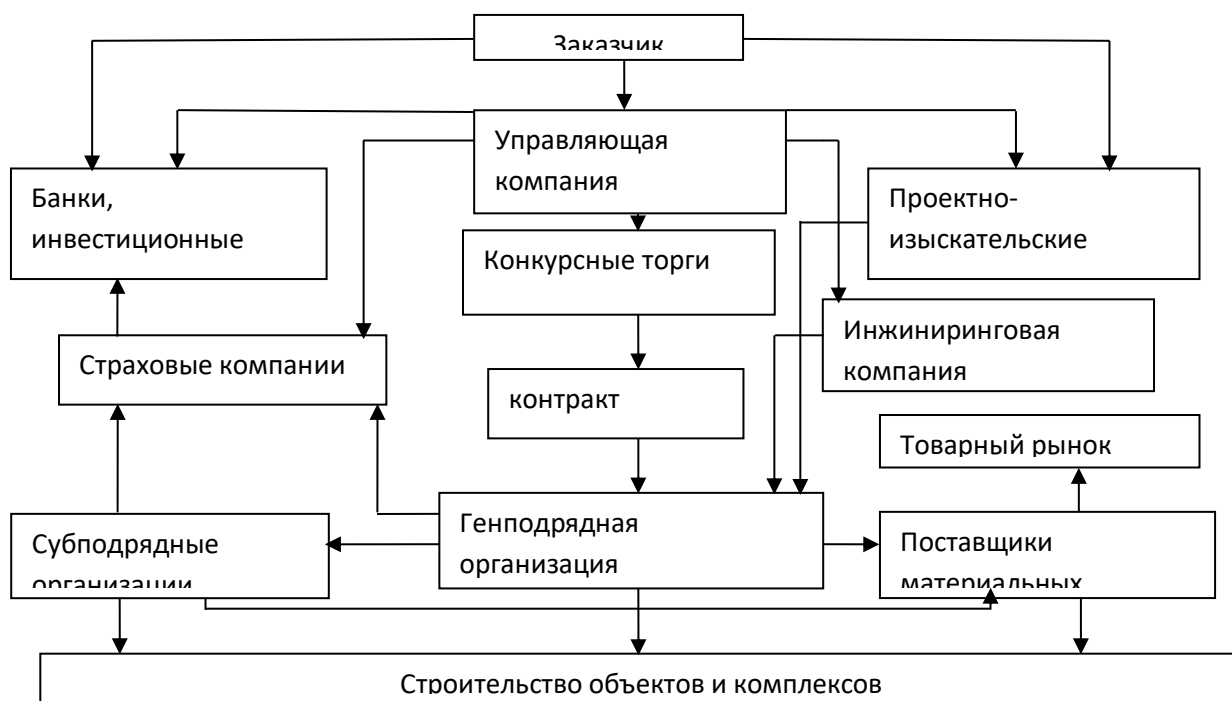


Рисунок 2 - Схема взаимодействия участников строительного процесса

Кроме этих непосредственных участников строительного процесса в создании строительной продукции участвуют десятки заводов-изготовителей технологического оборудования, строительных машин и материалов. В связи с таким большим числом участников можно утверждать, что процесс строительного производства формируется под влиянием большого количества организационных факторов. Преобразование системы управления, совершенствование её означает, в первую очередь, изменение организационных отношений и, соответственно, организационных форм управления.

С учетом особо важной роли проектной стадии в строительном процессе проектно-изыскательские организации выделяются в качестве отдельного участника этого процесса. Из числа проектных организаций заказчиком назначается генеральный проектировщик. Ответственный за разработку проекта в целом. Он привлекает для выполнения отдельных видов работ субподрядные специализированные проектные и изыскательские организации.

Для координации инвестиционного процесса на территории муниципального образования местная администрация создает орган капитального строительства (отдел, управление).

Федеральный закон 2003 г. относит к компетенции поселений и городских округов организацию строительства муниципального жилищного фонда и создание условий для жилищного строительства. К компетенции муниципальных образований всех типов отнесено строительство автомобильных дорог и сооружений на них на соответствующих территориях.

Фактически под контролем органов местного самоуправления находятся не только жилищное и дорожное строительство, но и строительство промышленных объектов коммунального хозяйства, потребительского рынка, социальной сферы, инженерных коммуникаций [4].

Подотрасль жилищного строительства в настоящее время представлена, с одной стороны, сохранившими свой производственный потенциал крупными комплексными подрядными строительными организациями, ведущими многоэтажное строительство, с другой стороны, средними и малыми строительными фирмами, специализирующимися на малоэтажном индивидуальном строительстве.

Крупные строительные организации и были созданы в результате приватизации бывших государственных строительных организаций. Они выполняют на условиях подряда весь комплекс строительно-монтажных и отделочных работ, имея в своем составе специализированные строительные и транспортные подразделения, подразделения строительной техники и предприятия стройиндустрии.

Средние и малые строительные фирмы, как правило, образовались в период экономических реформ в форме закрытых акционерных обществ и обществ с ограниченной ответственностью (ООО). Для обеспечения своей деятельности они в значительной степени используют подрядные отношения с крупными строительными организациями [5].

Важной особенностью современного жилищного строительства является использование новых современных технологий и отделочных материалов. Для предприятий стройиндустрии характерно использование зарубежных технологий и материалов, обеспечивающих требования современного рынка жилья к качеству и ассортименту строительных изделий и полуфабрикатов.

Таким образом, к основным технологическим этапам строительной деятельности относятся: проектный этап: проведение инженерных изысканий, разработка, согласование, экспертиза и утверждение проектно-сметной документации; собственно капитальное строительство; приемка законченных объектов в эксплуатацию.

В статье, было рассмотрено несколько определений понятия «строительный комплекс», уточнены принципы и методы его функционирования. Была дана характеристика строительного комплекса как системы, определена его глобальная цель (воспроизводство основных фондов). Рассмотренный комплекс включает в себя три основных уровня (институциональный, хозяйственный и производственный), обладает особенностями своей деятельности, своими методами управления. Кроме того, были рассмотрены точки зрения различных авторов по вопросу выявления факторов, препятствующих и способствующих управлению строительным комплексом.

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СОВЕРШЕНСТВОВАНИЕ ВЗАИМОДЕЙСТВИЯ УЧАСТНИКОВ ВЭД С ТАМОЖЕННЫМИ ОРГАНАМИ ПРИ ПОМОЩИ ТАМОЖЕННОГО ПРЕДСТАВИТЕЛЯ

***Аннотация:** В статье рассматривается правовая и организационная роль таможенных представителей, их влияние на упрощение и ускорение таможенных процедур, а также снижение административной и финансовой нагрузки на участников ВЭД. Исследование опирается на анализ действующего законодательства РФ, нормативно-правовой базы, регулирующей работу таможенных представителей, и современных подходов к организации таможенного администрирования. Приведены ключевые аспекты взаимодействия между таможенными органами, представителями и бизнесом, а также даны рекомендации по совершенствованию механизмов данного взаимодействия.*

***Ключевые слова:** таможенные представители, внешнеэкономическая деятельность, таможенные органы, логистика, оптимизация таможенных процедур, упрощение взаимодействия.*

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IMPROVING THE INTERACTION OF FOREIGN ECONOMIC ACTIVITY PARTICIPANTS WITH CUSTOMS AUTHORITIES WITH THE HELP OF A CUSTOMS REPRESENTATIVE

Abstract: *The paper examines the legal and organizational roles of customs representatives, their influence in simplifying and expediting customs procedures, and reducing administrative and financial burdens for FEA participants. The study is based on an analysis of Russian legislation, the regulatory framework governing customs representatives, and modern approaches to customs administration. Key aspects of interactions between customs authorities, representatives, and businesses are provided, along with recommendations for improving these mechanisms.*

Keywords: *customs representatives, foreign economic activity, customs authorities, logistics, customs procedures optimization, interaction improvement.*

Современная внешнеэкономическая деятельность (ВЭД) представляет собой сложную и многоуровневую систему взаимосвязей между государствами, бизнесом и регулируемыми структурами. Таможенная политика, играя ключевую роль в упрощении международной торговли, оказывает значительное влияние на темпы экономического роста и инвестиционную привлекательность стран. Однако изменчивость таможенного законодательства, рост транспортных объемов и необходимость строгого соблюдения нормативных требований создают значительные трудности для бизнеса.

Важным звеном в построении взаимодействия между участниками ВЭД и таможенными органами оказываются таможенные представители — посредники, которые обеспечивают юридическое, административное и техническое сопровождение таможенных операций. Их деятельность направлена на снижение рисков, связанных с неправильным оформлением документов, несоблюдением сроков декларирования и другими факторами, которые могут затруднить международные поставки.

В данной статье изучаются механизмы участия таможенных представителей в процессах ВЭД. Особое внимание уделяется их роли в оптимизации таможенных процедур, минимизации времени на обработку грузов и снижении затрат участников ВЭД. Исследование направлено на выявление существующих проблем взаимодействия и разработку рекомендаций для повышения эффективности использования института таможенных представителей.

Таможенные представители играют важную роль в процессе оптимизации взаимодействия между участниками ВЭД и таможенными органами. Согласно Таможенному кодексу Евразийского экономического союза (ТК ЕАЭС), таможенный представитель — это юридическое лицо, которое на основании договорных обязательств оказывает услуги по непосредственному взаимодействию с таможенными органами от имени декларантов или иных заинтересованных лиц. Таможенный представитель не только облегчает грузооборот через границу, но и способствует снижению времени и затрат на соответствующие процедуры [1].

Основные функции таможенных представителей включают:

- правильное представление таможенной декларации, контроль корректности заполнения документов;
- предотвращение ошибок, связанных с классификацией товаров, расчётом таможенных платежей;
- сопровождение клиента в процессе прохождения таможенного контроля;
- консультирование по вопросам изменения таможенного законодательства;
- предоставление гарантии соблюдения установленных нормативов.

За счёт высокой компетенции и обширного опыта таможенные представители эффективно решают задачи, связанные с динамикой внешнеэкономических операций. В условиях сложных и часто меняющихся нормативно-правовых условий их услуги становятся востребованными как у крупных корпораций, так и у малого и среднего бизнеса.

Несмотря на очевидные преимущества, существующая система взаимодействия с таможенными органами содержит ряд проблем. Основные из них включают:

- Сложность и объём бюрократических процедур. Даже при взаимодействии через представителя участники ВЭД сталкиваются с перегруженностью действующих регламентов. Это обусловлено как многообразием форм отчётности, так и неравномерным применением законодательства в различных таможенных органах.
- Недостаточная цифровизация процессов. Несмотря на активное внедрение информационных технологий в таможенное администрирование, некоторые процедуры остаются недостаточно автоматизированными. Это приводит к риску замедления операций, особенно при обмене документами между разными органами [3].
- Ограничение финансовых ресурсов у малого бизнеса. Услуги таможенных представителей часто недоступны для малых компаний, что накладывает на них дополнительное бремя самостоятельного взаимодействия с таможней.
- Квалификационная подготовка. Уровень компетенции таможенных представителей может варьироваться, что иногда приводит к ошибкам в декларации и другим нарушениям.

Эти проблемы подчеркивают необходимость совершенствования системы не только со стороны государственных органов, но и на уровне участников ВЭД.

Для улучшения взаимодействия ВЭД-участников с таможенными органами через таможенного представителя целесообразно внедрить следующие меры:

1. Дальнейшая цифровизация таможенных операций. Внедрение электронных платформ, интеграция общедоступных баз данных и реализация

проектов таможенного "единого окна" способны минимизировать роль бумажной документации и сократить время на проведение процедур.

2. Повышение квалификации таможенных представителей. Организация курсов дополнительного обучения для представителей, с упором на изменения в законодательстве, развитие навыков работы с информационными системами и применение практических кейсов.

3. Разработка индивидуальных решений для малого бизнеса. Государство может предусмотреть субсидирование услуг таможенных представителей для отдельных категорий предпринимателей, что облегчит их интеграцию во внешнеэкономическую деятельность.

4. Создание конструктивного диалога между бизнесом и государством [2]. Регулярное проведение встреч представителей ВЭД, таможни и таможенных представителей позволит устранить многие разночтения в интерпретации таможенных норм.

Таможенные представители как институт играют важную роль в современном регулировании таможенных процедур. Они выступают ключевым звеном в организации логистических цепей, оказывая значительное влияние на скорость и эффективность внешнеэкономических операций. Однако существующие проблемы, такие как недостаточная цифровизация и ограничения доступа некоторых категорий бизнеса к их услугам, требуют принятия соответствующих мер.

Таким образом, внедрение цифровых решений, развитие компетенций представителей и создание благоприятных условий для бизнеса могут существенно улучшить взаимодействие в системе "участник ВЭД — таможня". Комплексная адаптация этих мер станет важным шагом для повышения конкурентоспособности российских компаний на международных рынках и обеспечения их устойчивого развития.

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АНТИЧНАЯ МЕБЕЛЬ, СОЗДАННАЯ С ИСПОЛЬЗОВАНИЕМ БИОНИЧЕСКИХ ФОРМ

Аннотация: В данной статье рассматривается влияние и закономерности бионических форм на мебель древности. В статье анализируется мебель Древнего Египта, Греции, Рима, Японии, Индии, Китая и исламских государств.

Ключевые слова: Закономерность, форма, природа, элемент, мастер, устойчивость, конструкции, животных, эстетика, развития, интерьер.

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ANTIQU FURNITURE CREATED USING BIONIC SHAPES

Annotation: This article examines the influence and patterns of bionic shapes on ancient furniture. The article analyzes the furniture of Ancient Egypt, Greece, Rome, Japan, India, China and Islamic states.

Keywords: Regularity, form, nature, element, master, stability, constructions, animals, aesthetics, development, interior.

Античная мебель, созданная с использованием бионических форм, представляет собой уникальное сочетание эстетики, функциональности и природных закономерностей, воплощённых в материальной культуре древних цивилизаций. Исследование данной темы позволяет выявить особенности конструирования предметов интерьера, основанные на принципах естественной морфологии, что демонстрирует глубокое понимание древними мастерами законов природы и их адаптацию в материальном производстве.

Античный период охватывает широкий временной диапазон, начиная от ранних образцов мебели Древнего Египта и завершая шедеврами римских мастеров, что даёт возможность рассмотреть эволюцию конструктивных решений в их естественном развитии.

Анализ мебели этого периода с точки зрения бионики позволяет проследить, как естественные формы, структуры и принципы организации,

свойственные живым организмам, находили отражение в мебели античного мира, обеспечивая её эргономичность, долговечность и эстетическую выразительность. Основными принципами бионического проектирования являются адаптация природных структур, экономия материалов, повышение прочности конструкций и улучшение эксплуатационных характеристик.

В античности мастера часто прибегали к использованию природных форм и пропорций, что проявлялось в геометрии, орнаментике и конструктивных решениях мебели. Одним из наиболее ярких примеров бионических принципов в античной мебели является использование колонн и ножек мебели, стилизованных под форму стволов деревьев, лап животных или других природных объектов. Древнеегипетские мастера создавали кресла и ложи с ножками в форме лап львов, быков и других животных, что символизировало силу и могущество. В Древней Греции наблюдалось стремление к гармонии и пропорциям, основанным на математических закономерностях, таких как золотое сечение. Греческие мастера использовали в оформлении мебели мотивы растений, виноградной лозы, аканфа, что создавало органичную связь между человеком и природой.

Древнеримская мебель, в свою очередь, отличалась практичностью и массивностью, но также содержала элементы бионического дизайна, выраженные в декоративных элементах, вдохновлённых живой природой. Исследование конструктивных и декоративных особенностей античной мебели с точки зрения бионических закономерностей показывает, что использование природных форм было не только художественным приёмом, но и способом оптимизации функциональных характеристик предметов обихода.

Бионические формы обеспечивали равномерное распределение нагрузки, увеличивали устойчивость конструкций, а также способствовали эргономичности мебели. Например, изогнутые спинки кресел и сидений повторяли анатомические контуры человеческого тела, что повышало комфортность использования.



1 рис. Мебель древних народов.

Применение бионических принципов в античной мебели можно рассматривать как раннюю форму биометрики, когда мастера, не обладая современными научными знаниями, интуитивно следовали природным закономерностям, воплощая их в материальном производстве. Это позволяет утверждать, что бионика как принцип дизайна существовала задолго до её формального осознания и систематизации в XX веке. Таким образом, античная мебель, созданная с использованием бионических форм, является ярким примером органичного взаимодействия искусства, техники и природных закономерностей. Она демонстрирует, как древние мастера, вдохновляясь природными структурами, создавали предметы, обладающие не только высокой эстетической ценностью, но и оптимальными эксплуатационными характеристиками.

Влияние бионической мебели в антике представляет собой сложный феномен, который отражает взаимодействие природы и человеческого ремесла в процессе создания предметов обихода. Бионика как метод проектирования, основанный на изучении природных форм и структур, проявлялась в античности в различных аспектах мебели, что свидетельствует о глубоком понимании древними мастерами принципов гармонии, функциональности и эргономики.

Применение бионических закономерностей в мебельном производстве древности можно рассматривать как предшественник современных концепций устойчивого дизайна и инновационных решений. Античная мебель, созданная с учетом природных форм, демонстрирует не только эстетическую привлекательность, но и высокую степень практичности, что особенно заметно в артефактах Древнего Египта, Греции и Рима.

В Древнем Египте мебельные конструкции основывались на принципах

устойчивости, заимствованных у природы. Одним из наиболее распространенных примеров является использование ножек мебели в форме лап животных, что обеспечивало не только эстетическую выразительность, но и повышенную стабильность изделий. Египетские мастера активно применяли бионические элементы, подражая природным линиям и структурным особенностям окружающей среды.

Львиные лапы, загнутые спинки стульев, имитирующие силуэты растений, а также резные элементы, отражающие формы папируса и лотоса, свидетельствуют о высоком уровне понимания природных принципов устойчивости и красоты. Эти конструкции сочетали в себе функциональность и символическое значение, что подчеркивало культовое и социальное положение их владельцев.



Рис 2. Производство мебели в древнем Египте: стулья и сундук.

Древнегреческая мебель также демонстрирует влияние бионических закономерностей, особенно в формах кресел, лож и столов. Принципы пропорциональности, основанные на золотом сечении и симметрии, восходят к природным закономерностям роста и развития живых организмов. Клепсидры и кифары, использовавшиеся в оформлении мебели, повторяли формы морских раковин и растений, что способствовало созданию гармоничных конструкций.

Греческие мастера активно использовали принципы биометрики, что проявлялось в точном воспроизведении анатомических особенностей животных и человека. Ножки столов и кресел часто оформлялись в виде копыт или лап зверей, что не только придавало мебели изящество, но и увеличивало ее устойчивость. Древнегреческие мастера, опираясь на наблюдение за природой, интуитивно использовали бионические формы для повышения

функциональности и комфорта мебели, создавая уникальные образцы, которые остаются актуальными до сих пор.

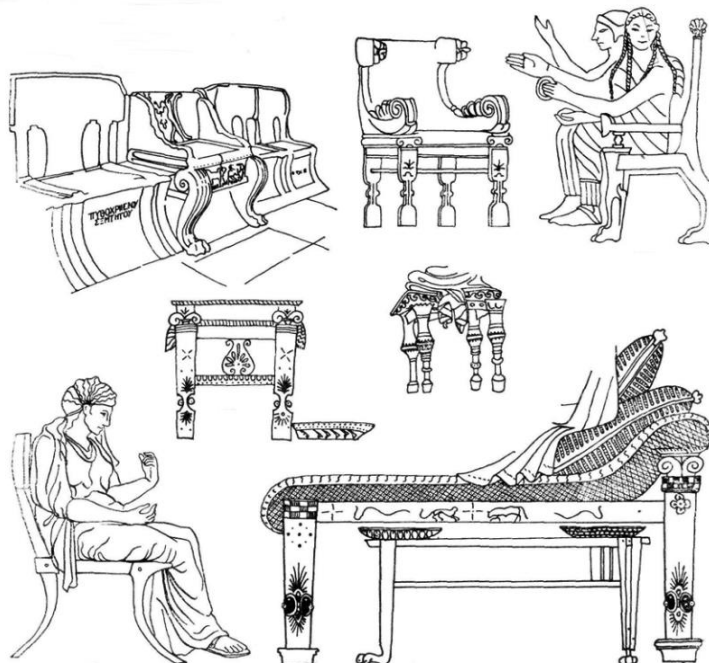


Рис 3. Мебель древней Греции.

В Римской империи бионические принципы проектирования мебели достигли своего расцвета. Римские мастера, черпая вдохновение в природе, создавали изысканные предметы интерьера, сочетавшие в себе инженерные достижения и художественную выразительность. Кроме того, римские мастера применяли сложные технологии обработки древесины, металла и камня, опираясь на естественные принципы роста и развития материалов. Это позволило создать прочные и долговечные конструкции, устойчивые к внешним воздействиям. Развитие римской мебели демонстрирует не только совершенствование эстетики, но и глубокое понимание бионических принципов, что позволило древним мастерам разрабатывать уникальные инженерные решения, многие из которых до сих пор применяются в современном дизайне.

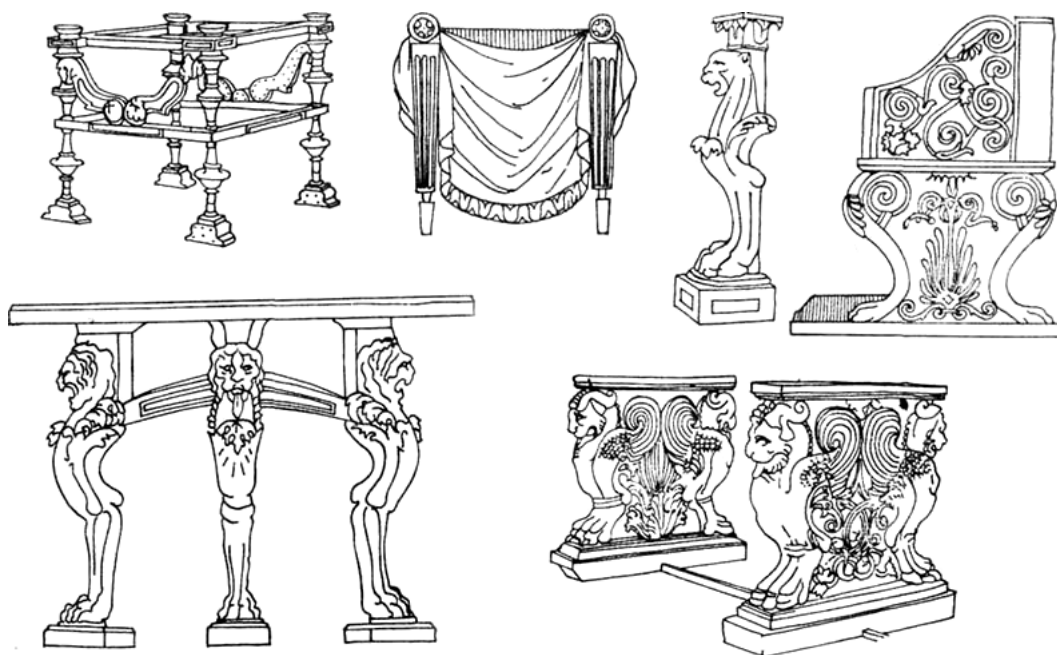


Рис 4. Древнеримская мебель.

Таким образом, влияние бионической мебели в антике прослеживается через все этапы развития древних цивилизаций. Древние мастера интуитивно использовали принципы бионики, вдохновляясь природными формами, что позволило создавать функциональные и эстетически выразительные предметы интерьера. Эти принципы проектирования нашли свое отражение в различных культурах, начиная от Древнего Египта и заканчивая Римской империей, что свидетельствует о глубоком понимании законов природы и стремлении человека к гармонии с окружающим миром.

Влияние бионических форм на мебель в древней Азии прослеживается через множество культурных и художественных традиций, отражающих тесную связь человека с природой. Бионические формы, основанные на структурных и эстетических принципах живых организмов, активно использовались в мебельном дизайне, что обусловлено философскими и религиозными представлениями того времени. В китайской традиции мебельные формы вдохновлялись природными элементами, такими как изгибы бамбука и контуры ветвей деревьев.

Древнекитайские мастера создавали конструкции, напоминающие силуэты растений и животных, придавая мебели органичность и гармонию. Одним из характерных примеров является стиль Мин, в котором использовались изящные линии и природные мотивы, обеспечивавшие не только эстетическую привлекательность, но и функциональность предметов интерьера.

В Японии бионические формы нашли отражение в минимализме и адаптивности мебели. Вдохновение черпалось из природных явлений, таких

как волны, листья и камни, что выражалось в мягких, текучих линиях мебели. Традиционные японские изделия, включая татами, низкие столики и складные экраны, следовали принципам естественности, легкости и трансформации, позволяя мебели интегрироваться в окружающую среду. В Индии влияние бионических форм прослеживается в использовании мотивов флоры и фауны в резьбе и декоре мебели. Древнеиндийские мастера черпали вдохновение в природных формах, создавая сложные орнаменты, имитирующие лианы, цветочные узоры и тела животных. Такой подход не только подчеркивал декоративность мебели, но и передавал символическое значение, связывая предметы быта с религиозными и мифологическими концепциями.

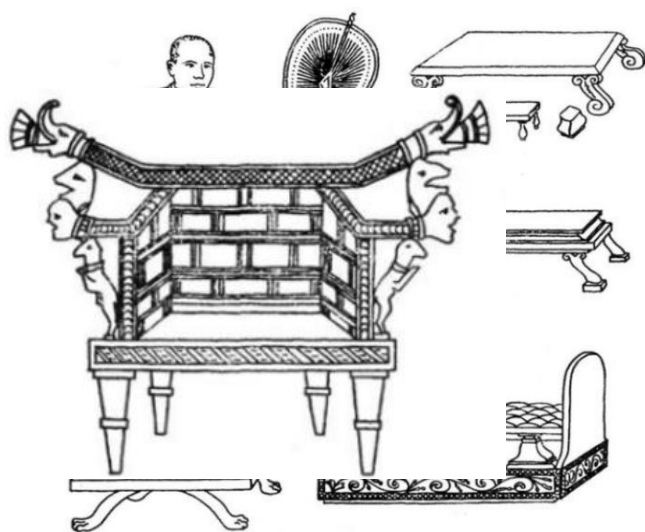


Рис 5. Древнеиндийская мебель.

В исламской традиции, распространенной в Средней Азии, бионические формы проявлялись в геометризированных интерпретациях природных мотивов. Резные деревянные панели, арочные элементы и декоративные вставки часто основывались на структурных закономерностях растений и животных, трансформированных в сложные узоры. Такой стиль обеспечивал баланс между математической точностью и природной гармонией.

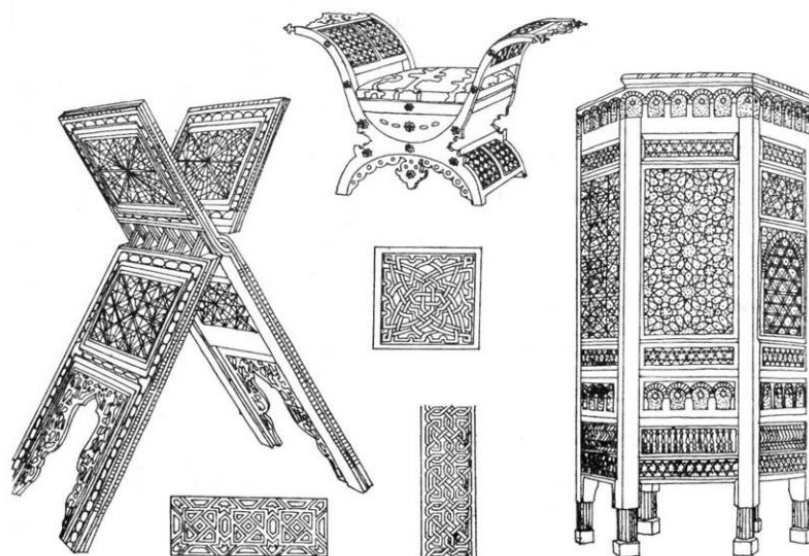


Рис 6. Древне исламская мебель.

В целом бионические формы в мебели древней Азии демонстрируют глубокую связь с природой, отражая как эстетические, так и функциональные принципы. Они способствовали формированию устойчивых традиций мебельного искусства, основанных на адаптации естественных структур и материалов к бытовым и культурным потребностям общества. Исследование бионических закономерностей в мебели древних цивилизаций Азии позволяет глубже понять эволюцию дизайнерских решений и их актуальность в современном проектировании интерьеров.

Античная мебель, созданная с учетом бионических закономерностей, не только удовлетворяла функциональные потребности, но и служила символом статуса, эстетических предпочтений и философских воззрений своего времени. Анализируя влияние бионической мебели в антике, можно сделать вывод о том, что принципы, заложенные древними мастерами, продолжают оказывать влияние на современный дизайн и архитектуру, доказывая, что бионика остается актуальным направлением в проектировании мебели и интерьеров.

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ДИДАКТИЧЕСКИЙ МАТЕРИАЛ ПРИ ОБУЧЕНИИ УЗБЕКСКОМУ ЯЗЫКУ В ВУЗЕ

Аннотация: в данной статье рассматривается дидактический материал как средство обучения узбекскому языку. Узбекский язык в вузе определяется двумя факторами: предметом обучения и целями обучения. Способности к усвоению учебных предметов неодинаковы. Методическая литература уделяет внимание тематике, связанной с использованием дидактического материала как особый тип учебных пособий.

Ключевые слова: дидактика, дидактический блок, инсценировка, презентация, процесс обучения, узбекский язык.

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DIDACTIC MATERIAL OF TEACHING UZBEK LANGUAGE AT UNIVERSITY

Abstract: this article examines didactic material as a means of teaching the Uzbek language. The Uzbek language at a university is determined by two factors: the subject of study and the goals of study. The ability to master academic subjects is not the same. Methodological literature pays attention to topics related to the use of didactic material as a special type of teaching aids.

Key words: didactics, didactic block, dramatization, presentation, learning process, Uzbek language.

Содержание курса узбекского языка в вузе определяется двумя факторами: предметом обучения и целями обучения. Способности к усвоению разных учебных предметов у студентов неодинаковы: одни легко запоминают теорию, но допускают много орфографических и пунктуационных ошибок; другие – не могут объяснить правильное написание букв. В методической литературе автор уделяет особое внимание тематике, связанной с методикой преподавания с использованием дидактического материала для формирования познавательных универсальных учебных действий [1; 2]. Преодолеть трудности в изучении языка помогают творческие задания, разнообразный дидактический материал, практические работы. Этим и определяется актуальность данной статьи.

Дидактический материал играет огромную роль в процессе обучения узбекскому языку, предупреждения и исправления ошибок. Поэтому использование дидактического материала на всём протяжении изучения узбекского языка очень важно.

Дидактика (от греч. *didaktikós* – поучающий, относящийся к обучению), часть педагогики, разрабатывающая теорию образования и обучения, воспитания в процессе обучения. Термин «дидактика» применялся в педагогических сочинениях уже в 17 в. Я. А. Коменский в «Великой дидактике» разработал важнейшие вопросы дидактики: содержание образования, дидактические принципы и правила наглядности, последовательности, природосообразности и др., организацию классно-урочной системы [4].

Дидактический материал – особый тип учебных пособий, преимущественно наглядных: карты, таблицы, наборы карточек с текстом, цифрами или рисунками, реактивы, растения, животные и т.д., в том числе обеспечивает ментальное представление фактического элемента реальности, но именно с помощью чувств мы в первую очередь приближаемся к реальности. Итак, наиболее полное обучение происходит благодаря контакту с реальностью. Эти ресурсы приближают реальность, а также помогают решить проблемы отсутствия дисциплины и внимания в аудитории. Простейшими дидактическими ресурсами для обучения являются реальные объекты, которые можно использовать несколькими способами: можно написать на них их названия, использовать в качестве источника словарного запаса – улучшая произношение и орфографию, интегрируя их в определенные структуры, такие как локативные предлоги, сравнения и т.д. Также можно практиковать определения с их помощью и оперировать ими: «общая физическая реакция» [3], которая является фундаментальной помощью для легкого усвоения словарного запаса.

Другим распространённым ресурсом является классная доска, которую можно использовать в качестве телепрограммы, записав на ней дату и текущую тему. Важно спланировать то, что планируется написать, прежде чем делать это. Привлечение внимания обучаемых – одна из важнейших задач, и для этой цели учителю следует научиться делать простые рисунки, заметки на доске. Следует избегать написания на ней в течение длительного времени; целесообразно использовать цветной мел, чтобы подчеркнуть любой элемент, на котором нужно сосредоточиться, например, предлоги в предложении. Проектор обладает теми же преимуществами, что и классная доска, и некоторыми другими, такими как представление уже подготовленных слайдов, рисунков, диаграмм. Флэш-карты могут быть чрезвычайно полезны при правильном использовании; карточки со словами, содержащие единственное слово, можно упорядочить для построения предложений и преобразования из утвердительного в отрицательное и вопросительное.

Групповую работу можно проводить с помощью таких мероприятий, как конкурс на написание самого длинного предложения. С другой стороны,

с помощью карточек с картинками рекомендуем практиковать упражнения. Если карты представляют известных персонажей, мы можем практиковать физические описания или играть угадать, кого изображает карта. Они также могут быть использованы для формирования истории или для упорядочивания их в соответствии с ней. Точно так же настенные диаграммы являются полезным визуальным вводом. Одним из самых популярных ресурсов является видео, так как оно является мотивирующей силой, потому что обеспечивает более близкий подход к реальности и поддерживает активность студентов. Представление проекции с помощью предыдущего действия свяжет визуализацию с предыдущим опытом, и можно предложить некоторые упражнения для активного и всестороннего наблюдения, например, разделительный вопрос. Другими контролируемыми лингвистическими практиками могут быть повторение упражнений, попытка предсказать, что произойдет в проекции, драматизация или дублирование диалогов, или способы использования косвенной речи, краткое изложение сюжета или отработка лексики, или определенных лингвистических элементов. Эти методы также могут быть применены при просмотре театральной постановки, хотя обычно их довольно трудно найти. Инсценировки непосредственно вовлекают учеников, повышают их самооценку и заставляют их позитивно относиться к изучению предмета. Они особенно полезны для развития устного общения и отработка четырех навыков. Компьютеры становятся все более популярными благодаря своим исключительным преимуществам: они позволяют взаимодействовать с программой, а процесс обучения индивидуализирован в соответствии со способностями обучаемого. Поскольку это подразумевает активную работу, то в данном случае улучшается усвоение содержания и создает автономное обучение – студенты работают самостоятельно; кроме того, сочетание визуального и звукового движения обеспечивает очень привлекательную презентацию.

Как отмечает В. М. Букатов, работа с компьютером может быть похожа на работу с учебником, но учитель может представить упражнение с определенной задачей и тестом в начале и конце, чтобы проверить предыдущие знания и усвоение [2].

Игры (ролевые, деловые) являются важным элементом обучения, поскольку они представляют реальные коммуникативные ситуации, а не просто симуляцию, и имеют определенные преимущества: они поощряют командную работу и практику всех навыков, творческое использование языка, они развивают коммуникативную компетентность и стимулируют изучение русского языка. Некоторые интересные игры – это игры на слова, экшн-игры, настольные игры и логические задачи.

При подходе к образованию, ориентированному на учащихся, деятельность в аудитории сосредоточена на потребностях студентов, а не на потребностях других участников образовательного процесса. Учитель действует как посредник и проводник, а не в качестве основного источника

информации. Помимо содействия общению со сверстниками, сотрудничеству и активному обучению, ориентированность на учащихся также направлена на превращение их в независимых обучаемых путем создания и развития навыков самомотивации и саморегуляции. Ориентированный на учащихся подход к преподаванию и обучению, часто называемый конструктивистским подходом, утверждает, что знания, вместо того чтобы быть объективными и фиксированными, являются в некоторой степени личными, социальными и культурными. Поэтому студентам следует предоставить навыки обучения во время дидактического процесса, чтобы они могли выработать свой собственный стиль обучения. Основными принципами обучения, ориентированного на обучающихся, являются:

- процесс обучения, являющийся «активным, волевым и внутренне опосредованным»;

- ориентированный на студента подход к преподаванию и обучению учитывает систему убеждений, ценностей, интересов, целей, ожиданий и эмоциональных состояний обучающегося, а также мотивационное влияние – которое может быть положительным или отрицательным – на процесс обучения;

- на обучение влияет внутренняя мотивация учащегося, которая проявляется в вовлеченности, любознательности, энтузиазме в понимании того, что они должны изучать;

- учебные задачи, ориентированные на обучаемых, должны привлекать и стимулировать любознательность, креативность и мышление более высокого порядка;

- социальное и культурное разнообразие рассматриваются как факторы, которые должны поддерживать взаимодействие между учащимися с целью развития навыков межличностного общения;

- предшествующее обучение учащегося действует как когнитивный фильтр, то есть как основа для построения реальности и интерпретации жизненного опыта.

Таким образом, дидактический материал как средство обучения является грамотным помощником продумывания основных этапов урока и методов работы в соответствии с предлагаемой учебником логикой в изложении материала, а также поиском эффективных педагогических условий активизации.

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РОЛЬ ЛАТИНСКОГО ЯЗЫКА ПРИ ФОРМИРОВАНИИ КОММУНИКАТИВНОЙ КОМПЕТЕНЦИИ СТУДЕНТОВ МЕДИЦИНСКОГО ВУЗА

***Аннотация:** в статье описываются некоторые дидактические приемы и методы, применяемые на занятиях по латинскому языку, способствующие повышению эффективности учебного процесса и формированию у студентов мотивации к самообразованию. Кроме того, наглядно демонстрируется эффективное применение студентами полученных навыков анализа иностранных слов — дериватов греко-латинского происхождения.*

***Ключевые слова:** дидактические приёмы, греко-латинские дериваты, словообразовательный анализ, латинский язык.*

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THE ROLE OF LATIN IN THE FORMATION OF COMMUNICATIVE COMPETENCE OF MEDICAL STUDENTS

***Abstract:** The article describes some didactic techniques and methods used in Latin language classes, which contribute to improving the effectiveness of the educational process and creating motivation among students for self-education. In addition, students clearly demonstrate the effective use of the obtained skills of analyzing foreign words — derivatives of Greek-Latin origin.*

***Keywords:** didactic techniques, Greek-Latin derivatives, word-formation analysis, Latin.*

Образование и воспитание специалиста-профессионала своего дела, очень сложный и трудоёмкий процесс. «Образование обеспечивает определённый уровень развития познавательных потребностей и способностей человека, определённый уровень знаний, умений, навыков, его подготовки к тому или иному виду практической деятельности» [1].

Студенты медицинского вуза традиционно изучают латинский язык и медицинскую терминологию. Для них и сегодня являются актуальными древние латинские изречения: «In via est in medicina via sine lingua Latina» — «Непроходим путь в медицине без латинского языка» и «Non enim tam praeclare est scire Latine, quam turpe nescire» — «Не так прекрасно знать

латинский язык, как стыдно его не знать». Многовековое развитие медицинских знаний осуществлялось на латинском языке, впитавшем в себя богатое наследие греческого языка. И в наши дни греко-латинская лексика продолжает служить источником создания интернациональных терминов в различных областях науки, так, например, впервые открытым микроорганизмам, растениям, животным, различным веществам даётся научное определение, созданное на базе греко-латинских лексико-грамматических элементов. Однако, помимо формирования профессиональных знаний, изучение латинского языка также способствует повышению общекультурного уровня студентов, формированию коммуникативных компетенций, развитию мышления. По словам Ю.С. Холманских, «ведущим направлением модернизации современного узбекского образования является компетентностный подход, который предполагает не столько увеличение объема знаний в предметных областях, сколько создание условий для самостоятельного добывания знаний студентами и развития способности применять их в разных ситуациях» [5].

Как утверждает Л.Ф. Ельцова, «обучение латинской грамматике упрощается, если обучаемый знаком с грамматикой русского языка, начертание большинства латинских букв хорошо известно всем, кто изучает иностранный язык, изучение анатомии невозможно без владения латинским языком, так как международная анатомическая номенклатура использует алфавит, фонетику и грамматику латинского языка» [2].

Для преподавателя высшей школы особенно важно выбрать свой стиль организации учебного процесса, который направлен на мотивацию обучающихся, их «погружение» в дисциплину и обеспечение гармоничного перехода к новому виду учебной деятельности. В этой связи усиливается и выходит на первый план роль педагога высшей школы, способного моделировать эффективные стратегии обучения и выбирать оптимальные методы введения в новую учебную дисциплину. Следовательно, при планировании учебной деятельности преподавателю необходимо учитывать временной фактор, творчески подходить к содержанию занятий, максимально опираясь на основные дидактические принципы обучения: научности, доступности, целенаправленности, систематичности и последовательности, наглядности, связи обучения с жизнью, сознательности и активности, прочности, воспитания и развития. Как известно, изучение любого языка начинается с краткого фонетического курса, а именно: знакомство с алфавитом, особенностями чтения и произношения отдельных букв и буквосочетаний.

Процесс усвоения новых лексических единиц начинается уже на первом занятии в ходе знакомства с основными фонетическими и акцентологическими нормами латинского языка, что позволяет оптимизировать работу по активному усвоению лексического материала. Согласно логико-дидактической структуре, которая базируется на обучении по трем ведущим подсистемам медицинской терминологии: анатомо-

гистологической, клинической и фармацевтической, на наш взгляд, уже в упражнения по чтению необходимо включать лексику всех трёх разделов, что позволяет обучающимся в общих чертах сформировать представление о содержании изучаемой дисциплины. В этом случае целесообразно формировать грамотную подборку лексических единиц, которая представляет собой как слова общеупотребительной лексики, так и специальные научные термины.

В процессе чтения студентам предлагается не только воспроизвести то или иное слово, но и подумать о его значении. Без труда переводятся такие термины, как *arteria*, *vena* и т.п. Например, простые немотивированные слова *substantia* (материя), *distantia* (расстояние) легко узнаваемы и переводятся студентами без проблем. При знакомстве с буквосочетанием «*ae* (*aë*)» студентам предлагается перевести термин «*aër*». По аналогии с английским вариантом студенты легко догадываются о значении термина, далее им предлагается назвать известные им производные слова с данным корнем. Список слов, как правило, звучит следующий: аэропорт, аэрозоль, анаэробный, аэробика, аэроплан. Таким образом, уже с первых занятий студенты проводят аналогии с известными общеупотребительными словами, используя словесно-логическое мышление, выстраивают вербальные цепочки однокоренных слов, ведущих своё происхождение от греко-латинских основ.

При изучении способов словообразования в латинском языке можно предлагать студентам найти и выделить латинские суффиксы и приставки в русских словах. Так, например, в слове «кондуктор» студенты видят приставку «кон-» имеющую значение «совместно, вместе», и суффикс «ор» — «агент действия, тот, кто выполняет какое-либо действие». Студенты, обладающие хорошим лингвистическим чутьём, также видят основу «дукт» от лат. «*ducere* — вести, *ductus* — проток». Таким образом, они приходят к общему значению слова — «сопровождающий». Например, в слове «трансфер» студенты находят приставку «транс» — «пере-, через, за пределы» и суффикс «фер» — «несущий что-либо». И выводят общее значение слова — «переносящий что-либо за определённые пределы». Данные задания дают понять студентам значимость латинского языка, понимание того, что и в настоящее время он служит для создания новых слов.

Таким образом, мы приходим к выводу, что для мотивации и активизации познавательной учебной деятельности, важно создать обучающимся условия, при которых они смогут самостоятельно делать выводы, планируя и выстраивая алгоритм изучения той или иной темы, подходят к осмыслению необходимости самообразования. В данной работе к рассмотрению предлагаются некоторые дидактические методы и приёмы, применяемые на практических занятиях по латинскому языку в АГМИ, способы интегративного и личностно-ориентированного подхода к обучению латинской медицинской терминологии, позволяющие наглядно показать студентам влияние латинского языка на формирование словесно-логического мышления, формирование лексикона медика, обогащение словарного запаса

дериватами греко-латинского происхождения. Всё это способствует общекультурному развитию студентов, формированию аналитического мышления, навыков самовоспитания и самообразования, межкультурной коммуникации.

При преподавании дисциплины «Латинский язык» возможно использование различных дидактических приемов и методов. Основными дидактическими принципами обучения при этом являются: принцип визуализации учебного процесса, принцип целенаправленности, связи обучения с жизнью, систематичности и последовательности, доступности, интегративного подхода. Например, активно используется в учебном процессе метод визуализации учебного материала, суть которого заключается в том, что студентам при объяснении нового материала раздаются листы с опорными таблицами и схемами. При таком подходе усвоение нового учебного материала проходит более динамично и эффективно. Этот же самый прием можно использовать при закреплении материала, контроле усвоенных знаний и при обобщении изученного лексико-грамматического материала перед рубежным и итоговым контролем. Данный метод позволяет студентам не отвлекаться от конкретного материала, как при объяснении у доски. Студенту не нужно переводить взгляд от тетради на написанное на доске, его внимание не рассеивается, он не отвлекается на какие-либо внешние раздражители.

В качестве следующего метода, который применяется на занятиях по латинскому языку, можно указать индивидуальные задания на повторение материала в виде тестов или письменных упражнений, при котором используется принцип систематичности и последовательности. Данный метод позволяет чётко и эффективно проконтролировать уровень усвоения изученного материала, для проверки навыков работы с лексико-грамматическим материалом, а также для закрепления нового материала.

На занятиях по теме «Общекультурное значение латинского языка» предлагается использовать «метод круглого стола». В процессе обсуждения студенты высказывают своё мнение об актуальности афоризмов, о современной трактовке античных высказываний, выбирают афоризмы, которые можно использовать в качестве личного жизненного девиза, девиза группы или факультета. Также студенты готовят небольшие сообщения о понравившихся им афоризмах, подбирают к латинским высказываниям похожие по смыслу русские пословицы и поговорки. Одним из неперенных условий для этого вида деятельности является личная заинтересованность студентов, им предлагается выбрать только тот материал, который им интересен, и вызывает желание поделиться найденной информацией со студентами своей группы. Данный вид организации учебного занятия способствует повышению мотивации к изучению латинской афористики, развивает навыки дискуссии, ораторские способности, коммуникативные качества речи. При проведении предметной олимпиады возможно рекомендовать в качестве заданий решение тематических кроссвордов,

подбор русских пословиц, соответствующих латинским афоризмам, нахождение соответствия между вышедшими из употребления устаревшими и современными названиями заболеваний и т.п. Все перечисленные дидактические приёмы и методы способствуют повышению эффективности учебного процесса, вызывают интерес к изучению латинского языка.

В процессе выполнения вышеперечисленных заданий студенты проявляют произвольное и непроизвольное внимание к латинской терминологии, находят языковую и логическую связь между терминологиями различных дисциплин и различных языков.

Таким образом, мы наглядно видим значимость знания основ латинского языка и греко-латинских терминоэлементов. Подводя итог вышесказанному, следует отметить, что специфика дисциплины «Латинский язык» в сочетании с умелым и грамотным использованием основных дидактических принципов в учебном процессе способствует расширению лингвистического кругозора, развитию словесно-логического мышления, формированию терминологически грамотного специалиста, повышению его общекультурного уровня, формированию коммуникативных компетенций. Изучая латинский язык, студенты приобщаются к огромной лексико-грамматической базе данных, что позволит им в дальнейшем лучше воспринимать иностранные слова-дериваты греко-латинского происхождения.

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ТОҒ ШАРОИТИДА ЙЎЛ-ТРАНСПОРТ ҲОДИСАЛАРИНИ ТРАНСПОРТ ОҚИМИ ВА ЙЎЛ ПАРАМЕТРЛАРИНИ ЎРГАНИШ АСОСИДА ТАҲЛИЛ ҚИЛИШ

Аннотация: Қамчиқ довони йўлидаги транспорт оқими, йўлнинг бўйлама қиялиги, кенглиги, эгрилик радиусларини ўрганиш асосида бу параметрларни йилига 1 км га тўғри келадиган йўл транспорт ҳодисалари сонига боғлиқлиги таҳлил қилинган. Қамчиқ довони йўлининг хавфли участкалари аниқланган ва уларнинг хавфлилиги даражаси аниқланган ва ҳаракат хавфсизлигини таъминлаш бўйича тавсиялар ишлаб чиқилган.

Калим сўзлар: йўл транспорт ҳодисалари, кўриниш масофаси, йўлнинг эгрилик радиуси, йўлнинг кенглиги, қиялик бурчаги, ҳаракат миқдори, бўйлама қиялик

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ANALYSIS OF ACCIDENTS IN MOUNTAIN CONDITIONS BASED ON TRAFFIC AND ROAD PARAMETERS

Abstract The traffic flow on the Kamchik pass road, the parameters of the road, the longitudinal slope of the road, the width of the road, the radius of curvature of the road in 1 km depend on the number of road accidents per year. Hazardous sections of the Kamchik pass road have been identified, their hazard level has been determined and recommendations have been developed.

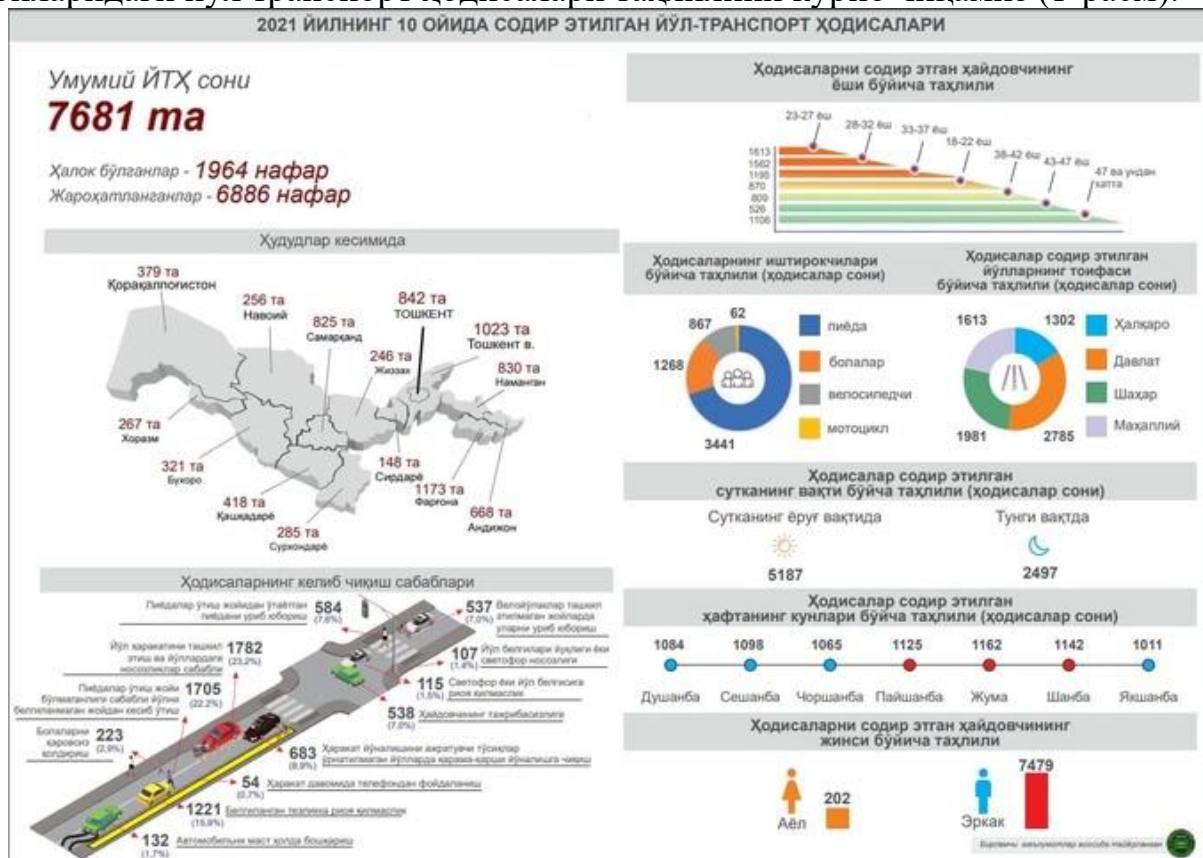
keywords traffic accidents, viewing distance, radius of curvature of the road, width of the road, angle of inclination, traffic intensity, longitudinal slope.

I. КИРИШ

Аҳоли сони юқори сураатларда ўсиб борар экан, транспорт воситаларининг сони ва уларнинг йўллардаги ҳаракат жадаллиги ҳам ошиб бормоқда. Бундай ҳолат автомобиль йўлларида ҳаракат хавфсизлигини таъминлашда катта муаммоларни пайдо бўлишига олиб келмоқда.

Дунё бўйлаб йўл ҳаракати хавфсизлигини таъминлашда сезиларли ютуқларга эришилмоқда. Аммо йўл-транспорт ҳодисаларининг (ЙТХ) олдини олишга қаратилган тадбирларни илмий асосларга таянган ҳолда амалга ошириш талаб даражасида эмас.

Жаҳон соғлиқни сақлаш ташкилотининг маълумотларига асосан, одамлар ЙТХ даги ўлимларнинг асосий сабаблари рўйхатида йўл-транспорт ҳодисалари саккизинчи ўринни эгаллаган. Дунё бўйича ҳар йили 1 миллиондан ортиқ инсонлар айнан йўл-транспорт ҳодисаларида ҳалок бўлади. Ўзбекистон Республикасида 2021 йилнинг январь-октябрь ойларидаги йўл транспорт ҳодисалари таҳлилини кўриб чиқамиз (1-расм).



1-расм. 2021 йилнинг январь-октябрь ойлари давомида содир бўлган йўл-транспорт ҳодисалари.

Ўзбекистонда ИИВ ЙҲХББ матбуот хизматининг хабарига кўра дастлабки 10 ойда 7681 та ЙТХ расман қайд этилган бўлиб, уларда 1964 киши ҳалок бўлган, 6886 киши эса тан жароҳати олган.

Шуни алоҳида айтиш жоизки, бу кўрсаткичлар бутун 2020 йилдаги кўрсаткичларидан ошиб кетган, ўтган йилда 6982 та ЙТХ (2019 йилга нисбатан 13,7 фоизга кам) қайд этилган бўлиб, уларда 1962 киши ҳалок бўлган (-6,3 фоиз) ва 6591 киши тан жароҳати олган (-16,8 фоиз)). Ўтган йилдаги пасайиш коронавирус пандемияси сабабли узоқ давом этган карантин билан боғлиқ бўлиши мумкин.

Вилоятлар кесимида энг кўп ЙТХ Фарғона вилоятига тўғри келмоқда - 1173 та. Қолаверса, Тошкент вилоятида - 1023 та ҳамда Тошкент шаҳрида - 842 та ЙТХлари қайд этилган. Шунингдек, Самарқанд вилоятида 825 та ЙТХ содир этилган. Бундан кўриниб турибдики, дастлабки 5 ойга қараганда пиёдалар ҳамда болалар билан боғлиқ ЙТХлар сони кескин ошган. ЙТХлар

юзага келишига сабаб бўлган омиллар қаторида йўл ҳаракатини ташкил этиш ва йўллардаги носозликлар сабабли - 23,2 % (1782 та), пиёдалар ўтиш йўлаклари йўқлиги сабабли белгиланмаган жойдан ўтиш - 22,2 % (1705 та), белгиланган тезликка риоя қилмаслик - 15,9 % (1221 та), қарама-қарши йўналишга чиқиб кетиш - 8,9 %ни (683 та), пиёдалар ўтиш жойидан ўтаётган пиёдани уриб юбориш - 7,6 % (584 та) ташкил этган.

Шу билан бирга, 7 % (538 та) ЙТХлари ҳайдовчининг тажрибасизлиги, яна 7 % и (537 та) эса велойўлаклар бўлмаган жойларда уларни уриб юбориш каби ҳолатларга тўғри келмоқда. Қолаверса, болаларни қаровсиз қолдириш барча аварияларнинг 2,9 % га (223 та) сабаб бўлган бўлса, автомобилни маст ҳолатда бошқариш 1,7 % (132 та) ЙТХга олиб келган. Бошқа сабаблар билан боғлиқ ҳолатлар эса 3,6 %ни ташкил этган.

Сўнгги 10 йилда Республика ҳудудида содир этилган ЙТХларнинг сонини 8 % га камайишига эришилган. Шу билан бирга, ушбу даврда транспорт воситаларининг сони ошган. Ушбу йиллар давомида Республикадаги транспорт воситалари сони 72 % га (2,1 млн.дан 3,6 млн.га), аҳоли сони эса 21 % га (29,1 млн.дан 35 млн.га) ошган.

Транспорт воситаларининг ишлаш шароитининг таҳлили шуни кўрсатадики, улар юқори даражада ривожланган йўл тармоғи мавжуд бўлгандагина самарали ишлай олади. Текис асфальт йўлда ҳаракатланаётган транспорт воситаларининг ўртача тезлиги 45-50 км/соат ни ҳамда денгиз сатҳидан юқори баландликдаги йўлларда эса ўртача тезлик 8-15 км/соат ни ташкил этади. Денгиз сатҳидан юқори баландликдаги йўналишларда ишлаётган транспорт воситаларининг ўртача тезлигини 3-4 км/соат га ошиши уларнинг унумдорлигини сезиларли даражада ортишига олиб келади.

Маълумки тоғ шароитидаги автомобиль йўлларида ҳудуднинг рельеф тузилиши, йўлнинг денгиз сатҳидан баландлиги, йўлнинг режадаги ва бўйлама кесимдаги эгриликлари, йўлдаги кўриниш масофаси ва йўл бўйлама қиялиги каби омиллар ўзига хос ҳаракат шароитини юзага келтиради ва автомобилларнинг агрегатларига, бошқарув тизимларига ва ҳаракат ҳавфсизлигига катта таъсир кўрсатади.

II. АСОСИЙ ҚИСМ

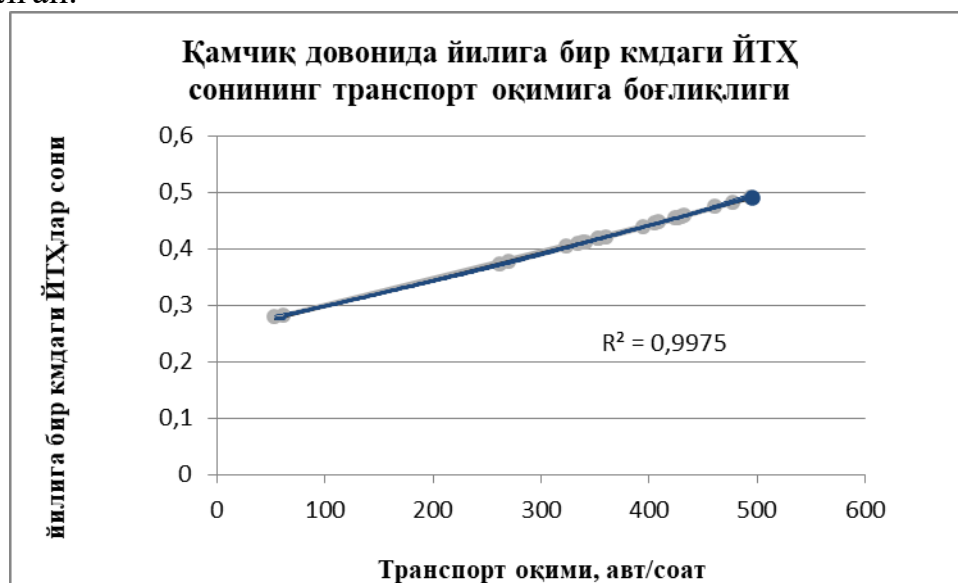
Тоғ шароитидаги йўлда ЙТХларининг транспорт оқими, йўл параметрларини ўрганиш асосида таҳлил қилиш Қамчиқ довонидаги автомобиль йўли мисолида амалга оширилди.

Тадқиқотларга кўра, йилига бир км йўлга тўғри келадиган ЙТХ сони транспорт интенсивлигининг ошиши билан ортади. Бу барча мамлакатлар учун хос бўлиб, қуйидаги корреляцион боғлиқлик билан ифодаланади [3].

$$n_N = 0,256 + 0,000408 * N + 1,36 * (10^{-7}) N^2, \quad (1)$$

бунда: n_N - йилига бир км йўлга тўғри келадиган ЙТХ сони ;
 N - транспорт оқими, авт/соат $40 < N < 1600$ авт/соат;

2-расмда 1 км йўлга тўғри келадиган йиллик ЙТХлар сони n_v нинг транспорт оқими N га боғлиқлик графиги Камчик довони йўли учун келтирилган.



2-расм. Қамчик довонида йилига 1 км йўлга тўғри келадиган ЙТХлари сони n_N нинг транспорт оқими N га боғлиқлиги графиги.

Графикнинг таҳлили шуни кўрсатадики ҳар бир йўл бўлагидаги транспорт оқимининг ортиши билан ЙТХлари сони ошиб боради. Камчик довонидаги йўлда транспорт оқими йиллар давомида ўсиб бормоқда, бу ЙТХ сонини ошишига олиб келмоқда.

Йилига 1 км йўлга тўғри келадиган ЙТХлар сонининг йўл кенглигига боғлиқлигини қуйидаги тенглама орқали ифодалаш мумкин [3].

$$n_v = 1/(0,173B - 0,21), \quad (2)$$

бунда: n_v - йилига 1 км йўлга тўғри келадиган ЙТХлар сони;

B - йўлнинг кенглиги, метрда; $4\text{ м} < B < 20\text{ м}$;

3-расмда 1 км йўлга тўғри келадиган йиллик ЙТХлари сони n_v нинг йўлнинг кенглиги B га боғлиқлиги графиги Камчик довони йўли учун келтирилган.



3-расм. Камчиқ довони йўли учун 1 км йўлга тўғри келадиган йиллик йТХлари сони n_v нинг йўлнинг кенглиги V га боғлиқлик графиги.

Графикнинг таҳлили шуни кўрсатадики йўлнинг кенглиги камайиб бориши билан йТХлари сони ошиб боради. Камчиқ довонидаги йўлнинг 222-230 км лардаги бўлаклари йТХлари содир бўлиши бўйича энг хавфли бўлақлар ҳисобланади.

Йўлнинг кенглиги камайган сари йТХларининг сони ортиб боради. 1 км йўлга тўғри келадиган йиллик йТХлари сонининг ортиши йўл кенглиги 7 м дан кам бўлганда сезиларли даражада ортади. Эгрилик радиуси кичик бўлган бурилишлар йТХлари содир бўладиган хавфли жойлар ҳисобланади. Уларда содир бўлган йТХлари умумий миқдордан 10-12% ни ташкил этади. Энг хавфли йўл бўлаклари эса бурилиш радиуси 500 м дан кам бўлган жойлардир.

Кўриниш масофаси йўл ҳаракати хавфсизлигини таъминлашнинг муҳим омилларидан биридир. Аксарият йТХлари нотўғри танланган ҳайдаш тезлиги туфайли 300 м дан кам кўриниш масофасида содир бўлади. Бир км йўлга тўғри келадиган йиллик йТХлари сонини кўриниш масофасига боғлиқлигини қуйидаги формула билан ифодалаш мумкин:

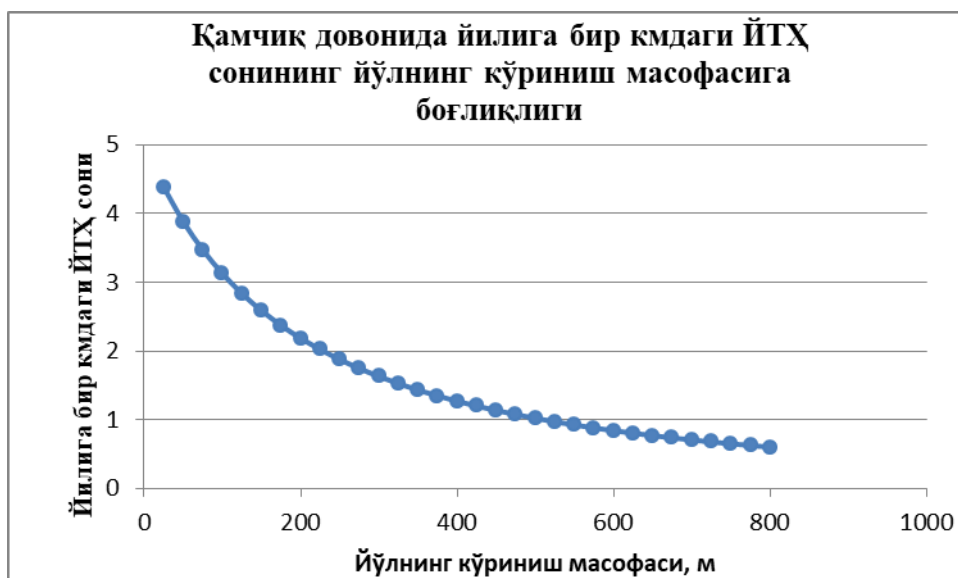
$$n_d = 1/(0,200 + 0,00111d + 0,0000009d^2), \quad (3)$$

$$25 < d < 800 \text{ м}$$

бунда: n_d - йилига 1 км йўлга тўғри келадиган йиллик йТХлари сони;

d - кўриниш масофаси;

4-расмда 1 км йўлга тўғри келадиган йиллик йТХлари сони n_v нинг кўриниш масофаси d га боғлиқлик графиги Камчиқ довони йўли учун келтирилган.



4-расм. Камчиқ довони йўли учун 1 км йўлга тўғри келадиган йиллик ЙТХлари сони n_d нинг кўриниш масофаси d га боғлиқлик графиги.

Графикнинг таҳлили шуни кўрсатадики кўриниш масофасининг камайиб бориши билан ЙТХлари сони ошиб боради. Камчиқ довонидаги йўлнинг 197, 199, 222, 232 ва 234 км лардаги йўл бўлаклари ЙТХлари содир бўлиши бўйича энг хавфли бўлақлар ҳисобланади.

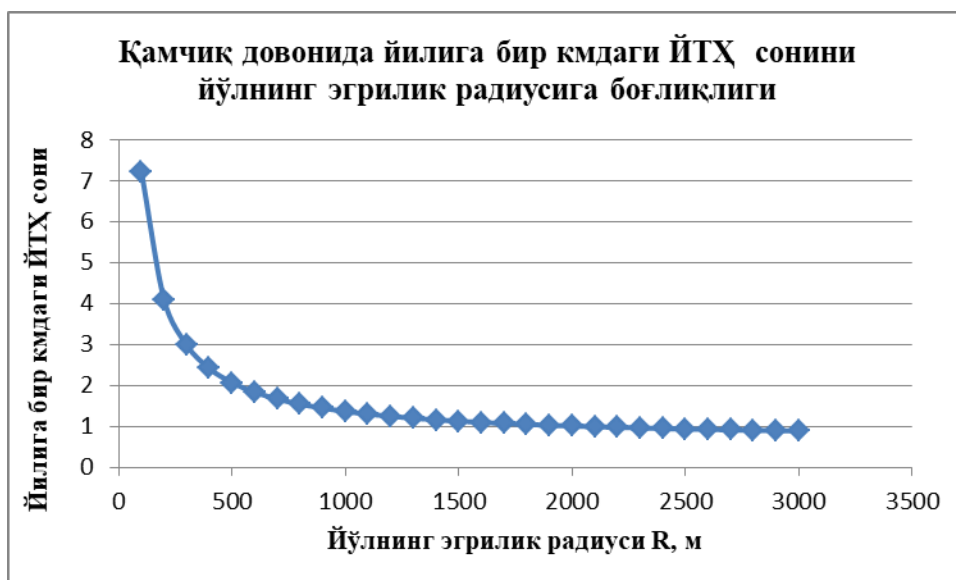
1 км йўлга тўғри келадиган йиллик ЙТХлари сони n_R нинг режадаги эгри чизик радиуси R га боғлиқлигини қуйидаги формула орқали ифодаласа бўлади [3].

$$n_R = 0,647 + 723/R - 6495,5/R^2, \quad (4) \text{ бунда } 100 < R < 3000 \text{ м}$$

Бунда: n_R - 1 км йўлга тўғри келадиган йиллик ЙТХлари сони;

R - йўлнинг режадаги эгри чизик радиуси.

5-расмда 1 км йўлга тўғри келадиган йиллик ЙТХлари сони n_R нинг режадаги эгри чизик радиуси R га боғлиқлик графиги Камчиқ довони йўли учун келтирилган.



5-расм. Камчик довони йўли учун 1 км йўлга тўғри келадиган йиллик ЙТХлари сони n_R нинг режадаги эгри чизик радиуси R га боғлиқлик графиги.

Графикнинг таҳлили шуни кўрсатадики йўлнинг бурилиш радиусининг миқдори камайиб бориши билан ЙТХлари сони ошиб боради. Камчик довонидаги йўлларнинг 222, 224, 225, 228 км лардаги йўл бўлаклари ЙТХлари содир бўлиши бўйича энг ҳавфли бўлақлар ҳисобланади.

Йўл қисмининг бўйлама қиялигининг ЙТХларига таъсири одатда транспорт режимларининг хусусиятлари билан боғлиқ. ЙТХлар сони узлуксиз равишда йўлнинг бўйлама қиялиги ортиши билан ортиб боради, 3% дан ортиқ бўйлама қияликларда эса ЙТХнинг кескин ортиши кузатилади.

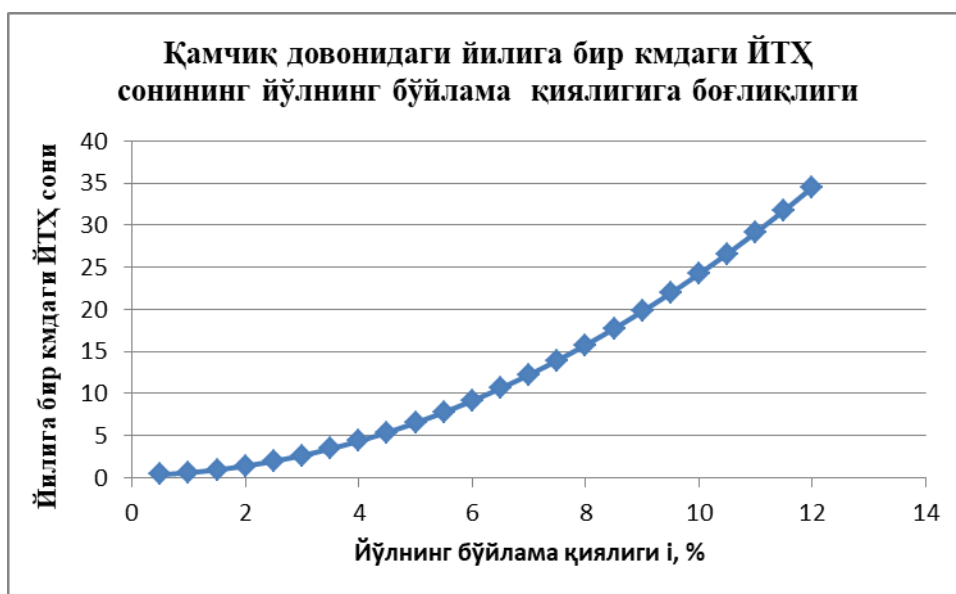
Бўйлама нишаблик катталигига боғлиқ равишда йилига 1 км йўлга тўғри келадиган йиллик ЙТХлари сонини қуйидагича ифодалаш мумкин:

$$n_i = 0,265 + 0,105i + 0,0229i^2, \quad (5) \quad 0,5\% < i < 7\%$$

бунда: i – йўлнинг бўйлама қиялик бурчаги, %;

n_i – 1 км йўлга тўғри келадиган йиллик ЙТХлари сони.

6-расмда 1 км йўлга тўғри келадиган йиллик йўл-транспорт ҳодисалари сони n_i нинг йўлнинг бўйлама қиялик бурчаги i га боғлиқлик графиги Камчик довони йўли учун келтирилган.



6-расм. Камчиқ довони йўли учун 1 км йўлга тўғри келадиган йиллик ЙТХлари сони n_i нинг йўлнинг бўйлама қиялик бурчаги i га боғлиқлик графиги.

Графикнинг таҳлили шуни кўрсатадики йўлнинг бўйлама қиялик бурчаги ошиб бориши билан ЙТХлари сони ортади. Камчиқ довони йўлининг 222-230 км (бўйлама қиялик 3%), 234-236 км (бўйлама қиялик 8%) ҳамда 243-245 км ларининг 12% ли қияликли бўлаклари ЙТХлари содир бўлиши бўйича энг ҳавфли бўлақлар ҳисобланади.

Тоғ ва баланд тоғ йўллари бўйлаб ЙТХларининг тақсимланишини таҳлил қилиш, улар концентрациясининг зичлиги, ҳавфли ҳудудларни аниқлаш, тоғ ва йўл шароитларининг ЙТХларига таъсир даражасини аниқлаш имконини беради [4].

Тоғли шароитларда йўл ҳаракати ҳавфсизлигини таъминлашни муваффақиятли ҳал этиш учун меъёрий-ҳуқуқий базани такомиллаштиришни ҳисобга олган ҳолда, ҳайдовчи - автомобил-йўл-атроф-муҳит (ХАЙМ) тизимининг барча таркибий қисмлари учун ташкилий-техник чора-тадбирларни ишлаб чиқиш бўйича тадқиқотларни давом эттириш керак.

Мавжуд маълумотлар таҳлили, сўнгги йилларда А-373 “М-39 автойўли-Гулистон-Бўка-Ангрен-Қўқон ва Андижон орқали-Ўш” автомобиль йўлининг “Қамчиқ” довони қисмида содир бўлган ЙТХлари оқибатида, фуқароларнинг ҳалок бўлиши билан боғлиқ ҳолатлар сони ортаётганлигидан далолат бермоқда.

Хусусан, 2019 йил давомида автомобиль йўлининг “Қамчиқ” довони қисмида жами 455 та ЙТХлари рўйхатга олинган ва натижада 25 нафар фуқаролар вафот этган ҳамда 257 нафар фуқаролар турли кўринишдаги тан жароҳати олиб шифохонага ётқизилган.

2020 йил давомида эса, жами 382 та ЙТХлари рўйхатга олинган ва мазкур ходисалар оқибатида 31 нафар фуқаролар вафот этган ҳамда 161 нафар фуқаролар тан жароҳати олган.

2021 йилнинг 1-чораги давомида жами 81 та ҳолат рўйхатга олинган ва натижада 18 нафар фуқаро тан жароҳати олган.

Мазкур ҳолатлар содир бўлган жой ўрганилганда, содир бўлган ЙТХлари сонининг 20 фоиздан ортиқ қисми автомобиль йўлининг 222-230 км оралиғи қисмида кузатилган.

Жумладан, 2019 йил давомида рўйхатга олинган жами 455 та ЙТХларининг 78 таси, 2020 йилда 382 тадан 81 таси, 2021 йилнинг 1-чорагида 81 та ҳолатдан 15 таси автомобиль йўлининг 222-230 км оралиғи қисмида кузатилган.

А-373 “М-39 автойўли-Гулистон-Бўка-Ангрен-Қўқон ва Андижон орқали-Ўш” автомобиль йўлининг 222-230 км оралиғида кузатилаётган ЙТХларининг келиб чиқишига йўлнинг 3% ли қиялик бурчагида ҳайдовчилар томонидан тезликни меъёридан ошириши сабаб қилиб кўрсатилмоқда.

Қамчиқ довони автомобиль йўлининг 222-230 км оралиғи таҳлил қилинганда қуйидагилар аниқланди:

- Бу ораликда М1 тоифасидаги автомобилларнинг ўртача ҳаракат тезлиги 67,6 км/соат ни ташкил этди;
- Бу ораликда М2 тоифасидаги автомобилларнинг ўртача ҳаракат тезлиги 65,3 км/соат ни ташкил этди;
- Бу ораликда N1 тоифасидаги автомобилларнинг ўртача ҳаракат тезлиги 52,4 км/соат ни ташкил этди;
- Бу ораликда N2 тоифасидаги автомобилларнинг ўртача ҳаракат тезлиги 49,7 км/соат ни ташкил этди;
- Бу ораликда N3 тоифасидаги автомобилларнинг ўртача ҳаракат тезлиги 44,9 км/соат ни ташкил этди;
- Бу ораликда барча тоифадаги автомобилларнинг ўртача ҳаракат тезлиги 65,1 км/соат ни ташкил этди;
- Йўлнинг кенглиги 18-20 м ни ташкил этди;
- Йўлнинг бўйлама қиялик бурчаги 7 % ни ташкил этди;
- Йўлнинг бурилиш радиуслари 200-1800 м ни ташкил этди;

Тадқиқотлар натижасида шуни айтиш мумкинки Қамчиқ довони автомобиль йўлининг 222-230 км оралиғида кузатилаётган ЙТХларининг келиб чиқишига асосий сабаблар қуйидагилардан иборат:

- Тезликни меъёридан оширилиши;
- Эгрилик радиусларида ҳайдовчиларнинг транспорт воситаси тезлигини тўғри танлай олмаслиги;
- Йўл қиялигининг 7-10% гача ўзгариши.
- Йўлнинг кўриниш даражасининг пастлиги.
- Об-ҳаво шароитининг тез ўзгариши.

III. ХУЛОСА

Хулоса қилиб айтганда тоғ йўлларида ЙТХларининг содир бўлишини камайтириш мақсадида: тоғ шароитидаги автомобиль йўлларида ҳудуднинг рельеф тузилиши, йўлнинг денгиз сатҳидан баландлиги, йўлнинг режадаги ва бўйлама кесимдаги эгриликлари, йўлдаги кўриниш масофаси ва йўл бўйлама қиялиги каби омилларнинг ЙТХлар сонига боғлиқлик қонуниятлари Қамчик доवони йўли мисолида аниқланди.

Бу қонуниятларни ва тоғ йўллариининг хавфли бўлакларини билиш автомобиль йўллариининг техник параметрларини замонавий талабларга мос келтириш орқали тоғли шароитларда йўл ҳаракати хавфсизлигини таъминлашни муваффақиятли ҳал этишда ва бунинг натижасида тоғ йўлларида ЙТХларини содир бўлишини олдини олишда муҳим роль ўйнайди.

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ПРИНЦИПЫ ПОСТРОЕНИЯ, СТРУКТУРА И ТЕХНОЛОГИЯ ИСПОЛЬЗОВАНИЯ CASE-СРЕДСТВ ДЛЯ АНАЛИЗА БИЗНЕС- ПРОЦЕССОВ

***Аннотация:** В статье рассматриваются основные принципы построения, структура и технология использования CASE-средств, которые используются с целью анализа и моделирования бизнес-процессов. С учетом современных условий исследуются технологии их применения. К ним относятся методы визуализации, автоматизированной системы формирования документации и налаживанию взаимосвязей между системами.*

***Ключевые слова:** принцип, CASE-средства, анализ, технология, бизнес-процесс, реинжиниринг.*

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PRINCIPLES OF CONSTRUCTION, STRUCTURE AND TECHNOLOGY OF USING CASE TOOLS FOR ANALYSIS OF BUSINESS PROCESSES

***Abstract:** The article examines the basic principles of construction, structure and technology of using CASE tools, which are used to analyze and model business processes. Taking into account modern conditions, the technologies of their application are studied. These include methods of visualization, automated system of documentation formation and establishing relationships between systems.*

***Keywords:** principle, CASE tools, analysis, technology, business process, reengineering.*

Введение

В настоящее время организациям необходимо выживать в условиях активно развивающейся конкуренции. Для этого нужно регулярно актуализировать все процессы на предприятиях. Достичь эффективного

результата можно с помощью использования CASE-средств, то есть программных инструментов, которые автоматизируют процессы проектирования, анализа и оптимизации бизнес-процессов.

Методы исследования:

- Изучение теоретической базы;
- Структурно-функциональный анализ;
- Сравнительный анализ инструментов;
- Обобщение и составление выводов.

При имеющихся на данный момент условиях наблюдается повышение сложности бизнес-процессов при проведении цифровизации. Также возникает потребность в снижении уровня издержек времени, в частности, на процессы проектирования и внедрения изменений. Стоит отметить ужесточение требований в таких аспектах, как точность и детализация моделей.

Актуальность данного инструмента обусловлена использованием инновационных технологий, которые повышают уровень профессионализма работы предприятий. Применение AI-аналитики для автоматизации процесса предложения оптимизации и цифровых двойников с целью прогнозирования изменений.

Стоит учитывать некоторые сложности, которые могут возникнуть в процессе эксплуатации. Основные из них – это понимание со стороны сотрудников и важность адаптации под стандарты и особенности отраслей.

CASE-средства основаны на определенных принципах, представленных на рисунке 1.

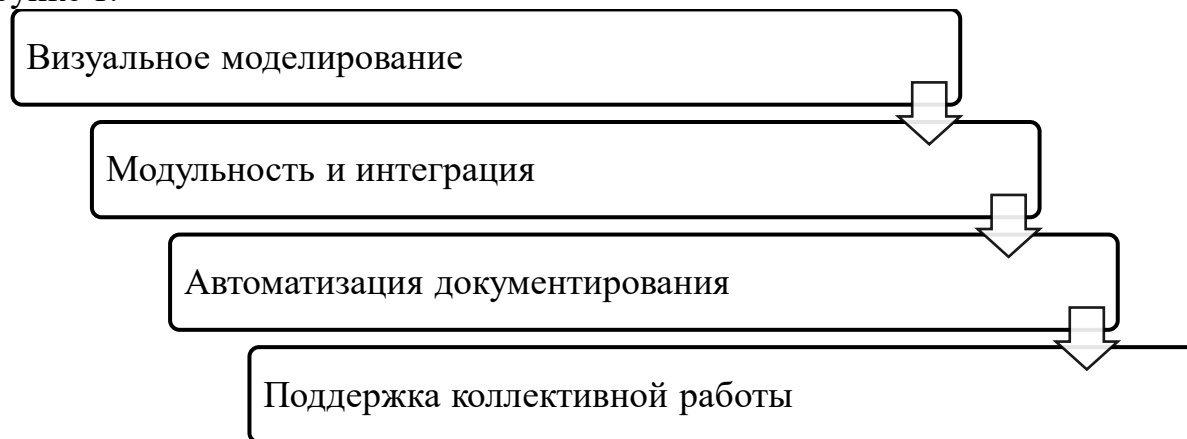


Рисунок 1 – Ключевые принципы CASE-средств

Приведенные принципы основаны на применении методов BPMN, UML, IDEF, а также налаживания взаимодействия между ними и процессами деятельности организации. Появляется возможность подключения дополнительных модулей, например, анализа производительности и симуляции.

Использование искусственного интеллекта и иных инновационных инструментов помогает значительно облегчить и улучшить процессы на предприятиях. Они могут генерировать технические задания, отчеты и

регламенты. Это повлияет на сокращение затрат времени и трудовых ресурсов, что приведет к снижению финансовых издержек, а значит поможет повысить уровень прибыли в компаниях. Также такие методы повышают конкурентоспособность, что дает возможность не только укрепить свою позицию на рынке, но и усилить ее.

Структура CASE-средств имеет четыре важных составляющих. К ним относятся: средства централизованного хранения информации, средства ввода, средства анализа и разработки, средства вывода. Наглядно она представлена на рисунке 2.

Редактор моделей

- Построение диаграмм

Анализатор

- Проверка корректности, выявление узких мест

Симулятор

- Имитационное моделирование процессов

Репозиторий

- Хранение моделей, данных, связей между объектами

Генератор кода

- Автоматическое создание прототипов ПО

Рисунок 2 – Структура CASE-средств

Для того, чтобы эффективно использовать предложенную методику, необходимо соблюдать четкость в этапах внедрения. Для начала требуется собрать все требования, после чего зафиксировать текущее состояние процессов. После этого следует провести анализ и выявить имеющиеся и возникающие проблемы. Затем проектируются оптимизированные процессы, и, в заключении, используется способ тестирования через симуляцию.

Заключение

Использование CASE-средств с целью анализ бизнес-процессов помогает в оптимизации процессов и повышения их эффективности. С целью высокой производительности требуется выбрать выгодный инструментарий, который будет удовлетворять цели и задачи компании. Необходимо провести обучение сотрудников для повышения их работоспособности.

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«ЗЕЛЕНАЯ» ЭКОНОМИКА: ОСНОВНЫЕ НАПРАВЛЕНИЯ, МОДЕЛИ, ПРИНЦИПЫ, ПЕРСПЕКТИВЫ РАЗВИТИЯ В УЗБЕКИСТАНЕ

Аннотация. Одной из новейших тенденций развития мировой хозяйственной системы является внедрение принципов «зеленой» экономики. В связи с тем, что «зеленая» экономика основана на экологической чистоте и ресурсосбережении, требуется коренная реорганизация традиционных производств. В частности, требуется инновационное развитие государственных предприятий, играющих важную роль в экономике Узбекистана. В данной статье рассматриваются научно-теоретические основы «зеленой» экономики, представлены существующие инновации в «зеленой» экономике, исследуются инновационные модели управления в «зеленой» экономике, раскрываются аспекты сотрудничества между государственным и частным секторами, а также оценивается эффективность инвестиций в «зеленую» экономику в мире и излагаются основы перехода к «зеленой» экономике в Узбекистане, описываются принимаемые меры в этом направлении.

Ключевые слова: «зеленая» экономика, «зеленые» инвестиции, энергосбережение, «зеленые» источники энергии, выбросы CO₂, предприятия с государственным участием, принципы зеленой экономики, привлечение инвестиций, инновационное развитие.

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THE «GREEN» ECONOMY: MAIN DIRECTIONS, MODELS, PRINCIPLES, PROSPECTS OF DEVELOPMENT IN UZBEKISTAN

Annotation. *One of the latest trends in the development of the global economic system is the introduction of the principles of the «green» economy. Due to the fact that the «green» economy is based on environmental cleanliness and resource conservation, a fundamental reorganization of traditional industries is required. In particular, innovative development of state-owned enterprises, which play an important role in the economy of Uzbekistan, is required. This article examines the scientific and theoretical foundations of the «green» economy, presents existing innovations in the «green» economy, explores innovative management models in the «green» economy, reveals aspects of cooperation between the public and private sectors, and evaluates the effectiveness of investments in the «green» economy in the world and outlines the basics of transition to a «green» economy.» It is the economy in Uzbekistan that describes the measures taken in this direction.*

Keywords: «green» economy, «green» investments, energy saving, «green» energy sources, CO₂ emissions, enterprises with state participation, principles of green economy, attraction of investments, innovative development.

В настоящее время многие страны Европы, Соединенные Штаты Америки, Китай и другие страны уделяют особое внимание развитию зеленой экономики. Потому что зеленая экономика – это экономическая модель, ориентированная на обеспечение устойчивого развития, основанного на защите окружающей среды, рациональном использовании природных ресурсов и сокращении углеродного следа. Эта модель направлена на повышение экологической устойчивости экономики, эффективное использование природных ресурсов и социальную справедливость. С другой стороны, управление инновациями в «зеленой» экономике сосредоточено на разработке и внедрении новых технологий, методов и практик и предполагает модернизацию экономики в целях достижения экологической устойчивости.

В целом, эффективный переход к «зеленой» экономике требует создания ее научной концепции, что считается важным при углубленном изучении научно-теоретических основ «зеленой» экономики.

Научные и теоретические основы «зеленой» экономики опираются на ряд фундаментальных концепций, каждая из которых формирует новые подходы к защите окружающей среды и эффективному использованию ресурсов [11]:

Устойчивое развитие (sustainable development): эта концепция предполагает обеспечение экономического роста в экологически и социально устойчивой форме. Устойчивое развитие, как один из его основных принципов, предусматривает защиту ресурсов и для будущих поколений. Это противоречит традиционной экономической модели, в которой природные ресурсы рассматриваются как объект неограниченного использования.

Циркулярная экономика (circular economy): в этой модели основное внимание уделяется сокращению отходов до минимума, переработке ресурсов и использованию их для создания новых продуктов. Процесс перехода от «зеленой» экономики к циркулярной экономике направлен на управление производственными ресурсами в секторах продуктов и сырья.

Экологическая эффективность (eco-efficiency): экологическая эффективность – это подход, направленный на достижение оптимальных экономических результатов, но при этом наносящий меньший ущерб окружающей среде и обеспечивающий эффективное использование природных ресурсов. Этот принцип «зеленой» экономики предусматривает одновременное повышение экологической устойчивости и экономической эффективности.

Следует отметить, что в «зеленой» экономике инновации являются основным средством обеспечения экологической устойчивости экономики. Инновации включают в себя новые технологии, продукты и стили, которые служат защите окружающей среды, эффективному использованию природных ресурсов и способствуют социально-экономическому благополучию. Ключевые инновационные подходы в «зеленой» экономике включают:

Зеленые технологии: это экологически чистые и энергоэффективные технологии. В качестве примеров можно привести возобновляемые источники энергии (солнечная энергия, энергия ветра, энергия воды), технологии переработки отходов, технологии очистки воды и воздуха.

Экоинновации: экоинновации предусматривают создание новых продуктов, услуг и технологий, направленных на решение экологических проблем. Эти инновации направлены на снижение ущерба окружающей среде, рациональное использование природных ресурсов и повышение социальной ответственности.

Управленческие инновации: к ним относятся инновационные подходы к управлению, направленные на разработку новых методов управления для экономии ресурсов, снижения экологических рисков и обеспечения устойчивого развития.

Инновационный менеджмент играет важную роль в развитии «зеленой» экономики. Модели инновационного управления направлены на разработку эффективных подходов для обеспечения экологической и экономической устойчивости. В такие модели может быть включено следующее:

Устойчивая бизнес-модель: в рамках этой модели создаются бизнес-структуры, основанные на разработке «зеленых» технологий и экологически чистых продуктов. При этом компании будут внедрять новые технологии для снижения экологических рисков и уменьшения негативного воздействия на окружающую среду в своей деятельности.

Экологическое предпринимательство: эта модель основана на создании новых экологических предприятий и стартапов, ориентированных на решение экологических проблем. Экологические предприниматели работают в таких

областях, как переработка отходов, производство возобновляемой энергии и устойчивое сельское хозяйство.

Гибридные стратегии: эти стратегии призваны сочетать традиционные и «зеленые» методы управления для обеспечения экономической эффективности и экологической безопасности одновременно. Благодаря гибридным стратегиям традиционные технологии могут быть адаптированы к экологическим требованиям.

Для внедрения инноваций в «зеленую» экономику важно взаимодействие государственного и частного секторов. Это сотрудничество включает в себя следующие аспекты:

Государственная поддержка и регулирование: государство должно поощрять инновации, повышая налоги, предоставляя субсидии и гранты на развитие экологически чистых технологий, внедряя экологические стандарты.

Социальная ответственность предприятий: ряд компаний реализуют экологические программы для выполнения социальной ответственности. Эти программы направлены на экономию ресурсов, сокращение выбросов и использование устойчивых источников энергии.

В целом, «зеленая» экономика и управление ее инновациями являются необходимым элементом на пути к достижению устойчивого развития. Научные и теоретические основы «зеленой» экономики основаны на принципах устойчивого развития, циркулярной экономики и экологической эффективности. Инновации играют важную роль в этом процессе и включают в себя «зеленые» технологии, экоинновации и управленческие инновации. Благодаря сотрудничеству государственного и частного секторов инновационный менеджмент «зеленой» экономики может эффективно развиваться.

Как было отмечено выше, современная мировая экономика развивается под влиянием изменений климата, происходящих на поверхности Земли. Признаки изменения климата, которые наносят вред здоровью и жизни человека, вызывают озабоченность мирового сообщества. По мнению международных организаций, мировой ВВП может сократиться на несколько триллионов долларов США, если не будут приняты незамедлительные меры по повышению экологической безопасности национальных экономик [12]. Такая ситуация является причиной обострения существующих экономических и социальных проблем, в то время как население на Земле постоянно увеличивается.

Эффективная политика по смягчению последствий изменения климата будет состоять из трех этапов [9]:

Первый этап заключается в определении источника изменения климата. Парниковые газы, создаваемые человеческим фактором, можно разделить на четыре типа в зависимости от их происхождения: потребление электроэнергии, лесное хозяйство и землепользование, промышленность и переработка отходов.

Вторым этапом является измерение этой проблемы, то есть введение общей единицы измерения, которая позволяет рассчитывать и отслеживать изменение климата. Общепринятым показателем изменения климата во всем мире является плотность углекислого газа в атмосфере. Это относится к количеству углекислого газа, выделяющегося в результате использования энергии при производстве единицы продукта или услуги.

Третий этап – разработка политики. С изменением климата можно бороться путем экологизации трех основных направлений экономической политики: бюджетной, денежно-кредитной и структурной. Экологичная налогово-бюджетная политика включает в себя введение налога на выбросы углерода, «зеленые» субсидии, в то время как «зеленая» денежно-кредитная политика направлена на использование инструментов центрального банка для поддержки экологически чистой экономической деятельности.

Результаты анализа показывают, что выброс техногенного углекислого газа в атмосферу обусловлен главным образом энергетикой и, в относительно меньшей степени, сельскохозяйственным и промышленным секторами (рис. 1).

Следовательно, стратегии перехода к национальной «зеленой» экономике должны обеспечивать инновационное развитие, направленное, в первую очередь, на снижение углеродных выбросов энергетического сектора и, во-вторых, на снижение углеродных выбросов сельского хозяйства, промышленности, землепользования и лесного хозяйства, а также переработки отходов.

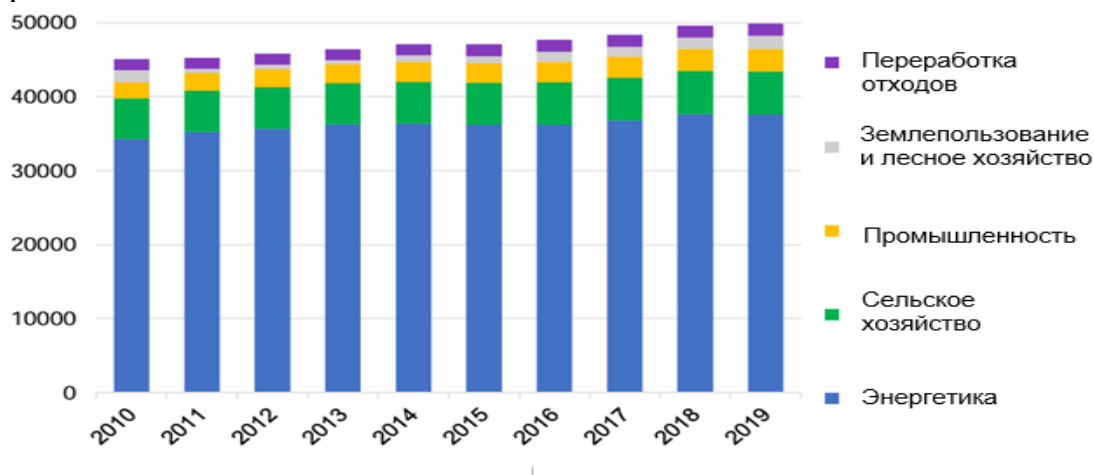


Рис. 1. Доля выбросов парниковых газов в отраслевом разрезе мира, млн т CO₂ [9]

Исследования показали, что инвестиции в «зеленую экономику» считаются более эффективными, чем инвестиции в простое развитие. Это хорошо видно на рисунке 2 ниже.

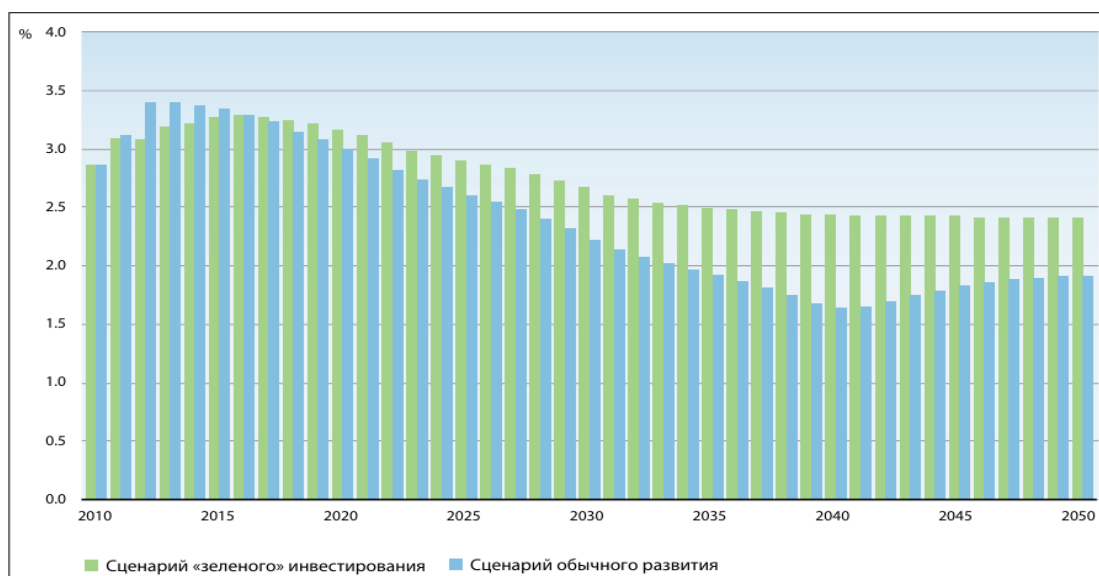


Рис.2. Ежегодные темпы роста ВВП в соответствии со сценарием «зеленых» инвестиций и сценарием простого развития [7]

На рисунке 3 ниже показана тенденция и прогноз сокращения выбросов CO_2 , связанных с производством энергии, за счет инвестирования 2% ВВП в «зеленую» экономику по сравнению с инвестированием в традиционный сценарий развития.

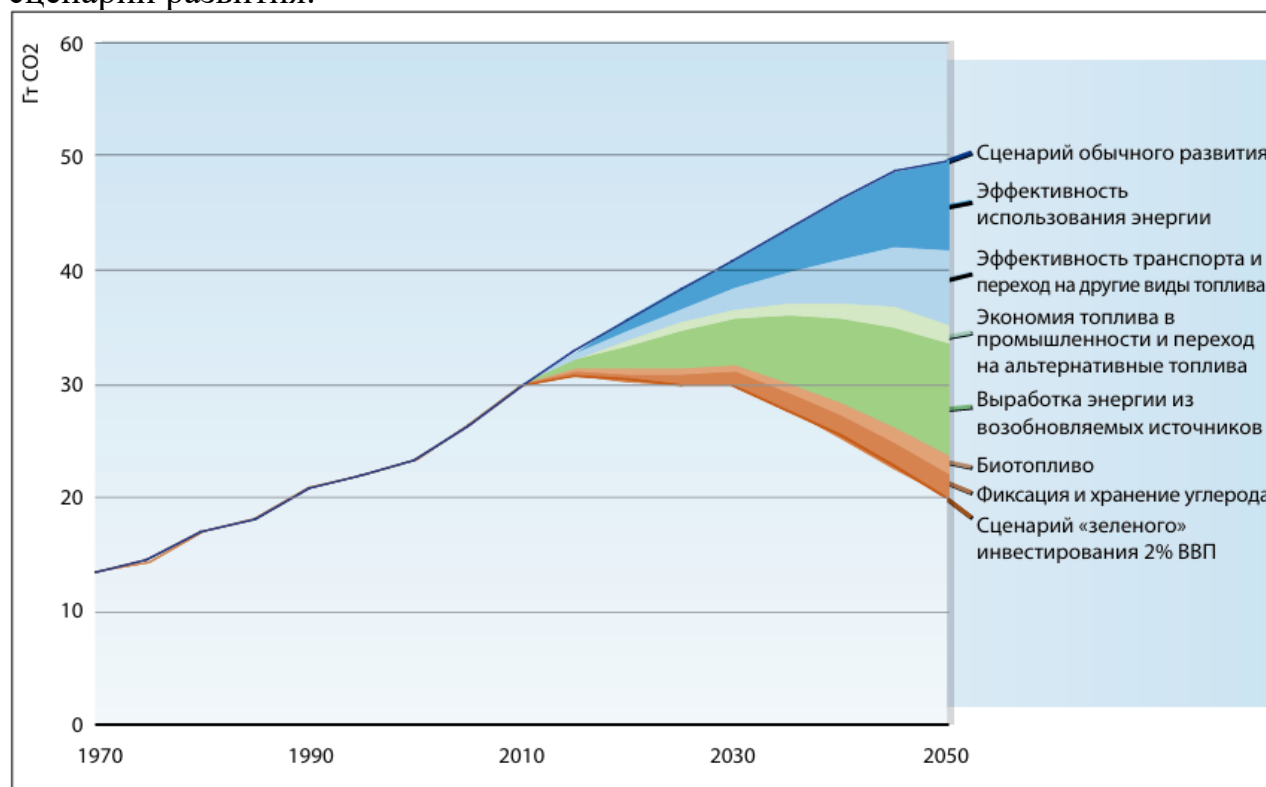


Рис.3. Снижение выбросов CO_2 , связанных с выработкой энергии, при инвестировании 2% ВВП в «зеленую» экономику в сравнении с их инвестированием в сценарии обычного развития [7]

Следует отметить, что в Узбекистане также уделяется большое внимание развитию «зеленой» экономики. Примером этого является принятие стратегии перехода Республики Узбекистан к зеленой экономике на период 2019-2030 годов [7] и объявление 2025 года годом сохранения окружающей среды и зеленой экономики в нашей стране [8]. Также в документах, определяющих ближайшее и отдаленное будущее нашей республики [5, 6], установлены масштабные меры по последовательному переходу к «зеленой» экономике. В целом, в Узбекистане предпринимаются шаги на государственном уровне, такие как экологическая политика, повышение энергоэффективности, переход на возобновляемые источники энергии.

Тенденции развития «зеленой» экономики в Узбекистане реализуются ускоренными темпами. Эти тенденции стали одним из приоритетов страны в области устойчивого развития, охраны окружающей среды и рационального использования природных ресурсов. В настоящее время для развития «зеленой» экономики в Узбекистане предпринят ряд важных шагов.

Эффективное использование водных ресурсов: в Узбекистане существует проблема нехватки воды, поэтому эффективность важна в управлении водными ресурсами. Государство реализует ряд проектов по модернизации ирригационных систем, внедрению водосберегающих технологий в сельское хозяйство и внедрению технологий обработки и повторного использования воды.

Повышенный интерес к зеленым источникам энергии: в Узбекистане уделяется особое внимание развитию солнечной и ветровой энергетики. Государство обладает потенциалом в области солнечной энергетики и уделяет большое внимание реализации проектов в этой области. Это поможет снизить доверие к углеродным источникам энергии и сократит выбросы парниковых газов.

Энергосбережение: в экономике Узбекистана реализуются программы, направленные на повышение энергоэффективности. Инновации позволяют внедрять технологии в производство и обслуживание населения, снижать потребление энергии и минимизировать воздействие на окружающую среду.

Сокращение выбросов углекислого газа: Узбекистан входит в число стран, стремящихся сократить выбросы парниковых газов в ответ на глобальное изменение климата. Разрабатываются программы для участия в международных соглашениях, таких как Парижское соглашение, и сокращения выбросов углекислого газа.

Экологическое сельское хозяйство: в Узбекистане развивается органическое сельское хозяйство. Это помогает сократить использование химических удобрений и пестицидов, защитить почву и противостоять климатическим изменениям.

Зеленые города и экотуризм: в Узбекистане растет интерес к созданию экологически чистых и устойчивых городов, а также развитию экотуризма. Это поможет сохранить природу и создать новые рабочие места.

Законодательные и институциональные реформы: для развития «зеленой» экономики важно создать необходимую законодательную базу и разработать соответствующие институциональные механизмы. Узбекистан принимает различные стимулирующие меры для поддержки предпринимателей, работающих в сфере «зеленых» технологий и устойчивого развития.

Узбекистан быстрыми темпами осуществляет шаги по переходу к «зеленой» экономике и воплощению в жизнь основных принципов устойчивого развития.

Все это обусловлено существующим положением дел в Узбекистане. Так, согласно данным, помимо энергетики, промышленности, сельского хозяйства и переработки отходов, значительное место в выбросах парниковых газов в разрезе секторов экономики занимают строительство, транспорт и производство ископаемого топлива (рис. 4). Примечательно, что в мировой статистике, когда строительный сектор не достигает и одного процента в выбросах парниковых газов, доля строительства в Узбекистане составляет более 15 процентов. В свою очередь, эта ситуация должна быть учтена при запуске процесса перехода Узбекистана к «зеленой» экономике.

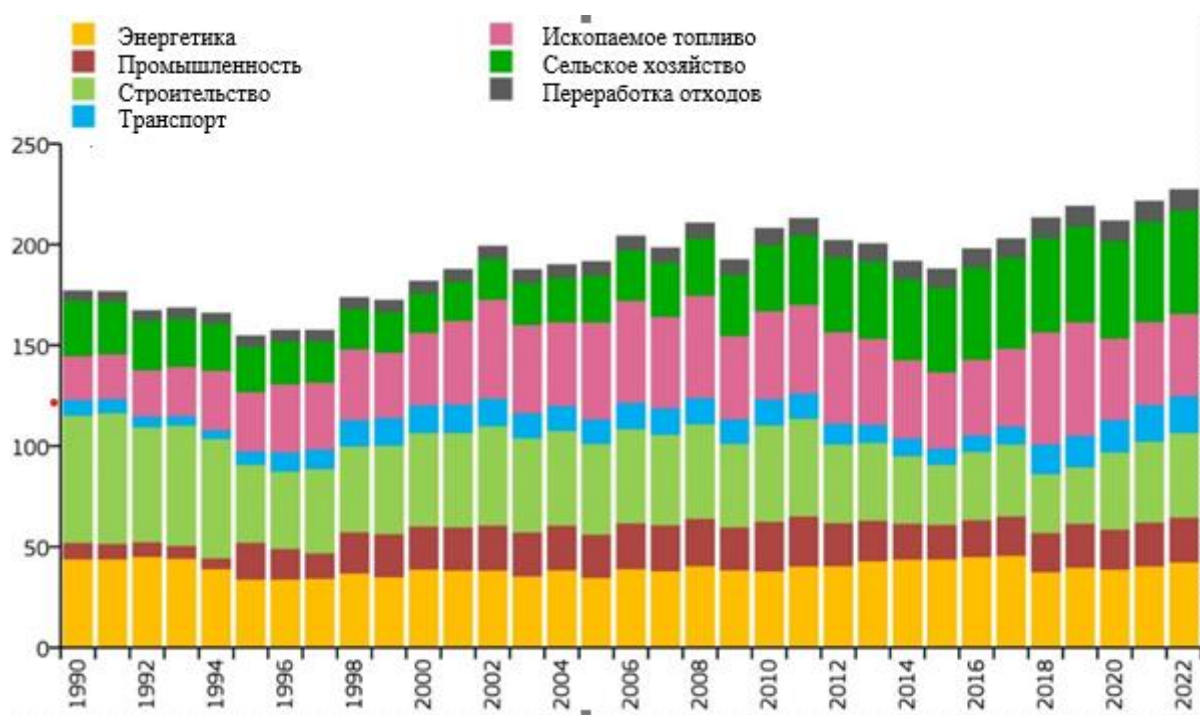


Рис.4. Выбросы парниковых газов в различных сферах экономики Узбекистана, млн.т CO₂ [9]

Согласно стратегии Республики Узбекистан по переходу к «зеленой» экономике [7], переход к «зеленой» экономике должен основываться на следующих основных принципах:

«соответствие Национальным целям и задачам в области устойчивого развития;

рациональное использование ресурсов, устойчивое потребление и производство;

включение экологических и социальных критериев в систему экономического учета;

приоритетность применения «зеленых» инструментов и подходов для достижения целей социально-экономического развития;

достижение существующих макроэкономических целей посредством повышения конкурентоспособности и роста показателей в ключевых секторах, создания «зеленых» рабочих мест, повышения благосостояния населения;

обеспечение инвестиционной привлекательности мероприятий по эффективному использованию ресурсов» [7].

Чтобы внедрить эти принципы на практике в реальном секторе экономики, потребуется радикально изменить и модернизировать существующие производственные мощности, внедрить технические и технологические инновации предприятий. Это, в свою очередь, требует привлечения большого объема инвестиций. Стратегия Республики Узбекистан по переходу к «зеленой» экономике [7] предусматривает следующие формы и механизмы поддержки «зеленых» инвестиций в данном направлении:

«внедрение системы «зеленого» кредитования, венчурного финансирования;

создание «зеленых» фондов, специальных фондов энергосбережения и других аналогичных механизмов;

активизация частного сектора в финансировании проектов по переходу к «зеленой» экономике, а также стимулирование банковской системы к «зеленым» инвестициям;

поддержка устойчивого роста «зеленой» экономики со стороны государства посредством фискальной политики» [7].

Несомненно, использование этих механизмов может дать большой эффект. Однако недостатки в институциональном развитии существующего рынка капитала указывают на то, что необходимо провести значительную работу в этом направлении.

1. «Зеленое» кредитование развивалось в основном в направлении «зеленых» потребительских кредитов. В то же время концепция «зеленого» кредитования предприятий не получила развития и не была широко внедрена в практическую деятельность коммерческих банков. Очевидно, что технологии строительных компаний и предприятий по разработке строительных материалов должны быть переоснащены «зелеными» инновациями, а для этого необходимо будет применять концепцию «зеленого» кредитования в более широком смысле в этой сфере.

2. В рамках существующей «зеленой» денежно-кредитной политики и

концепций развития республиканского рынка капитала институциональному развитию венчурного финансирования практически не придавалось значения. В частности, не было принято отдельного закона о венчурном финансировании, или какой-либо другой закон не содержит статей, направленных на регулирование деятельности по венчурному финансированию. В действующей законодательной базе венчурное финансирование упоминается в очень редких случаях. Например:

согласно закона «О науке и научной деятельности» [1] (статья 22, шестой абзац) тесная связь науки и производства осуществляется путем развития инновационной инфраструктуры, в т.ч. и венчурных фондов;

согласно закона «Об инвестициях и инвестиционной деятельности» [2] (статья 1, третий абзац) «правоотношения в области концессионной деятельности, заключения, исполнения и прекращения соглашений о ... венчурных фондов ... регламентируются отдельными законами»;

согласно закона «О специальных экономических зонах» [3] (статья 11) предусматривает, что венчурные фонды могут создаваться в специальных научно-технологических зонах;

согласно закона «Об инновационной деятельности» [4] венчурная организация включена в число субъектов инновационной инфраструктуры (статья 25 пятый абзац). Статья 29 данного закона озаглавлена как «Венчурные организации, фонды, товарищества». Однако данная статья не описывает и не разграничивает венчурный фонд и венчурное товарищество. Самое интересное, что в шестом абзаце статьи 29 говорится: «Создание, реорганизация и ликвидация венчурных организаций осуществляются по решению учредителей в порядке, установленном законодательством» [4]. Однако порядок организации, реорганизации и ликвидации венчурных организаций в Национальной базе данных законодательства Республики Узбекистан законодательно не закреплён.

Для устранения данной ситуации в качестве отдельного нормативно-правового документа следует принять закон Республики Узбекистан «Об институтах и деятельности венчурного финансирования».

В целом, нужно сказать, что в Узбекистане осуществляются широкомасштабные реформы по переходу к «зеленой» экономике. Этому свидетельствуют принятые в стране в последние годы правительственные решения, которые последовательно осуществляются во всех сферах и отраслях. Однако в целях более эффективного осуществления мер в этом направлении требуется институциональное и законодательное обеспечение всех направлений инновационной деятельности, в том числе инновационных инфраструктур, в которые входит и венчурные фонды.

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ПЕРЕДОВОЙ ЗАРУБЕЖНЫЙ ОПЫТ УПРАВЛЕНИЯ ПРОЦЕССАМИ НА ЖИВОТНОВОДЧЕСКИХ ПРЕДПРИЯТИЯХ

Абстрактный. Сегодня в связи с острой конкуренцией на мировом рынке продовольствия все большую актуальность приобретает совершенствование процессов управления на животноводческих предприятиях. Ведь эффективная организация деятельности предприятий этой сферы обеспечивает рациональное использование ресурсов, удовлетворяя при этом потребности населения в продуктах питания. В статье рассматриваются передовые методы и опыт управления на предприятиях по переработке животноводческой продукции в развитых зарубежных странах.

Ключевые слова. Животноводство, переработка, зарубежный опыт, метод управления, опыт США.

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ADVANCED FOREIGN EXPERIENCE IN PROCESS MANAGEMENT AT LIVESTOCK ENTERPRISES

Abstract. Today, due to intense competition in the global food market, improving management processes at livestock enterprises is becoming increasingly important. After all, the effective organization of the activities of enterprises in this area ensures the rational use of resources, while satisfying the needs of the population for food products. The article discusses advanced methods and experience of management at enterprises for the processing of livestock products in developed foreign countries.

Keywords. Livestock, processing, foreign experience, management method, US experience.

Введение. В условиях глобализационных процессов в мировой экономике и торговой системе обеспечение конкурентоспособности предприятий в сфере переработки животноводческой продукции является актуальной проблемой. В этих целях важно изучить опыт развитых зарубежных стран по улучшению качества продукции, повышению эффективности производства, выполнению экологических требований.

Методология. В статье на основе анализа зарубежного опыта и научных источников рассматриваются стили управления, практика использования цифровых технологий, стандарты управления качеством, методы управления охраной окружающей среды передовых зарубежных стран.

Животноводческая перерабатывающая промышленность является важной отраслью аграрного сектора и имеет большое значение для обеспечения продовольственной безопасности, экономического развития и повышения занятости. Современные перерабатывающие предприятия позволяют нам повышать качество животноводческой продукции, продлевать сроки ее хранения и поставлять потребителям экологически чистую продукцию. Сегодня развитие этого сектора является важной частью интеграции сельского хозяйства и промышленности, способствующей устойчивому росту экономики страны.

В нашей стране переработка продукции животноводства определена как одно из стратегических направлений сельского хозяйства. Развитие этой отрасли играет важную роль в обеспечении продовольственной безопасности, повышении занятости населения и укреплении экспортного потенциала национальной экономики.

Сегодня на мировом рынке растет спрос на экологически чистую и качественную продукцию животноводства. Сложившаяся ситуация требует развития местной перерабатывающей промышленности на основе современных технологий и внедрения инновационных решений в производственные процессы. Это, в свою очередь, создает основу для производства продукции, соответствующей международным стандартам.

Анализ. Мировой опыт показывает, что животноводческая перерабатывающая промышленность Европы, США и других развитых стран оснащена передовыми технологиями, позволяющими поддерживать высокое качество продукции. В частности, в таких странах, как США, Германия и Нидерланды, предприятия по переработке продукции оснащены роботизированными и автоматизированными технологиями. Это позволяет повысить эффективность за счет минимизации вмешательства человека в процессы. Датчики автоматически контролируют качество продукции, температуру, влажность и другие параметры.

Давайте рассмотрим пример США: американская животноводческая перерабатывающая промышленность является одной из самых технологически продвинутых в мире. Инновационные решения, применяемые в этой области, направлены на повышение эффективности производства, обеспечение стандартов безопасности и снижение негативного воздействия на окружающую среду.

В США животноводческие компании также имеют передовой опыт в переработке отходов. В частности, Smithfield Foods (крупнейшая компания по производству свинины в США) перерабатывает отходы в метан для выработки энергии. Компания Calgren Renewable Energy (Калифорния) производит биотопливо из отходов животноводства.

Тем временем такие компании, как Walmart и Nestlé, отслеживают происхождение продукции с помощью блокчейна. Компания BeefChain (Вайоминг) добилась полной прозрачности в цепочке поставок говядины. А с продукцией Tyson Fresh Meats потребители могут узнать источник сырья с помощью QR-кода.

Американские компании также добились высоких результатов в плане безопасности и сертификации: Neogen и 3М обнаруживают в продуктах такие патогены, как сальмонелла и кишечная палочка, в течение 24 часов, а системы Eagle Product Inspection автоматически обнаруживают посторонние предметы в мясе. Компания Midamar (США) производит продукцию, соответствующую стандартам Halal.

В области автоматизации и робототехники такие крупные компании, как Tyson Foods и Cargill, используют роботов в процессах резки, очистки и упаковки мяса. Компания JBS USA внедрила автоматизированные системы переработки баранины и говядины. Внедрение этих систем позволяет сократить затраты на рабочую силу на 30–40 % и свести к минимуму отходы. Дроны и датчики позволили контролировать здоровье и питание скота в режиме реального времени. Такие компании, как Cainthus, используют дроны с функцией распознавания лиц для оценки состояния животных.

Американские компании также эффективно используют искусственный интеллект (AI). Например, такие системы, как IBM Watson, позволяют проводить предиктивное обслуживание сбоев на производственных линиях. В израильской компании Afimilk, работающей в США, производство коровьего молока контролируется искусственным интеллектом. Благодаря этим возможностям потребление энергии может быть снижено на 20%, а качество продукции может контролироваться с точностью 99,9%.

Роль правительства в поддержке животноводческой отрасли в США и привлечении инвестиций. В рамках программ Министерства сельского хозяйства США (USDA) Служба безопасности и инспекции пищевых продуктов (FSIS) проверяет мясную и птицеводческую продукцию в автоматизированных лабораториях. Финансирование стартапам предоставляется через программу SBIR (Исследования инноваций в малом бизнесе).

В результате вышеперечисленных возможностей животноводческая отрасль США приносит годовой доход в размере 200 миллиардов долларов. Повышение эффективности на 15–20% за счет технологических инноваций. К 2023 году экспорт мяса и молочной продукции из США превысит 30 миллиардов долларов.

Будущее выращенного в лабораторных условиях мяса (культивированное мясо) в США: такие компании, как UPSIDE Foods, разрабатывают производство искусственного мяса.

Планируется, что с помощью технологии CRISPR можно будет изменять генетические характеристики животных (например, создавать породы, устойчивые к болезням).

Закключение. Американская животноводческая промышленность является мировым лидером в области высоких технологий (AI, блокчейн, автоматизация). Эти инновации направлены на повышение качества продукции, обеспечение безопасности и содействие устойчивому развитию. Для таких стран, как Узбекистан, изучение опыта США и адаптация его к местным условиям может стать важным шагом в развитии животноводческого сектора.

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ЖИВОТНОВОДСТВО И ГОСУДАРСТВЕННАЯ ПОДДЕРЖКА ОТРАСЛИ ПЕРЕРАБОТКИ ЖИВОТНОВОДЧЕСКОЙ ПРОДУКЦИИ

***Аннотация.** Как известно, рост численности населения в мировом масштабе повышает актуальность обеспечения продовольственными и различными промышленными товарами. Развитие животноводческой отрасли в экономике страны и реализация государственной поддержки в этой сфере являются важным фактором. В данной статье рассмотрен механизм государственной поддержки животноводческой отрасли в Узбекистане.*

***Ключевые слова.** Животноводческая отрасль, основные законы, регулирующие животноводческую отрасль, международный опыт.*

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LIVESTOCK AND STATE SUPPORT FOR THE LIVESTOCK PROCESSING INDUSTRY

***Abstract.** As is known, the growth of the world population increases the relevance of providing food and various industrial goods. The development of the livestock industry in the country's economy and the implementation of state support in this area are an important factor. This article discusses the mechanism of state support for the livestock industry in Uzbekistan.*

***Keywords.** Livestock processing industry, basic laws regulating the livestock sector, international experience.*

Введение. Отрасль переработки продукции животноводства — это отрасль, которая занимается промышленной переработкой продукции, производимой в животноводческих хозяйствах, обеспечивая население продовольственными и различными промышленными товарами.

Анализ. С точки зрения экономической значимости сектор переработки животноводческой продукции выполняет такие задачи, как обеспечение местной продовольственной безопасности, создание цепочки добавленной стоимости за счет глубокой переработки сельскохозяйственной продукции, повышение занятости и развитие местной промышленности, а также снижение зависимости от импортной продукции. Исходя из этого, можно

сказать, что государственная поддержка имеет большое значение для развития данной отрасли. В нашей республике разработан механизм комплексного развития животноводческой отрасли, который напрямую будет служить усилению доли этой отрасли в экономике.

В частности, к основным законам, регулирующим животноводческую отрасль, можно отнести следующие.

Закон «О сельском хозяйстве» (2018 г., новая редакция). Настоящий Закон определяет государственную политику в области сельского хозяйства, укрепляет правовое положение фермерских и крестьянских хозяйств, устанавливает механизмы государственной поддержки и субсидирования животноводческой отрасли, устанавливает обязанности по обеспечению экологической безопасности и ветеринарного контроля.

Закон «О фермерском хозяйстве» (1998 г., новая редакция 2019 г.). Данный закон, в свою очередь, устанавливает порядок организации, функционирования и финансирования фермерских хозяйств, регулирует механизмы землеотвода и государственной поддержки, устанавливает права и обязанности фермеров, занимающихся животноводством, а также предусматривает систему кредитования для внедрения новых технологий и современных методов производства.

Закон «О ветеринарии» (2020). Настоящий Закон направлен на сохранение здоровья животных и профилактику их заболеваний, создание системы ветеринарного контроля за обеспечением качества продукции животноводства, профилактику болезней животных и регулирование деятельности государственной ветеринарной службы, а также на развитие системы контроля за соответствием продукции животноводства гигиеническим нормативам.

Кроме того, нормативно-правовую базу развития животноводческой отрасли также составляют ряд Указов и Постановлений Президента Республики Узбекистан.

«Стратегия развития животноводческой отрасли на 2020–2030 годы» (2020 г., Указ № ПФ-5922). Данный Указ - устанавливает стратегический план модернизации животноводческой отрасли, меры по организации животноводческих комплексов и агропромышленных кластеров в сельской местности. Он предусматривает совершенствование системы предоставления льготных кредитов и субсидий фермерам, а также уделяет особое внимание внедрению инновационных технологий, в том числе искусственного осеменения, развитию ветеринарного обслуживания, повышению экспортного потенциала.

Постановление № PQ-4041 «О развитии глубокой переработки продукции животноводства» (2019). Постановлением устанавливается система поддержки предприятий по переработке животноводческой продукции, порядок привлечения иностранных инвесторов для внедрения новых технологий, а также поддержка местных товаропроизводителей путем предоставления налоговых льгот и субсидий.

Постановление № PQ-5039 «Об усилении государственной поддержки животноводства» (2021 г.). Постановлением установлена необходимость совершенствования механизмов государственной поддержки животноводческих хозяйств, развития частного предпринимательства и расширения системы кредитования, стимулирования экспорта молочной и мясной продукции.

Кроме того, Узбекистан сотрудничает с различными международными соглашениями и организациями, учитывая международный опыт в области животноводства. В частности, Всемирная торговая организация (ВТО) требует разработки механизмов экспорта животноводческой продукции, соответствующих международным стандартам и международному санитарному и ветеринарному контролю.

Правила ФАО (Продовольственной и сельскохозяйственной организации Объединенных Наций) устанавливают рекомендации по уходу за животными, их здоровью и экологической устойчивости, а также стандарты использования биотехнологий и методов искусственного осеменения в животноводстве.

Чтобы занять достойное место в международном сообществе, Узбекистан также начал придерживаться правил сотрудничества в рамках Европейского Союза. В частности, Евросоюз окажет финансовую помощь для внедрения международных стандартов качества при экспорте животноводческой продукции и модернизации переработки молочной и мясной продукции.

Для ускорения реализации вышеуказанных задач в настоящее время в стране государством предусмотрен ряд льгот и стимулов.

Предоставление государством льготных кредитов - фермерским хозяйствам, занимающимся животноводством, предоставляются кредиты под низкие проценты сроком на 3-5 лет. В рамках программы продовольственной безопасности определенная часть процентов по кредиту покрывается государством.

В результате предоставления государственных налоговых льгот действуют льготы по НДС и налогу на прибыль для предприятий, производящих молочную и мясную продукцию. Действует система освобождения от таможенных пошлин для производителей, импортирующих новые технологии.

При выделении государством субсидий и грантов животноводам также предоставляются субсидии на производство продуктов питания, поставку кормов и ветеринарное обслуживание. Государственные гранты предоставляются предприятиям, внедряющим инновационные технологии.

Заключение. В Узбекистане создана прочная правовая база для развития животноводческой отрасли. Законы, указы президента, международно-правовые документы и государственные стимулы поддерживают развитие отрасли. Благодаря этим подходам можно добиться устойчивого развития животноводства и перерабатывающей промышленности страны.

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ВЛИЯНИЕ КЛИМАТИЧЕСКИХ ИЗМЕНЕНИЙ НА СТРАТЕГИИ РЕИНЖИНИРИНГА

Аннотация: В данной статье исследуются изменения в процессе реинжиниринга бизнес-процессов в зависимости от климатических изменений. Приводятся основные климатические проблемы, с которыми сталкиваются предприятия, внедряя реинжиниринг. А также рассматривается их влияние на основные процессы деятельности компаний. Учитываются принципы климатически-ориентированного реинжиниринга, в состав которых входят, например, устойчивость операций и цифровизация.

Ключевые слова: климатические изменения, реинжиниринг, бизнес-процесс, устойчивость, трансформация.

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THE IMPACT OF CLIMATE CHANGE ON REENGINEERING STRATEGIES

Abstract: This article examines how climate change is changing business process reengineering. It identifies the key climate challenges that companies face when implementing reengineering and examines their impact on core business processes. It takes into account the principles of climate-smart reengineering, such as operational sustainability and digitalization.

Keywords: climate change, reengineering, business process, sustainability, transformation.

Введение

В наше время организации сталкиваются с вынужденной адаптацией к быстро меняющимся внешним факторам. Одним из таких факторов является изменение климатических условий. Его влияние приводит к необходимости пересматривать и менять имеющиеся бизнес-процессы на предприятиях. С

данной задачей справляется такой инструмент, как реинжиниринг. Он дает возможность быстро, радикально и эффективно перекроить процессы и достигнуть поставленных целей.

Методы исследования:

1. Системный анализ. Изучение климатических изменений, а также их взаимосвязей с различными аспектами деятельности компаний.
2. Сравнительный анализ. Сравнение классических и климатически-ориентированных подходов реинжиниринга.
3. Статистический анализ. Оценка данных и их влияния.
4. Метод обобщения. На базе полученного анализа формулируются выводы.

Для того, чтобы решить проблемы, возникающие в процессе реинжиниринга с условием постоянно меняющихся климатических условий, необходимо для начала выявить их основные направления:

- Глобальное потепление. Характеризуется повышением средних температур и тепловых волн;
- Увеличение частоты возникающих засух и наводнений;
- Снижение биоразнообразия и ухудшение состояния почвы;
- Усиление экологических стандартов.

Приведенные факторы оказывают непосредственное влияние на все основные бизнес-процессы, происходящие на предприятиях (рисунок 1). Компании сталкиваются с рядом проблем, которые необходимо экстренно и эффективно решать, чтобы не понести убытки.

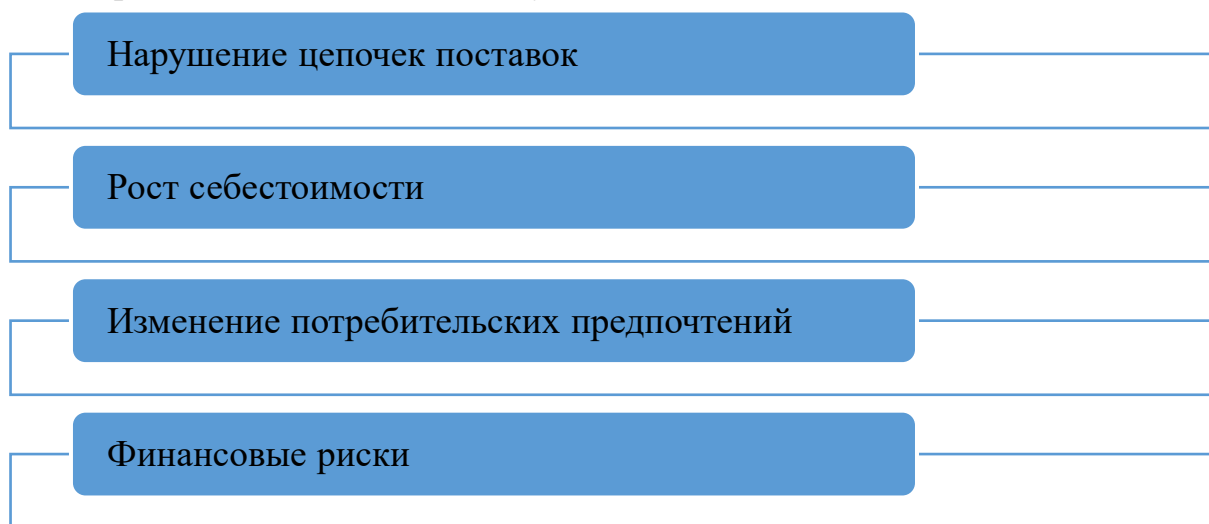


Рисунок 1 – Проблемы, связанные с изменением климатических условий

С целью минимизации рисков нужно вводить определенные изменения в бизнес-процессах. Например, использование принципов циркулярной экономики может делать бизнес более экологичным, что позволит привлекать новых клиентов и удерживать старых. Это связано с популяризацией движения здорового образа жизни и экологически чистых продуктов. Оптимизация логистических процессов и выбор поставщиков также играет важную роль в

повышении эффективности работы предприятия. Неотъемлемой частью высоких показателей результативности внедрения реинжиниринга при климатических изменениях является регулярный анализ рисков, подготовка к внеплановым ситуациям и страхование.

Основные инструменты и методы реинжиниринга в условиях систематических изменений климатических факторов представлены на рисунке 2.

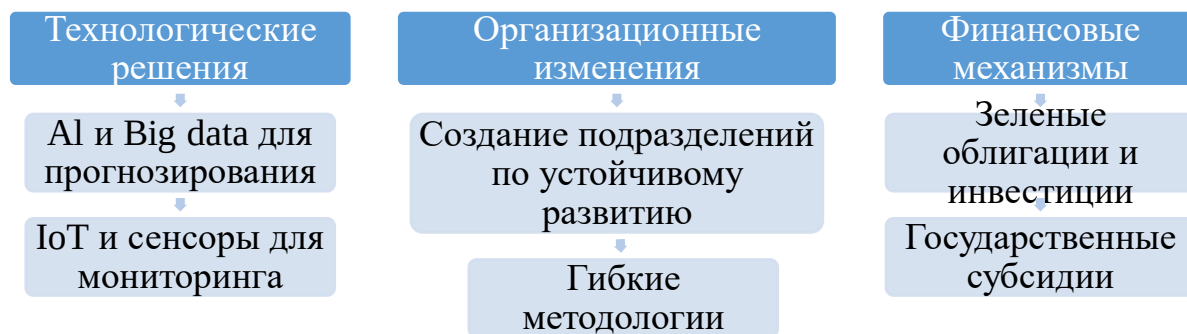


Рисунок 2 – Инструменты реинжиниринга

Заключение

В условиях климатических изменений необходимо радикально менять процессы, а не только вводить мелкие корректировки. Такой метод, как реинжиниринг, дает возможность и минимизировать риски, и повысить конкурентоспособность. Для эффективного его использования нужно интегрировать риски в процессы планирования, прибегнуть к информационным технологиям, повышать экологичность и квалификацию сотрудников.

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ПЕДАГОГИЧЕСКИЕ УСЛОВИЯ РАЗВИТИЯ СОЦИАЛЬНОЙ АКТИВНОСТИ БУДУЩИХ ВОСПИТАТЕЛЕЙ ДОШКОЛЬНЫХ ОБРАЗОВАТЕЛЬНЫХ ОРГАНИЗАЦИЙ

***Аннотация:** В статье рассматриваются педагогические условия, способствующие развитию социальной активности будущих воспитателей дошкольных образовательных организаций. Актуальность исследования обусловлена необходимостью подготовки педагогов, способных эффективно взаимодействовать с детьми, родителями и коллегами, а также активно участвовать в социальной жизни общества. В работе представлены теоретические основы социальной активности, выделены ключевые педагогические условия и предложены практические рекомендации для их реализации в образовательном процессе.*

***Ключевые слова:** социальная активность, будущие воспитатели, дошкольные образовательные организации, педагогические условия, профессиональная подготовка, мотивация, интерактивная среда, рефлексия, интеграция теории и практики.*

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PEDAGOGICAL CONDITIONS FOR THE DEVELOPMENT OF SOCIAL ACTIVITY OF FUTURE EDUCATORS OF PRESCHOOL EDUCATIONAL ORGANIZATIONS

***Annotation:** The article examines the pedagogical conditions that contribute to the development of social activity of future preschool educators. The relevance of the research is determined by the need to train educators capable of effectively interacting with children, parents, and colleagues, as well as actively participating in the social life of society. The work presents the theoretical foundations of social activity, identifies key pedagogical conditions, and offers practical recommendations for their implementation in the educational process.*

Keywords: *social activity, future educators, preschool educational organizations, pedagogical conditions, professional training, motivation, interactive environment, reflection, integration of theory and practice.*

Современное общество предъявляет высокие требования к профессионализму воспитателей дошкольных образовательных организаций. Одним из важнейших качеств будущего педагога является социальная активность, которая проявляется в способности к самореализации, инициативности, ответственности и готовности к участию в общественной жизни. Развитие социальной активности будущих воспитателей требует создания специальных педагогических условий, которые будут способствовать формированию их личностных и профессиональных компетенций.

Социальная активность понимается как интегративное качество личности, выражающееся в стремлении к преобразованию окружающей действительности, участию в общественной жизни и реализации социально значимых инициатив. В контексте профессиональной подготовки воспитателей социальная активность включает в себя:[11]

1. Готовность к взаимодействию с участниками образовательного процесса (детьми, родителями, коллегами).

2. Способность к саморазвитию и профессиональному росту.

3. Участие в социальных проектах и общественных инициативах.

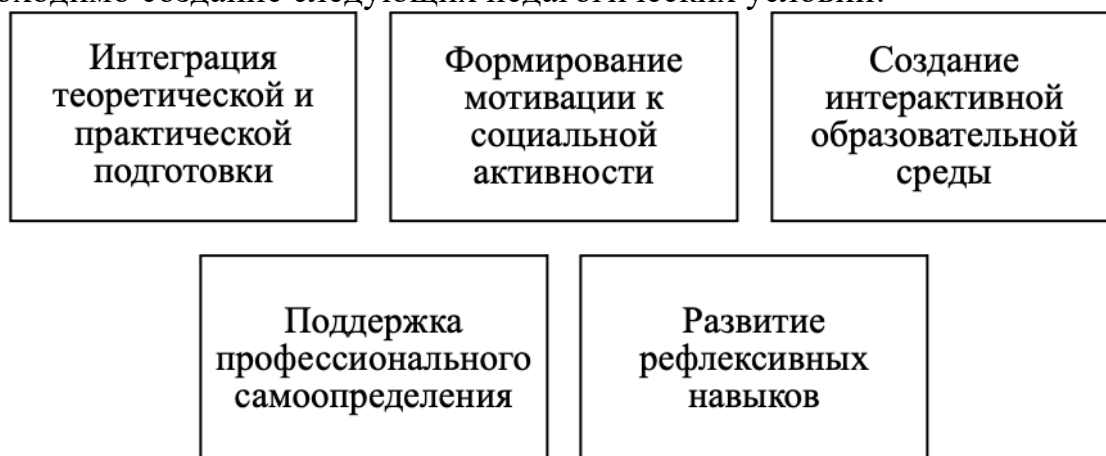
Исследование педагогических условий развития социальной активности будущих воспитателей дошкольных образовательных организаций является актуальной темой в современной педагогической науке. Этой проблематикой занимались как отечественные, так и зарубежные ученые. Ниже приведены примеры исследований и ученых, которые внесли вклад в изучение педагогических условия развития социальной активности будущих воспитателей дошкольных образовательных организаций

John Dewey один из основателей прагматической педагогики, подчеркивал важность социальной активности в образовательном процессе. Его идеи о "learning by doing" (обучение через действие) актуальны для развития социальной активности будущих воспитателей.[7] Albert Bandura известный своими исследованиями в области социального научения, подчеркивал роль наблюдения и подражания в формировании социальной активности. Его теория может быть применена для понимания механизмов развития социальной активности у будущих воспитателей. [8] Paulo Freire бразильский педагог и философ, разработал концепцию критической педагогики, которая подчеркивает важность социальной активности и вовлеченности педагогов в преобразование общества. Его идеи актуальны для подготовки воспитателей, ориентированных на социальные изменения.[9]

Л.С. Выготский хотя не занимался непосредственно социальной активностью воспитателей, его труды о социальной природе развития личности и роли среды в формировании человека стали теоретической

основой для многих современных исследований. Его идеи о зоне ближайшего развития и социальном взаимодействии актуальны для понимания формирования социальной активности.[1] А.В. Мудрик исследовал проблемы социализации личности и роль педагога в этом процессе. Его работы подчеркивают важность социальной активности как качества, необходимого для успешной профессиональной деятельности воспитателя.[2] Т.И. Шамова изучала вопросы активизации учебной и профессиональной деятельности студентов. Ее исследования в области педагогических условий развития активности личности могут быть применены к подготовке будущих воспитателей.[3] Е.А. Сидорова в своих работах рассматривает педагогические условия формирования социальной активности будущих воспитателей, акцентируя внимание на интеграции теоретической и практической подготовки, а также на роли рефлексии в профессиональном становлении.[4] И.А. Зимняя исследовала ключевые компетенции педагога, включая социальную активность. Ее работы подчеркивают важность развития коммуникативных и организаторских навыков у будущих воспитателей.[5] В.А. Сластенин в своих трудах рассматривал вопросы профессиональной подготовки педагогов, включая формирование их социальной активности. Он подчеркивал необходимость создания условий для самореализации и инициативности студентов.[6]

Для успешного развития социальной активности будущих воспитателей необходимо создание следующих педагогических условий:



Будущие воспитатели должны не только овладевать теоретическими знаниями, но и применять их на практике. Это возможно через организацию педагогических практик, участие в мастер-классах и тренингах, а также через моделирование профессиональных ситуаций. Важным условием является развитие внутренней мотивации студентов к участию в социальной жизни. Это может быть достигнуто через вовлечение их в волонтерские проекты, организацию студенческих инициатив и поддержку их идей. Использование активных методов обучения, таких как деловые игры, дискуссии, проектная деятельность, способствует развитию коммуникативных навыков и инициативности. Будущие воспитатели должны осознавать значимость своей профессии и ее социальную роль. Для этого необходимо проводить

мероприятия, направленные на формирование профессиональной идентичности (встречи с опытными педагогами, экскурсии в дошкольные учреждения). Рефлексия позволяет будущим воспитателям анализировать свои действия, оценивать их эффективность и корректировать поведение. Это способствует формированию ответственности и осознанности в профессиональной деятельности.

Для реализации указанных педагогических условий рекомендуется:

- Внедрять в учебный процесс интерактивные технологии и методы активного обучения.
- Организовывать социальные проекты и волонтерские акции с участием студентов. [10]
- Создавать условия для профессионального общения и обмена опытом (конференции, круглые столы).
- Обеспечивать психолого-педагогическую поддержку студентов в процессе их профессионального становления.

Развитие социальной активности будущих воспитателей дошкольных образовательных организаций является важной задачей современного педагогического образования. Создание специальных педагогических условий, направленных на интеграцию теоретической и практической подготовки, формирование мотивации, развитие рефлексивных навыков и поддержку профессионального самоопределения, способствует подготовке компетентных и инициативных педагогов, готовых к активному участию в социальной жизни.

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АНАЛИЗ СОДЕРЖАНИЯ ПОНЯТИЯ «ХУДОЖЕСТВЕННО– ЭСТЕТИЧЕСКОЕ ВОСПИТАНИЕ» В НАУЧНОЙ ЛИТЕРАТУРЕ

***Аннотация:** На этапе модернизации нашего государства всесторонне развитие ребенка является целью учебно–воспитательного процесса. В последнее время актуально и повышено внимание к проблемам теории и практики художественно–эстетического воспитания обуславливает формирования отношения к действительности, то есть как средству нравственного и умственного воспитания, всесторонне развитой, духовно богатой личности.*

***Ключевые слова:** дошкольный возраст, педагогика, воспитание, художественно–эстетического вкус, закон красоты.*

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ANALYSIS OF THE CONTENT OF THE CONCEPT OF "ARTISTIC AND AESTHETIC EDUCATION" IN SCIENTIFIC LITERATURE

***Abstract:** At the stage of modernization of our state, the comprehensive development of the child is the goal of the educational process. Recently, there has been an urgent and increased attention to the problems of theory and practice of artistic and aesthetic education, which determines the formation of an attitude to reality, that is, as a means of moral and mental education, a comprehensively developed, spiritually rich personality.*

***Keywords:** preschool age, pedagogy, upbringing, artistic and aesthetic taste, the law of beauty.*

Дошкольный возраст – важнейший этап развития и воспитания личности; это период приобщения ребенка к познанию окружающего мира и начальной социализации. Активизация, самостоятельность мышления, развитие познавательного интереса и любознательность детей происходит в этом возрасте.

Воспитание – деятельность, направленная на развитие личности, создание условий для самоопределения и социализации обучающегося на основе социокультурных, духовно–нравственных ценностей и принятых в

обществе правил и норм поведения в интересах человека, семьи, общества и государства.

В дошкольной образовательной организации выделяются следующие виды воспитания

1. Физическое воспитание. Основная задача заключается в развитии физических качеств (выносливость, гибкость, ловкость, быстрота, сила) и укреплении здоровья. Физическая активность способствует совершенствованию любознательности и «тянет» за собой умственное развитие.

2. Умственное (интеллектуальное) воспитание. У ребенка в ходе умственного воспитания повышается интеллект, способности к сознанию и самопознанию и другие психические процессы (ощущение, восприятие, воображение, мышление, память, речь)

3. Нравственное и этическое воспитание. Главная задача заключается в передаче моральных норм, существующих в обществе и в конкретной семье и развитие у ребенка нравственных качеств и ценностей. Ребенок с детства формирует свою жизненную позицию к семье, природе, стране, людям, труду, обучается культуре общения и поведения.

4. Трудовое воспитание. Трудовое воспитание предполагает обучение ребенка тем или иным навыкам труда, развивает соответствующие качества (добросовестность, трудолюбие, старательность) и сознательное отношение к деятельности.

5. Художественно–эстетическое воспитание. Художественно–эстетическое воспитание направлено на формирование у ребенка художественного вкуса, эстетических ценностей и творческого предпочтения, чувства красоты, знакомство с разными видами искусства. Дети должны научиться чувствовать искусство, передавать заложенный сюжет и эмоционально сопереживать происходящему.

Н. Варкки считает, что «педагогика определяет художественно – эстетическое воспитание детей дошкольного возраста как целенаправленный процесс формирования творчески активной личности ребенка, способного воспринимать и оценивать прекрасное в жизни и искусстве».

Запорожец И. Д. определяет художественно–эстетическое воспитание как «организацию жизни и деятельности детей, способствующую развитию эстетических и художественных чувств ребенка, формированию представлений и знаний о прекрасном в жизни и искусстве, эстетических оценок и эстетического отношения ко всему, что нас окружает» Ш. А. Амонашвили утверждал, что художественно–эстетическое воспитание – это «целенаправленный, систематический процесс воздействия на личность ребенка с целью развития у него способности видеть красоту окружающего мира, искусства и создавать ее». Во – первых, это процесс целенаправленного воспитания чувства прекрасного. Во – вторых, это формирование способности воспринимать и видеть красоту в искусстве и жизни, оценивать ее. В – третьих, задача художественно–эстетического воспитания заключается

в формировании художественного вкуса. И, наконец, в – четвертых, развитие способности к самостоятельному творчеству и созданию прекрасного, развитие умения творчески создавать продукты ручного творчества. Своеобразное понимание сущности художественно–эстетического воспитания обуславливает и различные подходы к его целям. Поэтому проблема целей и задач художественно–эстетического воспитания требует особого внимания.

Главная цель художественно– эстетического воспитания заключается в том, что «взрастить в человеке эстетическую культуру», включающую в себя: восприятие – способность видеть прекрасное в любом его проявлении в природе, искусстве, межличностных отношениях; чувства – эмоциональная оценка прекрасного; потребности – желания и необходимость получать эстетические переживания путем созерцания, анализа и создания прекрасного; вкус – умение оценивать и анализировать проявления окружающего мира с точки зрения соответствия его эстетическим идеалам; идеалы – личностные представления о прекрасном в природе, человеке, искусстве. Эта цель также отражает и особенность художественно–эстетического воспитания, как части всего педагогического процесса. Во всех вышесказанных определениях, художественно–эстетическое воспитание, вырабатывает и совершенствует в ребенке дошкольного возраста способность эстетического сознания прекрасного в искусстве и жизни, давать правильную оценку и воспринимать его, формировать художественный вкус, и творческую активную личности ребенка. Проанализировав содержание понятия художественно–эстетическое воспитание в научной литературе, исследователи выделяют как целенаправленный, систематический процесс воздействия на личность ребенка с целью развития у него способности видеть красоту окружающего мира, искусства и создавать ее. У детей осуществляется развитие способности к самостоятельному творчеству и созданию прекрасного, формирование художественно–эстетических вкусов и идеалов личности, умение воспринимать и видеть красоту в искусстве и в жизни, оценивать ее. Изобразительному искусству принадлежит особая роль в художественно– эстетическом воспитании дошкольников. Так как его характерной особенностью является отражение действительности в художественных образах, которые действуют на сознание и чувства ребёнка, воспитывают в нём определённое отношение к событиям и явлениям жизни, помогают глубже и полнее познавать действительность. На становление личности ребёнка, его развитие очень велико влияние искусства, он способен тонко чувствовать живопись, его душа предрасположена к восприятию прекрасного.

Художественно–эстетическое воспитание предполагает воспитание грамотного зрителя, пробуждение интереса к произведениям искусства ознакомление с разными видами искусства, накопление эстетических впечатлений и образов, первые шаги к осознанному творческому процессу, способность понимать, созерцать и оценивать произведения искусства,

воспитание видения прекрасного во всех жизненных проявлениях. Художественно–эстетическое воспитание имеет деятельную и созидательную направленность, которое не должно ограничиваться только созерцательной задачей, оно должно также формировать способность создавать прекрасное в искусстве и жизни. Ребенок, так или иначе, художественно эстетически развивается, общаясь с эстетическими явлениями жизни и искусства. У ребенка без вмешательства извне могут сложиться неверные представления о жизни, ценностях, идеалах, но при этом ребенком не осознается эстетическая сущность предметов, а развитие зачастую обусловлено стремлением к развлечению. Б. Т. Лихачев, также как и многие другие педагоги и психологи, считает, что только целенаправленное педагогическое эстетико–воспитательное воздействие, вовлечение детей в разнообразную художественную творческую деятельность способны развить их сенсорную сферу, обеспечить глубокое постижение эстетических явлений, поднять до понимания подлинного искусства, красоты действительности и прекрасного личности. Т. Н. Фокина, подчеркивает, что: «Художественно–эстетическое воспитание – воспитание целостной гармонически развитой личности, для которой характерно сформированность у детей эстетического сознания, наличие системы эстетических потребностей и интересов, способностей к творчеству, правильное понимание прекрасного в действительности и искусстве». Эта цель также отражает и особенность художественно–эстетического воспитания, как части всего педагогического процесса.

Способность ребенка откликаться безотчетно на все привлекательное свидетельствует о том, что будущее умение видеть и понимать красоту окружающего мира, искусство, а так же творить по законам красоты существует в его душе как возможность» выделяет А. А.Петрикевич. По мнению Н. А. Ветлугиной, благодаря взаимодействию чувственного восприятия, эмоций, слова, эстетическое переживание ребенка обогащается и становится разностороннее. Большинство педагогов (Г.С.Лабковская, Д.Б.Лихачев, Е.М.Торошилова и другие) выделяют три ведущие задачи по художественно–эстетическому воспитанию.

Первая задача художественно– эстетического воспитания выражается в тяге и интересе к эстетически значимым предметам и явлениям, в создании определенного запаса элементарных эстетических знаний и впечатлений, склонности без которого не может возникнуть. Цветовые и пластические впечатления, накопления разнообразных запасов звука из всего этого состоит содержание задачи. Педагог должен умело подобрать по указанным параметрам такие предметы и явления, которые будут отвечать нашим представлениям о красоте, будет формироваться чувственно–эмоциональный опыт. Необходимы также конкретные знания о природе, самом себе, о мире художественных ценностей. Как отмечает О.К.Ожерельева, «разносторонность и богатство знаний – основа формирования широких интересов, потребностей и способностей, которые проявляются в том, что их обладатель во всех способах жизнедеятельности ведет себя как эстетически

творящая личность». Вторая задача художественно–эстетического воспитания состоит в «формировании на основе полученных знаний и развития способностей художественного восприятия таких социально–психологических качеств человека, которые обеспечивают ей возможность эмоционально переживать и оценивать значимые предметы и явления, наслаждаться ими». Эта задача говорит о том, что случается, что дети интересуются, например живописью, лишь на общеобразовательном уровне, они торопливо смотрят картину, стараются запомнить название, художника, затем обращаются к новому полотну. Главное состоит в том, чтобы «воспитать, развить такие качества, потребности и способности личности, которые превращают индивида в активного создателя, творца эстетических ценностей, позволяют ему не только наслаждаться красотой мира, но и преобразовывать его «по законам красоты». Ребенок должен не только знать прекрасное, уметь любоваться им и оценивать, но и сам активно участвовать в создании прекрасного в искусстве, жизни, но и создавать продукты ручного творчества, в этом и заключается задача. Рассмотренные задачи частично отражают содержание понятия художественно–эстетического воспитания и педагогические подходы к этой проблеме. Художественно–эстетическая воспитанность человека основывается на органическом единстве развитых природных сил, способностей восприятия, эмоционального переживания, воображения, мышления и художественно– эстетической образованности. На этом фундаменте возникает и формируется творческая индивидуальность, ее эстетическое отношение к искусству, к самой себе, своему поведению, к людям и общественным отношениям, к природе и труду.

Результатом художественного воспитания по мнению Н.И. Киященко и А.И. Бурова является художественная воспитанность, которая состоит в сформированности знаний, умений и навыков в области восприятия искусства, развитости художественного вкуса, суждений, оценок, выраженной потребности общения с искусством, способности к самостоятельному художественному творчеству. Искусство во всем его многообразии (литература, скульптура, народное творчество, живопись и др.) является незаменимым средством формирования духовного мира детей. Важным признаком художественно–эстетической воспитанности является сформированное умение любоваться красотой, совершенными явлениями в искусстве и жизни. Возникновение у ребенка возвышенных переживаний и духовного наслаждения при встрече с прекрасным; чувства отвращения от столкновения с безобразным; чувства юмора, иронии, сарказма от общения с комическим; чувств гнева, страха, ужаса, сострадания, порождаемых трагическим, все это признаки его подлинной эстетической развитости и воспитанности. Таким образом, художественно–эстетическая воспитанность личности имеет интегративный характер. В. И. Волынкин доказал, что формирование художественных потребностей в дошкольном возрасте происходит в процессе педагогической деятельности на основе единства компонентов: когнитивный компонент (художественно–эстетические знания

детей об искусстве и его структуре); перцептивный компонент (формирование способности ребёнка к восприятию художественных образов); практический компонент (художественно-творческая деятельность ребёнка). Критерии когнитивного компонента: наличие основных знаний о художественной литературе, музыки, графике, живописи, скульптуре, декоративно-прикладном творчестве, искусстве театра; – понимание особенностей выразительных средств различных видов искусств; способность к аргументированному художественно-эстетическому суждению, оценке произведений искусства и явлений действительности (проявление художественно-эстетического вкуса). Критерии перцептивного компонента: – рассматривать предметы (явления), выделять из целого отдельные части, сравнивать их с известными ребёнку сенсорными эталонами (форма, цвет, величина), определять признаки предмета (явления); – эмоциональной насыщенностью замечать выразительность форм, цвета, пропорций; – оценочным характером, выражать к ним свое отношение и чувства. Критерии практического компонента: – художественно-творческая деятельность развивает индивидуальность личности ребёнка, помогает ему овладеть основными моральными нормами через умение различать добро и зло, жалость и ненависть, смелость и трусость и т.д. – понимание жизненных ценностей, свои личностные особенности, по – новому осмысливать их, переживает над их значением и глубиной. Результатом, художественно-эстетической воспитанности детей предполагает формирование начальных художественно-эстетических представлений и понятий на основе чувственного освоения художественных образов и их восприятие, а также многократных переживаний в процессе восприятия объектов и явлений действительности и произведений искусства, проявления художественно-творческой деятельности. Дошкольникам доступны все виды художественной деятельности: рисование, лепка, составление рассказов, придумывание стихов, пение. Естественно, они имеют большое своеобразие, которое выражается в наивном, непосредственном отображении действительности, в необыкновенной искренности, в вере в правдивость изображаемого, в отсутствии заботы о зрителях и слушателях. Развитие художественных творческих способностей детей, в котором происходит возникновение замысла, в претворении его в деятельности, в умении комбинировать свои знания и впечатления, в большой искренности при выражении чувств и мыслей. «Все разновидности художественно-творческой деятельности восприятие произведений искусства, первые их оценки, попытки их исполнять и импровизировать – возникают именно в дошкольном детстве. Поскольку этот период наиболее благоприятен для детей в приобретении и накоплении опыта восприятия произведений искусства, а также в приобщении к первичным исполнительским навыкам». Это воспитание начинается с воспитания у ребенка эстетической восприимчивости ко всему, что его окружает. Яркие зрительные образы живописных произведений эмоционально воспринимаются детьми, будят их фантазию, воображение,

развивают наблюдательность и интерес ко всему окружающему. Б.Т. Лихачев определяет, что «такое беглое знакомство с шедеврами искусства исключает один из главных элементов эстетического отношения – любование». С эстетическим любованием тесно связана общая способность к глубокому переживанию. Рассматривая картины, отвечая на вопросы педагога, высказывая свое отношение к изображенному на них, дети учатся понимать, чувствовать «дух» искусства. Из вышесказанного можно сделать вывод, что художественно– эстетическое воспитание – важнейшая сторона личностного развития детей.

Художественно–эстетическое воспитание предполагает ознакомление с разными видами искусства, накопление художественно–эстетических впечатлений и образов, пробуждение интереса к произведениям искусства, первые шаги к осознанному творческому процессу, способность понимать, созерцать и оценивать произведения искусства, воспитание видения прекрасного во всех жизненных проявлениях. Художественно–эстетическая воспитанность детей включает в себя следующие компоненты: когнитивный, перцептивный, практический. У детей старшего дошкольного возраста закладываются начальные художественно– эстетические представления и понятия на основе чувственного освоения художественных образов и их восприятие, способность воспринимать и эмоционально откликаться на красоту в окружающем мире в природе, человеческих отношениях, мире вещей, а также многократных переживаний в процессе восприятия объектов и явлений действительности и произведений искусства, проявления самостоятельной художественно–творческой деятельности. Дети становятся организованными и с интересом всматриваются в окружающее, учатся замечать своеобразие, уникальность предметов и явлений, осознавать и выражать свои чувства, желание заниматься художественно–творческой деятельностью.

В последнее время актуально проблема теории и практики художественно–эстетического воспитания детей в дошкольной образовательной организации. Художественно–эстетическое воспитание предполагает ознакомление с разными видами искусства, накопление художественно– эстетических представлений и знаний и художественных образов. Художественно–эстетическое воспитание пробуждает первые шаги к осознанному творческому процессу, воспитывает грамотного зрителя, способного понимать, созерцать и оценивать произведения искусства, видения прекрасного во всех жизненных проявлениях.

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ТЕХНОЛОГИЧЕСКИЕ АСПЕКТЫ И КОНСТРУКТИВНЫЕ РЕШЕНИЯ ДЛЯ ЭФФЕКТИВНОГО ОТДЕЛЕНИЯ ЗЕРЕН МАША ОТ СТРУЧКОВ

Аннотация: В данной работе рассматриваются технологические аспекты и конструктивные решения, направленные на эффективное отделение зерен маша от стручков. Анализируются основные проблемы, возникающие при механизированной обработке данной культуры, включая механические повреждения зерен и высокие потери урожая. Представляется методика «Комбинированное вибро-воздушное отделение зерен маша», основанная на использовании вибрационного лотка и воздушного сепаратора для минимизации повреждений и повышения чистоты готового продукта. В рамках исследования предоставляются экспериментальные данные, подтверждающие эффективность предложенной методики.

Ключевые слова: зерно, стручок, обработка, вибрация, сепарация, технология, эффективность, очистка, повреждение, производство

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TECHNOLOGICAL ASPECTS AND DESIGN SOLUTIONS FOR EFFICIENT SEPARATION OF MUNGEON BEANS FROM PODS

Abstract: This paper examines the technological aspects and design solutions aimed at the efficient separation of mung bean grains from pods. The main problems arising during mechanized processing of this crop are analyzed, including mechanical damage to grains and high yield losses. The technique of "Combined vibration-air separation of mung bean grains" is presented, based on the use of a vibrating tray and an air separator to minimize damage and improve the purity of

the finished product. The study provides experimental data confirming the effectiveness of the proposed technique.

Keywords: *grain, pod, processing, vibration, separation, technology, efficiency, cleaning, damage, production*

Введение: Маш (*Vigna radiata*) является важной сельскохозяйственной культурой, широко используемой в пищевой промышленности благодаря высокому содержанию белка, пищевых волокон и микроэлементов. Однако процесс отделения зерен маша от стручков представляет собой значительную технологическую проблему, так как традиционные методы очистки часто связаны с высокими потерями урожая и значительными трудозатратами. Современные технологии и конструктивные решения позволяют оптимизировать этот процесс, повышая эффективность производства и снижая механические повреждения зерен.

Методология: Комбинированное вибро-воздушное отделение зерен маша. Данная методика основана на сочетании вибрационных и воздушных технологий, обеспечивающих эффективное раскрытие стручков и отделение зерен маша без значительных механических повреждений. Процесс начинается с загрузки стручков в вибрационный лоток, где за счет колебательных движений происходит разрушение оболочки стручков. Контролируемая частота вибраций позволяет минимизировать дробление зерен, а их постепенное высвобождение улучшает качество разделения. После вибрационного воздействия освобожденные зерна и оболочки поступают в воздушный сепаратор, где поток воздуха направленно отделяет легкие стручковые отходы от более тяжелых зерен, обеспечивая их очистку и минимизируя примеси. Особенностью данной методики является адаптивная настройка интенсивности вибрации и силы воздушного потока в зависимости от влажности и зрелости сырья. Это позволяет использовать технологию на различных стадиях обработки урожая, а также повышает универсальность и точность процесса. Внедрение комбинированного вибро-воздушного отделения способствует значительному снижению потерь зерен, сокращению ручного труда и увеличению производительности обработки, что делает данный метод экономически оправданным и экологически безопасным.

Результат: в ходе исследования методики «Комбинированное вибро-воздушное отделение зерен маша» была проведена серия экспериментов на различных образцах урожая с разной степенью влажности и зрелости. В результате установлено, что применение вибрационного лотка с частотой колебаний 25–30 Гц позволило сократить механические повреждения зерен на 42% по сравнению с традиционными методами механического воздействия. Воздушный сепаратор эффективно удалял стручковые оболочки и примеси, обеспечивая чистоту готового продукта на уровне 96%, что на 18% выше по сравнению с ручной обработкой. Оптимальная скорость воздушного потока составляла 5–7 м/с, что обеспечивало максимальное разделение без потерь зерен.

Дополнительный анализ показал, что благодаря внедрению данной методики удалось увеличить общую производительность процесса на 37%, сократив затраты ручного труда на 54%. Среднее время обработки 1 кг маша снизилось с 12 минут (при ручном отделении) до 5 минут, что значительно повысило экономическую эффективность технологии. Полученные результаты подтверждают, что вибро-воздушный метод является перспективным направлением в механизированной обработке зерновых культур, обеспечивая высокую сохранность урожая и снижение производственных издержек.

Таблица 1.

Эффективность используемого оборудования в методике «Комбинированное вибро-воздушное отделение зерен маша»

Оборудование	Область применения	Эффективность (%)	Преимущества	Недостатки
Вибрационный лоток	Раскрытие стручков и первичное отделение зерен	86%	Минимальное повреждение зерен (↓ 42% дробления), высокая производительность	Требует точной настройки частоты колебаний
Воздушный сепаратор	Отделение легких оболочек и примесей	96%	Высокая степень очистки (↑ 18% по сравнению с ручной обработкой), снижение затрат труда (↓ 54%)	Зависимость от правильной регулировки скорости потока
Калибровочный механизм	Отбор целых зерен, контроль качества	91%	Повышение товарного качества продукции, автоматизация процесса	Возможны ошибки при высокой влажности сырья
Конвейерная система	Транспортировка зерен между этапами обработки	98%	Ускорение производственного цикла, снижение ручного труда	Требует регулярного технического обслуживания

Заключение: Автоматизация процесса отделения зерен маша от стручков является важным направлением в повышении эффективности агропромышленного комплекса. Использование вибрационных и воздушных технологий позволяет минимизировать механические повреждения зерен, сократить трудозатраты и повысить общую рентабельность производства. Дальнейшие исследования и усовершенствование конструктивных решений могут способствовать разработке более энергоэффективных и экологически безопасных технологий обработки маша.

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СТРУКТУРНАЯ ОРГАНИЗАЦИЯ И ЗНАЧЕНИЕ НЕРВНОГО АППАРАТА В ГИСТОФИЗИОЛОГИИ ТОНКОГО КИШЕЧНИКА

Резюме: В статье изучены исследования методом морфологического эксперимента изучены структура, локализация и источники чувствительной и двигательной иннервации тонкого кишечника, а также реакция его тканей на ту или иную денервацию. Материалы обрабатывались общегистологическими методами, методом Бильшовского-Гросс, и по Ниссли. Интрамуральные нервные узлы тонкой кишки также обильно снабжены чувствительными окончаниями. Исследуя нервный аппарат кишечника в разные сроки после удаления спинно-мозговых узлов во всех случаях мы наблюдали однотипные изменения крупных нервных клеток кишечных сплетений. Инфильтративным и атрофическим изменениям подвергались и крипты кишечника

Ключевые слова: кошка, тонкой кишки, эксперименты, перерезка брыжеечных нервов, солнечного сплетения, спинно-мозговых узлов, денервация.

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STRUCTURAL ORGANIZATION AND SIGNIFICANCE OF THE NERVOUS APPARATUS IN THE HISTOPHYSIOLOGY OF THE SMALL INTESTINE

Abstract: The article studies the structure, localization and sources of sensory and motor innervation of the small intestine, as well as the reaction of its tissues to one or another denervation using a morphological experiment. The material was processed by general histological methods, the Bilshovsky-Gross method, and according to Nissl. Intramural nerve nodes of the small intestine are also abundantly supplied with sensory endings. Examining the intestinal nervous apparatus at different times after removal of the spinal nodes, in all cases we observed the same type of changes in large nerve cells of the intestinal plexuses. Intestinal crypts were also subjected to infiltrative and atrophic changes.

Key words: cat, small intestine, experiments, transection of mesenteric nerves, solar plexus, spinal nodes, denervation.

Введение. Изучение иннервационных отношений в органах необходимо для понимания механизма связи органов с центральной нервной системой и интеграции их в систему целостного организма. Иннервационные отношения в полостных органах характеризуются целым рядом особенностей. К числу их в первую очередь относится наличие внутрисстеночного ганглионарного аппарата, связанного с центральной нервной системой, и присутствия многочисленных афферентных приборов обеспечивающих этим органам тонкую приспособленность к условиям существования и широкую возможность рефлекторного функционирования в качестве составных элементов целостного организма. Экспериментальные работы предпринятые для выяснения вопроса, связанного с изучением чувствительных окончаний в тонкой кишке не многочисленны[1,2]. В настоящем исследовании методом морфологического эксперимента изучены структура, локализация и источники чувствительной и двигательной иннервации тонкого кишечника, а также реакция его тканей на ту или иную денервацию[3,4].

Цель исследования. Изучить методом морфологического эксперимента структура, локализация и источники чувствительной и двигательной иннервации тонкого кишечника, а также реакция его тканей на ту или иную денервацию.

Материалы и методы исследования. Для решения поставленной задачи на 75-ти здоровых кошках нами были произведены следующие серии экспериментов: 1) перерезка брыжеечных нервов, 2) удаление узлов солнечного сплетения, 3) перерезка больших чревных нервов, 4) удаление чувствительных спинно-мозговых узлов (грудных и поясничных) с двух сторон, 5) удаление части тонкой кишки. После операции животные забивались в различные сроки начиная с 24 часов и кончая 12-ю сутками.

Материал обрабатывался общегистологическими методами, методом Бильшовского-Гросс, и по Нисслю.

Результаты исследования. В результате поставленных экспериментов и изучения материала нами установлено, что вся стенка тонкой кишки обильно снабжена нервными приборами рецепторной природы различной степени сложности. Характерной чертой их строения является большая длина концевых ветвей. Волокна, образующие рецепторы большей частью безмякотные, изредка покрыты тонким малозаметным слоем миэлина, который постепенно исчезает. По своему ходу эти волокна делятся чаще дихотомически, иногда на большое количество ветвей. Необходимо отметить одну чрезвычайно существенную черту чувствительных окончаний в тонкой кишке. По-видимому, большая часть рецепторов представлена конечными разветвлениями отростков нервных клеток, расположенных здесь же в кишечной стенке в составе узлов Ауэрбаховского и Мейснеровского сплетения. Интрамуральные нервные узлы тонкой кишки также обильно снабжены чувствительными окончаниями. Однако, по своему строению они более короткие и не выходят за пределы ганглия. Нам удалось установить цитоархитектонику сплетений причем клетки первого типа преобладают в

узлах подслизистого сплетения и лежат всегда крупными скоплениями. Изменения нервных клеток спинномозговых узлов выражалось двумя формами страдания. В одном случае это был настоящий хроматоз с перемещением тигроидного вещества к одному краю клетки и с резким сморщиванием и сдвиганием к периферии ядра. Чувствительность стенки тонкой кишки обеспечивается за счет наличия местных клеток второго типа Догеля в составе Ауэрбаховского и Мейсснеровского сплетения и чувствительных спинно мозговых узлов. В узлах межмышечного сплетения крупных нейронов больше, в узлах ближе к серозной оболочке их число еще больше возрастает. Мелкие нервные клетки обладают большим количеством отростков, тонких и коротких отходящих от клеточного тела и в непосредственной близости от него оканчиваются, и одним длинным отростком, входящим как правило в состав тонкого стволика безмякотных волокон. Крупные клетки не снабжены такими синаптическими аппаратами, величина их гораздо больше и наконец отростки этих клеток образуют несомненное рецепторное окончание во всех отделах кишечной стенки. На основании этих признаков могут быть эти клетки причислены к клеткам 2-го типа Догеля, клеткам чувствительной природы. Нейриты клеток первого типа по своим внешним свойствам совершенно идентичны постганглионарным волокнам автономной нервной системы и также как эти последние всегда идут в сопровождении большого количества швановских клеток. Исследуя нервный аппарат кишечника в разные сроки после удаления спинно мозговых узлов во всех случаях мы наблюдали однотипные изменения крупных нервных клеток кишечных сплетений. При удалении спинно мозговых узлов средней и нижней грудной области отмечается расширение кровеносных сосудов, сопровождающееся переполнением сосудов полиморфно ядерными нейтрофильными лейкоцитами (особенно в поздние сроки после операции). Из расширенных сосудов лейкоциты проникают в окружающую ткань. в том числе и в нервные узлы. В подслизистой оболочке возникают круглоклеточные инфильтраты. После удаления узлов солнечного сплетения отмечается резкая вазодилатация, артериолы превращаются в гладко контурные трубочки, вялые мышечные клетки делаются плоскими и низкими. Явления расширения сосудов нейтрофильной и круглоклеточной инфильтрации наблюдаются в течение всего срока эксперимента. Инфильтративным и атрофическим изменениям подвергались и крипты кишечника.

Вывод. Таким образом, учитывая наши данные, касающиеся иннервации кишечника следующим образом расцениваем описанные выше изменения: 1. Инфильтрация нейтрофилами и дедифференцирование ряда тканевых элементов являются следствием чувствительной денервации тонкой кишки. Инфильтрация полиморфно-ядерными лейкоцитами тканей кишки в противоположность данным полученным при деафферентации других органов, не достигало крайних степеней, что может быть объяснено неполной

чувствительной денервацией в связи с наличием афферентных нейронов в составе ее внутривисцеральных сплетений.

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ЛИЧНОСТНАЯ РИСКОВАЯ ПРИВЯЗАННОСТЬ К ОНЛАЙН-ИГРАМ КАК ПРЕДМЕТ ПСИХОЛОГИЧЕСКОГО ИССЛЕДОВАНИЯ

***Аннотация:** В этой статье рассматриваются психологические исследования зависимости от азартных игр в Интернете у людей, склонных к риску. Также описаны рискованные игры и их негативные факторы и влияние на общество, а также негативное влияние этих игр на психику человека.*

***Ключевые слова:** тотализатор, азартная зависимость, виртуальные игры, «1xbet», социальная изоляция, депрессия, онлайн-казино, виртуальный мир, психическое здоровье, стресс, эмоциональная реактивность, анонимность азартных игр в Интернете, цифровая безопасность, депрессия, тревога, азартные игры в Интернете, самоконтроль.*

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PERSONAL RISK ATTACHMENT TO ONLINE GAMES AS A SUBJECT OF PSYCHOLOGICAL RESEARCH

***Abstract:** This article reviews psychological research on online gambling addiction in individuals with risk-taking. Also, risk-based games and their negative factors and effects on society, as well as the negative impact of these games on the human psyche, are described.*

***Key words:** totalizator, gambling addiction, virtual games, "1xbet", social isolation, depression, online casino, virtual world, mental health, stress, emotional reactivity, internet gambling anonymity, digital security, depression, anxiety, online gambling, self-control.*

Введение.Сегодняшняя глобализация и развитие цифровых технологий оказывают влияние практически на все сферы жизни человека. Популярность Интернета создала множество удобств и возможностей. Однако наряду с этими возможностями формируются и различные социальные и психологические проблемы. В частности, одной из актуальных проблем стали онлайн-гемблинг и его негативные последствия. Азартные игры онлайн стали не только развлекательной деятельностью, но и уникальным экономическим

и психологическим механизмом, основанным на риске, что создает необходимость глубокого анализа психологических особенностей и потребностей людей, участвующих в этих играх. Исследования показывают, что азартные игры онлайн побуждают игрока неоднократно идти на риск в обмен на преимущественно краткосрочную выгоду. Во время этого процесса человеческий мозг постоянно работает на основе механизмов удовлетворения и вознаграждения. Частые успехи или неудачи в игре нарушают эмоциональную устойчивость, повышают импульсивность, ослабляют самообладание. В результате развивается игровая зависимость, когда игрок больше привязывается к игре, чтобы избежать реальных жизненных проблем или снять кратковременный стресс.

Рискованные люди имеют более высокий риск стать зависимыми от азартных игр, чем другие. Такие люди часто склонны принимать рискованные решения, отдавая предпочтение краткосрочным вознаграждениям над долгосрочной стабильностью. Их психологические особенности характеризуются такими факторами, как низкий самоконтроль, высокий уровень эмоциональной реактивности и подверженность сильным страстям. Люди, которые психологически слабее, например, те, кто плохо справляется со стрессом, тревогой и депрессией, с большей вероятностью становятся зависимыми от азартных игр. Кроме того, к числу важных факторов, формирующих игровую зависимость, относится влияние окружающей среды, близких и общества. Последствия зависимости от азартных игр в Интернете широко распространены. Прежде всего, это отрицательно сказывается на экономическом состоянии человека. Во многих случаях игроки попадают в финансовый кризис и в долги. Это, в свою очередь, усиливает депрессию и ухудшает отношения с семьей и обществом. В результате игровой зависимости многие люди оказываются в социальной изоляции, теряют уверенность в себе, отвлекаются от своих жизненных целей. Среди психологических повреждений выделяют расстройства памяти и внимания, потерю эмоционального равновесия и психическую депрессию.

Методика исследования. «Анонимность и удобство азартных игр в Интернете повышают их привлекательность, что может привести к зависимости»[1.р.357-386]. По этому мнению Гриффитс подчеркивает опасность азартных игр в Интернете. В то время как в традиционных азартных играх поведение игроков может контролироваться общественностью или учреждениями, в онлайн-играх таких механизмов нет. Чувство анонимности подрывает самообладание людей, поскольку они не чувствуют социального давления и ответственности. Также удобство азартных игр – возможность подключения в любой момент через Интернет – увеличивает частоту, с которой игроки идут на риск. Это приводит к формированию быстрой зависимости.

«Зависимость от азартных игр в Интернете имеет более высокий риск, чем традиционные формы азартных игр»[2.р.105-119]. Исследование Шаффера показывает, что азартные игры в Интернете опасны из-за своей

скорости и легкого доступа к играм. В то время как традиционные азартные игры имеют ограничения по игровому пространству и времени, в азартных играх онлайн их нет. Люди могут играть в любое время и в любом месте, что делает игровой процесс погруженным в повседневную жизнь. Игроки теряют способность контролировать время и деньги, что приводит их к экономическим и психологическим кризисам.

«Распространенность онлайн-гемблинга и его неконтролируемое развитие вызывают беспокойство»[3.р. 212-214.] По мнению Ладусера, бесконтрольное развитие индустрии онлайн-гемблинга порождает опасные тенденции в обществе. Государства часто не могут полностью контролировать платформы онлайн-гемблинга, что приводит к появлению незаконных или нелегализованных игровых услуг. Особенно опасна такая ситуация для молодежи и лиц, принадлежащих к группе риска, у которых механизмы своевременной защиты не работают в достаточной степени. Автор подчеркивает необходимость усиления законодательства и мер контроля, регулирующих игорные площадки.

«Психологические особенности молодых людей и их склонность к риску играют важную роль в привлечении их к азартным играм»[4.р. 225-257]. Деревенский считает, что психологическая ранимость и импульсивность молодых людей повышают риск их вовлечения в азартные игры. Молодые люди часто считают более важными краткосрочные выгоды и не могут правильно оценить риск. Также на них сильно влияет влияние сверстников. Рискованное поведение друзей или социальные роли могут привлечь молодых людей к азартным играм. Это оказывает негативное влияние на эмоциональное и социальное развитие подростков.

«Психологические особенности молодых людей и их склонность к риску играют важную роль в привлечении их к азартным играм»[5.р. 225-257]. Деревенский считает, что психологическая ранимость и импульсивность молодых людей повышают риск их вовлечения в азартные игры. Молодые люди часто считают более важными краткосрочные выгоды и не могут правильно оценить риск. Также на них сильно влияет влияние сверстников. Рискованное поведение друзей или социальные роли могут привлечь молодых людей к азартным играм. Это оказывает негативное влияние на эмоциональное и социальное развитие подростков.

«Мотивационное интервью и методы самопомощи могут помочь зависимым от азартных игр осознать и изменить свое поведение»[6.р. 355-372] Ходжинс подчеркивает эффективность методов мотивационного интервьюирования для зависимых от азартных игр. С помощью этого метода психологи учат игроков распознавать свои проблемы и находить решения. Важно посредством мотивационного интервью пробудить внутреннюю мотивацию человека, объяснить ему последствия его действий. Кроме того, с помощью техник самопомощи человек учится контролировать свое поведение и поддерживает себя в процессе отказа от азартных игр.

«Существует множество путей, которые приводят к развитию проблем с азартными играми, включая психологические, биологические и социальные факторы»[7.р. 487-499] В своей модели «Пути» Блащинский описывает три основных пути, ведущих к развитию игровой зависимости: биологический, психологический и социальный. Некоторые люди более склонны к риску из-за генетической предрасположенности или из-за уникальной дофаминовой системы в мозгу. В других случаях эту зависимость развивают психологические травмы или стресс. Социальные факторы формируются под влиянием окружающей среды и культурных ценностей. Эта модель помогает понять сложную природу зависимости и предлагает индивидуальные подходы к лечению.

«С ростом популярности азартных игр в Интернете уровень зависимости растет, и это создает новые риски»[8.р. 709-725]. Исследование Уолберга показывает, что рост индустрии онлайн-гемблинга приводит к росту зависимости. Расширение возможностей азартных игр посредством онлайн-платформ создает серьезные проблемы, особенно на фоне развивающихся технологий. Автор подчеркивает необходимость контроля этого процесса и усиления профилактических мер.

«Распространенность игровой зависимости среди подростков негативно влияет на их эмоциональное и социальное развитие»[9.р. 239-254]. Дельфаббро говорит о нарушении процессов развития в результате игровой зависимости у юных игроков. Поскольку молодые люди эмоционально нестабильны, азартные игры могут привести к стрессу, депрессии и социальной изоляции. Они также теряют самоконтроль и сталкиваются с финансовыми проблемами. Дельфаббро подчеркивает необходимость профилактических и образовательных программ для предотвращения таких негативных последствий.

«Интернет-гемблинг порождает новые формы зависимости среди молодежи, что негативно влияет на их психологическое здоровье»[10.р. 649-663]. В нем рассматривается распространенность азартных игр в Интернете среди южнокорейских подростков и факторы риска, которые к этому приводят. Авторы обнаружили высокую распространенность азартных игр в Интернете и отметили, что это состояние отрицательно влияет на психологическое здоровье молодых людей. В исследовании отмечена необходимость усиления профилактических мер по предотвращению зависимости от азартных игр в Интернете.

«Люди, не склонные к риску, подвергаются высокому риску азартных игр в Интернете, что негативно влияет на их финансовую и социальную жизнь»[11.р.281-289]. В этом исследовании, проведенном среди студентов Университета Макао, изучалась природа импульсивности и ее влияние на проблемы с азартными играми. Авторы обнаружили, что люди с высоким уровнем импульсивности чаще участвуют в онлайн-гемблинге, что негативно влияет на их финансовую и социальную жизнь. Результаты исследования

показывают важность психологических вмешательств, направленных на снижение импульсивности.

«Люди с низким самоконтролем чаще становятся зависимыми от онлайн-гемблинга, что негативно влияет на качество их жизни и психическое состояние»[12.р.198-207]. Это исследование было проведено среди китайских студентов и изучало влияние самоконтроля на зависимость от азартных игр. Авторы обнаружили, что учащиеся с низким уровнем самоконтроля чаще рисковали во время игры, что могло нанести вред их психическому здоровью. В исследовании рекомендованы профилактические меры, направленные на личностное развитие.

«Люди, которые переживают финансовый кризис из-за азартных игр в Интернете, испытывают социальную изоляцию и подвергаются повышенному риску депрессии»[13.р.123-138]. Это южнокорейское исследование изучает экономические и социальные последствия азартных игр в Интернете. Авторы показывают, что игроки, испытывающие финансовые проблемы, чаще страдают от социальной изоляции и депрессии. В этом исследовании подчеркивается необходимость служб поддержки для предотвращения экономических кризисов.

Результаты исследования. Для эффективного решения этой проблемы необходимо принять ряд мер. Во-первых, бороться с зависимостью можно с помощью психотерапии, в частности когнитивно-поведенческой терапии. Этот метод помогает человеку заново проанализировать свои мысли и действия. Во-вторых, важно создать систему социальной поддержки. Группы взаимопомощи, такие как «Анонимные игроки», играют важную роль в оказании психологической поддержки зависимым. Что касается профилактических мер, то очень важно формировать цифровую безопасность и культуру среди молодежи и взрослых, а также информировать широкую общественность о вредном влиянии игр.

В семьях цифровая деятельность детей и подростков должна быть под контролем, а родители должны пропагандировать здоровый образ жизни своих детей. Предотвратить распространение этой проблемы также можно за счет ужесточения законодательства об азартных играх и введения технических ограничений. Зависимость от онлайн-гемблинга – сложное состояние, приводящее к серьезным психологическим и социальным проблемам, требующее широкого спектра мер профилактики и лечения. Результаты исследований, проводимых в этом направлении, послужат защите психического здоровья людей и обеспечению их социально-экономической стабильности в будущем. Пристрастие к онлайн-гемблингу становится одной из актуальных тем исследований в области психологии и здравоохранения. Это состояние вызывает специфические изменения в психике и поведении человека. Азартные игры, особенно онлайн, стимулируют склонность человека идти на риск и усиливают краткосрочное удовлетворение. Во время этих игр активируются центры вознаграждения и удовольствия мозга, что мотивирует человека играть все чаще и чаще. В результате регулярного

продолжения такой деятельности у человека формируется психологическая зависимость, и по мере углубления этого состояния он начинает отвлекаться от реальной жизненной деятельности, обязанностей и целей. Если глубоко проанализировать психологические механизмы пристрастия к онлайн-гемблингу, в первую очередь следует подчеркнуть роль системы вознаграждения. Каждый успешный риск, на который человек идет, например, выигрыш в игре, приводит к выбросу дофамина в мозг. Дофамин — нейромедиатор, создающий у человека чувство удовольствия, и этот процесс стимулирует повторение мозговой активности. Краткосрочное удовлетворение обычно возникает, когда достигается успех или открываются новые возможности. Однако проигрышные ситуации также оказывают на игроков психологическое давление и заставляют их продолжать рисковать. Этот процесс, в свою очередь, может усилить стресс, тревогу и депрессию. Исследования показывают, что риск игровой зависимости обычно выше у психологически уязвимых людей. В частности, к зависимости склонны люди с низкой способностью управлять стрессом, высоким уровнем тревожности и низким самоконтролем. Для таких личностей азартные игры служат средством временного отвлечения от проблем и эмоционального облегчения. В результате они забывают о своих жизненных обязанностях и демонстрируют поведение, направленное на удовлетворение потребности в получении кратковременного «вознаграждения» посредством игры. Продолжение такого поведения приводит к углублению игровой зависимости. Также склонность к азартным играм может быть связана с биологическими и социальными детерминантами личности. Некоторые исследования показывают, что на этот процесс влияют генетические факторы. Например, склонность к риску или импульсивность у некоторых людей могут быть связаны с определенными характеристиками мозга. В то же время влияние социального окружения и друзей также является важным фактором. Если близкое окружение человека склонно рисковать или заниматься азартными играми, под их влиянием человек будет более активно заниматься подобной деятельностью. Ученые в области психологии стремятся разработать эффективные методы лечения, позволяющие снизить вредные последствия игровой зависимости. В частности, когнитивно-поведенческая терапия является эффективным инструментом анализа собственных мыслительных процессов человека и формирования конструктивных подходов. Целью данной терапии является повышение уровня осознанности действий и решений человека, а также формирование необходимых навыков для отказа от азартных игр. Кроме того, важны также программы групповой поддержки. Группы взаимопомощи, такие как «Анонимные игроки», оказывают большую социальную поддержку в преодолении зависимости. Необходимо усилить меры профилактики азартных игр. Важно организовать масштабные образовательные программы по цифровой культуре и безопасности среди молодежи, контролировать цифровую активность детей в семьях, пропагандировать среди них здоровый образ жизни. При этом следует

усилить законодательство и технические ограничения азартных игр на государственном уровне. Таким образом можно избежать негативных последствий, связанных с играми. Пристрастие к онлайн-гемблингу – сложный процесс, вызывающий серьезные психологические и социальные проблемы, против которого необходимо принимать эффективные меры. Научно-профилактическая деятельность в этом направлении сыграет важную роль в сохранении психического здоровья людей и обеспечении их социального благополучия в будущем. Пристрастие к азартным играм – сложный и многогранный процесс, на который влияет ряд психологических, социальных и биологических факторов. Психологически к азартным играм более склонны люди с высоким уровнем тревожности и низкой толерантностью к стрессовым ситуациям. Такие личности обращаются к азартным играм как к средству временного бегства от проблем и трудностей реальной жизни. Краткосрочную выгоду и азарт они воспринимают как высокий уровень психологического облегчения, ускоряющего формирование игровой зависимости. Также люди, склонные к тревоге и депрессии, пытаются контролировать свое внутреннее эмоциональное состояние посредством азартных игр. Они могут временно чувствовать себя хорошо, добившись успеха, но это кратковременно и вызывает еще больший стресс, когда они терпят неудачу. Это повторяется снова и снова, вызывая углубление игровой зависимости. Такие личности склонны принимать импульсивные решения и идти на риск в надежде на успех. Социальные факторы также относятся к числу важных факторов, формирующих склонность к азартным играм. Большое значение имеет влияние окружающей среды и социального окружения. Например, интерес друзей или близких знакомых к азартным играм или их активное участие в них может повысить интерес человека к этим играм. Наличие культуры азартных игр в обществе и принятие ее в качестве социальной нормы также влияет на вовлеченность игроков в подобную деятельность. Кроме того, отсутствие или слабость системы социальной поддержки может привести к тому, что люди выберут вредные привычки, такие как азартные игры, чтобы избежать стресса и беспокойства. Кроме того, необходимо проанализировать генетические и нейробиологические факторы игровой зависимости. Некоторые исследования показывают, что рискованность и импульсивность людей иногда связаны с генетическими факторами. Определенные изменения в активности мозга или различия в уровнях нейротрансмиттеров могут повысить склонность людей к азартным играм и склонность к развитию зависимости.

Например, процессы, связанные с выработкой дофамина, усиливают чувство удовольствия от успеха в азартных играх и вызывают у человека желание пережить это эмоциональное состояние еще раз. В совокупности эти факторы формируют отношение человека к азартным играм. Каждый фактор необходимо учитывать, чтобы предотвратить зависимость и справиться с ней. Психологи и исследователи сосредоточены на разработке профилактических мер по снижению игровой зависимости. Эффективными методами таких мер

являются развитие навыков самоконтроля, обучение стратегиям управления стрессом и тревогой, а также укрепление систем социальной поддержки. Кроме того, важно развивать цифровую культуру среди молодежи и детей и проводить просветительские мероприятия о вреде азартных игр. Эти меры станут важным фактором снижения проблемы игровой зависимости в будущем.

Игровая зависимость – сложное состояние, глубоко укоренившееся в психологии человека и от которого трудно избавиться. Для решения этой проблемы необходимо использовать эффективные терапевтические и профилактические подходы. Прежде всего, при лечении зависимости широко применяется психотерапия, в частности когнитивно-поведенческая терапия. Этот подход направлен на изменение мыслительных процессов человека и сознательное управление поведением. С помощью КПТ можно объяснить игроку связь между его решениями и чувствами, а также научить необходимым стратегиям отказа от вредных привычек. Во время терапии важно вовлекать игрока в альтернативные виды деятельности, развивать навыки управления стрессом и самоконтроля. Наличие системы межличностной поддержки также является одним из наиболее эффективных способов лечения зависимости. Групповая терапия. Через группы взаимной поддержки, такие как «Анонимные игроки», люди, страдающие зависимостью, делятся своим опытом и поддерживают друг друга. Такое групповое общение помогает человеку избавиться от чувства одиночества и вернуть уверенность в себе. Люди, сталкивающиеся с похожими проблемами, мотивируют друг друга взаимными советами и поддержкой. Этот метод особенно эффективен для людей, находящихся в социальной изоляции. Роль семьи в преодолении игровой зависимости также очень важна. Благодаря семейному консультированию и поддержке близкие человека могут активно участвовать в процессе выздоровления и оказывать эмоциональную поддержку. Желание семьи понять и оказать поддержку ускоряет процесс выздоровления и повышает мотивацию игрока. Важно работать вместе, чтобы разрешать семейные конфликты и справляться со стрессом. За счет улучшения психологической среды борьба с зависимостью становится более эффективной.

Что касается профилактических мер, то необходимо проводить масштабную просветительскую и просветительскую работу по предупреждению игровой зависимости. Важно формировать среди молодежи и взрослых культуру цифровой безопасности и ответственной игры, а также повышать осведомленность о вредных последствиях азартных игр. В частности, в образовательных учреждениях должны быть реализованы программы по управлению стрессом, правильному тайм-менеджменту, пропаганде здорового образа жизни. Предотвратить эту проблему также можно путем усиления государством законодательства, регулирующего азартные игры, введения ограничений на онлайн-платформы и контроля рекламной деятельности. Эти меры позволят снизить распространенность

азартных игр и помогут сохранить психологическое здоровье людей. В результате можно контролировать и предотвращать проблему игровой зависимости в больших масштабах. Профилактические и социальные меры по предотвращению зависимости от азартных игр в Интернете требуют эффективных подходов во многих областях. Прежде всего, необходимо сосредоточиться на повышении знаний о цифровой культуре и безопасности среди молодежи. В образовательных учреждениях должны быть внедрены специальные программы для формирования таких навыков, как правильная оценка рисков, правильный тайм-менеджмент, ответственная деятельность в Интернете. Молодежь должна быть осведомлена о негативных последствиях цифровых технологий, включая опасность азартных игр. Благодаря этому формируется их осознанное и ответственное поведение. Также важно распространять информацию и повышать осведомленность общественности о вредных последствиях азартных игр. В этом процессе должна проводиться всесторонняя пропагандистская работа через средства массовой информации, социальные сети и другие средства коммуникации. Разъясняя людям финансовый, психологический и социальный вред азартных игр, можно обеспечить им осторожность и безопасность. Кроме того, необходимо усилить контроль над азартными играми путем введения технических ограничений и ужесточения законодательства на государственном уровне. Ограничение деятельности онлайн-гемблинг-платформ, введение механизмов, ограничивающих доступ молодежи, а также выявление нелегальных игровых платформ и принятие мер против них должно стать неотъемлемой частью государственной политики. Данные профилактические меры важны для предотвращения распространения игровой зависимости, сохранения здоровья населения и улучшения благосостояния людей.

Краткое содержание. Пристрастие к онлайн-гемблингу является одной из актуальных психологических проблем современного цифрового общества, которая оставляет серьезный след в психической, социальной и экономической жизни человека. Исследования показывают, что любители риска становятся особенно зависимыми от этих игр из-за их стремления к краткосрочным вознаграждениям. Это состояние отрицательно влияет на их психологическую устойчивость и социальную активность, заставляет их отдаляться от своих жизненных планов и целей. Финансовый кризис, стресс, противоречивые отношения с семьей и обществом – самые распространенные последствия игровой зависимости. В психологии личности игромания характеризуется импульсивным поведением, эмоциональной нестабильностью и потерей контроля. Благодаря активации системы вознаграждения в мозгу человек достигает кратковременного успеха и хочет повторить эту ситуацию еще раз. Неудачи, наоборот, побуждают играть еще больше. Чтобы разорвать этот негативный порочный круг, необходимы комплексные профилактические и терапевтические меры. Чтобы помочь человеку, прежде всего, необходимо помочь ему осознать свою проблему, понять свое поведение и сформировать управленческие навыки.

Большое значение в процессе лечения имеют методы индивидуальной и групповой терапии. Через систему групповой поддержки зависимые от азартных игр общаются с людьми, которые их понимают, и делятся своим опытом. Это помогает им не чувствовать себя одинокими и побуждает встать на путь выздоровления. В то же время системы социальной поддержки и помощь близких ускоряют процесс выздоровления. Профилактические меры также очень важны в борьбе с игровой зависимостью. Среди основных мер — пропаганда цифровой безопасности и игровой культуры среди молодежи, повышение осведомленности о вредном воздействии игр. Также необходимо усилить законодательство, регулирующее азартные игры, ввести технические ограничения на нелегальные игровые площадки. Эти мероприятия позволяют сократить распространение азартных игр и обеспечить здоровую психологическую среду среди населения. Преодоление зависимости от азартных игр в Интернете требует комплексного подхода. Положительных результатов можно добиться только при совместном применении психотерапии, социальной поддержки и правовых ограничений. Эти меры играют важную роль в сохранении психологического здоровья людей и укреплении их социальной стабильности.

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ПЕРСОНАЛИЗАЦИЯ В ЭЛЕКТРОННОЙ КОММЕРЦИИ: КАК ПРЕДЛАГАТЬ КЛИЕНТАМ ТО, ЧТО ОНИ ДЕЙСТВИТЕЛЬНО ХОТЯТ

***Аннотация:** В условиях стремительного развития цифровой экономики персонализация становится важным инструментом повышения конкурентоспособности компаний в электронной коммерции. Настоящее исследование посвящено анализу методов и технологий персонализации, включая использование искусственного интеллекта (AI), машинного обучения (ML) и Big Data, для улучшения пользовательского опыта и увеличения продаж. В работе рассмотрены примеры успешного применения персонализированных решений на платформах Amazon, Netflix и Wildberries. Определены основные преимущества персонализации, такие как повышение конверсии, увеличение среднего чека и улучшение лояльности пользователей. Однако процесс внедрения персонализации сопряжён с рядом проблем, включая вопросы конфиденциальности данных, технические ограничения и этические аспекты. На основании проведённого анализа разработаны практические рекомендации по внедрению персонализированных стратегий в электронной коммерции.*

***Ключевые слова:** Персонализация, электронная коммерция, искусственный интеллект, машинное обучение, Big Data, рекомендательные системы, пользовательский опыт, конфиденциальность данных.*

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PERSONALIZATION IN E-COMMERCE: HOW TO OFFER CUSTOMERS WHAT THEY REALLY WANT

***Abstract:** In the context of the rapid development of the digital economy, personalization has become a crucial tool for enhancing the competitiveness of companies in e-commerce. This study analyzes personalization methods and technologies, including Artificial Intelligence (AI), Machine Learning (ML), and Big Data, aimed at improving user experience and increasing sales. The paper examines successful cases of personalized solutions applied on platforms such as Amazon, Netflix, and Wildberries. The main benefits of personalization are*

identified, including increased conversion rates, higher average order value, and improved customer loyalty. However, the process of implementing personalization involves various challenges, such as data privacy concerns, technical limitations, and ethical considerations. Based on the conducted analysis, practical recommendations for implementing personalized strategies in e-commerce are developed.

Keywords: *Personalization, e-commerce, artificial intelligence, machine learning, Big Data, recommendation systems, user experience, data privacy.*

Введение

В условиях современной цифровой экономики электронная коммерция становится важнейшим инструментом для ведения бизнеса. Конкуренция между онлайн-магазинами и маркетплейсами стремительно растет, и привлечение и удержание клиентов становится все более сложной задачей. Одним из эффективных решений в данной ситуации является персонализация — стратегия, позволяющая предлагать клиентам именно те товары и услуги, которые максимально соответствуют их потребностям и предпочтениям.

Персонализация помогает компаниям повысить конверсию, увеличить средний чек и улучшить клиентский опыт. Благодаря использованию современных технологий, таких как искусственный интеллект (Artificial Intelligence, AI) и машинное обучение (Machine Learning, ML), возможности персонализации значительно расширились, позволяя создавать точные и релевантные рекомендации в реальном времени.

Целью данного исследования является анализ методов и технологий персонализации в электронной коммерции, а также оценка их влияния на повышение лояльности клиентов и увеличение продаж.

Для достижения поставленной цели были определены следующие задачи:

1. Исследовать понятие и значение персонализации в электронной коммерции.
2. Описать основные методы и технологии персонализации, включая использование больших данных и алгоритмов машинного обучения.
3. Рассмотреть практические примеры успешной реализации персонализированных решений на известных платформах.
4. Оценить эффективность персонализации с точки зрения ключевых показателей.
5. Выявить основные проблемы и ограничения при внедрении персонализации.
6. Разработать практические рекомендации по внедрению персонализированных стратегий в электронной коммерции.

1. Понятие и значение персонализации в электронной коммерции

Персонализация в электронной коммерции — это процесс адаптации предложений, контента и пользовательского опыта на основе индивидуальных характеристик и предпочтений каждого клиента.

Персонализация позволяет интернет-магазинам и платформам предлагать покупателям релевантные товары, услуги и рекламные предложения, что значительно повышает удовлетворенность пользователей и способствует увеличению продаж.

Согласно исследованию McKinsey (2022), компании, активно использующие персонализацию, способны увеличивать доход на 5–15% и повышать эффективность маркетинговых затрат на 10–30% по сравнению с конкурентами, которые не применяют подобные подходы. Персонализация лежит в основе стратегий клиентоориентированности, что особенно важно в условиях высокой конкуренции на рынке электронной коммерции.

Персонализация имеет ряд существенных преимуществ как для продавцов, так и для покупателей:

1. Для продавцов:

- **Повышение конверсии.** Персонализированные рекомендации и предложения увеличивают вероятность покупки, так как клиенту предлагаются товары, соответствующие его интересам.

- **Рост среднего чека.** Алгоритмы персонализации способствуют увеличению среднего чека за счет предложения дополнительных и сопутствующих товаров.

- **Улучшение удержания клиентов.** Персонализированный подход способствует созданию положительного пользовательского опыта, что увеличивает лояльность и сокращает отток клиентов.

- **Оптимизация маркетинговых затрат.** Таргетированные кампании, построенные на основе анализа данных о предпочтениях клиентов, позволяют значительно повысить эффективность рекламных вложений.

2. Для покупателей:

- **Улучшенный пользовательский опыт.** Персонализированный контент и рекомендации делают процесс покупки более удобным и приятным.

- **Экономия времени.** Клиенты быстрее находят нужные товары благодаря релевантным предложениям.

- **Чувство индивидуального подхода.** Пользователи ценят внимание к их предпочтениям, что повышает удовлетворенность и доверие к бренду.

Персонализация играет ключевую роль в создании положительного пользовательского опыта, который, в свою очередь, является одним из важнейших факторов конкурентоспособности компании на рынке электронной коммерции. [1, с.45]

2. Основные методы и технологии персонализации

Внедрение персонализации в электронной коммерции требует использования разнообразных методов и технологий, которые позволяют собирать, анализировать и интерпретировать данные о клиентах. Современные технологии, такие как искусственный интеллект, машинное обучение и Big Data, позволяют создавать точные и динамичные персонализированные предложения.

Одним из ключевых шагов в процессе персонализации является сегментация аудитории. Сегментация позволяет разделить пользователей на группы по определённым характеристикам, что позволяет более точно адаптировать предложения и маркетинговые стратегии.

1. Демографическая сегментация. Демографическая сегментация основывается на таких характеристиках, как возраст, пол, доход, образование, семейное положение и географическое местоположение. Этот метод позволяет создавать предложения, ориентированные на определённые социальные группы.

2. Поведенческая сегментация. В отличие от демографической, поведенческая сегментация фокусируется на действиях пользователей, таких как:

- Частота посещений сайта;
- История покупок и просмотренных товаров;
- Взаимодействие с рекламными кампаниями и email-рассылками;
- Пройденные этапы воронки продаж.

Примером поведенческой сегментации является ретаргетинг — технология, позволяющая показывать рекламу пользователям, которые уже проявляли интерес к определённым товарам или услугам.

1. RFM-анализ (*Recency, Frequency, Monetary*).

RFM-анализ — это метод сегментации, который основывается на трёх ключевых метриках:

- *Recency* (давность). Сколько времени прошло с момента последнего взаимодействия клиента с компанией (последней покупки или визита на сайт).
- *Frequency* (частота). Как часто клиент взаимодействует с компанией.
- *Monetary* (сумма). Сумма, потраченная клиентом за определённый период времени.

RFM-анализ позволяет выявить наиболее ценных клиентов и разработать для них индивидуальные предложения. Например, для пользователей с высокой частотой покупок и значительными тратами можно предложить программу лояльности или эксклюзивные скидки.

Искусственный интеллект (AI) и машинное обучение (ML) играют ключевую роль в создании персонализированных предложений. Современные алгоритмы позволяют анализировать огромные объёмы данных и предлагать пользователям релевантные товары и услуги.

2. Коллаборативная фильтрация (*Collaborative Filtering*).

Коллаборативная фильтрация основывается на анализе поведения пользователей с похожими предпочтениями. Этот метод предполагает, что если два пользователя имели схожие покупки или оценки товаров, то, вероятно, они заинтересуются и другими схожими товарами.

Примером применения коллаборативной фильтрации является алгоритм рекомендаций Netflix, который предлагает пользователям фильмы и сериалы на основе того, что смотрели люди с похожими предпочтениями.

3. Контентная фильтрация (Content-Based Filtering).

В отличие от коллаборативной фильтрации, контентная фильтрация основывается на характеристиках товаров и интересах конкретного пользователя. Алгоритмы анализируют информацию о продуктах (категории, описание, ключевые слова) и предлагают пользователю контент, соответствующий его предпочтениям.

Например, на Amazon пользователю, который ранее покупал книги одного жанра, будут предложены книги того же жанра.

4. Гибридные подходы.

В реальных системах часто используется комбинация коллаборативной и контентной фильтрации, что позволяет повысить точность рекомендаций. Гибридные системы объединяют сильные стороны обоих подходов и минимизируют их недостатки.

Примером гибридной системы является рекомендательный алгоритм YouTube, который анализирует как поведение пользователей, так и контент видео для создания релевантных рекомендаций.

Big Data играет критически важную роль в персонализации, так как позволяет компаниям анализировать огромные объёмы данных, включая:

- Историю покупок;
- Поисковые запросы;
- Взаимодействие с контентом;
- Отзывы пользователей.

Предиктивная аналитика (Predictive Analytics) использует методы машинного обучения для предсказания будущих действий пользователей на основе анализа исторических данных. Применение предиктивной аналитики позволяет:

- Прогнозировать потребности пользователей;
- Определять оптимальные моменты для отправки рекламных предложений;
- улучшать точность рекомендаций.

В результате компании получают возможность разрабатывать точные и эффективные стратегии персонализации, которые позволяют улучшить клиентский опыт и увеличить продажи. [2, с.216]

3. Практическое применение персонализации

На практике персонализация широко применяется в электронной коммерции, где ведущие платформы используют различные технологии для повышения конверсии, увеличения среднего чека и повышения лояльности клиентов. В этом разделе будут рассмотрены примеры применения персонализации на таких платформах, как Amazon, Netflix и Wildberries, а также способы оптимизации пользовательского опыта и маркетинговых стратегий.

Рекомендательные системы являются одной из наиболее эффективных форм персонализации, активно применяемой в электронной коммерции. Они

анализируют поведение пользователей, историю покупок и просмотров, а затем предлагают им релевантные товары и услуги.

1. Amazon

Amazon — одна из крупнейших платформ электронной коммерции, которая широко использует персонализацию для улучшения пользовательского опыта. Ключевые элементы персонализации на Amazon включают:

- Рекомендательные блоки. Например, разделы «Покупатели, которые купили этот товар, также купили...», «Рекомендации на основе вашей истории просмотров» и «Часто покупают вместе».
- Персонализированные email-рассылки. Amazon использует алгоритмы машинного обучения для отправки пользователям предложений на основе их предыдущих покупок и поисковых запросов.
- Динамическое ценообразование. Платформа применяет предиктивную аналитику для оптимизации цен и предложения скидок.

Amazon использует как коллаборативную фильтрацию, так и контентную фильтрацию, а также гибридные подходы, что позволяет значительно повысить точность рекомендаций.

2. Netflix

Netflix является примером компании, которая активно использует персонализацию для улучшения пользовательского опыта и увеличения вовлеченности.

- Алгоритмы рекомендаций. Netflix применяет коллаборативную фильтрацию, анализируя просмотренные фильмы и сериалы пользователей, а также рейтинги, которые они ставят.
- Адаптивные превью и миниатюры. В зависимости от предпочтений пользователя платформа может менять обложки фильмов и сериалов, чтобы сделать их более привлекательными.
- Персонализированные подборки. Списки, такие как «Рекомендуемые для вас», «Похожие на...» и «Пользователи, которым понравилось это, также смотрели», формируются на основе анализа данных о поведении пользователей.

Netflix использует гибридные системы, что позволяет более точно учитывать как индивидуальные предпочтения пользователей, так и поведение аудитории в целом.

3. Wildberries

Wildberries — крупнейший российский маркетплейс, который активно использует персонализацию для повышения продаж и улучшения пользовательского опыта.

- Индивидуальные рекомендации. На основе истории покупок и просмотров Wildberries предлагает пользователям релевантные товары.
- Динамический контент. Платформа адаптирует содержание главной страницы и поисковых выдач в зависимости от интересов пользователя.

- Индивидуальные акции и скидки. Wildberries применяет предиктивную аналитику для разработки персонализированных предложений.

Персонализированный маркетинг включает использование индивидуальных подходов к каждому клиенту, что позволяет значительно повысить эффективность рекламных кампаний.

1. Динамический контент и автоматизированные рассылки

- Современные платформы электронной коммерции активно используют email-рассылки, которые адаптируются под каждого пользователя. Такие рассылки включают рекомендации товаров, подборки на основе интересов и предложения на основе последних покупок.

- Пример: Amazon регулярно отправляет письма с подборками товаров, которые могут заинтересовать пользователя на основе его предыдущих покупок.

2. Индивидуальные скидки и акции

- Персонализированные предложения, основанные на анализе поведения пользователей, являются мощным инструментом для увеличения продаж.

- Пример: Wildberries предоставляет индивидуальные скидки постоянным клиентам и предлагает специальные акции в зависимости от их предпочтений и частоты покупок.

Создание удобного и адаптированного интерфейса позволяет улучшить взаимодействие пользователя с платформой и повысить лояльность клиентов.

1. Кастомизация интерфейса и содержания

- Персонализированные главные страницы, где пользователю показываются только те категории товаров, которые его интересуют.

- Динамическое изменение интерфейса на основе истории поиска и предпочтений.

2. Интерактивные инструменты (примерочные, конфигураторы)

- Онлайн-конфигураторы позволяют пользователям самостоятельно создавать продукт, исходя из своих предпочтений.

- Виртуальные примерочные, как на Wildberries, позволяют пользователям визуализировать товар перед покупкой.

Применение таких технологий позволяет компаниям повысить удобство использования своих сервисов и сделать процесс покупки более интуитивным.

5. Проблемы и ограничения персонализации

Несмотря на значительные преимущества персонализации, её внедрение в электронной коммерции сопряжено с рядом проблем и ограничений. Основные сложности связаны с этическими вопросами, техническими ограничениями и потенциальными рисками.

1. Нарушение приватности пользователей

- Персонализация предполагает сбор и анализ огромных объёмов данных о поведении пользователей, включая их покупки, просмотры, предпочтения и личные данные.

- Некорректное использование данных может привести к вторжению в частную жизнь пользователей, что вызывает беспокойство по поводу конфиденциальности.

2. Соответствие законодательным нормам

- Компании, работающие на международных рынках, обязаны соблюдать различные правовые нормы, регулирующие использование персональных данных.

- Например, GDPR (General Data Protection Regulation) в Европейском Союзе предъявляет строгие требования к сбору, хранению и использованию данных пользователей.

- В США применяются такие акты, как California Consumer Privacy Act (CCPA), которые обеспечивают защиту прав пользователей на доступ к своим данным и контроль над их использованием.

3. Этические аспекты алгоритмов

- Алгоритмы машинного обучения, используемые для персонализации, могут обладать предвзятостью, что приводит к неравномерному предоставлению информации различным группам пользователей.

- Некорректная сегментация или дискриминация на основе данных могут вызывать негативные реакции со стороны общества и пользователей.

Технические ограничения и возможные риски

1. Качество данных

- Персонализация требует точных и актуальных данных. Неполные или устаревшие данные могут привести к неэффективным рекомендациям и ухудшению пользовательского опыта.

- Ошибки в данных, такие как дублирование или неправильная классификация, также снижают точность алгоритмов.

2. Сложность внедрения

- Разработка и интеграция персонализированных систем требуют значительных финансовых и временных затрат.

- Компании должны инвестировать в технологии машинного обучения, Big Data и инфраструктуру для обработки данных.

3. Скалируемость систем

- Для крупных компаний, таких как Amazon или Netflix, обработка огромного количества данных требует высокой вычислительной мощности и продвинутых алгоритмов.

- Системы должны быть масштабируемыми, чтобы справляться с ростом пользовательской базы и увеличением объёмов данных.

4. Проблемы безопасности

- Сбор и хранение больших объёмов персональных данных увеличивают риск утечек и кибератак.

- Компании обязаны обеспечивать высокий уровень безопасности данных и предотвращать несанкционированный доступ к информации.

5. Негативный пользовательский опыт

- Персонализация может оказаться навязчивой, если пользователи ощущают избыточный контроль со стороны компании.

- Чрезмерная адаптация контента или постоянные рекомендации могут вызвать раздражение и недовольство пользователей.

Персонализация, несмотря на её эффективность, сталкивается с серьёзными проблемами, которые необходимо учитывать при её внедрении. Компании должны находить баланс между улучшением пользовательского опыта и соблюдением норм этики и безопасности. [3, с.95]

6. Практические рекомендации по внедрению персонализации

Успешная персонализация требует тщательного планирования, выбора подходящих технологий и постоянного мониторинга эффективности. В данном разделе представлены пошаговые рекомендации для компаний по внедрению персонализированных решений, а также советы по выбору технологий и программных продуктов.

Пошаговые рекомендации для компаний по внедрению персонализированных решений

1. Сбор и анализ данных

- Определите, какие данные о пользователях необходимо собирать для улучшения персонализации. Это могут быть:

- Демографические данные (возраст, пол, местоположение);
- Поведенческие данные (история покупок, просмотров, предпочтений);
- Данные из взаимодействий с контентом (поисковые запросы, клики, отзывы).

- Обеспечьте сбор данных из различных источников (веб-сайты, мобильные приложения, email-рассылки и т. д.).

- Убедитесь, что все данные собираются в соответствии с законодательными нормами и политиками конфиденциальности.

2. Сегментация аудитории

- Разделите пользователей на группы на основе демографических, поведенческих и психологических характеристик.

- Используйте RFM-анализ для определения ценных клиентов и разработки для них специализированных предложений.

- Постоянно обновляйте сегменты на основе новых данных, чтобы поддерживать актуальность рекомендаций.

3. Выбор технологий и инструментов

- Инвестируйте в Big Data и предиктивную аналитику для эффективного анализа большого объёма данных.

- Используйте машинное обучение и искусственный интеллект для создания точных рекомендаций.

- Рассмотрите использование гибридных рекомендательных систем, сочетающих коллаборативную фильтрацию и контентную фильтрацию.

- Популярные инструменты и платформы:

- Amazon Personalize — сервис для создания персонализированных рекомендаций на базе машинного обучения.

- Google AI Platform — мощная платформа для анализа данных и разработки персонализированных моделей.

- Salesforce Marketing Cloud — инструмент для создания персонализированных маркетинговых кампаний.

4. Создание персонализированного контента

- Разрабатывайте индивидуальные предложения, акции и рекомендации для каждого сегмента аудитории.

- Применяйте динамический контент на веб-сайтах и в email-рассылках, адаптируя его под интересы пользователей.

- Оптимизируйте интерфейсы для удобства пользователей, обеспечивая им возможность настраивать внешний вид и содержание страниц.

5. Мониторинг и оценка эффективности

- Определите ключевые показатели эффективности (KPI), такие как:

- Конверсия;

- Средний чек (Average Order Value);

- Пожизненная ценность клиента (Customer Lifetime Value);

- Retention Rate (Удержание клиентов);

- Коэффициент отказов (Bounce Rate).

- Используйте инструменты аналитики (например, Google Analytics, Yandex.Metrica) для отслеживания результатов.

- Постоянно улучшайте алгоритмы и подходы на основе полученных данных.

6. Соблюдение этических норм и защита данных

- Собирайте данные только с согласия пользователей и обеспечивайте возможность управления своими данными.

- Соблюдайте законодательные нормы, такие как GDPR и CCPA, при сборе и хранении данных.

- Регулярно проверяйте системы безопасности и защищайте данные от несанкционированного доступа.

Советы по выбору технологий и программных продуктов

1. Выбор платформы для персонализации

- Определите, какие задачи должны быть решены: рекомендации, email-рассылки, адаптация интерфейсов и т. д.

- Изучите возможности популярных платформ, таких как Adobe Experience Cloud, Salesforce, Amazon Personalize и Google AI Platform.

- Убедитесь, что выбранная технология соответствует вашему бизнес-процессу и может быть интегрирована с текущими системами.

2. Инвестирование в машинное обучение и искусственный интеллект

- Используйте инструменты для разработки моделей машинного обучения, такие как TensorFlow, Scikit-Learn, PyTorch.

- Разработайте гибридные алгоритмы, объединяющие несколько подходов к персонализации для достижения максимальной точности.

3. Обеспечение безопасности и конфиденциальности

- Инвестируйте в инструменты кибербезопасности и регулярно проводите аудиты безопасности.

- Обеспечьте возможность пользователям контролировать свои данные (например, добавив функционал управления предпочтениями и историей действий).

Практическое применение этих рекомендаций позволит компаниям эффективно внедрить персонализацию, улучшить пользовательский опыт и добиться значительного увеличения доходов. [4, с.15]

Заключение

Персонализация в электронной коммерции становится важнейшим инструментом для повышения конкурентоспособности компаний. Благодаря использованию современных технологий, таких как искусственный интеллект, машинное обучение и Big Data, компании могут создавать точные и релевантные предложения для своих клиентов. Это позволяет не только увеличивать конверсию и средний чек, но и повышать лояльность пользователей, улучшая их общий опыт взаимодействия с брендом.

В процессе исследования были рассмотрены основные методы и технологии персонализации, включая коллаборативную фильтрацию, контентную фильтрацию и гибридные подходы. Особое внимание уделено практическому применению персонализированных технологий на известных платформах, таких как Amazon, Netflix и Wildberries. Примеры их успешного использования подтверждают эффективность подходов, направленных на адаптацию предложений под предпочтения пользователей.

Ключевыми показателями эффективности персонализации являются конверсия, средний чек, пожизненная ценность клиента, коэффициент отказов и уровень удержания клиентов. Применение персонализации позволяет существенно улучшить эти показатели, что подтверждается примерами успешных кейсов.

Однако внедрение персонализации также сопровождается определёнными проблемами и ограничениями, такими как этические вопросы, конфиденциальность данных, технические сложности и потенциальные риски безопасности. Компании должны уделять особое внимание защите данных и соблюдению прав пользователей, особенно в условиях строгих законодательных норм, таких как GDPR и CCPA.

Рекомендации, предложенные в исследовании, включают пошаговый план внедрения персонализированных решений, выбор подходящих технологий и инструментов, а также мониторинг ключевых показателей

эффективности. Эти рекомендации могут быть полезны как для крупных компаний, так и для малого и среднего бизнеса, стремящихся улучшить пользовательский опыт и повысить доходность.

Персонализация в электронной коммерции продолжает развиваться, и перспективы её применения связаны с интеграцией новых технологий, таких как искусственный интеллект, предиктивная аналитика и когнитивные вычисления. Дальнейшие исследования могут быть направлены на:

1. Улучшение алгоритмов рекомендаций с использованием новейших моделей машинного обучения.

2. Интеграцию персонализации с виртуальной и дополненной реальностью для создания более глубокого и интерактивного пользовательского опыта.

3. Разработку гибридных систем, которые сочетают различные методы персонализации для достижения максимальной точности.

4. Создание этических стандартов и принципов для разработки персонализированных систем, учитывающих вопросы конфиденциальности и безопасности данных.

Проведённое исследование подтверждает, что персонализация остаётся важнейшим фактором успеха в электронной коммерции, и её дальнейшее развитие будет напрямую влиять на конкурентоспособность компаний на глобальном рынке.

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ЗНАЧЕНИЕ КИСЛОТНОЙ РЕЗИСТЕНТНОСТИ ЭРИТРОЦИТОВ КАК ПОКАЗАТЕЛЬ СТЕПЕНИ РАЗВИТИЯ ГИПОКСИИ У НОВОРОЖДЕННЫХ С РЕСПИРАТОРНЫМ ДИСТРЕСС-СИНДРОМОМ

Резюме: Целью настоящего исследования является изучение кислотной резистентности эритроцитов (КРЭ) у новорожденных с тяжелым респираторным дистресс-синдромом как маркер нарушения функциональной активности эритроцитов-важного фактора развития гипоксии. Результаты исследования показали, что в основной группе (n=41) КРЭ повышена, что свидетельствует о нарушении функциональной активности эритроцитов и напряжении эритропоэза.

Ключевые слова: респираторный дистресс-синдром, кислотная резистентность, эритроциты, новорожденные

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THE SIGNIFICANCE OF ERYTHROCYTE ACID RESISTANCE AS AN INDICATOR OF THE DEGREE OF HYPOXIA DEVELOPMENT IN NEWBORNS WITH RESPIRATORY DISTRESS SYNDROME

Summary: The purpose of this study is to study the acid resistance of erythrocytes (CEA) in newborns with severe respiratory distress syndrome as a marker of impaired functional activity of erythrocytes, an important factor in the development of hypoxia. The results of the study showed that in the main group (n = 41), KRE was increased, which indicates a violation of the functional activity of erythrocytes and erythropoiesis strain.

Keywords: respiratory distress syndrome, acid resistance, erythrocytes, newborns

Актуальность: Респираторный дистресс-синдром новорожденных (РДСН) заболевание, проявляющееся развитием дыхательной недостаточности непосредственно или в течение нескольких часов после родов, нарастающее по тяжести до постепенного выздоровления выживших, как правило, между 2 и 4

днями жизни. Несмотря на достижения перинатологии в последние годы, существует целый ряд нерешенных проблем в тактике терапии новорожденных с респираторным дистресс-синдромом. Об этом свидетельствует тот факт, что одной из наиболее частых причин смерти в настоящее время является именно эта патология и ее последствия, составляя в структуре неонатальных смертей до 25 % [1-4]. Поиск альтернативных путей улучшения газообмена у новорожденных с РДС – одно из разрабатываемых в настоящее время направлений по оптимизации ведения новорожденных с данной формой патологии [5, 6]. Кислотная резистентность эритроцитов (КРЭ) отражает их функциональную активность. В физиологических условиях соотношение эритроцитов, различных по стойкости, строго стабильно и свидетельствует о динамическом равновесии в системе крови, обеспечивающем соответствие между деятельностью кроветворной и кроверазрушающей систем [8].

Цель исследования: Изучить кислотную резистентность эритроцитов у доношенных новорожденных с тяжелым респираторным дистресс синдромом.

Материал и методы исследования: Были обследованы 85 доношенных новорожденных, поступившие в отделение анестезиологии, реанимации и интенсивной терапии Ферганского областного детского многопрофильного медицинского центра с ноября 2022 по декабрь 2023 г., у которых в раннем неонатальном периоде развился тяжелый РДС. Основную группу составили доношенные новорожденные (n=41) с тяжелым РДС, декомпенсированной дыхательной недостаточностью, потребовавший искусственную вентиляцию легких через интубационную трубку, признаками пневмопатии на рентгенограмме. В данной группе детей соотношение PaO_2/FiO_2 составило ≤ 200 мм рт.ст., а легочной комплайнс $< 0,9$ мл/кг/мм рт. ст. Искусственную вентиляцию легких проводили с помощью респиратора «Babylog 8000 plus 5.n» (Dräger GmbH, Германия) с вентиляцией по объему и скоростью потока от 3 л/мин, а также применен прерывистый спонтанный поток (ISF). Контрольную группу составили 44 доношенных новорожденных, родившихся в Ферганском филиале Республиканского перинатального центра. Критерием включения в группу сравнения было отсутствие респираторных нарушений в раннем неонатальном периоде. Критериями исключения в обеих группах были патологические состояния раннего неонатального периода. Изучение КРЭ у новорожденных с РДС проводилось в острую стадию заболевания (1-5 сут. жизни). У новорожденных без респираторных нарушений исследование проводилась в аналогичные сроки (2-5 сут. жизни). Группы новорожденных были сопоставимы по возрасту на момент исследования ($p=0,3$). Для анализа использовали 20 мкл капиллярной крови из объемов крови, взятых для рутинных исследований.

Кислотную резистентность эритроцитов определяли методом Терскова-Гительсона [8]. Принцип метода: кровь из пальца пациента смешивают с 0,85% NaCl, до получения при красном фильтре экстинкции 0,700 на фотоэлектрическом фотометре, используя специальную кювету, снабженной приспособлением для поддержания постоянной температуры. Для компенсации

в правый пучок света ставят пустую кювету аппарата. После этого из кюветы выливают в отдельную пробирку всю взвесь: затем в кювету вновь вливают точно 2 мл этой взвеси, которая в определенный момент смешивается с 2 мл 0,004 н раствора HCl в 0,85% NaCl . Точно через 30 секунд делают первое определение экстинкции $E_{0'30''}$. Затем каждые 30 сек. делают новое определение экстинкции ($E_{1'00''}$, $E_{1'30''}$, $E_{2'00''}$ и т.д.), пока величина экстинкции не перестанет уменьшаться (E_n). Поддерживается температура кюветы при 24°C. Т.к. красный фильтр нечувствителен к цвету гемоглобина, экстинкция зависит только от концентрации взвешенных в растворе эритроцитов. Постепенное уменьшение экстинкции, наблюдаемое через 30-секундные интервалы, вызывается постепенным разрушением эритроцитов, причем сначала разрушаются те формы, резистентность которых к соляной кислоте слабее. Вычисляют процент уменьшения экстинкции за каждые 30 сек, принимая разность $E_n - E_{0'30''}$ за 100%. Полученные результаты наносят графически и получают эритрограмму. Данные могут быть представлены в виде численных значений: общее время гемолиза – время в минутах, от начала отсчета до завершения гемолиза. Стадия с максимальной скоростью гемолиза показывает, на какой минуте распалось максимальное количество эритроцитов. Уровень максимального гемолиза – количество эритроцитов (в %), распавшееся на стадии с максимальной скоростью гемолиза. Количество высокостойких эритроцитов (в %), распавшихся после 10-й минуте от начала гемолиза. Статистическая обработка материала проведена с использованием программы SPSS. Количественные признаки, представленные в виде медианы (25-75 процентиля), сравнивали с использованием непараметрического критерия Манна-Уитни. Для сравнения качественных бинарных признаков использован двусторонний метод Стьюдента-Фишера. В качестве порогового уровня статистической значимости принято значение 0,05.

Результаты исследования. Данные о поле, гестационном возрасте, оценке по шкале Апгар, массе тела при рождении среди новорожденных представлены в таблице 1.

Таблица 1.

Общая характеристика обследованных новорожденных

№	Показатель	Основная группа	Контрольная группа	P
1	Мальчики/девочки	25/16	25/19	0,8
2	Гестационный возраст, нед	39 (38-40)	39 (38-40)	1,0
3	Оценка по Апгар на 1-й мин	4 (2-6)	7 (7-8)	<0,001
4	Оценка по Апгар на 5-й мин	6 (4-7)	8 (8-8)	<0,001
5	Масса тела при рождении, гр	3250	3345	0,2

Как видно из таблицы группы были сопоставимы по указанным параметрам. Статистически значимые различия выявлены при сравнении оценки по шкале Апгар на 1-й и 5-й мин ($p < 0,001$).

Данные о кислотной резистентности эритроцитов новорожденных представлены в рис. 2. Как видно из данных рис.2., кислотная стойкость основной массы эритроцитов у новорожденных с тяжелым респираторным дисресс-синдромом повышена, что может свидетельствовать о нарушении у них физико-химических свойств мембран эритроцитов, формировании жестких, ригидных мембран, более устойчивых к действию кислотного гемолитика. Более высокая устойчивость мембран эритроцитов к повреждающим воздействиям в условиях дыхательной недостаточности показана А.А. Ненашевым, И.М.Тищенко: с нарастанием степени тяжести дыхательной недостаточности у пациентов отмечалось увеличение механической резистентности эритроцитов [9].

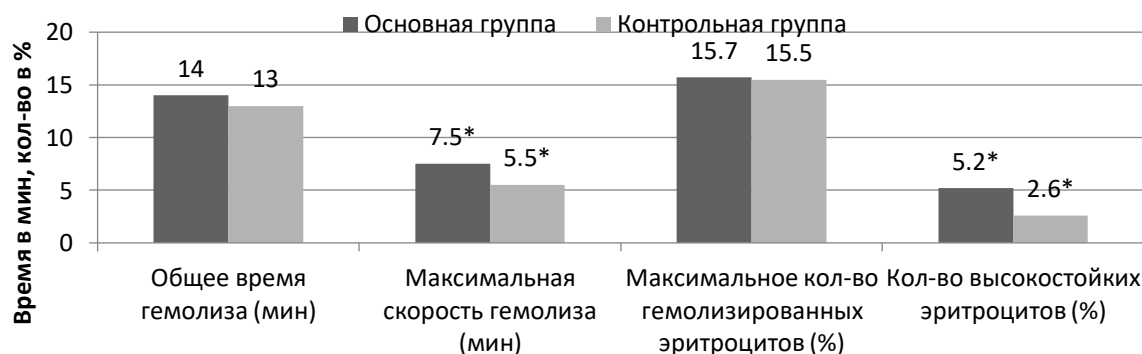


Рис.2. Кислотная резистентность эритроцитов в сравниваемых группах. *-

$p < 0,001$

Повышение ригидности цитолеммы эритроцитов приводит к снижению внутритканевого давления кислорода, так как деформируемость ригидных эритроцитов понижена, узкую часть капилляров эритроциты с пониженной деформируемостью минуют через шунтирующие анастомозы, перенос кислорода в этом случае осуществляется путем простой диффузии, чего недостаточно для адекватного снабжения кислородом органов и тканей. Снижение кислородной емкости крови связано с увеличением степени механического гемолиза жестких эритроцитов в кровеносных сосудах, в порах венозных синусов селезенки [10]. Количество высокостойких эритроцитов у доношенных новорожденных с тяжелым РДС значительно выше (5,2%), чем у доношенных новорожденных без дыхательных расстройств (2,6%, $p=0,02$). Самой высокой кислотной стойкостью обладают незрелые эритроциты [8]. Увеличение количества высокостойких эритроцитов у новорожденных с РДС свидетельствует об активации эритропоэза в ответ на тканевую гипоксию.

Таким образом, определение кислотной устойчивости эритроцитов позволяет разделить последние по стойкости к слабому раствору соляной кислоты. При этом кислотная устойчивость эритроцитов новорожденных с тяжелым РДС отличается от таковой у новорожденных без респираторных нарушений. Нужно отметить, что нарушение реологических свойств крови является одним из патогенетических факторов, способствующих развитию РДС. Активация лейкоцитов и продукция ими провоспалительных медиаторов приводит как к локальному, так и к системному повреждению клеточных мембран, в том числе эритроцитов. Эритроциты с поврежденной мембраной становятся источником свободных радикалов [12-14]. Избыток последних способствует повреждению альвеолярно-капиллярной мембраны в легких, инактивация сурфактанта и ингибированию его синтеза [11]. Функциональные активные эритроциты способны инактивировать свободные радикалы, так как обладают мощной антиоксидантной системой [13]. Повышение кислотной стойкости основной массы эритроцитов у новорожденных с РДС свидетельствует о нарушении функциональной активности эритроцитов, снижении их способности связывать свободные радикалы. Результаты нашего исследования позволяют сделать вывод о том, что нарушение функциональной активности эритроцитов может быть одним из звеньев патогенеза тяжелого РДС у новорожденных.

Выводы:

1. У новорожденных с тяжелым РДС повышается кислотная резистентность, что свидетельствует о нарушении функциональной активности эритроцитов и сопровождается интенсификацией эритропоэза.
2. Нарушение функциональной активности эритроцитов является одним из звеньев патогенеза тяжелого РДС у новорожденных.
3. Перспективным направлением по улучшению газообмена у новорожденных детей с тяжелым РДС является поиск, разработка и внедрение лекарственных средств, улучшающих энергетический метаболизм в эритроцитах и стабилизирующие их мембраны.

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ОТРАЖЕНИЕ ПРИРОДЫ ЮЖНОГО УЗБЕКИСТАНА В ГЕОГРАФИЧЕСКИХ НАЗВАНИЯХ

***Аннотация:** Описаны появление и формирование топонимов Южного Узбекистана, их отличительные особенности, отличающиеся от топонимов других регионов.*

***Ключевые слова:** топоним, названия, ороним, гидроним, ойконим.*

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REFLECTION OF THE NATURE OF SOUTHERN UZBEKISTAN IN GEOGRAPHICAL NAMES

***Abstract:** The appearance and formation of toponyms of Southern Uzbekistan, their distinctive features, which differ from toponyms of other regions, are described.*

***Key words:** toponym, place names, oronym, hydronym, oikonym.*

Имя каждого объекта важно прежде всего потому, что оно служит индикатором адреса. Название любого географического объекта упоминается в статье 4 действующего Закона Республики Узбекистан «О наименованиях географических объектов», принятого в 2011 году, как «Требования к названиям географических объектов». Эти требования представляют собой название, присвоенное географическому объекту:

- Представление наиболее характерных особенностей географического объекта;
- Соответствие существующей системе названий географических объектов на земле, где этот географический объект расположен;

- Учет мнения местного населения;
- Как правило, оно должно состоять не более чем из трех слов;
- Настоящий закон должен соответствовать требованиям части второй статьи 6.²⁰

Также в этом правовом документе при наименовании географических объектов были установлены строгие ограничения на наименование людей по имени человека, многократное повторение имен, а также подчеркивалось, что название должно даваться исходя из географических и исторических особенностей называемой местности.

Разнообразие природы Южного Узбекистана, включающего в себя территорию Кашкадарьинской и Сурхандарьинской областей, широта взглядов проживающих здесь народов, бережное отношение местного населения к природе, интересные географические объекты отражены здесь в топонимах. Согласно книге профессора Торы Нафасова «Толковый словарь топонимов Узбекистана», в Южном Узбекистане объяснено 400 топонимов, причем около половины этих топонимов воплощают в себе определенные природные особенности и характеристики географического объекта. Названия географических объектов региона, связанные с их природными особенностями, целесообразно определить в оронимы, гидронимы, ойконимы, фитонимы, зоонимы и другие группы.

Оронимы – географические названия, отражающие особенности рельефа места. Название большинства географических объектов описывает особенности природы места. Хисар назван так потому, что возвышается как крепость между долинами Кашкадарьи, Сурхандарьи и Хисаря. «Хисар» на согдийском языке означает «курган», «калья». Хонтахти - на северо-западном склоне горы расположен платформенный рельеф, образованный эрозией и карстовыми процессами, который называется Хонтахти, потому что он немного похож на двухступенчатый трон, на котором восседают правители. Кайфантог-Кауфа+н(он) в Согде состоит из морфем места, кайфо~кауфи+н-тог, высокий холм. Дарбанд — село в Байсунском районе. Дербент на местной речи. Фактически в произведениях Оронима А. Навои дарбанд – это преграда, порог, дверь, пересечение дороги, проходящей через гору, узкое-узкое место ущелья. Колышек, штамп, естественная преграда, знак, крепость, форт, обозначающие границы двух регионов или стран, которые используются для того, чтобы держать дверные полотна плотно и плотно.

Дастарташ - высота в Чиракчинском, Дехканабадском районах. Дастар-талла, размещение камня уподобляется тюрбану на голове человека. Айгиртепа — крутой холм в Гузорском, Дехканабадском, Чиракчинском, Байсунском, Ангорском, Шорчинском районах. Адамташ — вершина в Дехканабадском районе. Крутые скалы на вершине горы, названной в честь этого сравнения, издали выглядят как человеческие фигуры. Крутой и высокий пик в форме человека.

²⁰ Газета «Народное слово» №198. 13 октября 2011 г.

Гидронимы. Река, озеро, пруд, колодец — топонимы, обозначающие название водных сооружений в целом. Арабсой — ручей в Китабском, Гузорском, Шахрисабзском, Чиракчинском, Камашинском, Мубаракском районах. Ручей, принадлежащий людям, принадлежащим к арабской этнической группе. Арнасой — ручей с длинными и глубокими оврагами. Кашкакадарья — название реки и региона. Образуется как Кашка + дарья, гидроним. «Кашка» — составное слово, каш — основа, ка — образующий аффикс.

В древнетюркском языке Каш — холм, высота. В 12 веке по-турецки край, край, сторона, берег всего. Кашкадарья — река с быстрым течением. В основе этого значения лежит значение слова «каша», гора, горная высота. Скорость течения горных рек быстрая и бурная. Название восточной и северной части реки от Китаба — Кашкадарья, а затем это название было введено в нижнее течение. Комментарии о пересыхающей и разбухающей реке по отношению к нижнему течению сказаны применительно к нынешнему состоянию реки. Сурхандарья — официальное название реки и региона. Такое название регион получил 11 марта 1941 года. Сурхандарья является правым притоком Амударьи. Нынешнее официальное название в надписях — Сурхандарья, после присоединения Каратогдарьи, Карасува слева, Тополондарьи и Тентаксоа справа. Таджикский сурх-красный, красноватый цвет, хан-об, вода, река, сурхон-красная вода, вода с красноватой почвой. По названию племени Сурхи, Сурхон трактуется как река Сурханов. В средневековых источниках он упоминается как Чагонруд. Танхоз — левый приток Кашкадарьи. Также называется Тангас, Танкас. В произведениях Ибн Хавкала — Асруд. Известно, что это сделано. Узкий, узкий, короткий по ширине. По мнению А.Л. Хромова, хос+хош-булок, канал, бассейн являются синонимами слова джан по смыслу и функции. Гидронимы образуются из слова Хос~хош.

Ойконимы — знаменитое название жилых районов, таких как город, деревня, деревня, район. Сапожник - Книга т. деревня. Состав: нога+чи. На древнетюркском и древнеузбекском языке аякчи/аякчи — это название чаш, тарелок и предметов домашнего обихода или мастеров, которые их изготавливают. Имя мастеров было перенесено в название села. Варганза - Китаб р. город У Родаки варг означает плотину, банду, по-согдийски варг означает место сбора воды, банда, плотина, а суффикс о- - суффикс местного падежа. Место рядом с водоемом.

Этнонимы. Карлукхана - район Каршиша. Место проживания карлуков, место, где жили карлуки, часть древнетюркского населения. Гувалак — город Косон. В акмангитовом разрезе мангитов Кашкадарьинской области присутствуют семена гувалака/гобулака. Название город получил в зависимости от этнического состава его населения. Уз - Яккабог т. город. Одним из крупнейших и древнейших племен узбекского народа является юз. Произношение в речи местных жителей - ги. На основе этого этнонима было создано название села.

Фитонимы. Дубулга — село в Шахрисабзском районе. Это дерево, которое растет в горах, и из-за своей большой древесины из него делают палки, дубинки, палки и келидастас. В прошлом головной убор из таких материалов, как железо и сталь, назывался шлемом для защиты от вражеских стрел и мечей. Поскольку этот вид дерева рос на месте села, его называли Бубулгой. Подобные примеры можно встретить в Южном Узбекистане под оронимом, гидронимом, ойконимом, этнонимом, фитонимом, зоонимом, агрономимом, пертонимом, антропотопонимикой и другими названиями.

Анализируя географические названия региона Южного Узбекистана, обладающего уникальными природными условиями Узбекистана, можно увидеть, что притягательная природа этого региона ярко воплощена в географических объектах. Песчаные пустыни на равнинах, солончаки между ними, изолированные горы, возвышающиеся над равнинами, предгорья, долины рек, протекающие по глубоким ущельям, покрытые густыми еловыми лесами. Иногда голые скалистые высокие горы соединяются друг с другом. Мы видим, что природные условия этого региона запечатлены в их географических названиях. Кашкадарьинская, Сурханско-Шерабадская долины, которые соединены горами Хисарского хребта, отражены в названиях гор, равнин, рек, городов и сел региона, так как это историческая земля, где в Средней Азии расселялись разные царства, населенные народами разных языков, обменивавшимися друг с другом.

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ПРОФЕССИОНАЛЬНАЯ ОРИЕНТАЦИЯ НА ПЕДАГОГИЧЕСКИЕ ПРОФЕССИИ КАК ФАКТОР ПОВЫШЕНИЯ ИХ ПРЕСТИЖА И ОСОЗНАННОГО ВЫБОРА УЧАЩИМИСЯ ОБЩЕОБРАЗОВАТЕЛЬНЫХ ШКОЛ

***Аннотация:** в данной статье рассматриваются актуальные вопросы профессиональной ориентации учащихся школ на педагогические профессии. Отмечается роль личности и деятельности учителя; родителей, семьи, национальных профессиональных традиций как факторов повышения престижа профессий педагога, учителя, мастера-наставника в связи с особенностями их выбора детьми и молодёжью. Представлен анализ результатов исследований автора и других ученых, а также основные выводы.*

***Ключевые слова:** учащиеся, профессиональной ориентация, педагогические профессии, образ и престиж учителя, национальные традиции, общественное мнение, выбор профессии.*

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PROFESSIONAL ORIENTATION TOWARDS TEACHING PROFESSIONS AS A FACTOR IN INCREASING THEIR PRESTIGE AND CONSCIOUS CHOICE BY STUDENTS OF COMPREHENSIVE SCHOOLS

***Abstract:** this article examines current issues of professional orientation of school students towards teaching professions. The role of the personality and activities of the teacher; parents, family, national professional traditions as factors in increasing the prestige of the professions of teacher, teacher, master-mentor in connection with the peculiarities of their choice by children and youth is noted. An analysis of the results of research by the author and other scientists, as well as the main conclusions are presented.*

***Keywords:** students, professional orientation, teaching professions, image and prestige of the teacher, national traditions, public opinion, choice of profession.*

Как всем известно, прогрессивные реформы, произошедшие за период 2017-2021 гг. в сфере образования Республики Узбекистан. Министерством

народного образования Узбекистана подготовлен объёмный документ–проект постановления президента «О дополнительных мерах по дальнейшему совершенствованию системы образования и воспитания, ускорению развития науки в стране». Программе было предусматривать уменьшение недельной учебной планов путём объединения смежных предметов. Внедрение программы было намечено на 2021/2022 учебный год после экспертизы в учебных и научно-исследовательских учреждениях и всенародного обсуждения. На сегодняшний день по данной национальной учебной программе предполагается подготовка ученика к дальнейшей жизни и умение использовать полученные в школе знания и навыки на практике.

Создание социально-экономических, правовых, психолого-педагогических и иных условий для формирования всесторонне развитой личности, адаптации детей и молодёжи к жизни в современном изменяющемся обществе, осознанного выбора и последующего освоения образовательных и профессиональных программ, воспитание граждан, сознающих свою ответственность перед обществом, государством и семьей. Одним из важных направлений её реализации является обеспечение учреждений системы подготовки кадров высококвалифицированными специалистами, повышение престижа и социального статуса педагогической деятельности, профессии воспитателя, учителя, преподавателя [1,с.4]. По данному направлению проводится комплексная целенаправленная работа, включая: периодическое освящение деятельности образовательных учреждений и педагогов-новаторов в СМИ; повышение уровня профессионализма и квалификации учителей, преподавателей; укрепление авторитета «Учителя» в общественном мнении на основе реализации концепции «Семья – Махалля²¹ - Образовательные учреждения»; научно-практические конференции по проблемам совершенствования профессионализма и практической деятельности педагогических кадров.

На наш взгляд, большую роль в повышение престижа профессии воспитателя, учителя, преподавателя играет профессиональная ориентация учащихся школ на педагогические профессии, специальности. Первичное знакомство детей с представителями этой социэкономической группы профессий происходит в дошкольном образовательном учреждении (детском саду) и начальной школе. Ежедневное общение детей с воспитателем в детском саду, затем с учителем в начальной школе, а также все эмоциональные впечатления, переживания ребёнка и отношение к нему педагогов, формируют образные оценочные представления о качествах личности и деятельности воспитателя, учителя. Они же могут послужить первоначальными эмпирическими ориентирами для выбора в будущем педагогической профессии, т.е. во время окончания школы.

Согласно исследованиям Ш.Т. Эргашева и В.Г. Коротинной (2007; 2008)

²¹ Махалля – узбекская территориальная община, которая объединяет семьи, взрослых граждан, детей и молодёжь, проживающих на данной территории; осуществляет социальную и материальную поддержку, помогает в решении многих жизненно важных вопросов.

в начальных классах большими возможностями в формировании представлений детей о различных профессиях обладают учебные предметы и учебники²². Выявлено, что в текстах и на рисунках учебников для 1-го класса дети знакомятся с 38 профессиями, среди которых есть «Учитель». В учебниках для 2 и 3 классов, соответственно обозначаются 46 и 76 наименований профессий, в т.ч. «Учитель» и «Учитель труда». В учебниках за 4 класс – «Учитель; Учитель литературы; Учитель математики; Учитель русского языка». Данные исследования также показали, что из числа опрошенных учеников 1 класса (n=87) 18% девочек хотят быть *учителем, воспитателем*; среди мальчиков лишь 8 % – хотят стать *учителем*. Опросы учащихся 2 класса (n=119) показали, что среди девочек почти 50 % хотят стать врачом и *учителем*; мальчики назвали разные другие профессии, но не учителя [4, с.33]. Если в первом классе дети называли 33 профессии, специальности и должности, то к окончанию четвертого класса их знания мира профессий значительно увеличиваются: названы 258 профессий, специальностей, должностей; а 70% детей выбирают профессии, связанные с получением высшего образования [5, с. 267].

Как показывают проведенные нами опросы учащихся 4 классов, n=146 («*Кем ты будешь, хочешь быть, когда станешь взрослым?*»), младшие школьники способны выбирать для себя разные профессии, в частности, отвечают, что хотят «*стать учителем, быть как учитель*» (36 % девочки и 12 % - мальчики), при этом они называют положительные качества своего учителя. Профессию учителя и свой выбор, дети младшего школьного возраста, как правило, связывают с эмоционально-образными представлениями о своем учителе - «*она любимая, хорошая, добрая, строгая и т.п.*», а также с действиями учителя на уроках - «*она нас учит, показывает, рассказывает*»²³.

Таким образом, учитывая результаты вышеприведенных исследований, можно утверждать, что профессиональное ориентирование учащихся на педагогические профессии вполне возможно и необходимо осуществлять уже в начальной школе (1-4 классы). В этот период обучения детей у них формируются наглядно-образные и вербальные (словесные) представления о педагогической профессии и должности учителя. Постоянное общение и взаимодействие детей с учителями в начальных классах, способствует пониманию ими сущности педагогической деятельности и её престижности (хотя и недостаточно осознанно). Данные факторы обуславливают профессиональные предпочтения или выборы младшими школьниками

²² Авторами методом контент-анализа были рассмотрены все учебные предметы и учебники, изучаемые в начальных классах общеобразовательной школы Узбекистана, в результате определено, что профориентационные возможности учебных предметов весьма значительны. Но потенциально в каждом случае проведения профориентационной работы с учащимися на те, или иные профессии требуются специальные методические разработки.

профессии учителя, особенно среди девочек.

Как показывает практика, в средней школе профессиональные предпочтения учащихся могут меняться на протяжении всего периода обучения (с 5 по 9 класс). У подростков - учащихся 5, 6, 7 классов восприятие, понимание и выбор педагогической профессии прямо связаны с положительными отношениями к ним со стороны учителей, их поддержкой и личными качествами. Каждый учитель оценивается как: «плохой – хороший», «сильный – слабый», «строгий – мягкий», «несправедливый - справедливый» и др., причем больше преобладают положительные оценки, чем отрицательные.

В старших 8 и 9 классах на формирование мнений учащихся о престиже педагогической профессии и выбор данной профессии могут повлиять не только личностные и профессиональные качества учителей (хотя у каждого ученика есть свой любимый учитель), но в значительной степени их родители, члены семей, общественное мнение жителей махалли, профессиональные традиции народа. В национальном общественном сознании узбеков и других народов Центральной (Средней) Азии с древних времен сложился образ мудрого «Учителя (мужчины)», являющегося «Мастером, Наставником» для своих учеников, обучающим их наукам, искусствам и ремеслу; воспитывающим в них нравственные и профессионально важные качества. Прототип современной системы профориентации произошел от средневековых мастеров - ремесленников, создавших свои мастерские и обучавших своих учеников, как в Центральной Азии, так и в России, Европе.

По данным исследований Л.В. Голиш, Д.А. Захидовой (1999), изучавших материалы философско-научного наследия ученых средневекового Востока и Центральной Азии, в частности, трактатов Аль-Бируни, Аль Фараби, Ибн Сина, Туси, в УШ – XII веках мастера-ремесленники осуществляли отбор (профориентацию) и обучение (профподготовку) будущих учеников с учетом их склонностей, природных задатков, способностей и проявлений характера. Аналогично, происходил отбор и обучение учеников в светских образовательных учреждениях, при котором также учитывались: уровень умственного развития юношей, их начальные знания и навыки (чтения, письма, счета и др.), признаки одарённости и склонности к наукам и определенному виду искусства. В трактатах этих великих ученых также излагается подробное описание целей и задач духовно-нравственного и трудового воспитания человека, роли учителя и мастера - производственника в организации процесса обучения учеников наукам, искусствам, ремеслу [2].

Профориентационная практика показывает, что учащиеся – юноши, в отличие от девушек, больше ориентированы на профессии мастеров производственного обучения профессиональных колледжей, а также мастеров-ремесленников, работающих в собственных мастерских (народные ремесла, декоративно-прикладное искусство). Девушки предпочитают профессии воспитателя дошкольного учреждения, учителя средней школы;

мастера профессионального швейного колледжа; преподавателя академического лицея, педагогического, медицинского, языкового и других вузов.

Выводы:

1. Профессиональное ориентирование учащихся на педагогические профессии, в частности учителя, необходимо осуществлять в начальной школе (1-4 классы), что является фактором не только повышения их престижа, но также первоначальной предпосылкой становления профессионализма будущего педагога.

2. Профессию учителя и свой выбор дети младшего школьного возраста, как правило, связывают с эмоционально-образными представлениями о своём классном учителе. У подростков, учащихся 5, 6, 7 классов восприятие и понимание педагогической профессии прямо связаны с положительными отношениями к ним со стороны учителей, оценкой их поддержки и личных качеств. В 8 и 9 классах на формирование объективных мнений учащихся о престиже педагогической профессии и выбор данной профессии могут повлиять не только личностные и профессиональные качества учителей, но в значительной степени их родители, члены семей, жители махалли, профессиональные традиции народа.

4. Юноши больше ориентированы на профессии мастеров производственного обучения профессиональных колледжей и мастеров-ремесленников. Девушки предпочитают профессии воспитателя дошкольного учреждения, учителя средней школы, преподавателя академического лицея, педагогического, медицинского, языкового и других гуманитарных вузов.

5. Специальное исследование актуальных вопросов профессиональной ориентации учащихся школ на педагогические профессии может способствовать решению проблем не только повышения их престижа и выбора учащимися, но также становления профессионализма будущего педагога (как субъекта профориентации в начальной, средней школе и профессиональной подготовки в лицее, колледже, вузе).

Использованные источники:

1. Постановление Президента Республики Узбекистан «О дополнительных мерах по дальнейшему совершенствованию системы образования»
2. Указ Президента Республики Узбекистан «О дополнительных мерах по дальнейшему совершенствованию системы профессионального образования» от 6 сентября 2019 года
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О МОДЕЛИ БАЛАНСА МНОГООТРАСЛЕВОЙ ЭКОНОМИКИ И РЕШЕНИИ ТРАНСПОРТНОЙ ЗАДАЧИ КАК СОВРЕМЕННЫХ ПРОБЛЕМАХ ЭКОНОМИЧЕСКОГО РАЗВИТИЯ

Аннотация. В данной статье рассматривается модель баланса многоотраслевой экономики и решение транспортной задачи при помощи метода потенциалов. Задача проверяется на сбалансированность. Находится базовое возможное решение. Составляется план перевозки так, чтобы затраты на перевозку были минимальными.

Ключевые слова. Многоотраслевая экономика, транспортная задача, метод потенциалов, затраты, потребители, поставщики.

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ON THE BALANCE MODEL OF A MULTI-SECTORAL ECONOMY AND THE SOLUTION OF THE TRANSPORT TASK AS A MODERN PROBLEM OF ECONOMIC DEVELOPMENT

Abstract. This article discusses the model of the balance of a diversified economy and the solution of the transportation problem using the method of potentials. The task is checked for balance. A basic possible solution is found. A transportation plan is drawn up so that transportation costs are minimal.

Keywords. Diversified economy, transportation problem, method of potentials, costs, consumers, suppliers.

Основная задача модели баланса: при каком выпуске продукции n отраслевого производства полностью удовлетворится спрос? Здесь надо учитывать, что одна часть произведенной n отраслями продукции тратится на нужды самой отрасли, другая – на нужды других отраслей и еще одна часть – на не связанные с производством нужды.

Задача вычисления связи между отраслями путем производства и потребления различной продукции довольно трудная. Эту задачу в виде математической модели впервые в 1936 году выразил знаменитый американский экономист В.В.Леонтьев. Эта модель попытки анализа экономического кризиса 1929-1932 годов в Америке основана на алгебре матриц.

Рассмотрим производственную деятельность в определенный период, скажем, один год. Обозначим через x_i объем денежно выраженного валового продукта, произведенного i -й отраслью за этот период, здесь $i = 1, 2, \dots, n$, через x_{ij} – денежный объем произведенной i -й отраслью продукции, потраченной на нужды j -й отрасли, через y_i – денежный объем произведенной i -й отраслью продукции, потраченной на непроизводственные нужды. Естественно, объем валового продукта i -й отрасли должен равняться сумме денежных затрат объемов продукции на нужды n отраслей и непроизводственные нужды, т.е.

$$x_i = \sum_{j=1}^n x_{ij} + y_i, \quad i = 1, 2, \dots, n.$$

Эти уравнения называются соотношениями баланса.

Введем обозначения:

$$a_{ij} = \frac{x_{ij}}{x_j} \quad (i, j = 1, 2, \dots, n),$$

a_{ij} означает объем произведенной i -й отраслью продукции, затраченной на единицу объема продукции j -й отрасли. a_{ij} называется коэффициентом непосредственных затрат. Коэффициенты a_{ij} определяет применяемая в процессе производства в рассматриваемый период технология. Насколько новая, эффективная применяется технология, настолько меньше коэффициенты a_{ij} , настолько меньше затраты, настолько выше эффективность. В рассматриваемый период коэффициенты a_{ij} будем считать постоянными, т.е. затраты линейно зависят от валовых затрат:

$$x_{ij} = a_{ij} \cdot x_j, \quad (i, j = 1, 2, \dots, n).$$

Из-за этого соотношения рассмотренную многоотраслевую экономическую модель называют еще линейной моделью баланса. В этом случае система уравнений имеет следующий вид:

$$x_i = \sum_{j=1}^n a_{ij} x_j + y_i, \quad i = 1, 2, \dots, n. \quad (1)$$

Введем следующие обозначения:

$$A = \begin{pmatrix} a_{11} & a_{12} & \dots & a_{1n} \\ a_{21} & a_{22} & \dots & a_{2n} \\ \dots & \dots & \dots & \dots \\ a_{n1} & a_{n2} & \dots & a_{nn} \end{pmatrix}, \quad X = \begin{pmatrix} x_1 \\ x_2 \\ \vdots \\ x_n \end{pmatrix}, \quad Y = \begin{pmatrix} y_1 \\ y_2 \\ \vdots \\ y_n \end{pmatrix},$$

здесь A называется технологической матрицей, X – вектором валового продукта, Y – вектором конечного продукта. Согласно этим обозначениям, систему уравнений можно записать в следующем виде:

$$X = AX + Y. \quad (2)$$

Основная задача многоотраслевого баланса состоит в нахождении вектора валового продукта X по заданному вектору конечного продукта и матрице непосредственных затрат A , т.е. последнее уравнение нужно решить относительно неизвестного вектора X . Для этого приведем его к следующему виду:

$$(E - A)X = Y.$$

Если $\det(E - A) \neq 0$, то существует обратная матрица $(E - A)^{-1}$ и решение имеет следующий вид:

$$X = (E - A)^{-1} Y.$$

Матрица $S = (E - A)^{-1}$ называется матрицей непосредственных затрат. Для понимания экономического значения этой матрицы рассмотрим единичные векторы конечного продукта:

$$Y_i = (0, 0, \dots, 1, \dots, 0), \quad (i = 1, 2, \dots, n)$$

с единицей на i -м месте, нулями на остальных местах. Соответствующие им решения уравнения равны следующим:

$$X_1 = \begin{pmatrix} s_{11} \\ s_{21} \\ \vdots \\ s_{n1} \end{pmatrix}, \quad X_2 = \begin{pmatrix} s_{12} \\ s_{22} \\ \vdots \\ s_{n2} \end{pmatrix}, \quad \dots, \quad X_n = \begin{pmatrix} s_{1n} \\ s_{2n} \\ \vdots \\ s_{nn} \end{pmatrix}.$$

Значит, элемент s_{ij} матрицы $S = (s_{ij})$ означает количество продукции отрасли i , затраченной на отрасль j , для получения конечного продукта Y'_j .

Согласно экономическому смыслу рассматриваемой задачи, в уравнении (1) $y_i \geq 0, (i = \overline{1, n}), a_{ij} \geq 0 (i, j = \overline{1, n})$. Для решения уравнения должно быть $x_i \geq 0 (i = \overline{1, n})$. Это можно записать, как

$$Y \geq 0, A \geq 0 \text{ и } X \geq 0.$$

Если для произвольного вектора $Y \geq 0$ существует решение (2), удовлетворяющее неравенству $X \geq 0$, матрица $A \geq 0$ называется продуктивной матрицей. В этом случае модель Леонтьева тоже называется продуктивной моделью.

Пример. В следующей таблице даны в условных денежных единицах коэффициенты затрат и конечный продукт, намеченный в запланированный период:

Отрасль	Потребление		Конечный продукт
	Промышленность	Сельское хозяйство	

Производство	Промышленность	0,3	0,25	300
	Сельское хозяйство	0,15	0,12	100

Найти:

а) Количество запланированного валового продукта отраслей, межотраслевую доставку продукции, чистую продукцию отраслей;

б) Необходимое количество производства каждой отрасли при увеличении конечного продукта сельского хозяйства на 20%, промышленности на 10%.

Решение. а) Запишем матрицу коэффициентов прямых затрат A и вектор конечного продукта Y :

$$A = \begin{pmatrix} 0,3 & 0,25 \\ 0,15 & 0,12 \end{pmatrix}, \quad Y = \begin{pmatrix} 300 \\ 100 \end{pmatrix}$$

отсюда запишем матрицу:

$$E - A = \begin{pmatrix} 1 - 0,3 & -0,25 \\ -0,15 & 1 - 0,12 \end{pmatrix} = \begin{pmatrix} 0,7 & -0,25 \\ -0,15 & 0,88 \end{pmatrix}.$$

Тогда матрица полных затрат:

$$S = (E - A)^{-1} = \frac{1}{0,5785} \begin{pmatrix} 0,88 & 0,15 \\ 0,25 & 0,7 \end{pmatrix} = \begin{pmatrix} 1,52 & 0,26 \\ 0,43 & 1,21 \end{pmatrix}.$$

Определим вектор валового продукта:

$$X = \begin{pmatrix} 1,52 & 0,26 \\ 0,43 & 1,21 \end{pmatrix} \cdot \begin{pmatrix} 300 \\ 100 \end{pmatrix} = \begin{pmatrix} 482 \\ 250 \end{pmatrix}.$$

Найдем количество доставленной отраслями продукции x_{ij} по формуле:

$$x_{ij} = a_{ij} \cdot x_j.$$

Например, $x_{11} = a_{11} \cdot x_1 = 0,3 \cdot 482 = 144,6$.

Вычислив валовой продукт отраслей, межотраслевое снабжение продукцией, а также чистый продукт отраслей, составим следующую таблицу:

Отрасль		Потребление		Конечный продукт	Валовый продукт
		Промышленность	Сельское хозяйство		
Производство	Промышленность	144,6	62,5	300	482
	Сельское хозяйство	72,3	30	100	150
Чистая продукция		265,1	157,5		
Валовой продукт		482	250		

б) Согласно условию, вектор конечного продукта:

$$Y = \begin{pmatrix} 300 \cdot 1,1 \\ 100 \cdot 1,2 \end{pmatrix} = \begin{pmatrix} 330 \\ 120 \end{pmatrix},$$

тогда вектор продукта будет следующим:

$$X = S \cdot Y = \begin{pmatrix} 1,52 & 0,26 \\ 0,43 & 1,21 \end{pmatrix} \cdot \begin{pmatrix} 330 \\ 120 \end{pmatrix} = \begin{pmatrix} 532,8 \\ 287,1 \end{pmatrix}.$$

Таким образом, промышленное производство надо повысить до 532,8 условных денежных единиц, сельскохозяйственное – до 287,1 условных денежных единиц.

В настоящее время важно уметь решать задачу транспортировки или доставки товаров из отрасли в пункты назначения с минимально возможными затратами, удовлетворяя при этом потребности спроса и предложения [1]. Предположим, некая компания-поставщик имеет собственные производственные мощности во многих странах и поставляет продукцию всем ведущим мировым производителям [2]. Предположим, в локациях A1, A2, A3 есть три фабрики. Мощность заводов составляет 35, 50, 15 в сутки. Завод поставляет продукцию четырем клиентам B1, B2, B3 и B4, потребность которых составляет 30, 10, 20, 40 в день. Стоимость перевозки единицы продукции за один километр в условных единицах приведена в таблице ниже (Таблица 1).

Таблица 1 – Первоначальный план транспортировки

Потребители (Bj)					Запасы
Поставщики (Ai)	B1	B2	B3	B4	
A1	1	3	2	4	35
A2	2	1	4	3	50
A3	3	5	6	1	15
Спрос	30	10	20	40	

Составим план перевозки так, чтобы цена на перевозку была самой низкой. В качестве первого шага составим стандартную транспортную задачу. Для этого нужно проверить, сбалансирована задача или нет:

Если $\sum A_i = \sum B_j \rightarrow$ задача сбалансированная (закрытая).

Если $\sum A_i \neq \sum B_j \rightarrow$ задача несбалансированная (открытая), то необходимо добавить отсутствующего поставщика или потребителя в таблицу с ценой на транспортировку $c=0$.

В данном случае $\sum A_i = 100 \quad \sum B_j = 100 \rightarrow$ задача сбалансирована.

Теперь нужно найти базовое возможное решение. Составим первоначальный план перевозки. Выберем наименьшее значение среди всех стоимостных значений (выделено красным цветом), т.е. минимальные затраты. Здесь наименьшим элементом является 1. Всего есть 3 таких элемента. Сравним спрос и предложение этой ячейки (здесь, 30 и 35). Выделим ячейку с наименьшим значением (в данном случае 30) (см. таблицу 2 ниже). Вычтем исключенную ячейку с наименьшим значением, т.е. выделенное значение ячейки. (Здесь $35-30=5$). Соответственно удалим столбец или строку, вычеркнув их (в данном случае строку с источником A1).

Таблица 2 – Составление первоначального плана перевозки

Потребители (Vj)					Запасы
Поставщики (Ai)	B1	B2	B3	B4	
A1	1 30	3	2	4	35
A2	2	1	4	3	50
A3	3	5	6	1	15
Спрос	30	10	20	40	

Теперь продолжим процесс с оставшимися клетками. Опять же, найдем ячейку с наименьшей стоимостью и выполним те же действия, что и приведенные выше.

Здесь составляется базовое возможное решение (более подробную информацию см. в таблице 3 ниже).

Таблица 3 - Основные возможные решения плана перевозок

Потребители (Vj)					Снабжение
Поставщики (Ai)	B1	B2	B3	B4	
A1	1 30	3 0	2 5	4 0	35
A2	2 0	1 10	4 15	3 25	50
A3	3 0	5 0	6 0	1 15	15
Потребности	30	10	20	40	

Следующим шагом является проверка того, не вырождается ли план транспортировки (см. таблицу 4 ниже):

Таблица 4 - Количество основных ячеек

	Потребители (Bj)				Снабжение
Поставщики (Ai)	B1	B2	B3	B4	
A1	1 30	3 0	2 5	4 0	35
A2	2 0	1 10	4 15	3 25	50
A3	3 0	5 0	6 0	1 15	15
Потребности	30	10	20	40	

Количество основных ячеек = $m+n-1$ (m - поставщиков и n - потребителей).

$3+4-1=6$ основных ячеек.

Для проверки базового решения на оптимальность необходимо преобразовать исходную таблицу в следующий упрощенный формат. После этого заполнить потенциалы и свободные ячейки, используя формулы: $U_i+V_j=C_{ij}$ и $\Delta_{ij}=(U_i+V_j)-C_{ij}$, где U_i - потенциалы поставщиков (вписываются в таблицу в строку A_i), V_i - потребительские потенциалы (записываются в таблице в столбец B_j).

Если все $\Delta_{ij} \leq 0$, то план оптимален.

Если хотя бы один $\Delta_{ij} > 0$, то план не оптимальный, поэтому требуется перераспределение трафика по циклу и проверка нового плана, начиная с этапа 3 (см. таблицу 5 ниже).

Таблица 5 - Проверка базового решения на оптимальность

1 30	3 -	2 5	4 -	U1=0
4			3	
2 1	1 10	4 15	3 25	U2=2
3 -	5 -	6 -	1 15	U3=0
2	6	4		
V1=1	V2=-1	V3=2	V4=1	

$1 > 0$, значит, план не оптимальный, поэтому переходим к циклу.

Таблица 6 - Построение цикла транспортировки

1	-15	30	3	-4	2	+15	5	4	-3	U1=0
2	+15	1	1	10	4	-15	15	3	25	U2=2
3		-2	5	-6	6	-4	1	15	U3=0	
V1=1			V2=-1		V3=2		V4=1			

После изменений базовое решение принимает новый вид. Поэтому проверим оптимальность плана потенциальным методом (продолываем те же действия, что и приведенные выше). Окончательное базовое возможное решение приведено в таблице ниже (Таблица 7):

Таблица 7 – Окончательное базовое возможное решение

1	15	3	-	2	20	4	-	U1=0
		3				2		
2	15	1	10	4	-	3	25	U2=1
				1				
3	-	5	-	6	-	1	15	U3=-1
3		6		5				
V1=1		V2=0		V3=2		V4=2		

Поскольку все $\Delta_{ij} \leq 0$, план оптимален.

Стоимость транспортировки =
 $(1 \cdot 15) + (2 \cdot 20) + (2 \cdot 15) + (1 \cdot 10) + (3 \cdot 25) + (1 \cdot 15) = 15 + 40 + 30 + 10 + 75 + 15 = 185$
 (условных единиц измерения).

Таким образом, метод потенциалов не только решает задачу транспортировки, но и помогает нам найти оптимальное решение и понять, как работает модель и что можно изменить, и в какой степени модифицировать решение, что в свою очередь помогает определить стоимость и оптимального поставщика.

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ВЛИЯНИЕ СРОКОВ ПОСЕВА НА ФОТОСИНТЕТИЧЕСКИЙ ПОТЕНЦИАЛ СОРТОВ ОЗИМОГО ЯЧМЕНЯ

Аннотация. В этой работе изучены рост, развитие, фотосинтетический потенциал, фотосинтетическая продуктивность, урожайность, структура урожая, содержание питательных элементов озимого ячменя, выращенного в условиях орошаемых светлых серозёмных почв Кашкадарьинской области.

Ключевые слова: озимый ячмень, сроки посева, минеральное удобрение, норма, варианты, сорт, урожайность, жизнеспособность.

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INFLUENCE OF SOWING DATES ON PHOTOSYNTHETIC POTENTIAL OF WINTER BARLEY VARIETIES

Abstract. In this work growth, development, photosynthetic potential, photosynthetic productivity, yield, yield structure, nutrient elements content of winter barley grown in conditions of irrigated light sulfur soils of Kashkadarya province are studied.

Key words: winter barley, sowing dates, mineral fertilizer, norm, variants, variety, yield, viability.

Введение

Страны мира, выращивающие зерновые культуры, повышают урожайность и качество зерна за счёт применения передовых методов селекции ячменя, посева и агротехнологии, в частности, сроков и норм посева, системы внесения удобрений, сроков и норм орошения. Повышение урожайности и качества зерновых культур, в том числе сортов ячменя, в целях дальнейшего укрепления продовольственной безопасности — одна из важнейших задач современного зерноводства. Цель исследования заключается в определении оптимальных сроков посева и норм внесения минеральных удобрений, обеспечивающих получение наиболее качественного урожая зерна с низкой себестоимостью из интенсивных сортов озимого ячменя, выращиваемого на орошаемых землях в условиях Кашкадарьинской области.

Анализы и результаты

Основные показатели ценоза, как и продуктивность, рассчитываются на 1 м² или 1 гектар. Поверхность листьев также исчисляется в тысячах м²/га. Помимо этого, также используется индекс листовой поверхности. Фотосинтетический потенциал (ФП) зависит от площади поверхности листьев и продолжительности периода их активности. Фотосинтетический потенциал определяли экспериментально между фазами развития. В наших исследованиях в условиях Кашкадарьинской области сорт озимого ячменя Мавлоно в зависимости от сроков посева и норм внесения удобрений на орошаемых землях производит ФП от 1,155 до 2,207, сорт дуварак Болгали - от 1,67 до 2,273 млн. м²·день/га.

В наших исследованиях поверхность листа определяли в стадиях всходы-кущение, кущение-выход в трубку, выход в трубку-колошение, колошение-молочная спелость, молочная спелость-восковая спелость. У сорта Мавлоно, посаженного 1 октября, в период всходов и кущения площадь листьев на 1 га изменялась от 17000 м²/га до 27000 м²/га в зависимости от нормы внесения удобрений. Установлено, что с увеличением минеральной подкормки увеличивалась поверхность листьев на единицу площади, этот показатель изменялся с 16 м²/га до 30 м²/га у сорта Мавлоно. Поверхность самых высоких листьев у сорта Мавлоно, посаженного 15 октября, увеличилась с 19 м² до 32 м² в зависимости от нормы внесения удобрений, а у сорта Болгали с 18000 м²/га до 34000 м²/га. Аналогичная тенденция наблюдалась у сорта Болгали. Посев семян 1 и 15 ноября по сравнению с 1 и 15 октября привёл к уменьшению площади листовой поверхности. Такая закономерность наблюдалась у обоих сортов в фазы кущения-выхода в трубку, выхода в трубку-колошения, колошения-молочной спелости, молочной спелости-восковой спелости. В вегетационный период наибольшая площадь листовой поверхности приходилась на период выхода в трубку-колошения при всех сроках посева и вариантах норм внесения удобрений. Поверхность листа увеличивалась от периода всходов к периоду кущения, выхода в трубку-колошения. Закономерность редукции листовой поверхности наблюдалась в межфазный период колошения-молочной спелости, молочной спелости-восковой спелости. Эта закономерность встречалась у обоих сортов. В период выхода в трубку-колошения наибольшая листовая поверхность у посевов, высаженных 15 октября, изменялась с 34 м²/га до 58 м²/га в варианте без удобрений и с 33 м²/га до 62 м²/га в варианте без удобрений у сорта Болгали.

Таким образом, максимальную листовую поверхность на 1 га в условиях Кашкадарьинской области формируют озимые сорта ячменя Мавлоно и дуварак Болгали при посеве 15 октября, и у сортов Мавлоно и Болгали она составляет – 58 м²/га и 62 м²/га на 1 га соответственно при варианте Фон+N₁₈₀. К стадии молочно-восковой спелости активно работающая ассимиляционная поверхность у обоих сортов резко уменьшилась. Минеральные удобрения привели к продлению активности

листьев. Для получения высокой урожайности в поле необходимо создать достаточный фотосинтетический потенциал (ФП). Повышение ФП в пределах одного сорта основано на увеличении листовой поверхности и её максимального показателя.

В наших опытах у посевов, высаженных 15 октября, озимые сорта Мавлоно и дуварак Болгали формировали самый высокий ФП между фазами всходов и кущения, причём у сорта Мавлоно этот показатель составлял от 0,154 до 0,224, а у сорта Болгали от 0,126 до 0,238. млн. м²·сутки/га. Сроки посева в начале 1.X и в конце 1.XI, 15.XI привели к снижению ФП. В следующую фазу развития – между кущением и выходом в трубку, такая же закономерность наблюдалась и у сорта Мавлоно. Однако по сравнению с кущением за предыдущий период наблюдалось увеличение ФП в 2-3 раза по всем вариантам соответственно.

Рекомендации и выводы

Установлено, что высота растений ячменя уменьшалась с задержкой срока посева, устойчивость к полеганию повышалась, с повышением нормы внесения удобрений увеличивалась, а устойчивость к полеганию снижалась. Фотосинтетический потенциал (ФП) озимого сорта ячменя Мавлоно составляет от 1,155 до 2,207 млн. м²·сут/га на орошаемых землях в зависимости от сроков посева и норм внесения удобрений, сорта дуварак Болгали - от 1,67 до 2,273 млн. м²·сут/га. При посеве в период 15.X вегетационного периода ФП изменился с 1,464 млн. до 2,207 м²·сут/га у сорта Мавлоно и с 1,426 до 2,273 млн. м²·сут/га у сорта Болгали соответственно. Если посев раньше или позднее оптимального для посева срока - 15.X. приводил к снижению ФП озимых сортов Мавлоно и дуварак Болгали, то увеличение азотных удобрений с 60 до 180/га обеспечивало увеличение этого показателя.

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SUV TEJAMKOR EGAT-TIRQISH OCHGICH

Annotatsiya: maqolada qishloq xo'jalik ekinlarini sug'orishdan oldin traktor orqa qismiga maxsus o'rnatilgan ariq-tirqish ochgich ishchi organi bilan sug'orish ariqlari olinib sug'orilganda suv va mehnat resurslari tejali, ish bajarish sifatining oshishi orqali iqtisodiy samaradorlikka erishilishiga bag'ishlangan.

Kalit so'zlar: yer ostidan sug'orish, yer ustidan sug'orish, suv tejamkor egat-tirqish ochgich, ishchi organ, egat kengligi, suv oqimi, texnik tavsifi, tirqish chuqurligi, egat chuqurligi, agregat, ekin, namlanish, osma rama, o'simlik.

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WATER-SAVING EQUIPMENT OPENER

Abstract: the article is dedicated to saving water and labor resources and increasing the quality of work when irrigation ditches are removed with a working body of a ditch-slot opener specially installed on the back of the tractor before watering agricultural crops.

Key words: subsurface irrigation, surface irrigation, water-saving harrow-slot opener, working body, harrow width, water flow, technical description, harrow depth, harrow depth, aggregate, crop, irrigation, suspension frame, plant.

Kirish

Qishloq xo'jalik ekinlaridan yuqori hosil olishda asosiy agrotexnik tadbirlardan biri sifatli sug'orishdir. Sug'orishning sifati sug'orish usuliga va sug'orish arig'ini ochishga bog'lik bo'lib, uni yer ustidan, yomg'irlatib va yer ostidan sug'orish usullari mavjud.

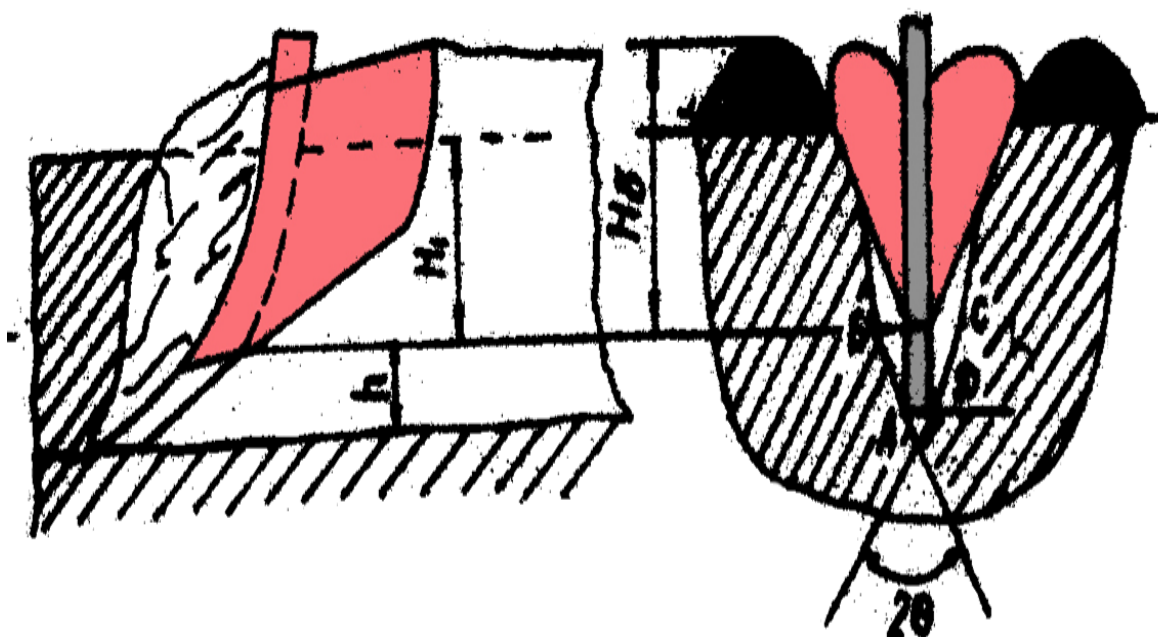
Ekinlarni yer ostidan sug'orish usuli respublikamizda hozirgacha keng miqyosda o'rganilmagan. Qishloq xo'jalik ekinlarini yer ustidan sug'orilganda tuproqning chuqur qatlamigacha namlanishiga erishiladi. Bunda o'simlik ildiz tizimi yetarli nam zahirasi bilan ta'minlanadi. Yer ustidan sug'orish bostirib sug'orish va egatlab sug'orish yo'li bilan amalga oshiriladi. Bostirib sug'orish usuli ayrim ekinlarni hisobga olmaganda deyarli ishlatilmaydi.

Sug'orish amaliyotida mayda, o'rtacha va chuqur egatlar mavjud bo'lib, dalaning qiyaligi 0,01 dan yuqori bo'lganda oqayotgan suv miqdori 0,1 l/s bo'lishi maqsadga muvofiq bo'ladi.

Qishloq xo'jalik ekinlarini, jumladan paxtani yetishtirishda asosiy masalalardan biri yerning bir tekis, chuqur namlanishini ta'minlab, uning yuqori qismini suv bostirmasdan sifatli sug'orishdir. Qatorlab ekiladigan ekinlarni sug'orishda unchalik chuqur bo'lmagan sug'orish egatlari ochilib, ular orqali ekinlar sug'oriladi. Sug'orish maydonlari tep-tekis bo'lmaganligi sababli suvchi butun egat bo'ylab suv oqimini kuzatib turishga majbur bo'ladi. Qator oralariga suvni katta oqim bilan haydab bo'lmaydi, chunki past joylarni suv bosib ketadi. Kichik oqim esa sug'orishning ish unumini pasaytirib yuboradi. Suv bosgan joylarda qatqaloq paydo bo'lib, namni tuproqning ustki qismiga ko'tarilishini tezlashtiradi. Bu holat qishloq xo'jalik ekinlarini rivojlanishiga salbiy ta'sir qiladi.

Tadqiqot usuli

Ilmiy tadqiqot natijalari asosida yuqoridagi kamchiliklarni oldini olish uchun suv tejamkor egat-tirqish ochgich (1-rasm) taklif etiladi. Ekinlarni sug'orish uchun takomillashtirilgan egat tirqish-ochgich sug'orish oldidan egat va tirqish ochish uchun mo'ljallangan. 1-jadvalda esa suv tejamkor egat-tirqish ochgichning texnik tavsifi keltirib o'tilgan.



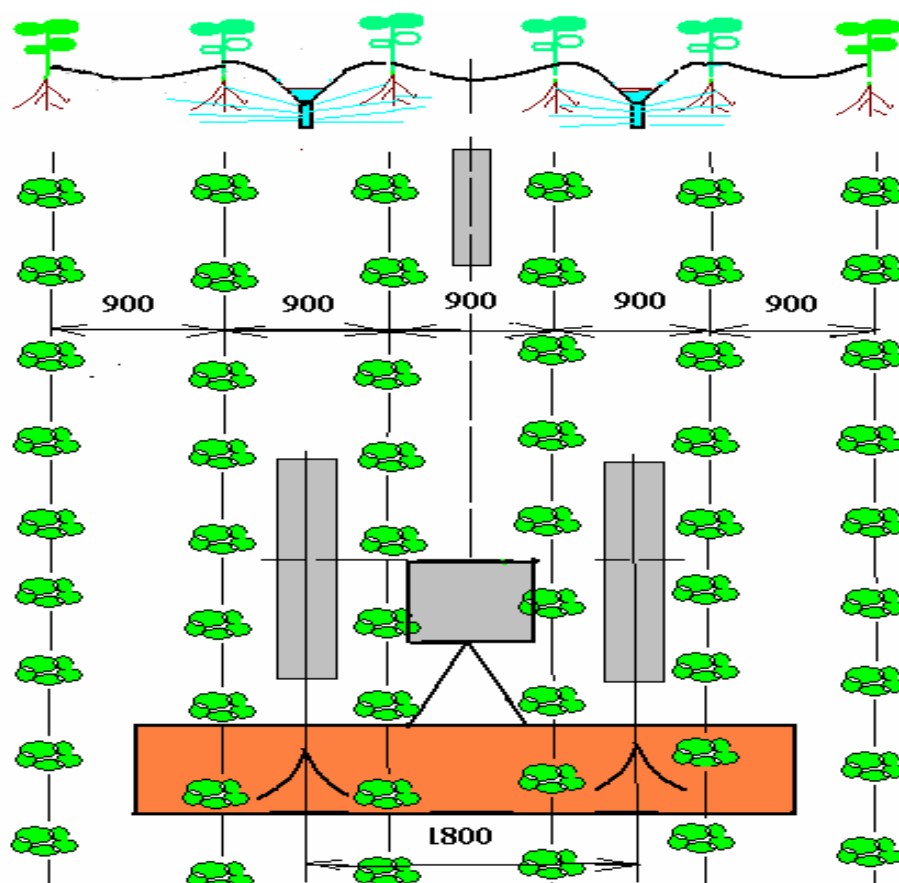
1-rasm. Egat –tirqish ochish jarayoni

1-jadval

Texnik tavsifi

Ko'rsatkichlar nomi	Ko'rsatkichlar miqdori
O'rnatilishi	maxsus ramaga
Ishchi organlar soni, dona	2
Egat kengligi, sm	45-50
Egat chuqurligi, sm	18-20
Tirqish kengligi, sm	4-5
Tirqish chuqurligi, sm	10-15
Ishchi organning og'irligi, kg	15-20
Ishchi organning tortishga bo'lgan qarshilik, kN	1,3-1,5

Egat-tirqish ochgich bir juft ishchi organ bo'lib, ular traktorning orqa g'ildiragi ketidan maxsus osma ramaga o'rnatiladi (2-rasm).



2-rasm. Egat tirqish –ochgich va uni agregatga o‘rnatish sxemasi.

Xulosa va takliflar

Ilmiy tadqiqot natijalari hamda tahlillar shuni ko‘rsatdiki egat –tirqish ochgichni qo‘llash orqali quyidagi afzalliklarga erishish mumkin:

1. Sug‘orish jarayonida suv egatning tirqish qismidan oqib parlanish yuzasi kam bo‘lib, oddiy sug‘orishga qaraganda parlanib yo‘qoladigan suv miqdori kamayadi.

2. Suv o‘simlik ildiziga tuproqning ostki qismidan borib, uning ustki qismi quruqligicha qoladi. Bu holat suvchini egat bo‘ylab suv oqimini kuzatishdan ozod qiladi.

3. Suv tuproqning ostki qismiga shimilgani hisobiga, ko‘p sarflanishiga qaramasdan sug‘orishlar soni 1...2 marta kamayadi va suv iqtisod qilinadi.

4. Suvchining ish unumdorligi 2...2,5 marta oshadi.

5. Ishchi organing iqtisodiy samaradorligi 939 000 so‘m/ga teng bo‘lib, bitta ishchi organing narxi esa 60...70 ming so‘mni tashkil etadi.

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ОБЗОР OPEN SOURCE ПРОГРАММ ДЛЯ УЧЕБНОГО ПРОЦЕССА

Аннотация: В статье рассматривается бесплатное программное обеспечение, которое можно использовать в младшей и старшей школе на уроках. Использование данных программных продуктов поможет учителю разнообразить свои уроки.

Ключевые слова: программное обеспечение, модернизация, современные образовательные технологии

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REVIEW OF OPEN SOURCE PROGRAMS FOR THE EDUCATIONAL PROCESS

Abstract: The article discusses free software that can be used in elementary and high school classes. Using these software products will help teachers diversify their lessons.

Keywords: software, modernization, modern educational technologies

Современное информационное общество формирует новую систему ценностей, в которой обладание знаниями, умениями и навыками является необходимым, но далеко не достаточным результатом образования. Начальная школа не может оставаться в стороне от процессов модернизации образования, происходящих сегодня во всем мире. Именно школу в первую очередь затрагивают все мировые тенденции и инновации: личностно ориентированный подход, информатизация, интеграция и др. К числу таких тенденций относится и применение ИКТ. Типичная проблема школы, когда ученики могут хорошо овладеть набором теоретических знаний, но испытывают значительные трудности в деятельности, требующей использования этих знаний для решения конкретных жизненных задач или проблемных ситуаций.

Ключевой проблемой остается модернизация не содержания предмета, а расширение использования современных образовательных технологий при его изучении, поскольку качество образования невозможно обеспечить только путем увеличения объемов учебной информации, подлежащей освоению, или ее особого изменения и структурирования.

Очень важным вопросом является роль преподавателя в новой системе обучения. Совершенно ошибочным является мнение о том, что можно полностью заменить преподавателя компьютером. Цель информатизации не в «оттеснении» преподавателя на «обочину» учебного процесса путем передачи возможно большего числа его функций компьютерам, а в изменении характера взаимодействия преподавателей и студентов в сторону большей интеллектуальной насыщенности, в создании для студентов возможности перехода от чисто исполнительских пассивных задач к творческим, таким, как постановка и решение все более сложных проблем. Не просто учить предмету, а учиться самостоятельно работать под руководством преподавателя - главная задача современного образования.

Ниже представлен обзор самых современных программных продуктов, способных помочь преподавателю разнообразить свои уроки:

Открываем законы родного языка, математики и природы

1. ИУМК разработан в условиях тесного сотрудничества специалистов по методике обучения младших школьников конкретным предметам и специалистов в области информационных технологий.

2. ИУМК – интегрированный комплекс, он включает материалы по русскому языку, математике и окружающему миру, как отдельно по каждому предмету, так и интегрированные материалы.

3. ИУМК направлен на взаимосвязанное формирование информационной и предметных компетенций младших школьников, на развитие их умственных действий.

4. ИУМК обеспечивает поддержку начального образования по любому комплекту, независимо от программы, не заменяя основные учебные пособия, а дополняя их. ИУМК разработан с ориентацией на требования стандарта.

5. В ИУМК учтены: возрастные познавательные возможности младших школьников; преимущества информационных технологий; специфика содержания учебных предметов.

6. ИУМК дает возможность диагностики и сохранения результатов обучения.

7. ИУМК полифункционален. Он предназначен для учителя и для учащихся, но может быть использован родителями. ИУМК поможет при подготовке и проведении урока, во внеурочное время, для дополнительных занятий, для самостоятельного изучения материала учеником или восполнения пробелов в его знаниях, для консультаций детей и родителей.

8. Инструментальная среда имеет сетевую версию.

9. Инструментальная среда открытая, ее может пополнять каждый учитель. Он может использовать готовые материалы медиатеки, тестовые задания, фрагменты уроков, а также на их основе создавать собственные. Тем, что создал один учитель, могут воспользоваться и другие учителя, если автор не наложил запрет.

ИУМК позволяет реализовать приемы личностно-ориентированного обучения, т.к. дает возможность:

1) осуществлять уровневую дифференциацию: по степени сложности заданий, по степени самостоятельности выполнения (с подсказками, с опорой на зрительный образ или без них), по объему заданий, по времени их выполнения;

2) учитывать индивидуальные особенности детей по способам восприятия и переработки информации, т.к. она представлена в разных видах: словесно (текст можно прочитать и услышать), предметно, знаково-символически, на динамических моделях (в анимации) и статических схематических моделях (таблица, схема, условный рисунок или чертеж);

3) использовать компьютерный инструмент для оценивания достижений учащихся.

Scilab – бесплатный математический продукт, который содержит сотни математических функций. Он имеет язык программирования высокого уровня, обеспечивающий доступ к сложным структурам данных, 2-D и 3-D графические функции.

Большое количество функциональных возможностей включены в Scilab:

Математика и моделирование

Для обычных инженерных и научных приложений, включая математические операции и анализа данных.

2-D и 3-D визуализация

Графика функции для визуализации, аннотирования и экспорта данных и множество способов создания и настройки различных типов диаграмм и графиков.

Оптимизация

Алгоритмы решения ограничены и неограниченные непрерывные и дискретные проблемы оптимизации.

Статистика

Инструменты для выполнения анализа данных и моделирования

Система управления Дизайн & Анализ

Стандартные алгоритмы и инструменты для системы управления исследования

Обработка сигнала

WolframAlpha переводит естественно-языковые вопросы в формат, понятный для компьютеров, что позволит производить вычисления и поиск через триллионы единиц «Кураторов данных» с использованием миллионов строк алгоритмов для предоставления пользователю ответов.

Wolfram Alpha не возвращает перечень ссылок, основанный на результатах запроса, а вычисляет ответ, основываясь на собственной базе знаний, которая содержит данные о математике, физике, астрономии, химии, биологии, медицине, истории, географии, политике, музыке, кинематографии, а также информацию об известных людях и интернет-сайтах. Он способен переводить данные между различными единицами измерения, системами счисления, подбирать общую формулу последовательности, находить

возможные замкнутые формы для приближенных дробных чисел, вычислять суммы, пределы, интегралы, решать уравнения и системы уравнений, производить операции с матрицами, определять свойства чисел и геометрических фигур.

Системы управления сайтом

Система управления содержимым (контентом) — информационная система или компьютерная программа, используемая для обеспечения и организации совместного процесса создания, редактирования и управления контентом (то есть содержимым).

Основные функции CMS:

- Предоставление инструментов для создания содержимого, организация совместной работы над содержимым,
- Управление содержимым: хранение, контроль версий, соблюдение режима доступа, управление потоком документов и т. п.,
- Публикация содержимого,
- Представление информации в виде, удобном для навигации, поиска.

В системе управления содержимым могут находиться самые различные данные: документы, фильмы, фотографии, номера телефонов, научные данные и так далее. Такая система часто используется для хранения, управления, пересмотра и публикации документации. Контроль версий является одним из основных её преимуществ, когда содержимое изменяется группой лиц.

VirtualDub — свободная утилита для захвата, монтажа и редактирования видеопотока для платформы Windows. Может использоваться для простых линейных операций над файлами формата видео. Также VirtualDub может использовать встроенные фильтры или подключаемые модули сторонних разработчиков.

- Основные функции: Вырезание и склеивание
- Конвертация, перекодирование видеофайлов
- Видеозахват (преобразование аудио и видео потоков в видеофайлы)
- Замена звуковой дорожки оригинала на звук из файлов .AVI, .avs, .dat, .divx, .m1v, .mpeg, .mp3, .mpg, .mpv, .vdr, .wav, .w64
- Работа с несколькими звуковыми дорожками.
- Наложение фильтров
- По умолчанию работа с .AVI, .dat, .divx, .mpeg, .mpg, .mpv.
- Работа с VOB, MPEG-2, AC-3, FLIC, FLV, FLI, FLC, MOV, MP4, PVN, 3GP, WMA, WMV, ASF, (с помощью плагинов).
- Распределённая работа на нескольких компьютерах в сети.
- Резка и склеивание по ключевым кадрам.
- Добавление/отрезание звуковой дорожки.
- Работа со звуковой дорожкой без рекомпрессии видео и наоборот.

Moodle — система управления курсами (электронное обучение), также известная как система управления обучением или виртуальная обучающая среда . Является аббревиатурой от англ. Modular Object-Oriented Dynamic Learning Environment (модульная объектно-ориентированная динамическая обучающая среда). Представляет собой свободное веб-приложение, предоставляющее возможность создавать сайты для онлайн-обучения.

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ИСПОЛЬЗОВАНИЕ СИСТЕМЫ СБАЛАНСИРОВАННЫХ ПОКАЗАТЕЛЕЙ ДЛЯ ОЦЕНКИ УСТОЙЧИВОГО РАЗВИТИЯ ПРЕДПРИЯТИЙ

***Аннотация:** В статье исследуется применение системы сбалансированных показателей в виде инструмента оценивания устойчивого развития компаний. Автор проводит анализ методологии адаптации традиционной системы сбалансированных показателей с целью высокой результативности деятельности предприятий. Рассматривается ССП, включающая в себя социальные, экономические, экологические и управленческие факторы.*

***Ключевые слова:** система сбалансированных показателей, устойчивость, бизнес-процесс, стратегическое управление, планирование.*

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USING THE BALANCED SCORECARD SYSTEM TO ASSESS THE SUSTAINABLE DEVELOPMENT OF ENTERPRISES

***Abstract:** The article examines the application of the balanced scorecard as a tool for assessing the sustainable development of companies. The author analyzes the methodology for adapting the traditional balanced scorecard to achieve high performance of enterprises. The BSC is considered, which includes social, economic, environmental and management factors.*

***Keywords:** balanced scorecard, sustainability, business process, strategic management, planning.*

Введение

В имеющихся условиях глобализации экономики и усиления экологических требований стратегия стабильности развития является важным элементом стратегического управления в организациях. Классические подходы к процессу оценивания эффективности, которые ориентированы на

финансовые результаты, не настолько результативны, поскольку не дадут полного, развернутого анализа. В такой ситуации актуальным методом становится система сбалансированных показателей.

Методы исследования:

1. Системный анализ;
2. Сравнительный анализ;
3. Анализ документации;
4. Синтез.

Система сбалансированных показателей – это инструмент стратегического управления результативностью бизнеса. Такая система помогает обеспечить достижение поставленных целей и стратегии ведения бизнеса.

Изначальный ее вариант включал в себя четыре основных блока: финансы, клиенты, внутренние процессы, обучение и рост. В настоящее время ССП способна приспосабливаться к различным возникающим условиям для более успешного результата.

Основные принципы, влияющие на перспективное развитие, представлены на рисунке 1.

Принципы адаптации			
Экологическая перспектива	Социальная перспектива	Экономическая перспектива	Перспектива управления

Рисунок 1 – Ключевые принципы адаптации ССП

Для того, чтобы построить систему сбалансированных показателей необходимо, в первую очередь, разработать стратегическую карту. Она показывает причинно-следственные связи (рисунок 2, рисунок 3), сформировавшиеся между всем разнообразием факторов успешного развития.



Рисунок 2 – Первый пример связей



Рисунок 3 – Второй пример связей

Внедрение системы сбалансированных показателей имеет свои положительные и отрицательные стороны. Основными преимуществами является: возможность комплексного подхода, количественная оценка нематериальных активов, связь стратегии с операционной деятельностью, коммуникации со стейкхолдерами. Проблемы, с которыми можно столкнуться: сложность разработки показателей, сбор верных данных, риск бюрократии, приспособление к изменениям внешней среды.

Для успешного использования такого инструмента, как система сбалансированных показателей, необходимо выполнить следующие действия:

- Вовлечь всех уровней в процесс разработки ССП;
- Применять итеративный подход к улучшению системы;
- Установить взаимосвязь с системами мотивации сотрудников;
- Проводить аудит всех показателей;
- Обеспечение полного доступа стейкхолдеров к информации.

Заключение

Система сбалансированных показателей, которая имеет возможность подстраиваться под различные факторы с целью повышения эффективности деятельности, является важным и действенным инструментом стратегического управления. Она помогает организациям улучшать большинство составляющих своей деятельности. С учетом всех имеющихся недостатков все-таки положительные стороны ССП перевешивают. Таким образом, внедряя систему сбалансированных показателей, компания может достичь значительных результатов путем оптимизации своей деятельности.

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THE PRACTICAL IMPLICATIONS OF CLASSIFYING SOURCES OF LAW IN COMMON AND CIVIL LAW SYSTEMS

Abstract : *The article examines the profound differences in classifying legal sources between common law and civil law systems, highlighting their epistemological and practical implications. Civil law prioritizes a hierarchical, codified structure rooted in legislative supremacy, ensuring predictability but limiting flexibility. In contrast, common law relies on judicial precedents and inductive reasoning, fostering adaptability at the potential cost of consistency. These classifications shape legal reasoning, education, and institutional design, reflecting deeper philosophical divides—civil law's rationalist, deductive approach versus common law's empiricist, case-based evolution. The analysis underscores how these systemic differences create barriers in legal harmonization and transnational borrowing, as each tradition embodies distinct conceptions of legal authority and knowledge.*

keywords: *Legal Systems Comparison, Source Classification, Judicial Precedent, Codification, Legal Reasoning*

Introduction

The classification of legal sources in common law and civil law systems represents not merely a technical distinction, but a fundamental epistemological divide that shapes the very fabric of legal thought and institutional development. In an era of accelerating legal globalization, where transnational harmonization efforts increasingly encounter systemic barriers, understanding these foundational divergences becomes imperative.[1] The conventional dichotomy between codified norms and judicial precedents fails to capture the profound jurisprudential consequences embedded in different approaches to legal source classification. These differences manifest not only in surface-level organizational structures but permeate the methodologies of legal reasoning, the hierarchy of normative authority, and ultimately the conception of law itself within each tradition.

Civil law's systematic taxonomy of sources reflects a rationalist worldview that prioritizes logical coherence and legislative supremacy, constructing an explicit normative pyramid with codified texts at its apex. By contrast, common law's organic development through judicial decisions embodies an empiricist tradition where legal principles emerge inductively from concrete disputes. This distinction

transcends procedural variation, representing alternative paradigms for generating legal knowledge. The civil law tradition conceptualizes legal sources as predetermined and systematically ordered, while common law treats them as evolving through continuous judicial articulation.

The practical significance of these classificatory approaches becomes particularly evident when examining their systemic implications. In civil law jurisdictions, the formal hierarchy of sources facilitates predictable ex ante application of norms, but may constrain adaptive capacity. Common law's dynamic precedent-based system offers greater flexibility at the potential cost of consistency. These structural differences fundamentally influence legal education, professional practice, and institutional design - from court architectures to law reporting systems. The classification of sources ultimately determines the pathways through which legal change occurs within each system, whether through legislative reform or judicial innovation.

Theoretical Framework of Legal Sources Classification

The classification of legal sources constitutes a fundamental epistemological framework that reflects deeper philosophical and institutional divergences between common law and civil law traditions. At its core, the conceptualization of what constitutes a "legal source" reveals contrasting approaches to legal validity and authority that have developed through centuries of jurisprudential evolution. In comparative jurisprudence, legal sources are not merely recognized as formal origins of binding rules, but as manifestations of distinct theories about the nature of law itself. The normative versus material sources dichotomy exposes this fundamental tension—where civil law systems emphasize the primacy of formally enacted norms, common law traditions grant constitutive authority to judicial decisions as repositories of legal principle.

This divergence stems from fundamentally different conceptions of legal knowledge and its institutional embodiment. Civil law's classification system, with its explicit hierarchy of written sources, embodies the rationalist tradition that seeks to organize legal knowledge through systematic codification.[2] The binding force of legal norms derives principally from their formal position within this predetermined structure, reflecting an essentially deductive model of legal reasoning. By contrast, common law's classification criteria emerge inductively through the gradual accretion of judicial decisions, where the unwritten but binding force of precedent reflects an empiricist approach to legal knowledge. Here, the authority of legal sources is not determined by their formal status but by their persuasive power within an evolving tradition of judicial reasoning.

The philosophical underpinnings of these classification systems reveal why they produce such different practical consequences. Civil law's rationalist tradition, descending from Enlightenment thought, constructs law as an autonomous system of abstract norms that can be comprehensively organized ex ante. This explains its emphasis on codification and the formal hierarchy of sources—the system seeks to predetermine legal outcomes through logical application of general principles. Common law's empiricist roots, by contrast, treat law as an ongoing social practice

that develops organically through judicial engagement with concrete cases. Its classification system accordingly prioritizes flexibility and context-specific reasoning over comprehensive systematization.

These theoretical differences manifest in concrete classification criteria that structure each system's operation. The civil law emphasis on formality hierarchy (constitutions, codes, statutes) versus common law's recognition of unwritten but binding precedents creates fundamentally different pathways for legal development and application. Similarly, the gradation of binding force operates differently—while civil law systems determine validity through formal source, common law assesses authority through principles of precedent weight and persuasive force. These classification mechanisms are not neutral technical devices but constitutive elements that shape how legal systems perceive, process, and produce legal knowledge.

The practical significance of these theoretical divergences becomes apparent when examining how each system accommodates legal change and manages normative conflict. Civil law's formal classification provides clarity and predictability but may constrain adaptive capacity, while common law's more fluid system offers responsiveness at potential cost of coherence. This framework ultimately demonstrates that classification systems are not merely descriptive categories but active participants in shaping legal discourse, institutional design, and the very boundaries of what each tradition recognizes as valid law.

Structural Taxonomy in Civil Law Systems

The civil law tradition's structural taxonomy of legal sources embodies a comprehensive epistemological framework that fundamentally shapes its approach to legal knowledge and institutional organization. At the heart of this system lies the principle of codification as the primary organizational paradigm, reflecting a deliberate rationalist construction of legal order that contrasts sharply with the organic development characteristic of common law systems. The codification imperative manifests not merely as a technical arrangement of legal materials, but as an expression of deeper philosophical commitments to systematic coherence and legislative supremacy. This formal hierarchy establishes an explicit normative pyramid that extends from constitutional texts through statutory codes to subordinate regulatory instruments, creating a rigid yet transparent structure of legal authority.

The civil law's legislative supremacy model operates through a carefully calibrated system of normative delegation, where each level of the hierarchy derives its validity and force from superior sources while simultaneously authorizing inferior ones. This vertical integration ensures theoretical consistency across the entire legal edifice, with codified texts serving as the principal reference points for all legal reasoning.[3] Secondary regulatory instruments occupy a derivative but essential position within this structure, implementing legislative principles while remaining strictly subordinate to them. The system's auxiliary sources—including doctrinal authority and general principles of law—function within carefully

delineated parameters, providing interpretive guidance without challenging the formal primacy of enacted norms.

This structural taxonomy produces profound systemic consequences that permeate all aspects of legal practice and theory. The formal hierarchy's greatest virtue lies in its capacity to generate predictability through transparent ordering of normative authority, enabling legal actors to determine with relative certainty which sources prevail in cases of conflict.[4] This predictability comes at the cost of reduced flexibility, as the system's deductive reasoning patterns require all legal solutions to be traceable to authorized textual sources. The civil law judge operates within this framework as a technician applying predetermined norms rather than a co-creator of legal principles, reflecting the system's fundamental commitment to legislative supremacy.

The classification system's epistemological implications become particularly evident when examining its approach to legal development and adaptation. Unlike common law's incremental evolution through judicial decisions, civil law systems channel legal change primarily through legislative revision and codification projects. This centralized mechanism for legal development reinforces the system's hierarchical logic while potentially creating disjunctions between formal norms and evolving social realities. The taxonomy's rigidity also influences comparative legal analysis, as civil law systems tend to conceptualize foreign legal concepts through their own classificatory frameworks, potentially obscuring fundamental differences in legal reasoning.

Ultimately, the civil law structural taxonomy represents more than a technical organizational scheme—it constitutes an institutionalized epistemology that determines how legal knowledge is produced, validated, and applied. The system's emphasis on formal sources and deductive reasoning patterns creates a distinctive legal consciousness that shapes everything from legal education to judicial methodology. This comprehensive framework explains why civil law systems approach problems of legal harmonization and transnational borrowing differently from their common law counterparts, as their fundamental classificatory assumptions create distinct pathways for legal reception and adaptation. The taxonomy's enduring influence demonstrates how deeply classification systems can shape not just the administration of law, but the very conception of what law is and how it ought to operate.

Dynamic Architecture of Common Law Sources

The common law system presents a fundamentally distinct architecture of legal sources characterized by its dynamic, evolutionary nature and the central role of judicial precedent as the primary organizational unit. This structural paradigm embodies an organic conception of law as an ongoing discourse rather than a static codification, with the doctrine of stare decisis serving as the institutional mechanism that ensures both continuity and controlled development of legal principles. The binding force of precedent operates through a sophisticated distinction between ratio decidendi and obiter dicta, creating a nuanced hierarchy of authoritative statements within each decision. This precedent-based system generates a unique form of legal

rationality where principles emerge inductively from the accumulated wisdom of concrete cases rather than being deduced from abstract legislative formulations. The common law's approach consequently develops as a complex tapestry of judicial reasoning, where each decision simultaneously builds upon existing doctrine while potentially distinguishing or refining prior interpretations.

Within this framework, statutory law occupies an ostensibly paradoxical position. While maintaining formal supremacy through the doctrine of parliamentary sovereignty, legislation in practice often requires judicial activation and interpretation to achieve operational force. This creates a dynamic tension between the theoretical primacy of enacted law and the practical authority of judicial exposition, with courts developing sophisticated techniques of statutory interpretation that effectively shape legislative meaning.[5] The common law's approach to statutes typically involves contextual and purposive analysis rather than strict textualism, reflecting the system's preference for pragmatic solutions over formalistic application. This interpretive methodology allows the judiciary to mediate between legislative intent and evolving social needs, ensuring that statutory integration occurs within the broader fabric of common law principles.

The system's adaptive capacity is further enhanced by its historical incorporation of equity and custom as corrective mechanisms. Equity functions as a vital supplement to the common law, providing flexible remedies where rigid application of precedent would produce unjust outcomes, while maintaining its own systematic principles that prevent arbitrary discretion. Customary practices, when sufficiently established and recognized, can attain legal force through judicial acknowledgment, demonstrating the system's capacity to absorb normative developments from social practice. These supplementary sources create multiple pathways for legal evolution, allowing the common law to respond to changing circumstances without abandoning its foundational commitment to precedent-based reasoning.

The dynamic architecture of common law sources produces systemic effects that permeate all aspects of legal practice and education. Legal reasoning develops as a specialized skill of analogical analysis, distinguishing relevant similarities and differences across cases rather than applying predetermined rules. This cultivates a particular form of legal consciousness that values context-specific solutions and incremental development over comprehensive systematization. The system's open-textured nature facilitates gradual adaptation to new social conditions, but potentially at the cost of predictability and transparency compared to civil law's formal hierarchies.

This structural analysis reveals how the common law's source architecture shapes its distinctive approach to legal problems and institutional development. The system's resilience stems from its capacity to balance stability through precedent with flexibility through judicial innovation, creating an ongoing dialogue between past decisions and present needs. The classification of sources in common law ultimately reflects a particular philosophy of law as an evolving social practice

rather than a static normative order, with profound implications for how legal knowledge is produced, transmitted, and applied within this tradition.

Jurisprudential Significance of Classification Differences

The fundamental divergences in classifying legal sources between civil law and common law systems extend far beyond technical distinctions, embodying profound jurisprudential consequences that shape the very nature of legal development and reasoning. These classificatory differences establish alternative paradigms for generating, organizing, and applying legal knowledge, reflecting deeper epistemological divides in how different traditions conceptualize the nature and function of law. The civil law's hierarchical taxonomy of sources, with its emphasis on codification and legislative supremacy, creates a framework oriented toward ex ante predictability, where legal outcomes ideally derive from logical application of predetermined norms.[6] By contrast, the common law's dynamic architecture, centered on precedent and judicial reasoning, prioritizes ex post adaptability, allowing legal principles to evolve responsively through accumulated judicial decisions. This fundamental opposition between systematic certainty and contextual flexibility represents not merely procedural variation, but competing visions of legal rationality itself.

The classificatory distinctions manifest most visibly in their contrasting methodologies of legal reasoning. Civil law's syllogistic application proceeds deductively from general principles to specific cases, reflecting its rationalist foundations and formal hierarchy of sources. Common law's analogical reasoning develops inductively through comparison of cases, mirroring its empiricist roots and precedent-based structure. These methodological differences produce distinct professional mentalities and institutional practices, influencing everything from judicial appointments to legal education. The civil law tradition cultivates jurists adept at systematic analysis and code interpretation, while common law training emphasizes case analysis and distinguishing precedents.

When examined through the lens of legal harmonization and transnational borrowing, these classificatory differences reveal significant systemic barriers. Legal transplants between systems frequently encounter conceptual untranslatability, as norms conceived within one classificatory framework struggle to find functional equivalents in another. The civil law's preference for comprehensive codification often conflicts with common law's incremental, case-based development, creating integration challenges in areas ranging from commercial law to human rights protection. These difficulties stem not from superficial dissimilarities but from fundamentally incompatible approaches to what constitutes valid legal knowledge and how it should be organized.

At the deepest level, the classification of legal sources serves as a mirror of legal consciousness, reflecting how different traditions understand law's relationship to society, state, and individual rights. Civil law's systematic taxonomy embodies an ideal of law as a rational construct capable of comprehensive organization by human intellect, while common law's organic structure treats law as an evolving social practice requiring continuous judicial mediation. These

contrasting visions carry implications for democratic theory, institutional design, and the very possibility of legal certainty in complex societies. The study of source classification thus transcends technical jurisprudence to engage fundamental questions about the nature of legal authority and the conditions for legitimate governance in different legal cultures.

Conclusion

The comparative analysis of legal source classification in civil law and common law systems reveals that these structural differences constitute more than mere technical distinctions—they represent fundamentally alternative juridical epistemologies. The civil law's systematic codification reflects an Enlightenment rationality that seeks to impose order through legislative supremacy and hierarchical organization, while the common law's precedent-based architecture embodies an evolutionary pragmatism that develops law through judicial articulation. These classificatory paradigms generate self-reinforcing cycles of legal reasoning, institutional practices, and professional mentalities that perpetuate their distinctive characteristics across generations.

The theoretical significance of this investigation lies in its demonstration of how source classification shapes the very possibilities of legal thought within each tradition. By exposing these deep structural divergences, the study contributes to comparative jurisprudence a framework for understanding why certain legal concepts resist translation between systems and why harmonization efforts often produce unintended consequences. Future research should explore how digitalization and artificial intelligence might disrupt these traditional classifications, potentially creating new hybrid forms of legal organization that transcend the classical dichotomy. The enduring value of this analysis resides in its capacity to illuminate how seemingly neutral organizational principles actually constitute the invisible architecture of legal rationality itself.

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LEGAL PLURALISM AND MORAL CONFLICT IN THE ERA OF GLOBALIZATION

Abstract : *This paper examines the complex interplay between legal pluralism and moral conflict in the era of globalization, where diverse normative systems—state, religious, customary, and transnational—coexist and compete. It highlights the challenges posed by overlapping legal authorities and incompatible ethical frameworks, particularly in contexts where universalist principles like human rights clash with culturally specific traditions. The study explores theoretical foundations of legal pluralism, its historical evolution, and the moral dilemmas arising from globalization, emphasizing tensions between universalism and particularism. By analyzing intersections of legal pluralism and moral conflict, the paper argues for nuanced approaches that balance recognition of diversity with the need for minimal ethical consensus. The conclusion underscores the role of institutional mechanisms in mediating these conflicts and calls for further research on emerging digital and transnational legal hybridities.*

Keywords: *Legal Pluralism, Moral Conflict, Globalization, Normative Diversity, Intercultural Dialogue*

Introduction

Globalization has fundamentally transformed the legal and moral landscape, creating a dynamic interplay between diverse normative systems. The erosion of traditional jurisdictional boundaries has given rise to legal pluralism, where state law coexists—and often competes—with non-state legal orders, including religious, customary, and transnational regimes. This fragmentation challenges the monopoly of state sovereignty and introduces complex moral dilemmas, as conflicting value systems intersect in increasingly interconnected societies.[1] The tension between universalist claims, such as human rights, and culturally specific moral frameworks underscores the need for a nuanced theoretical examination of how legal pluralism operates in conditions of globalization.

The central problem lies in the unresolved contradictions between overlapping legal authorities and incompatible ethical norms. While legal pluralism acknowledges the coexistence of multiple juridical systems, it does not inherently resolve the moral conflicts that arise when these systems impose divergent obligations on individuals and communities. For instance, transnational legal regimes may enforce gender equality provisions that clash with patriarchal customary laws, leaving individuals caught between competing claims of legitimacy. This raises critical questions about the nature of legal authority, the

limits of cultural relativism, and the possibility of a coherent ethical foundation for pluralist governance.

The objective of this study is to analyze the theoretical relationship between legal pluralism and moral conflict, interrogating how globalization exacerbates these tensions while also opening possibilities for dialogue. By engaging with legal theory and moral philosophy, the paper seeks to clarify whether pluralist frameworks can accommodate deep moral disagreements without descending into normative chaos. The analysis will challenge simplistic solutions—whether radical universalism or unqualified relativism—and instead explore mediated approaches that recognize both the inevitability of pluralism and the necessity of minimal ethical consensus. In doing so, the paper contributes to debates on post-Westphalian legality, offering a structured critique of how globalization reconfigures the interplay of law, power, and morality.

Theoretical Foundations of Legal Pluralism

Legal pluralism, as a conceptual framework, challenges the classical Western jurisprudential assumption that law is an exclusive domain of the state. Instead, it recognizes the coexistence of multiple, often competing, normative orders within a single social field, including religious, customary, indigenous, and transnational legal systems. This paradigm shift reflects a broader critique of legal centralism, which has long dominated positivist traditions by asserting the state's monopoly over juridical authority. The scope of legal pluralism extends beyond mere empirical observation of non-state law; it interrogates the very nature of legality, asking whether normative systems outside formal state structures can claim legitimate binding force.[2] This question becomes particularly urgent in the era of globalization, where migration, digital spaces, and transnational governance have further fragmented traditional legal hierarchies.

The historical trajectory of legal pluralism reveals its deep entanglement with colonial and postcolonial power structures. During the colonial period, European powers imposed legal systems upon subjugated societies while selectively recognizing indigenous norms to facilitate indirect rule—a form of hybrid legality that sustained domination while creating enduring pluralist legacies. In the postcolonial era, newly independent states often retained these pluralist structures, though frequently subordinating customary or religious law to centralized authority. [3] The postmodern turn in legal theory further radicalized pluralist thought, emphasizing the fluidity of legal identities and the impossibility of a singular, universal legal order. Scholars such as John Griffiths distinguished between "weak" pluralism, where the state retains ultimate control over non-state norms, and "strong" pluralism, which posits that law is inherently multiple and cannot be fully subsumed under state sovereignty. Boaventura de Sousa Santos expanded this critique by introducing the concept of "interlegality," arguing that legal orders interpenetrate in unpredictable ways, producing hybrid normative spaces that defy rigid classification.

The contributions of these theorists underscore the tension between pluralism as a descriptive reality and pluralism as a normative ideal. While Griffiths'

analytical framework provides tools for mapping legal diversity, Santos' work highlights the emancipatory potential of pluralism for marginalized communities resisting state hegemony. Yet this very potential raises dilemmas: if law is everywhere, can it retain any coherent function as a mechanism for social order? The answer, as suggested by contemporary pluralist scholarship, lies in a dialectical understanding of law as both a product of power struggles and a contested terrain for moral and political negotiation.

Moral Conflict in a Globalized World

The phenomenon of globalization has precipitated a profound transformation in the nature of moral conflict, rendering traditional ethical frameworks increasingly unstable in the face of competing normative claims. Unlike localized moral disagreements, which emerge within shared cultural or legal systems, contemporary conflicts arise from the collision of fundamentally divergent worldviews, each asserting its own legitimacy in a globalized space. Cultural relativism, once a theoretical concern primarily for anthropologists, has become an inescapable reality as migration, digital communication, and transnational economic integration force previously isolated value systems into direct confrontation.[4] This fragmentation is not merely a matter of differing customs but reflects deeper epistemological divides concerning the nature of justice, human dignity, and collective identity. The dissolution of geographical and cultural boundaries has not produced moral consensus but rather a proliferation of irreconcilable ethical positions, each claiming universal validity while resisting external adjudication.

At the heart of this conflict lies the tension between universalist and particularist conceptions of morality. Universalist approaches, exemplified by human rights discourse, posit the existence of transhistorical and transcultural ethical principles that ought to govern all societies. Particularist frameworks, by contrast, insist on the situated nature of moral reasoning, arguing that norms derive their meaning and authority from specific historical communities and traditions. Globalization exacerbates this tension by creating situations where universalist imperatives—such as gender equality or environmental protection—clash with deeply rooted local practices, from arranged marriages to resource extraction rituals. These are not abstract philosophical disputes but concrete dilemmas faced by legislators, judges, and ordinary citizens navigating overlapping jurisdictions. The paradox of globalization is that while it facilitates unprecedented interconnectedness, it simultaneously heightens awareness of incommensurable differences, making moral conflict not merely frequent but structurally inevitable.

The role of globalization in amplifying these dilemmas becomes particularly evident when examining the transformation of moral discourse into legal claims. As transnational institutions and NGOs promote universal standards, traditional norms are increasingly framed as violations requiring intervention, while local communities perceive such impositions as neo-colonial encroachments on sovereignty. This dynamic is evident in debates surrounding indigenous land rights, where international environmental protections conflict with ancestral hunting practices, or in controversies over religious freedom when it collides with secular

anti-discrimination laws. What emerges is not simply a clash of norms but a crisis of legitimacy, as competing systems appeal to fundamentally different sources of authority—rational-legal versus traditional, individualist versus collectivist. The globalization of moral conflict thus reveals the limitations of both purely universalist and strictly particularist approaches, suggesting the need for a more nuanced conceptual framework capable of addressing pluralism without succumbing to either hegemony or fragmentation.

Intersections of Legal Pluralism and Moral Conflict

The intersection of legal pluralism and moral conflict represents one of the most complex theoretical and practical challenges in contemporary jurisprudence. At this crossroads, the coexistence of multiple legal orders—state, religious, customary, and transnational—does not merely create procedural conflicts over jurisdiction but engenders fundamental disputes about the nature of justice itself. When state law imposes secular frameworks on communities governed by religious or traditional norms, the resulting tension transcends legal technicalities to reveal competing visions of social order.[5] These jurisdictional clashes are particularly acute in matters of family law, inheritance, and personal status, where state-enforced equality principles often collide with patriarchal or theocratic traditions. The resolution of such conflicts cannot be achieved through hierarchical subordination of one system to another, as this would negate the very premise of legal pluralism while potentially exacerbating moral resentment among subordinated groups.

The question of legitimacy becomes paramount in analyzing these intersections. In plural legal systems, authority derives not from a single source but from multiple, often incompatible foundations: democratic legislation, divine revelation, ancestral tradition, or transnational human rights regimes. This multiplicity challenges conventional notions of sovereignty, as the state's claim to ultimate legal authority is contested by communities that regard alternative normative systems as equally—or more—binding.[6] The crisis of legitimacy is particularly evident when state courts are asked to adjudicate matters already decided by religious tribunals or customary elders, raising profound questions about which institution possesses the moral right to judge. This dilemma cannot be resolved through purely procedural mechanisms, as it touches upon deeper philosophical issues concerning the relationship between law and morality, individual rights and collective identity.

Moral justifications for legal pluralism typically appeal to principles of autonomy and recognition. The autonomy argument maintains that individuals and communities should have the freedom to order their lives according to their deepest convictions, provided this does not infringe upon the equivalent rights of others. The recognition argument, rooted in theories of identity and difference, asserts that denying legal validity to minority normative systems constitutes a form of cultural oppression that undermines the dignity of group members. These moral claims present a formidable challenge to traditional state-centric models of legal unity, suggesting that justice in diverse societies may require institutionalizing difference rather than suppressing it. However, this approach raises its own ethical dilemmas,

particularly when recognized practices conflict with fundamental rights or public order.

Conclusion

The analysis of legal pluralism in the context of globalization reveals a fundamental tension between the recognition of normative diversity and the need for coherent governance. The coexistence of multiple legal orders—state, customary, religious, and transnational—challenges traditional conceptions of sovereignty while simultaneously offering innovative frameworks for managing moral conflict in heterogeneous societies. The study demonstrates that legal pluralism is not merely a descriptive reality but a normative challenge, requiring careful negotiation between competing claims of legitimacy. The Russian juridical tradition, with its historical engagement with multi-ethnic legal systems, provides valuable insights into balancing unity and diversity without resorting to either forced assimilation or unregulated fragmentation.

As globalization intensifies normative interactions across borders, legal pluralism will increasingly shape how societies reconcile universal principles with particular identities. The future of this paradigm depends on developing institutional mechanisms that transform conflict into dialogue, ensuring that pluralism does not degenerate into relativism. Key questions remain regarding the minimum substantive standards necessary for sustainable pluralist coexistence and the role of state institutions in mediating between competing legal orders. Further research should explore how emerging digital jurisdictions and transnational governance networks complicate traditional pluralist models, potentially creating new forms of legal hybridity that transcend conventional state-centric frameworks. These inquiries must address both the theoretical foundations and practical implications of pluralism in an era where legal boundaries are simultaneously dissolving and reconfiguring.

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INFLUENCE OF WESTERN LEGAL THOUGHT ON THE MODERN RULE OF LAW IN CHINA

Abstract : *This study examines the complex interplay between Western legal thought and the development of modern rule of law in China, revealing a process of selective adaptation rather than wholesale adoption. By analyzing conceptual, historical, and institutional dimensions, the paper demonstrates how China has reinterpreted Western legal principles—such as judicial independence, human rights, and constitutional governance—within its socialist legal framework. The research highlights the resulting hybrid legal system, which combines global juridical standards with indigenous governance priorities, challenging conventional narratives of legal convergence. Through a comparative-historical approach, the study underscores the tensions between Western individualism and Chinese collectivism, as well as the syncretic nature of China's legal modernization. The findings contribute to broader debates on legal pluralism and the globalization of legal norms, suggesting that China's trajectory offers an alternative model for rule of law development in non-Western contexts.*

Keywords : *Western Legal Thought, Chinese Rule Of Law, Legal Hybridization, Socialist Legal Tradition, Comparative Jurisprudence*

Introduction

The dynamic interplay between Western legal thought and the evolution of China's modern rule of law presents a critical field of inquiry in contemporary comparative jurisprudence. The significance of this study lies in its examination of how China, while maintaining its socialist legal tradition, has selectively integrated Western legal principles to construct a distinctively hybrid legal system. Western legal paradigms—ranging from natural law theories to liberal constitutionalism—have historically influenced legal reforms across diverse jurisdictions, yet their reception in China remains a complex process marked by adaptation rather than wholesale adoption.[1] This research seeks to systematically analyze the conceptual and institutional dimensions of this influence, addressing both its transformative potential and its limitations within China's unique socio-political framework.

The modernization of China's legal system, particularly since the Reform and Opening-Up era, reflects a deliberate engagement with Western legal concepts such as judicial independence, due process, and constitutional governance. However, this engagement is mediated through the prism of socialist rule of law, which prioritizes stability and Party leadership. The resulting legal synthesis raises fundamental

questions about the universality of Western legal norms and the viability of alternative modernities in legal development. By interrogating these tensions, this study contributes to broader theoretical debates on legal pluralism and the globalization of legal systems, while offering insights into China's strategic balancing of external influences and domestic imperatives.

Methodologically, the research employs a comparative-historical approach, tracing the transmission of Western legal ideas into Chinese jurisprudence and assessing their contemporary relevance. The analysis is grounded in legal-philosophical discourse, emphasizing the interplay between normative principles and institutional practice. Ultimately, this investigation not only clarifies the contours of China's legal transformation but also challenges conventional assumptions about the diffusion of legal norms in non-Western contexts. The findings hold implications for understanding the future trajectory of China's rule of law, particularly in an era of geopolitical contestation over legal paradigms.

Theoretical Foundations of Western Legal Thought

Western legal thought constitutes a complex tapestry of intellectual traditions that have fundamentally shaped modern jurisprudence. At its core, this tradition bifurcates into two principal streams: natural law theory and legal positivism, with liberal theories of the rule of law emerging as a consequential development of their interaction. Natural law, as articulated by Locke and Rousseau, posits an intrinsic connection between law and morality, asserting the existence of universal principles discernible through reason. This philosophical stance carries particular significance for China's legal development, as it raises questions about the ontological foundations of legal norms in a system that emphasizes historical materialism.

Legal positivism, represented by Austin and Hart, presents a contrasting paradigm by severing the necessary connection between law and morality, focusing instead on law as a system of rules emanating from sovereign authority. The positivist tradition's analytical rigor and emphasis on institutional structures have exerted notable influence on China's technical legal reforms, particularly in codification and administrative law.[2] However, this influence remains circumscribed by China's rejection of positivism's value-neutral premises, maintaining instead law's instrumental role in social governance. The liberal tradition of Dicey and Hayek synthesizes elements from both schools while emphasizing constitutionalism, separation of powers, and individual rights as institutional safeguards against arbitrary rule. These concepts have permeated global legal discourse, creating a framework against which China's socialist rule of law is often measured. The tension between Western liberal individualism and China's collectivist legal culture manifests most acutely in this domain, particularly regarding the interpretation of rights and the role of judicial institutions.

These theoretical traditions collectively represent not merely abstract philosophies but competing visions of law's relationship to state, society, and individual. Their reception in China reflects a strategic process of selective adaptation, where technical legal concepts are often divorced from their original philosophical underpinnings and recontextualized within China's distinct political-

legal framework. The resulting synthesis challenges conventional Western narratives of legal development while contributing to emerging discourses on pluralistic approaches to rule of law in a multipolar world order.

Historical Transmission of Western Legal Ideas to China

The historical trajectory of Western legal thought's influence on China reveals a complex process of selective adaptation and institutional transformation. The late Qing and early Republican period marked China's first systematic engagement with Western jurisprudence, characterized by the transplantation of European civil law structures. This initial reception reflected a pragmatic response to imperial decline, with legal modernization serving as both a defensive mechanism against foreign encroachment and a tool for domestic institutional strengthening. The post-1978 reform era witnessed a more targeted appropriation of Anglo-American legal concepts, particularly in commercial and economic law domains, where technical legal frameworks were adapted to facilitate market-oriented reforms while maintaining socialist political parameters.

Contemporary legal development demonstrates China's increasingly sophisticated engagement with international legal norms, particularly in areas of human rights and global governance. This phase differs fundamentally from earlier periods of legal borrowing, as China now participates actively in shaping transnational legal discourses while asserting its own interpretative frameworks.[3] The historical continuum from passive reception to active participation reflects China's evolving position in the global legal order, where Western legal concepts are neither rejected nor uncritically adopted, but rather reinterpreted through the prism of socialist rule of law with Chinese characteristics. This process of legal acculturation challenges conventional narratives of legal diffusion, presenting instead a model of dialectical engagement between civilizational legal traditions.

Conceptual Adaptations in China's Legal System

The transplantation of Western legal concepts into China's juridical framework has necessitated significant conceptual adaptations, creating a unique synthesis that reflects both global influences and indigenous legal characteristics. The distinction between rule of law and rule by law exemplifies this adaptive process, where China has reinterpreted the Western liberal model to align with its socialist legal tradition. While Western jurisprudence emphasizes the supremacy of law as a constraint on state power, China's approach maintains law as an instrument of governance under Party leadership, resulting in a system where legal norms serve developmental and stabilizing functions rather than acting as autonomous checks on authority. This adaptation reveals the fundamental tension between universalist legal aspirations and particularistic political realities.

Judicial independence and professionalization demonstrate another dimension of conceptual adaptation. China has adopted Western-derived institutional forms, such as standardized judicial examinations and procedural reforms, while preserving the judiciary's role as an extension of state governance rather than an independent branch of government. The professionalization of legal personnel follows global trends in legal education and practice, yet remains

embedded within a framework that prioritizes political reliability and social stability. This selective institutional borrowing creates a hybrid system that combines technical legal modernization with enduring socialist governance principles.[4] The human rights discourse presents perhaps the most complex case of conceptual adaptation. China has engaged with international human rights norms while articulating a distinctively collectivist interpretation that emphasizes economic and social rights over civil-political liberties. This approach reflects both a strategic response to international pressure and a philosophical rejection of Western individualism. By framing human rights within the context of developmental sovereignty and cultural particularism, China has developed a counter-discourse that challenges the universality of Western human rights paradigms while participating in the global human rights regime. These conceptual adaptations collectively illustrate China's capacity to engage with global legal norms while maintaining its distinctive juridical identity, offering insights into the complex interplay between legal globalization and local particularism in contemporary governance systems.

Institutional Reforms and Western Influences in China's Legal System

The institutional architecture of China's legal system has undergone significant transformation through the selective incorporation of Western legal concepts, creating a distinctive hybrid model that merges global juridical standards with socialist governance principles. In the domain of constitutional and administrative law, Western notions of checks on state power have been adapted to China's political context through mechanisms such as administrative litigation. While the 1989 Administrative Litigation Law introduced judicial review of government actions—a concept rooted in Western constitutionalism—its implementation remains constrained by the overarching authority of the Party and the legislative supremacy of the National People's Congress. This reflects a pragmatic adaptation where institutional forms are adopted while their substantive power dynamics are reconfigured to align with China's unitary political system. The development of administrative law thus represents not a replication of Western separation of powers, but rather the institutionalization of accountability within a single-party framework, demonstrating how global legal concepts are reinterpreted to serve domestic governance objectives.

Commercial and corporate law reforms reveal a more extensive engagement with Western legal models, particularly in the post-1978 period of economic liberalization. The adoption of Western-style contract law, property rights frameworks, and corporate governance structures was driven by the pragmatic necessities of market integration and foreign investment. The 1999 Contract Law and 2007 Property Law incorporated fundamental principles from German civil law and Anglo-American common law traditions, creating a legal infrastructure for market transactions. However, these adaptations maintain distinct Chinese characteristics, particularly in the state's retained authority over strategic sectors and land ownership.[5] The resulting legal regime facilitates economic globalization while preserving the state's directive role in economic development, illustrating how

technical legal transplants in commercial domains can coexist with socialist political economy. Criminal justice reforms demonstrate perhaps the most visible tension between Western legal principles and Chinese juridical traditions. The gradual incorporation of due process protections and the presumption of innocence—formally recognized in the 2012 Criminal Procedure Law amendments—reflects influence from international human rights standards. Yet these principles operate within a system that continues to emphasize social stability and crime control, resulting in a distinctive balance between rights protection and state security imperatives. The professionalization of judicial personnel and standardized evidence rules represent institutional responses to both domestic demands for justice and global expectations of legal fairness, while maintaining the political-legal system's fundamental orientation.

These institutional adaptations collectively illustrate China's strategic approach to legal modernization—adopting functional legal mechanisms from Western systems while reconfiguring their underlying normative foundations. The reforms reveal a pattern of selective institutional borrowing, where formal legal structures may resemble their Western counterparts while their operational logic remains embedded in China's political-legal tradition. This process challenges conventional understandings of legal convergence, presenting instead a model of institutional innovation that combines global legal standards with locally-specific governance priorities. The Chinese experience suggests that institutional legal reforms in non-Western contexts may follow distinct pathways, where external influences are mediated through existing political and cultural frameworks to produce hybrid legal orders with their own internal coherence.

Tensions and Syncretism in China's Legal Development

The integration of Western legal concepts into China's juridical system has generated fundamental tensions that reveal deeper philosophical and political divergences between civilizational legal traditions. At the core of these tensions lies the unresolved dialectic between Western individualism and Chinese collectivism, manifested most acutely in the conceptualization of rights and their social function. Western liberal legalism, with its emphasis on individual autonomy and negative liberties, conflicts with China's communitarian legal philosophy that privileges collective interests and developmental rights. This ontological divergence produces a syncretic legal reality where formal rights protections coexist with substantive limitations grounded in social stability considerations, creating a distinctive rights discourse that defies simple categorization within traditional Western legal typologies.

The encounter between socialist legal tradition and liberal legalism presents another dimension of this juridical syncretism. China's legal system maintains its Marxist-Leninist theoretical foundations while incorporating technical legal mechanisms from liberal systems, resulting in a hybrid model that combines socialist conceptions of law as an instrument of class rule with borrowed institutions of legal professionalism and procedural regularity. This synthesis challenges conventional periodizations of legal development, demonstrating how socialist legal

systems can engage in selective modernization without undergoing ideological transformation. The operational reality of China's legal system thus reflects neither pure socialist legality nor liberal legalism, but rather an emergent third path that negotiates between these competing paradigms through pragmatic adaptation. The relationship between authoritarian governance and rule of law principles constitutes perhaps the most politically sensitive area of tension.[6] China's approach demonstrates that rule of law frameworks can be deployed to enhance governance capacity without necessitating political liberalization, contradicting Western theoretical assumptions about the inherent connection between legal rationality and democratic structures. The Chinese experience suggests that authoritarian regimes may develop their own distinctive modalities of legal legitimacy, where predictability and procedural regularity serve to strengthen rather than undermine centralized authority. This adaptation challenges teleological narratives of legal evolution while contributing to broader theoretical debates about the necessary political preconditions for effective rule of law.

These tensions and syntheses collectively illustrate the complex dynamics of legal development in contemporary China, where global legal norms are neither fully rejected nor uncritically adopted, but rather reinterpreted through indigenous conceptual frameworks. The resulting legal order represents an important case of civilizational juridical innovation, offering insights into alternative modernities in legal development that transcend conventional East-West dichotomies. This process holds significant implications for understanding the future trajectories of legal globalization in an increasingly multipolar world order, where competing visions of legality may coexist and interact in unpredictable ways.

Conclusion

The examination of Western legal thought's influence on China's modern rule of law reveals fundamental insights about legal globalization and civilizational jurisprudence. The Chinese experience demonstrates that the transmission of legal concepts across civilizational boundaries inevitably produces hybrid systems that transcend their original theoretical frameworks. This hybridization process challenges conventional linear models of legal development, suggesting instead a more complex paradigm of selective adaptation and creative reinterpretation. The theoretical implications extend beyond China's particular case, offering a critical perspective on the nature of legal pluralism in an era of global interconnectedness.

China's legal evolution points toward an emerging model where technical legal rationality coexists with distinct political-philosophical foundations, creating institutional forms that resist easy classification within traditional Western legal taxonomies. Future trajectories will likely see China continuing to engage with global legal norms while asserting greater autonomy in shaping their interpretation and implementation. Rather than converging with or diverging from Western models, China's legal system appears destined to develop along its own distinctive path, contributing to a more multipolar landscape of global jurisprudence where multiple legitimate approaches to rule of law coexist. This development carries significant implications for international legal discourse, potentially reshaping

foundational assumptions about the universal applicability of Western legal paradigms.

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СОВРЕМЕННЫЕ ТЕХНОЛОГИИ УПРАВЛЕНИЯ ОРГАНИЗАЦИЕЙ

УДК:336.77

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THE ROLE OF GREEN FINANCE IN DRIVING CORPORATE INNOVATION TOWARDS SUSTAINABLE DEVELOPMENT

Abstract: *This study explores how green finance functions as a catalyst for corporate innovation aimed at sustainable development. It argues that by integrating environmental criteria into financial mechanisms—such as green bonds and sustainability-linked loans—green finance can reshape corporate behavior, reduce capital costs for eco-friendly projects, and promote long-term technological advancements. The paper constructs a robust theoretical framework combining financial economics, innovation theory, and sustainability science to examine how financial incentives, regulatory structures, and market dynamics collectively influence innovation. While green finance offers opportunities for risk-sharing and sustainable value creation, challenges such as inconsistent environmental metrics, greenwashing risks, and short-term financial pressures persist. The research emphasizes the need for cohesive policy support, improved financial models, and corporate strategies aligned with sustainability goals. Ultimately, the study positions green finance not only as a funding mechanism but also as a transformative force that fosters strategic innovation for a low-carbon, resilient global economy.*

Keywords: *Green Finance, Corporate Innovation, Sustainable Development, Esg Investment, Financial Mechanisms*

Introduction

The global transition toward sustainable development has become a central priority for modern economies, driven by escalating environmental challenges and the urgent need to reconcile economic growth with ecological preservation. Within this paradigm, green finance has emerged as a transformative force, redefining traditional financial mechanisms to align with sustainability objectives. By channeling capital toward environmentally responsible investments, green finance not only mitigates climate risks but also stimulates corporate innovation in ways that conventional financing cannot. The interplay between green finance and corporate innovation represents a critical yet underexplored dimension of sustainable development, warranting rigorous theoretical examination to uncover its underlying mechanisms and broader implications.

The rise of green finance reflects a fundamental shift in global financial markets, where environmental, social, and governance (ESG) criteria increasingly influence investment decisions. Instruments such as green bonds, sustainability-linked loans, and carbon pricing mechanisms have gained prominence, creating financial incentives for firms to adopt cleaner technologies and sustainable business practices. However, the extent to which these financial instruments effectively drive corporate innovation—particularly in fostering long-term sustainability—remains a subject of debate.[1] While existing research acknowledges the potential of green finance to incentivize eco-innovation, gaps persist in understanding how different financial mechanisms interact with corporate strategies, regulatory frameworks, and market dynamics to produce meaningful innovation outcomes.

A key research problem lies in the fragmented theoretical approaches to green finance and its role in corporate innovation. Much of the literature focuses either on macroeconomic policy impacts or firm-level case studies, neglecting a systematic analysis of the structural linkages between financial mechanisms and innovation processes.[2] This oversight limits the ability to formulate cohesive strategies for maximizing the sustainability impact of green finance. Addressing this gap requires a theoretical framework that integrates financial economics, innovation theory, and sustainability science to elucidate how green finance reshapes corporate behavior, risk assessment, and technological advancement.

The primary objective of this study is to analyze the theoretical foundations of green finance as a driver of corporate innovation, with a focus on its mechanisms, challenges, and policy implications. By employing a qualitative methodology grounded in comparative and logical analysis, the research synthesizes existing frameworks to identify key leverage points where financial interventions can most effectively spur sustainable innovation. The discussion extends beyond mere financial incentives to consider institutional, regulatory, and behavioral factors that mediate the relationship between green finance and corporate innovation. Ultimately, this study contributes to the evolving discourse on sustainable finance by providing a structured theoretical perspective that informs both academic research and practical policymaking in the Russian and global contexts. The findings hold significant relevance for stakeholders seeking to enhance the efficacy of green finance in achieving sustainability goals. Policymakers can derive insights into designing regulatory frameworks that incentivize innovation, while corporations may better understand how to leverage green financing for competitive advantage in an increasingly sustainability-oriented market. By bridging theoretical gaps and offering actionable recommendations, this research underscores the transformative potential of green finance in fostering corporate innovation that aligns with the imperatives of sustainable development.

Theoretical Framework

The intersection of green finance and corporate innovation represents a dynamic field of study that requires a robust theoretical foundation to elucidate its underlying mechanisms and systemic implications. Green finance, as a specialized domain within financial economics, redefines capital allocation by integrating

environmental sustainability as a core criterion. Its conceptual framework extends beyond traditional financial paradigms by incorporating long-term ecological risks and opportunities into investment decision-making. The principles of green finance are rooted in the alignment of financial flows with low-carbon, climate-resilient development pathways, emphasizing transparency, accountability, and measurable environmental impact. Financial instruments such as green bonds, sustainability-linked loans, and ESG (Environmental, Social, and Governance) investments serve as tangible manifestations of this paradigm shift, enabling capital deployment toward projects that mitigate environmental degradation while fostering economic growth.[3] These instruments are not merely financial tools but represent a broader institutional transformation in which markets increasingly recognize sustainability as a determinant of value creation and risk management.

Corporate innovation, particularly when oriented toward sustainable development, operates as a critical enabler of systemic change. Innovation in this context transcends technological advancements to encompass process optimization, circular business models, and organizational adaptations that collectively contribute to the United Nations Sustainable Development Goals (SDGs). The theoretical underpinnings of sustainable innovation emphasize its dual role in enhancing competitive advantage while addressing pressing ecological and social challenges. Unlike conventional innovation, which prioritizes short-term profitability, sustainable innovation necessitates a longer-term perspective, balancing economic returns with environmental stewardship and social equity. This alignment is particularly evident in sectors such as renewable energy, green manufacturing, and sustainable agriculture, where innovation directly contributes to decarbonization, resource efficiency, and inclusive growth. The theoretical discourse on sustainable innovation thus bridges microeconomic firm-level strategies with macroeconomic sustainability objectives, highlighting the interdependence between corporate actions and global ecological boundaries. The mechanisms linking green finance to corporate innovation are multifaceted, involving financial, regulatory, and behavioral dimensions. Financial incentives, such as preferential loan terms for green projects or equity investments in sustainable startups, lower the cost of capital for eco-innovation, making it a strategically viable option for firms. These incentives are reinforced by risk mitigation strategies embedded in green finance, where environmental due diligence reduces exposure to climate-related liabilities and stranded assets. The theoretical literature on sustainable finance underscores the role of long-term investment horizons in fostering innovation, as green projects often require extended gestation periods before yielding returns. This contrasts with traditional financial models that prioritize short-term gains, illustrating a fundamental divergence in how green finance reorients corporate behavior toward sustainability.

Regulatory and market-driven influences further shape the relationship between green finance and innovation. Policy interventions, such as carbon pricing, green tax credits, and mandatory ESG disclosures, create an enabling environment for sustainable innovation by internalizing environmental externalities and leveling

the playing field for green investments.[4] Market dynamics, including consumer demand for sustainable products and investor preferences for ESG-compliant assets, amplify these effects by generating economic rewards for firms that align innovation with sustainability. The theoretical framework thus integrates institutional economics, stakeholder theory, and innovation systems theory to explain how green finance operates as a catalyst for corporate innovation within a broader ecosystem of regulatory, market, and societal forces.

The synthesis of these theoretical perspectives provides a comprehensive lens through which to analyze the role of green finance in driving corporate innovation. By examining the interplay between financial mechanisms, corporate strategies, and institutional environments, this framework advances the understanding of how economic systems can be restructured to support sustainable development. It also identifies critical leverage points where policy and practice can intervene to accelerate the transition toward a green economy. The theoretical contributions of this analysis extend beyond academic discourse, offering actionable insights for policymakers, financial institutions, and corporate leaders seeking to harness the transformative potential of green finance in fostering innovation that is both economically viable and ecologically sustainable.

Discussion

The transformative potential of green finance in driving corporate innovation toward sustainable development manifests through multiple interconnected channels that redefine traditional business paradigms. At its core, green finance restructures capital allocation mechanisms by creating specialized funding vehicles for environmentally sustainable projects, thereby addressing one of the most persistent barriers to corporate eco-innovation - access to capital. The emergence of green bonds, sustainability-linked loans, and climate funds has established dedicated financial pipelines that enable corporations to undertake ambitious sustainability initiatives which might otherwise be deemed financially unviable under conventional financing models. This financial infrastructure not only lowers the cost of capital for green projects but also signals market validation for sustainable business models, creating a positive feedback loop that encourages further innovation.

The catalytic effect of green finance on research and development in environmental technologies represents another critical dimension of this transformation. By providing preferential financing terms and risk-sharing mechanisms for clean technology ventures, green financial instruments effectively mitigate the inherent uncertainties associated with technological innovation in sustainability sectors. This financial support proves particularly crucial in bridging the "valley of death" between laboratory-scale prototypes and commercially viable products, where traditional financing often withdraws due to perceived risks. The resulting acceleration in green technology development spans multiple industries, from renewable energy systems to circular economy solutions, each contributing to the broader sustainable development agenda while creating new market opportunities for pioneering firms.[5] The alignment of corporate strategies with

sustainability goals through green finance operates through both direct and indirect channels. Financial institutions increasingly incorporate environmental performance metrics into their lending criteria and investment decisions, creating powerful incentives for corporations to integrate sustainability into their core business strategies. This alignment extends beyond compliance to strategic repositioning, as companies recognize the competitive advantages of early adoption - including brand differentiation, access to green markets, and resilience against future regulatory changes. The strategic integration of sustainability objectives consequently reshapes corporate innovation pipelines, prioritizing developments that deliver both environmental and financial returns.

Despite these promising developments, significant challenges impede the full realization of green finance's potential in driving corporate innovation. The absence of standardized metrics and reporting frameworks for environmental impact creates opacity in green investment markets, complicating performance assessment and comparison. This measurement challenge manifests in multiple dimensions - from difficulties in quantifying avoided emissions to controversies surrounding what constitutes a genuinely sustainable investment. The resulting uncertainty may lead to either excessive risk aversion or, conversely, to greenwashing practices that undermine market confidence in green financial instruments.

The tension between short-term financial performance expectations and the long-term nature of sustainability investments presents another fundamental barrier. Traditional corporate governance models and financial market structures often prioritize quarterly earnings over long-term value creation, creating misaligned incentives that can stifle meaningful investment in sustainable innovation. This temporal disconnect becomes particularly acute in publicly traded companies facing shareholder pressure for immediate returns, potentially causing underinvestment in innovations whose benefits materialize over extended time horizons. The challenge lies in developing financial models and corporate governance approaches that appropriately value and accommodate the extended payoff periods characteristic of many sustainability-oriented innovations.

From a policy perspective, enhancing the effectiveness of green finance in stimulating corporate innovation requires coordinated action across multiple domains. Regulatory frameworks need to establish clear and consistent definitions of green activities while developing robust verification mechanisms to prevent greenwashing. Policymakers should consider implementing blended finance mechanisms that combine public and private capital to de-risk pioneering sustainable innovations, particularly in sectors with high capital intensity and long development cycles. The creation of innovation-friendly policy environments - including R&D tax credits specifically for green technologies and streamlined permitting processes for sustainable infrastructure projects - can further amplify the impact of green finance initiatives.[6] For corporate leaders, effectively leveraging green finance for innovation demands strategic reevaluation of traditional business models. This includes developing internal capabilities to identify and access appropriate green financing options, as well as establishing cross-functional teams

that integrate sustainability considerations throughout the innovation process. Companies at the forefront of this transition are creating dedicated sustainability innovation funds, establishing partnerships with green financial institutions, and developing new performance metrics that capture both financial and environmental returns. These strategic adaptations enable firms to not only comply with evolving sustainability standards but to actively shape emerging green markets through innovative products and services.

The systemic nature of the challenges and opportunities at the intersection of green finance and corporate innovation underscores the need for holistic solutions that bridge financial, technological, and policy domains. As the global economy transitions toward sustainability, the organizations that will thrive are those capable of navigating this complex landscape - securing green financing, developing breakthrough innovations, and aligning their strategies with the imperatives of sustainable development. The ongoing evolution of green finance frameworks and corporate innovation practices suggests we are witnessing the early stages of a fundamental restructuring of how businesses create value in an increasingly resource-constrained world.

Conclusion

This study has systematically examined the transformative role of green finance in catalyzing corporate innovation for sustainable development through a rigorous theoretical lens. The analysis reveals that green finance operates as both an enabler and accelerator of sustainable innovation by restructuring financial mechanisms, realigning corporate incentives, and creating new market paradigms. The theoretical framework developed demonstrates how specialized financial instruments lower barriers to eco-innovation while establishing sustainability as a core determinant of value creation in modern economies. The research contributes significantly to academic discourse by synthesizing financial economics with innovation theory, providing a structured understanding of the mechanisms through which green capital flows influence corporate technological and strategic development.

The study's findings highlight the dual nature of green finance as a market-driven solution and policy instrument for achieving sustainability objectives. It advances theoretical knowledge by clarifying the interconnected roles of financial incentives, risk mitigation strategies, and regulatory frameworks in shaping corporate innovation pathways. The research identifies critical leverage points where interventions can maximize the impact of green finance, particularly in addressing the temporal disconnect between short-term financial expectations and long-term sustainability investments. Future research should explore the evolving taxonomy of green financial instruments and their differential impacts across industries and organizational types. Theoretical work is needed to develop more nuanced frameworks for assessing the innovation outcomes of green finance, particularly in emerging economies and transitional sectors. The conceptual foundations laid in this study suggest promising directions for investigating how digital technologies might enhance the effectiveness of green finance mechanisms,

and how institutional innovations could better align financial markets with planetary boundaries. These theoretical explorations would further strengthen our understanding of the complex interplay between finance, innovation, and sustainability in the global economic system.

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GREEN BANKING AND SUSTAINABLE FINANCIAL PRODUCTS: TRENDS AND GLOBAL EXPANSION STRATEGIES

Abstract: *This study examines the evolving landscape of green banking and sustainable financial products, analyzing their global trends and expansion strategies. It highlights the critical role of financial institutions in aligning economic growth with environmental sustainability through instruments like green bonds, sustainability-linked loans, and carbon credits. The paper identifies key drivers, including investor demand and regulatory pressures, while addressing barriers such as greenwashing and lack of standardization. It proposes strategic approaches for global scalability, emphasizing policy harmonization, public-private partnerships, and technological integration. The findings underscore the necessity of coordinated action among stakeholders to advance sustainable finance, particularly in emerging markets.*

Keywords: *Green Banking, Sustainable Financial Products, Esg Criteria, Regulatory Frameworks, Climate Finance*

Introduction

The global financial system faces an unprecedented imperative to align economic growth with environmental sustainability, driven by escalating climate risks, regulatory shifts, and stakeholder demands. Within this transformation, the banking sector emerges as a critical enabler of sustainable development, leveraging its capital allocation functions to redirect financial flows toward low-carbon and socially inclusive projects. However, despite growing recognition of green banking's potential, systemic adoption remains fragmented, hindered by inconsistent regulatory frameworks, market misalignments, and operational inertia. [1] This study addresses these gaps by examining evolving trends in sustainable financial products and formulating actionable strategies for their global expansion, with a focus on institutional and policy-level interventions.

The urgency of sustainable finance is underscored by intergovernmental commitments such as the Paris Agreement and the UN Sustainable Development Goals, which position financial institutions as pivotal actors in mitigating ecological degradation. Yet, the transition from conventional to green banking practices encounters structural challenges, including divergent national standards, asymmetric information, and short-term profit orientation. These barriers not only limit scalability but also risk perpetuating "greenwashing," where superficial sustainability claims undermine genuine progress. By analyzing the interplay between market innovations and regulatory ecosystems, this research identifies

leverage points to accelerate the integration of environmental, social, and governance (ESG) principles into core banking operations.

Methodologically, the study employs qualitative analysis of policy documents, industry reports, and macroeconomic trends to map the trajectory of green financial instruments—from niche offerings to mainstream assets. It evaluates the efficacy of existing expansion strategies, emphasizing the need for harmonized global standards, technological integration, and cross-sector collaboration.

Theoretical Foundations of Green Banking

The concept of green banking represents a fundamental shift in financial intermediation, where traditional profit-driven banking models are recalibrated to incorporate environmental and social sustainability as core operational principles. At its foundation lies the integration of Environmental, Social, and Governance (ESG) criteria, which extends beyond mere risk management to embed long-term ecological and societal considerations into financial decision-making. This paradigm aligns with the triple-bottom-line approach, which posits that financial institutions must balance economic profitability with environmental stewardship and social equity to achieve sustainable growth. Unlike conventional banking, which prioritizes short-term returns, green banking necessitates a systemic reorientation toward value creation that transcends shareholder interests to encompass broader stakeholder welfare, including future generations.

The regulatory landscape governing green banking has evolved significantly, with international frameworks such as the EU Taxonomy and Basel III establishing standardized definitions and disclosure requirements for sustainable finance. These frameworks aim to mitigate greenwashing by ensuring that financial products labeled as "green" adhere to verifiable sustainability benchmarks.[2] The EU Taxonomy, for instance, provides a classification system for environmentally sustainable economic activities, while Basel III incorporates climate-related risks into banks' capital adequacy assessments. Such regulatory developments reflect a growing consensus that financial stability is inextricably linked to ecological resilience, compelling banks to internalize environmental externalities that were previously disregarded in traditional risk models.

A critical dimension of green banking's theoretical underpinnings is its role in facilitating the circular economy, an economic model designed to minimize waste and maximize resource efficiency through closed-loop systems. By financing renewable energy projects, sustainable agriculture, and eco-efficient manufacturing, banks can accelerate the transition from linear "take-make-dispose" production models to regenerative alternatives. This shift not only reduces environmental degradation but also mitigates long-term financial risks associated with resource scarcity and regulatory penalties on carbon-intensive industries. Furthermore, green banking fosters climate resilience by incentivizing investments in adaptive infrastructure, such as flood-resistant urban development and drought-tolerant agriculture, thereby safeguarding economic assets against escalating climate disruptions.

The theoretical discourse on green banking also engages with institutional economics, emphasizing the role of policy interventions and market incentives in shaping sustainable financial practices. Governments and central banks increasingly employ carbon pricing, green bonds, and preferential lending rates to steer capital toward low-carbon initiatives. [3]Meanwhile, behavioral finance insights suggest that investor preferences are gradually shifting toward sustainability, driven by heightened awareness of climate risks and generational value changes. This evolving demand dynamic reinforces the business case for green banking, as financial institutions that fail to adapt risk losing competitiveness in an increasingly eco-conscious market.

Green banking theory intersects with discussions on national economic modernization, where sustainable finance is viewed as both a compliance requirement and a strategic opportunity. By anchoring green banking in established economic theories while addressing region-specific realities, this study contributes to a nuanced understanding of how sustainable finance can be operationalized across diverse institutional environments.

This theoretical examination underscores that green banking is not merely an ethical adjunct to conventional finance but a necessary evolution to align financial systems with planetary boundaries. Its principles—rooted in ESG integration, regulatory innovation, and circular economy logic—provide a robust foundation for analyzing trends and expansion strategies in subsequent sections. The interplay between global standards and localized adaptations remains pivotal, particularly for emerging markets seeking to reconcile sustainability imperatives with developmental priorities.

Trends in Sustainable Financial Products

The evolution of sustainable financial products represents a transformative shift in global capital markets, reflecting the financial sector's response to escalating environmental challenges and changing stakeholder expectations. At the forefront of this transformation are innovative instruments such as green bonds, sustainability-linked loans, and carbon credits, each embodying distinct mechanisms for channeling capital toward environmentally and socially beneficial outcomes. Green bonds have emerged as a cornerstone of sustainable finance, with their proceeds exclusively allocated to climate-friendly projects ranging from renewable energy infrastructure to energy-efficient building retrofits. The rapid growth of this market segment demonstrates how fixed-income instruments can be effectively repurposed to meet sustainability objectives while maintaining financial viability. Sustainability-linked loans introduce an innovative performance-based approach, where borrowing costs are tied to the achievement of predetermined sustainability targets, creating powerful incentives for corporate borrowers to improve their environmental footprint. Carbon credits, operating within emissions trading systems, represent a market-driven solution to climate mitigation by putting a price on carbon emissions and creating economic value for emission reductions.

The expansion of these financial instruments is being propelled by three interrelated market forces that are reshaping the financial landscape. Investor

demand for sustainable assets has surged dramatically, driven by both ethical considerations and growing recognition of the material risks posed by climate change to long-term portfolio performance. [4] Institutional investors, particularly pension funds and sovereign wealth funds with long-term liabilities, are increasingly incorporating ESG factors into their investment decisions, creating substantial capital flows into sustainable financial products. Regulatory pressures are simultaneously intensifying, as policymakers worldwide implement measures to align financial systems with climate goals. These measures include mandatory ESG disclosures, stress testing for climate risks, and preferential treatment of green assets in capital requirements. The reputational benefits associated with sustainability leadership are creating additional impetus for financial institutions to develop and promote green products, as stakeholders ranging from customers to employees increasingly favor organizations with demonstrable environmental commitments.

Despite this progress, significant barriers continue to constrain the broader adoption and effectiveness of sustainable financial products. The lack of standardized definitions and reporting frameworks creates uncertainty for market participants, with varying interpretations of what constitutes a "green" or "sustainable" investment leading to comparability challenges and potential market fragmentation. This standardization deficit contributes to greenwashing risks, where the environmental benefits of financial products may be exaggerated or misrepresented, undermining trust in the sustainable finance ecosystem. The absence of universally accepted impact measurement methodologies further complicates the assessment of whether these instruments are delivering tangible environmental benefits commensurate with their claims.[5] Market liquidity remains constrained for many sustainable products, particularly in emerging markets, limiting their attractiveness to a broader investor base. The relatively higher transaction costs associated with sustainability verification and reporting present additional hurdles, particularly for smaller market participants.

The development of sustainable financial products exhibits distinct regional characteristics that reflect varying levels of market maturity and regulatory approaches. In Europe, a comprehensive regulatory framework centered on the EU Sustainable Finance Action Plan has created a relatively standardized and transparent market environment. North American markets demonstrate stronger influence from investor-driven initiatives, with asset managers playing a pivotal role in product innovation. Across Asia, sustainable finance is growing rapidly but faces challenges related to varying levels of regulatory development across jurisdictions. In emerging markets, sustainable financial products often focus on addressing pressing developmental needs alongside environmental objectives, such as financing access to clean energy or sustainable agriculture. The Russian market presents a unique case where sustainable finance is gradually gaining traction, with recent regulatory developments and growing interest from both issuers and investors, though the market remains at an earlier stage of development compared to global leaders. Technological advancements are playing an increasingly important role in addressing some of the key challenges facing sustainable financial

products. Distributed ledger technology shows promise in enhancing transparency and traceability in green bond markets, potentially reducing verification costs and mitigating greenwashing risks. Artificial intelligence applications are being deployed to improve ESG data collection and analysis, enabling more robust impact assessment and reporting. Digital platforms are emerging to connect investors with sustainable investment opportunities, particularly in previously underserved markets. These technological innovations have the potential to lower barriers to entry, improve market efficiency, and enhance confidence in sustainable financial products.

The trajectory of sustainable financial products suggests they are transitioning from niche offerings to mainstream financial instruments, though this transition remains incomplete. The growing sophistication of product structures, increasing market liquidity, and progressive refinement of regulatory frameworks all point toward continued market development. However, realizing the full potential of these instruments will require addressing persistent challenges related to standardization, transparency, and accessibility. The evolution of sustainable financial products represents not merely a new category of financial instruments, but a fundamental reimagining of how financial markets can contribute to solving pressing global environmental challenges while generating competitive returns.

Global Expansion Strategies for Green Banking

The globalization of sustainable finance necessitates strategic approaches that transcend national boundaries while accommodating local economic realities. Effective expansion of green banking practices requires a multidimensional framework that integrates policy coordination, collaborative financing models, and technological innovation to create an enabling ecosystem for sustainable financial products. At the policy level, harmonizing domestic regulations with internationally recognized benchmarks such as the EU Taxonomy and the Network for Greening the Financial System (NGFS) recommendations is critical for ensuring consistency in green finance definitions and reporting standards. This alignment reduces market fragmentation, enhances cross-border investment flows, and mitigates regulatory arbitrage risks where capital migrates to jurisdictions with weaker sustainability requirements.[6] However, such harmonization must be context-sensitive, particularly in emerging economies where abrupt adoption of stringent standards could constrain financial inclusion or economic development priorities. A phased implementation approach, coupled with capacity-building initiatives for regulators and financial institutions, can facilitate smoother transitions toward globally aligned yet locally adapted green finance frameworks.

Public-private partnerships emerge as a pivotal mechanism for accelerating the deployment of sustainable financial solutions at scale. Governments can stimulate market activity through targeted fiscal incentives such as tax credits for green bond issuances, preferential capital treatment for sustainable loans, or partial credit guarantees for climate-aligned projects. These measures help bridge the risk-return gap that often discourages private sector participation in emerging green markets. Development finance institutions play a crucial intermediary role by de-

risking early-stage sustainable investments through blended finance structures, thereby crowding in commercial capital. The establishment of national green investment banks, as demonstrated by several European and Asian economies, provides an institutionalized platform for coordinating public and private resources toward strategic sustainability priorities. Such collaborative models prove particularly relevant for infrastructure-intensive transitions in energy and transportation sectors, where long investment horizons and policy dependencies traditionally deter private financiers.

Technological integration constitutes the third pillar of global expansion strategies, addressing persistent challenges in transparency, efficiency, and risk management that hinder green finance scalability. Blockchain-based solutions offer immutable tracking of environmental impact metrics across the lifecycle of sustainable assets, reducing verification costs and enhancing trust in green financial instruments. Artificial intelligence and machine learning algorithms enable more sophisticated analysis of climate-related financial risks, incorporating forward-looking scenario analysis into credit assessments and portfolio management. Digital platforms that aggregate fragmented sustainability data help overcome information asymmetries between investors and green project developers, particularly in emerging markets where traditional due diligence processes prove costly and inefficient. These technological enablers must be complemented by cybersecurity safeguards and data governance protocols to maintain financial stability while fostering innovation.

Conclusion

The analysis of green banking and sustainable financial products reveals a fundamental transformation underway in global financial systems, driven by the imperative to reconcile economic growth with ecological sustainability. The convergence of regulatory developments, market innovations, and technological advancements demonstrates how financial institutions are progressively internalizing environmental considerations into their core operations. Sustainable financial instruments have evolved from niche offerings to increasingly mainstream assets, reflecting both changing investor preferences and the growing recognition of climate-related financial risks. However, this transition remains uneven across markets, with varying degrees of adoption influenced by local regulatory frameworks, economic structures, and financial system maturity.

The policy implications of these findings underscore the need for coordinated action among regulators, financial institutions, and international organizations. Regulatory bodies must prioritize the development of robust classification systems for sustainable assets while implementing rigorous disclosure requirements to combat greenwashing. Financial institutions should incorporate forward-looking climate risk assessments into their decision-making processes and develop innovative products that align with the transition to low-carbon economies. The establishment of public-private partnerships emerges as particularly crucial for mobilizing capital toward sustainable infrastructure projects, especially in emerging markets where financing gaps are most pronounced. Future research should focus

on several critical areas to advance understanding of sustainable finance dynamics. The scalability of green banking models in emerging market contexts requires deeper examination, particularly regarding the adaptation of global standards to local economic conditions. The evolving interaction between dynamic regulatory frameworks and financial innovation presents another important research avenue, as does the development of more sophisticated metrics for assessing the real-world impact of sustainable financial products.

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ЭВОЛЮЦИЯ ГЛОБАЛЬНЫХ МАРКЕТПЛЕЙСОВ: ТРЕНДЫ, ТЕХНОЛОГИИ И БУДУЩЕЕ ЭЛЕКТРОННОЙ КОММЕРЦИИ

***Аннотация:** В статье рассматривается эволюция глобальных маркетплейсов как ключевого элемента современной электронной коммерции. Автор анализирует исторические этапы развития цифровых торговых платформ, современные тренды, технологические инновации и региональные особенности функционирования маркетплейсов. Особое внимание уделяется роли искусственного интеллекта, блокчейна, AR/VR и финтех-решений в трансформации пользовательского опыта и бизнес-моделей. Также обсуждаются перспективы развития маркетплейсов в контексте метавселенных, Web 3.0 и устойчивого развития. Работа носит междисциплинарный характер и может быть полезна специалистам в области цифровой экономики, маркетинга, ИТ и стратегического менеджмента.*

***Ключевые слова:** электронная коммерция, маркетплейс, цифровая экосистема, искусственный интеллект, блокчейн, метавселенная, Web 3.0, финтех, персонализация, устойчивое развитие*

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THE EVOLUTION OF GLOBAL MARKETPLACES: TRENDS, TECHNOLOGIES, AND THE FUTURE OF E-COMMERCE

***Abstract:** This article explores the evolution of global marketplaces as a key component of modern e-commerce. The author analyzes the historical stages of digital trading platforms, current trends, technological innovations, and regional characteristics of marketplace operations. Special attention is given to the role of artificial intelligence, blockchain, AR/VR, and fintech solutions in transforming user experience and business models. The article also discusses the future of marketplaces in the context of metaverses, Web 3.0, and sustainable development. This interdisciplinary work may be of interest to professionals in the fields of digital economy, marketing, IT, and strategic management.*

***Keywords:** e-commerce, marketplace, digital ecosystem, artificial intelligence, blockchain, metaverse, Web 3.0, fintech, personalization, sustainable development*

Введение

В последние два десятилетия глобальные маркетплейсы стали неотъемлемой частью цифровой экономики, трансформируя способы взаимодействия между продавцами и покупателями по всему миру. Электронная коммерция (e-commerce), будучи ранее нишевым сегментом, превратилась в мощный драйвер мирового потребления, а маркетплейсы стали ключевыми площадками для реализации товаров и услуг в цифровом пространстве.

Традиционные формы розничной торговли постепенно утрачивают свои позиции, уступая место онлайн-платформам, способным предложить более широкий ассортимент, удобство покупки и высокую степень персонализации. Такие гиганты, как Amazon, Alibaba, eBay и MercadoLibre, не только изменили ландшафт торговли, но и заложили основу для формирования новых моделей потребления и поведения пользователей. На фоне стремительного технологического прогресса маркетплейсы начали интегрировать инновационные решения — от искусственного интеллекта и аналитики больших данных до блокчейн-технологий и дополненной реальности.

Цель данной статьи — проанализировать эволюцию глобальных маркетплейсов, выявить ключевые тенденции их развития, рассмотреть применяемые технологии и обозначить возможные сценарии будущего электронной коммерции. В исследовании особое внимание уделяется трансформации маркетплейсов из простых торговых платформ в сложные цифровые экосистемы, влияющие на бизнес-модели, логистику, финансы и пользовательский опыт.

Актуальность темы обусловлена не только масштабами роста e-commerce, но и необходимостью осмысления процессов, происходящих в условиях стремительного цифрового сдвига. Понимание этих процессов позволяет бизнесу адаптироваться к новым реалиям, а исследователям — формировать обоснованные прогнозы развития глобального рынка.

В рамках статьи будет рассмотрена историческая динамика развития маркетплейсов, проанализированы современные тренды и технологии, а также предложены сценарии их эволюции в ближайшие годы. Такой подход позволит комплексно оценить роль маркетплейсов в трансформации мировой торговли и очертить горизонты будущего электронной коммерции.

2. ИСТОРИЧЕСКАЯ ЭВОЛЮЦИЯ МАРКЕТПЛЕЙСОВ

Развитие глобальных маркетплейсов представляет собой логичную эволюцию торговли под воздействием цифровых технологий. Переход от традиционного офлайн-магазина к онлайн-торговле стал возможен благодаря широкому распространению интернета в конце XX века и росту доверия потребителей к цифровым транзакциям.

Ранние этапы электронной коммерции

Первые шаги в направлении электронной торговли были сделаны в 1990-х годах, когда в интернете начали появляться первые сайты,

предоставляющие возможность приобретать товары и услуги онлайн. Одним из ключевых событий стало создание в 1995 году **Amazon**, изначально ориентированного на продажу книг, а также запуск **eBay**, предложившего уникальную модель C2C (consumer-to-consumer) через аукционную систему. Эти компании стали пионерами в области построения онлайн-площадок, где встречаются продавцы и покупатели.

Развитие бизнес-модели маркетплейса

На рубеже 2000-х годов концепция маркетплейса как платформы, объединяющей множество продавцов и покупателей, получила широкое распространение. Основное отличие маркетплейса от интернет-магазина заключалось в том, что платформа не обязательно владеет продаваемыми товарами, а выступает посредником, предоставляющим инфраструктуру для торговли. Это позволило компаниям масштабироваться значительно быстрее и с меньшими издержками.

Параллельно происходило развитие платформ с фокусом на разные рынки: Alibaba и Taobao в Китае, Rakuten в Японии, OTTO в Германии, MercadoLibre в Латинской Америке. Эти маркетплейсы адаптировали модель под особенности локальных рынков, включая платежные инструменты, языковую среду и логистические цепочки.

От вертикальных платформ к экосистемам

С началом 2010-х годов маркетплейсы начали превращаться в цифровые экосистемы, предлагая не только товары, но и широкий спектр дополнительных услуг: логистику, финансовые сервисы, рекламу, облачные решения для продавцов, аналитику и многое другое. Ярким примером стала трансформация Amazon в универсальную платформу, интегрирующую сервисы Prime, AWS, Fulfillment by Amazon и др.

Подобные преобразования свидетельствуют о том, что маркетплейсы стали не просто торговыми платформами, а центрами цифрового взаимодействия, где создается добавленная ценность не только для конечного потребителя, но и для бизнеса, государства и технологической среды.

3. СОВРЕМЕННЫЕ ТРЕНДЫ РАЗВИТИЯ МАРКЕТПЛЕЙСОВ

Современный рынок электронной коммерции развивается с беспрецедентной скоростью, и маркетплейсы находятся в центре этой трансформации. Их адаптивность, масштабируемость и способность внедрять передовые технологии позволяют им не только сохранять актуальность, но и задавать вектор развития для всей отрасли. Ниже рассмотрены ключевые тренды, формирующие облик глобальных маркетплейсов сегодня.

Мобильная коммерция и приложение как основа UX

Одним из наиболее устойчивых трендов последних лет является рост мобильной коммерции (m-commerce). По данным Statista, более 70% глобальных онлайн-покупок совершаются с мобильных устройств. В ответ на это маркетплейсы делают упор на мобильные приложения, оптимизируя интерфейсы, внедряя голосовой поиск, биометрическую авторизацию и push-

уведомления. Пользовательский опыт становится более персонализированным, быстрым и «бесшовным».

Рост кроссбордер-торговли

Глобализация и логистическая интеграция позволяют маркетплейсам легко преодолевать географические границы. Кроссбордер-торговля (cross-border e-commerce) стала важнейшим источником роста, особенно для компаний из Азии. Alibaba, Shopee, Joom и другие платформы нацелены на международных потребителей, обеспечивая поддержку на разных языках, локальные способы оплаты и таможенную оптимизацию. Эта тенденция ведёт к глобальной унификации торговых стандартов и ускоряет международную экономическую интеграцию.

Персонализация и гиперсегментация

Современные маркетплейсы всё больше ориентируются на персонализированный подход к каждому пользователю. Алгоритмы рекомендаций, основанные на машинном обучении, анализируют поведение покупателей и формируют уникальные предложения, тем самым повышая конверсию. Гиперсегментация позволяет маркетплейсам работать с нишевыми аудиториями и минимизировать маркетинговые издержки.

Рост нишевых маркетплейсов

Наряду с универсальными платформами (Amazon, eBay) растёт число нишевых маркетплейсов, ориентированных на конкретные категории товаров или потребительские сегменты:

- Etsy — товары ручной работы и винтаж
- StockX — обувь и одежда streetwear
- Reverb — музыкальные инструменты
- Farfetch — люксовая мода

Потребители всё чаще отдают предпочтение платформам с глубокой экспертизой в конкретной нише, что открывает новые возможности для специализации и брендинга. Примером эффективной стратегии может служить авторская методика развития бизнеса на Amazon, разработанная автором статьи. Она ориентирована на реализацию товаров, произведённых внутри США, что позволяет сочетать локальную ценность, высокое качество и доверие со стороны потребителей с передовыми инструментами цифрового продвижения и аналитики.

Интеграция финансовых услуг (финтех на маркетплейсах)

Маркетплейсы активно внедряют финансовые инструменты, расширяя свой функционал за рамки торговли. Ключевые направления включают:

- Встроенные платежные системы (AliPay, Amazon Pay, ShopeePay)
- Buy Now, Pay Later (BNPL)
- Кредитование продавцов
- Микрофинансирование и страхование

Интеграция финтеха делает платформы самодостаточными экосистемами, повышая лояльность клиентов и создавая дополнительные источники дохода.

4. ИННОВАЦИОННЫЕ ТЕХНОЛОГИИ В ЭЛЕКТРОННОЙ КОММЕРЦИИ

Современные маркетплейсы активно трансформируются в технологические платформы, используя самые передовые инструменты цифровизации. Инновации позволяют им не только улучшать пользовательский опыт, но и оптимизировать внутренние бизнес-процессы, усиливать конкурентные преимущества и предлагать новые форматы взаимодействия с клиентами. Ниже представлены ключевые технологии, формирующие будущее электронной коммерции.

Искусственный интеллект и машинное обучение

AI (Artificial Intelligence) и ML (Machine Learning) стали основой для построения умных маркетплейсов. Эти технологии применяются в:

- Рекомендательных системах (suggested products)
- Персонализированной рекламе
- Прогнозировании спроса и управлении запасами
- Поддержке клиентов через чат-ботов и виртуальных ассистентов

Например, Amazon использует алгоритмы AI для анализа миллионов пользовательских сессий и предсказания того, какие товары будут наиболее интересны конкретному пользователю, тем самым увеличивая коэффициент конверсии.

Рекомендательные системы и предиктивная аналитика

Маркетплейсы всё активнее применяют предиктивную аналитику для прогнозирования поведения пользователей и динамики рынка. Это позволяет:

- Формировать персонализированные витрины товаров
- Предлагать динамическое ценообразование
- Определять трендовые продукты до того, как они станут популярными

Рекомендательные алгоритмы учитывают не только историю покупок, но и поведение пользователей в режиме реального времени (время просмотра товара, добавление в избранное, сравнение и т.д.).[1]

Виртуальная и дополненная реальность (VR/AR)

AR и VR становятся новым этапом в развитии визуального взаимодействия с продуктами:

- «Примерочные» AR для одежды, обуви, очков (например, IKEA Place, L'Oreal AR)
- Виртуальные шоурумы
- Интерактивные 3D-модели товаров
- Визуализация интерьера с мебелью и декором

Такие технологии особенно актуальны в fashion- и home-сегментах, где визуализация продукта критически важна для принятия решения о покупке.

Блокчейн и смарт-контракты

Блокчейн обеспечивает прозрачность, безопасность и доверие в e-commerce, особенно в сфере:

- Подтверждения подлинности товаров (антифейк решения)
- Умных контрактов для автоматизации сделок
- Трекинга цепочек поставок
- Криптовалютных платежей

Платформы вроде OpenBazaar и Origin Protocol уже предлагают децентрализованные маркетплейсы, где транзакции происходят напрямую между пользователями без посредников.

Интернет вещей (IoT) и автоматизация логистики

Интернет вещей трансформирует логистику маркетплейсов, делая её умной и предсказуемой:

- Умные склады с RFID-метками и автоматическими сортировщиками
- IoT-устройства для мониторинга температуры и условий перевозки
- Умные замки и ячейки для доставки
- Интеграция с дронами и автономными транспортными средствами

Например, Amazon активно тестирует доставку с использованием дронов Prime Air, а китайская JD.com уже использует автоматические сортировочные центры.

5. РОЛЬ ЭКОСИСТЕМ И ПЛАТФОРМЕННОЙ ЭКОНОМИКИ

Современные маркетплейсы всё чаще выходят за рамки торговых функций, превращаясь в многоуровневые цифровые экосистемы, в которых пользователи могут не только совершать покупки, но и пользоваться различными сервисами — от финансов и логистики до облачных решений и стримингового контента. Это отражает переход от традиционной электронной коммерции к платформенной экономике, где ключевым активом становится не товар, а доступ к инфраструктуре и данным.

Маркетплейс как ядро цифровой экосистемы

Лидеры индустрии, такие как Amazon, Alibaba, Rakuten и Walmart, уже давно не являются просто площадками для торговли. Они:

- предлагают облачные сервисы (Amazon Web Services, Alibaba Cloud)
- управляют логистическими сетями (FBA, Cainiao)
- развивают финансовые технологии (AliPay, Amazon Pay, Walmart Pay)
- предоставляют маркетинговые платформы для продвижения товаров продавцов
- инвестируют в медиа, контент и образование

Таким образом, маркетплейс становится ядром, объединяющим множество взаимосвязанных сервисов, что создаёт эффект "замкнутого круга" для пользователей и продавцов.[4, с.310]

Конкуренция между глобальными экосистемами

В условиях высокой конкуренции между глобальными игроками разворачивается борьба не только за пользователей, но и за доминирование в экосистеме. Примеры:

- Amazon vs. Alibaba: соперничество в логистике, облачных технологиях, AI и видеоконтенте

- Shopee и Lazada в Юго-Восточной Азии

- MercadoLibre в Латинской Америке, активно развивающий собственную платёжную и логистическую инфраструктуру

- Flipkart в Индии, получивший масштабную поддержку от Walmart и стремящийся создать национальную экосистему

Глобальные маркетплейсы стремятся локализоваться, чтобы укрепиться на региональных рынках и минимизировать барьеры для входа.

Интеграция B2C, B2B и C2C

Многие платформы сегодня работают одновременно с различными сегментами:

- B2C (бизнес-потребитель) — основной фокус Amazon, Wildberries, Ozon

- C2C (потребитель-потребитель) — eBay, Avito, Poshmark

- B2B (бизнес-бизнесу) — Alibaba, ThomasNet, Amazon Business

Гибкость модели позволяет маркетплейсам масштабировать предложения, работать с корпоративными клиентами, а также поддерживать малый и средний бизнес, предлагая логистику, аналитику, маркетинг и IT-услуги.

Сценарии монетизации экосистем

Монетизация происходит по нескольким направлениям:

- Комиссии за транзакции

- Платные подписки и премиум-сервисы (например, Amazon Prime)

- Реклама и продвижение товаров

- Платные инструменты аналитики для продавцов

- Финансовые услуги (кредиты, страхование, BNPL)

Таким образом, экосистемный подход позволяет маркетплейсам не только удерживать клиентов, но и значительно увеличивать средний доход с одного пользователя (ARPU).

6. ГЕОГРАФИЧЕСКИЕ ОСОБЕННОСТИ И ЛОКАЛЬНЫЕ АДАПТАЦИИ

Несмотря на глобальный характер электронной коммерции, успех маркетплейсов в различных регионах мира во многом зависит от их способности адаптироваться к локальным условиям — экономическим, культурным, инфраструктурным и технологическим. Универсальная бизнес-модель нередко требует значительных изменений для эффективного внедрения на новых рынках.

Азиатский рынок: масштаб, инновации и конкуренция

Рынок Азии, в особенности Китая и Юго-Восточной Азии, стал одним из самых динамичных и инновационных в мире. Такие платформы, как Alibaba, JD.com, Shopee и Tokopedia, адаптировали маркетплейс-модели к особенностям местной культуры:

- Интеграция мессенджеров и видео в процесс покупки (live-shopping)
- Суперприложения (super apps), объединяющие торговлю, финансы и соцсети (например, WeChat)
- Адаптация к специфике мобильных платежей и QR-кодов
- Проведение масштабных онлайн-распродаж (например, «День холостяков» 11.11 в Китае)

Североамериканский рынок: стандарты и сервис

В США и Канаде ключевыми игроками являются Amazon, Walmart Marketplace, eBay, Etsy и др. Покупатели в этом регионе особенно ценят:

- Высокие стандарты обслуживания и доставки (2-day shipping, Same-Day Delivery)
- Политику возврата и гарантий
- Прозрачную систему отзывов
- Надёжную поддержку клиентов
- Подписочные сервисы и экосистемность (Prime, Walmart+)

Маркетплейсы фокусируются на удобстве, доверии и технологической надёжности, создавая комплексный клиентский опыт.

Европа: регулирование, устойчивость и локализация

Европейский рынок характеризуется высокой степенью регуляции (GDPR, цифровой налог), а также акцентом на экологичность и устойчивое развитие. Платформы, такие как Zalando, Otto Group, Allegro, активно адаптируют свою деятельность под локальные предпочтения:

- Этичная цепочка поставок
- Маркировка углеродного следа
- Поддержка локальных брендов
- Учет многоязычности и разнообразия культур

Европейский покупатель требует прозрачности, этичности и высоких стандартов защиты данных, что влияет на модели операционной деятельности маркетплейсов.

Латинская Америка и Африка: вызовы и рост

Регионы с быстроразвивающейся цифровой инфраструктурой, такие как Латинская Америка и Африка, демонстрируют высокий потенциал роста. Ключевые особенности:

- Преобладание мобильного интернета
- Ограниченный доступ к традиционным финансовым инструментам (активное развитие финтеха)
- Необходимость локальных логистических решений (курьерские сети, пункты выдачи)
- Социальные платформы как каналы продаж (WhatsApp, Facebook Marketplace)

MercadoLibre в Латинской Америке и Jumia в Африке показывают, как локальные платформы успешно развиваются, адаптируясь к особенностям регионов с менее зрелой инфраструктурой.

7. БУДУЩЕЕ ГЛОБАЛЬНЫХ МАРКЕТПЛЕЙСОВ

Развитие глобальных маркетплейсов не стоит на месте: они находятся на стыке технологической революции, изменения потребительских ожиданий и устойчивых трендов цифровизации экономики. В этом разделе рассмотрим ключевые направления, которые определяют их развитие в ближайшие 5–10 лет.

Метавселенные и Web 3.0

Одним из самых обсуждаемых сценариев будущего электронной коммерции является её интеграция в метавселенные — цифровые пространства с полным погружением, персонализацией и иммерсивным опытом. Уже сейчас ведущие маркетплейсы и бренды:

- Экспериментируют с виртуальными магазинами в 3D-пространстве
- Продают цифровые товары (NFT) и скины для виртуальных миров
- Развивают аватары-покупателей и социальную торговлю в метавселенной

Web 3.0 — децентрализованный интернет, основанный на блокчейне и смарт-контрактах — может изменить принципы работы маркетплейсов, делая их более прозрачными и управляемыми сообществом.[2]

ESG и устойчивое развитие

Современные потребители и инвесторы всё чаще обращают внимание на экологические и социальные аспекты работы платформ. В ответ маркетплейсы:

- Внедряют экологичные упаковки и логистику
- Стимулируют покупку восстановленных и подержанных товаров
- Поддерживают малый и локальный бизнес
- Публикуют ESG-отчёты и декларируют цели устойчивого развития

Устойчивость станет одним из ключевых факторов доверия и конкурентоспособности маркетплейсов будущего.

Новые бизнес-модели: MaaS и DAO

Модели функционирования маркетплейсов продолжают эволюционировать:

- Marketplace-as-a-Service (MaaS) — предоставление «маркетплейса под ключ» для брендов и продавцов. Shopify, Mirakl, VTEX уже предлагают такие решения.

- DAO-управление (децентрализованные автономные организации) — потенциально способ управления платформой через голосование и смарт-контракты, без централизованной структуры. Это подход, активно обсуждаемый в рамках Web3.

Подобные модели меняют представление о владении, контроле и прибыли в e-commerce-среде.

Гиперперсонализация и искусственный интеллект нового поколения
С развитием генеративного ИИ (Generative AI) маркетплейсы смогут:

- Автоматически создавать контент и описания товаров

- Персонализировать интерфейс в реальном времени
- Проводить умную сегментацию и предлагать уникальные пользовательские маршруты
- Обеспечивать голосовое и визуальное взаимодействие нового уровня [3, с.416]

Искусственный интеллект станет ключевым элементом управления маркетплейсом будущего — от закупок до обслуживания клиентов.

Прогноз развития на 5–10 лет

Ожидается, что к 2030 году:

- Маркетплейсы будут тесно интегрированы с ИИ, AR/VR и блокчейн
- Доля кроссбордер-торговли превысит 30% от глобального объема e-commerce
- Основные игроки трансформируются в глобальные цифровые конгломераты, конкурирующие не только в сфере торговли, но и в финансовых и медиаплатформах
- Пользователь станет не просто покупателем, а соучастником экосистемы: контрибьютором, инвестором и управляющим

Заключение

Глобальные маркетплейсы прошли долгий путь от простых торговых площадок до высокотехнологичных экосистем, формирующих цифровую инфраструктуру мировой экономики. Их развитие отражает не только изменения в потребительском поведении, но и глубокие трансформации в области технологий, логистики, финансов и регулирования.

Исторический анализ показал, что успех маркетплейсов зависит от их способности адаптироваться к новым условиям и интегрировать инновационные решения — от искусственного интеллекта до блокчейна. Важную роль также играет локализация: платформы, ориентированные на конкретные рынки и культурные особенности, демонстрируют более устойчивый рост.

Современные тренды, такие как мобильная коммерция, персонализация, развитие нишевых платформ и расширение финтех-сервисов, подтверждают, что маркетплейсы уже давно перестали быть лишь каналом продаж. Они становятся центрами цифровой экономики, способными объединять различные сферы жизни — от потребления и развлечений до образования и финансов.

В будущем маркетплейсы продолжают трансформироваться, двигаясь в сторону метавселенных, Web 3.0 и более устойчивых бизнес-моделей. Использование DAO и генеративного ИИ, расширение ESG-практик и переход к децентрализованному управлению могут изменить не только формат торговли, но и роль самих платформ в обществе.

Таким образом, маркетплейсы будущего — это не просто площадки для обмена товарами, а интеллектуальные, адаптивные и этически ориентированные системы, способные формировать экономику завтрашнего

дня. Их развитие требует дальнейших исследований, особенно в аспектах регулирования, этики искусственного интеллекта, защиты прав потребителей и устойчивости. Осмысление этих процессов открывает новые горизонты как для исследователей, так и для бизнеса, стремящегося оставаться конкурентоспособным в условиях цифровой трансформации.

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СОВЕРШЕНСТВОВАНИЕ ВНУТРЕННЕГО КОНТРОЛЯ КАК ОБЪЕКТИВНАЯ НЕОБХОДИМОСТЬ УЛУЧШЕНИЯ УПРАВЛЕНИЯ МАТЕРИАЛЬНО-ПРОИЗВОДСТВЕННЫМИ ЗАПАСАМИ

***Аннотация:** в данной статье необходимость совершенствования внутреннего контроля как фактора улучшения управления материально-производственными запасами диктуется потребностью учитывать в методике внутреннего контроля особенности организации и производственного процесса, удаленность поставщиков и другие факторы, а также отражать участников данного процесса.*

***Ключевые слова:** материально-производственные запасы, внутренний контроль, управление, эффективность, бизнес-процессы.*

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IMPROVEMENT OF INTERNAL CONTROL AS AN OBJECTIVE NEED TO IMPROVE INVENTORY MANAGEMENT

***Abstract:** in this article, the need to improve internal control as a factor in improving inventory management is dictated by the need to consider the specifics of the organization of the production process, the remoteness of suppliers and other factors in the internal control methodology, as well as reflect the participants in this process.*

***Keywords:** material and production stocks, internal control, management, efficiency, business processes.*

Любое строительное предприятие, занимающееся производством строительных материалов или оказанием строительно-монтажных работ и услуг, ориентируется на современные технологические разработки, а также на новшества в производственных процессах. А для осуществления

производственных процессов и выпуска современной качественной строительной продукции необходимы сырье, материалы и другие производственные запасы.

Поступающее сырье и материалы являются по своему экономическому содержанию оборотными активами, что означает их полное использование в процессе создания продукции или оказания услуг как предметов труда.

Для обеспечения бесперебойности производственного процесса создаются собственно запасы из этих материалов и сырья. Это влияет на оборачиваемость активов, поэтому перед компанией актуально встает вопрос рационального использования ресурсов и оптимального размера запасов. Все это возможно только при условии правильно поставленного учета и регулярного контроля за их использованием.

В этой связи учет и контроль материально – производственных запасов является необходимым для эффективного управления производственным процессом, обеспечения непрерывности производства и своевременной поставки готовой продукции заказчикам.

С позиции контроля за материально – производственными запасами следует обозначить правильность приемки сырья, списания в производство по установленным ценам и нормам, сохранность на складах, своевременность списания непригодных и т.д.

Методы исследования: методы теоретического исследования или универсальные: системный анализ литературных и информационных источников; логическое моделирование экономических процессов на основе чего определены исходные теоретические положения исследования, его основные понятия, направления; методы практического исследования или эмпирические методы: библиографический анализ литературы и материалов сети Internet; изучение результатов деятельности объектов исследования и документации; сравнительный анализ методом цепной подстановки; статистические методы оценки.

Гипотеза исследования состоит в том, что эффективно организованный внутренний контроль материально-производственных запасов обеспечивает более правильный учет и контроль их расходования.

Для полноты раскрытия вопроса об организации внутреннего контроля в организации необходимо рассмотреть само понятие «внутренний контроль».

В соответствии со статьей 19 Федерального закона "О бухгалтерском учете" экономический субъект обязан организовать и осуществлять внутренний контроль совершаемых фактов хозяйственной жизни. Экономический субъект, бухгалтерская (финансовая) отчетность которого подлежит обязательному аудиту, обязан организовать и осуществлять внутренний контроль ведения бухгалтерского учета и составления бухгалтерской (финансовой) отчетности [1].

При этом информация Минфина содержит рекомендации по организации и осуществлению экономическим субъектом (за исключением

организаций сектора государственного управления) внутреннего контроля. И определяет, что «Внутренний контроль - процесс, направленный на получение достаточной уверенности в том, что экономический субъект обеспечивает:

а) эффективность и результативность своей деятельности, в том числе достижение финансовых и операционных показателей, сохранность активов;

б) достоверность и своевременность бухгалтерской (финансовой) и иной отчетности;

в) соблюдение применимого законодательства, в том числе при совершении фактов хозяйственной жизни и ведении бухгалтерского учета» [2].

По мнению авторов Вилисова В. Я. и др. в работе «Инструменты внутреннего контроля» даются такие разновидности понятия «контроль» как: «финансовый, экономический и хозяйственный» и поясняя суть этих видов контроля приходят к выводу, что «хозяйственный и экономический почти тождественные понятия, и включают, помимо финансового, ещё и административный и организационно-технический контроль» [3].

Результаты и доказательная база гипотезы строилась на синтетической и аналитической информации строительной организации ООО «Бетон-пласт» городского округа Тольятти, которая занимается выпуском строительной продукции типа - изготовление бетонных полуфабрикатов, таких как саманные камешки из грунто-бетона или создание бетонной крошки как промежуточного продукта при изготовлении фундаментных или стеновых бетонных блоков и оказанием ремонтно-строительных услуг.

При осуществлении производственных процессов по изготовлению такой строительной продукции используются такие строительные материалы как цемент, песок, вода, гравий и т.д., и поэтому возникает потребность в использовании спецодежды и спецоснастки. Это диктует необходимость покупки данных материально-производственных запасов и их списание в производство с последующим выбытием.

Исходя из плана внутренней аудиторской проверки материально-производственных запасов предприятия ООО «Бетон-пласт» (рис. 1) в 3 этап была включена проверка учета операций, связанных с использованием материально-производственных запасов, в том числе использования спецодежды и спецоснастки.

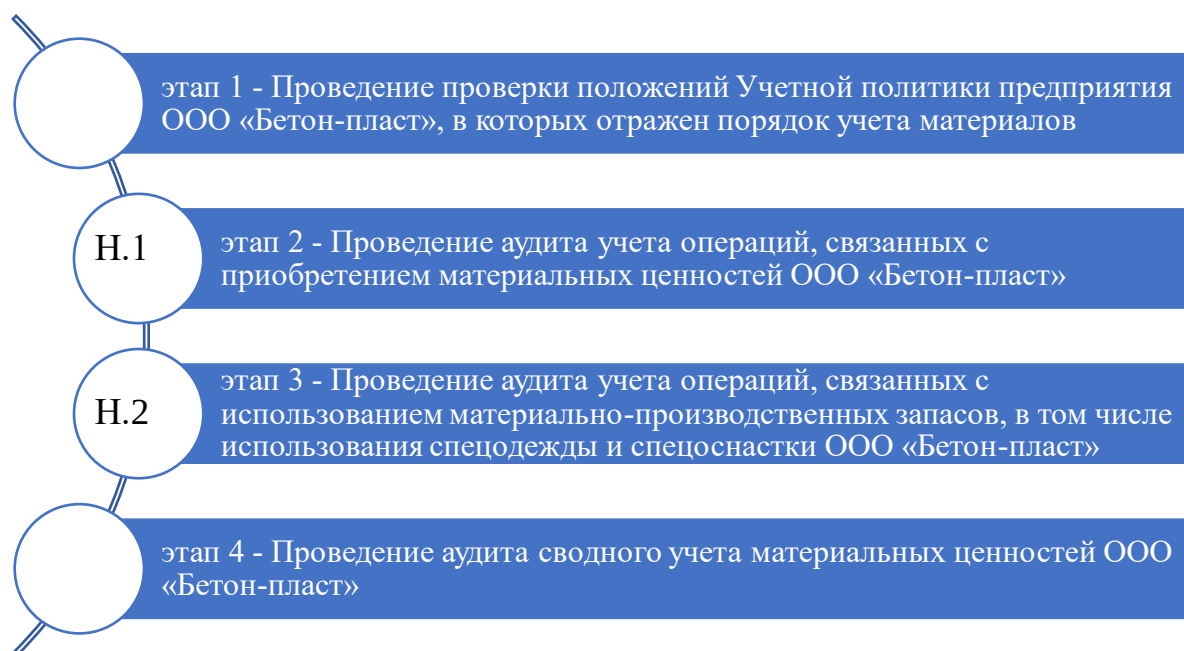


Рисунок 1 – План аудиторской проверки материально-производственных запасов предприятия ООО «Бетон-пласт»

При анализе плана внутренней проверки были выявлены следующие недостатки: Н.1 – не учтены особенности организации (ритмичность производства, удаленность поставщиков и другие); Н.2 – не отражены участники процесса. Это в итоге выразилось в том, что материальные затраты формируются с некоторым завышением стоимости, так как на затраты полностью и сразу списывается стоимость специальной одежды.

Учитывая специфику данного предприятия как представителя строительной отрасли, которая выражается в том, что есть сезонностью производства, а также непрерывность или, наоборот, дискретность производственных процессов и с целью повышения эффективности управления материально-производственными запасами и снижения риска невыполнения заказа предлагается задействовать в процессе внутреннего контроля мастера (или начальника участка) и кладовщика. Главный бухгалтер и бухгалтер участвуют в этом процессе в силу своих функциональных обязанностей.

В таком случае цепочка внутреннего контроля материально-производственных запасов по иллюстрации бизнес-процессов закупочных и производственных операций с учетом проведения работ по нормированию и проверке расходования запасов сырья и материалов с целью снижения риска невыполнения заказа будет выглядеть следующим образом (рис. 2).

При построении цепочки внутреннего контроля материально-производственных запасов приняты следующие условные обозначения (см. рис. 2):

3.1 - проверка остатков материально-производственных запасов на складах;

3.2 – сравнение остатков материально-производственных запасов с потребностью производства;

3.3 - контроль сроков поставок материально-производственных запасов от поставщика;

П.1 – научно-обоснованное нормирование потребления сырья и материалов на производстве и складах;

П.2 - проверка расходования запасов сырья и материалов в производстве;

П.3 - ликвидация непроизводительных потерь сырья и материалов;

Р.1 – риск перерасхода сырья, материалов и др. материально-производственных запасов;

Р.2 – риск увеличения затрат, срывов сроков производства и сокращения прибыли;

Р.3 – риск нарушения синхронизации производственного процесса.

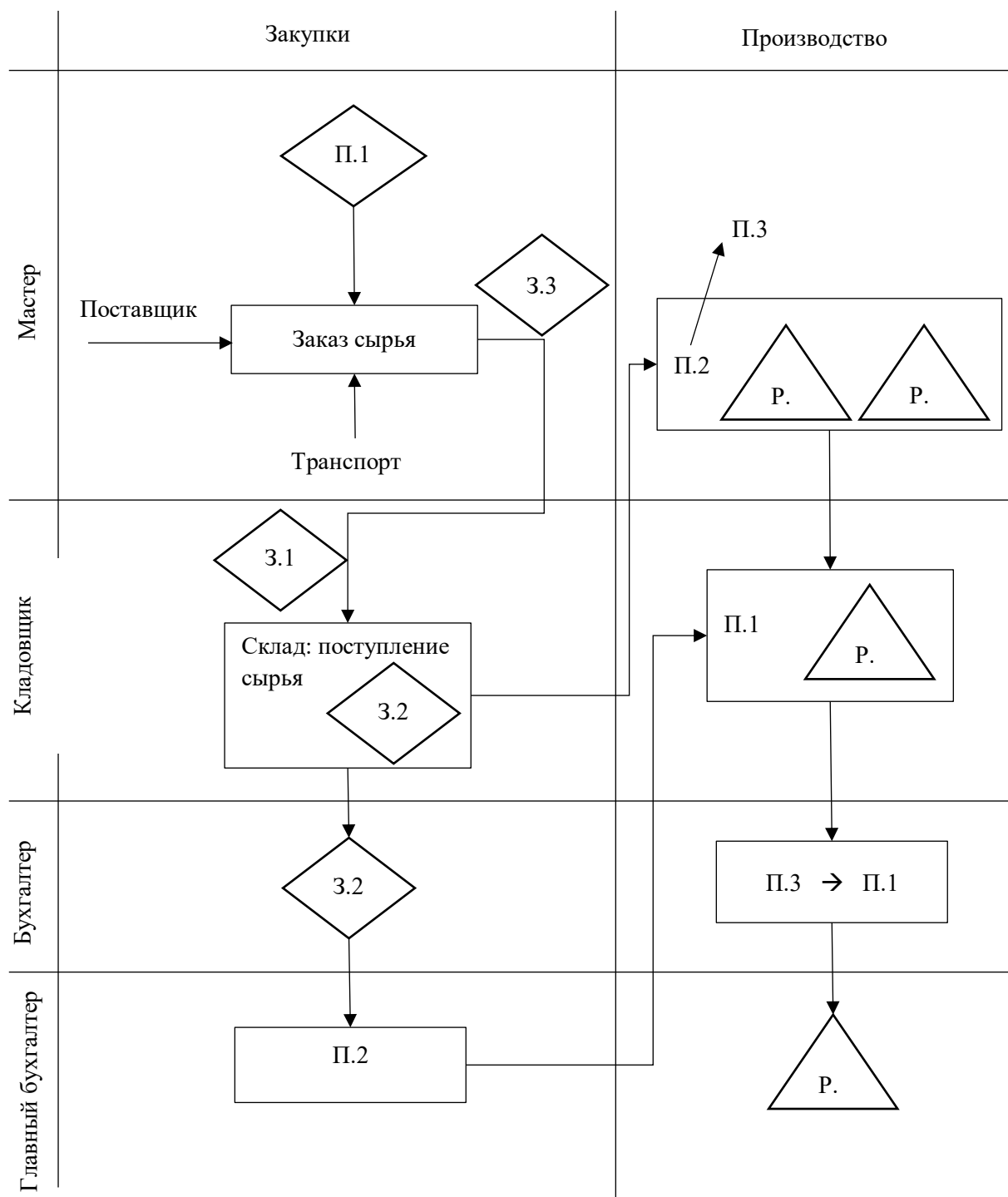


Рисунок 2 - Цепочка внутреннего контроля материально-производственных запасов по бизнес-процессам с целью снижения риска невыполнения заказа

Таким образом построение системы внутреннего контроля материально-производственных запасов с целью снижения риска невыполнения заказа позволят учесть все выявленные недостатки и правильно отнести на затраты те суммы, которые подлежат отнесению в данном периоде и в данном объеме.

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СОВЕРШЕНСТВОВАНИЕ АНАЛИТИЧЕСКОГО СОПРОВОЖДЕНИЯ ПРОЦЕССА УПРАВЛЕНИЯ ОБОРОТНЫМИ АКТИВАМИ

***Аннотация:** в данной статье необходимость совершенствования аналитического сопровождения процесса управления оборотными активами обоснована следующим требованием: принятие во внимание наличие и размер дебиторской задолженности для анализа оборачиваемости и повышения эффективности использования оборотных активов.*

***Ключевые слова:** оборотные активы, показатели оборачиваемости, управление, эффективность.*

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IMPROVEMENT OF ANALYTICAL SUPPORT OF THE CURRENT ASSETS MANAGEMENT PROCESS

***Abstract:** in this article, the need to improve accounting and analytical support for the current assets management process is justified by the following requirements: considering accounts receivable for analyzing the effectiveness of the use of current assets and the possibility of establishing control points in the information environment and current assets management processes in order to increase the efficiency of their use.*

***Keywords:** current assets, accounting and analytical support model, management, efficiency.*

В настоящее время экономика всех предприятий Российской Федерации находится под давлением внешних факторов, которые проявляются в санкционном действии со стороны прежних поставщиков и покупателей и формах финансового взаимодействия. Поэтому следует сказать о появлении таких явлений как импортозамещение, смена поставщиков, смена

покупателей, изменение тарифных режимов во внешней торговле, а также изменения видов расчетов и валюты расчетов между предприятиями.

Все эти процессы повлекли за собой необходимость перестройки внутреннего механизма управления оборотными активами, так как замедление оборачиваемости оборотных средств приводит к тому, что их часть выходит из оборота, то есть происходит их иммобилизация и соответственно у предприятия замедляется поступление выручки, а значит и окупаемость вложенных средств. Поэтому со стороны производственных запасов следует рассматривать вопросы сокращения складских запасов, сокращение складских помещений, внедрение научно-обоснованных норм незавершенного производства и другие направления их оптимального расходования. Наличие дебиторской задолженности говорит о том, что часть денежных средств предприятия выведена из оборота и фактически находится в пользовании у покупателя.

Методы исследования: методы теоретического исследования или универсальные: системный анализ литературных и информационных источников; логическое моделирование экономических процессов на основе чего определены исходные теоретические положения исследования, его основные понятия, направления; методы практического исследования или эмпирические методы: библиографический анализ литературы и материалов сети Internet; изучение результатов деятельности объектов исследования и документации; сравнительный анализ методом цепной подстановки; статистические методы оценки.

Гипотеза исследования заключалась в обосновании необходимости принятия во внимание величины дебиторской задолженности для анализа показателей эффективности использования оборотных активов.

Результаты оригинального авторского исследования сложились из анализа показателей эффективности использования оборотных активов предприятия транспортной отрасли городского округа Тольятти. Для этого была сделана выборка и проведен анализ на основе данных отчетной формы №1 «Баланс предприятия». В анализе были использованы такие показатели эффективности использования оборотных активов как: коэффициент оборачиваемости (формула 1) и длительность кругооборота оборотных средств (формула 2) [1,2].

Коэффициент оборачиваемости ($K_{об}$) рассчитывается по формуле 1 как отношение выручки (или объема реализованной продукции) к среднегодовому остатку нормируемых оборотных средств. Измеряется данный показатель в оборотах.

$$K_{об} = V_{рп} / ОС, \quad (1)$$

где $K_{об}$ - коэффициент оборачиваемости, кол-во оборотов;

$V_{рп}$ – объем реализованной продукции или выручка, руб.

$ОС$ - среднегодовой остаток нормируемых оборотных средств, руб.

Показатель «длительности кругооборота оборотных средств» ($D_{об}$) рассчитывается по формуле 2 как отношение количества дней в исследуемом периоде к коэффициенту оборачиваемости.

$$D_{об} = T / K_{об}, \quad (2)$$

где T – количество дней в исследуемом периоде, дни (месяц – 30 дней, квартал – 90 дней, год – 360 дней);

Статистические данные, приведенные в расчетах, являются истинными, а названия предприятия-условными. Для расчета вышеуказанных показателей использовались данные выручки, запасов, денежных средств и дебиторской задолженности за период 2021–2023 годы. По предприятию ООО «Альфа» получена следующая статистика показателей (табл. 1):

Таблица 1 – Данные по предприятию ООО «Альфа» для расчета показателей оборачиваемости

Показатели	2021	2022	2023
1. Выручка, тыс. руб.	1705430	1492021	1733975
2. Запасы, тыс. руб.	8244	13309	20999
3. Денежные средства, тыс. руб.	730	880	990
4. Итого нормируемые оборотные средства (OC), тыс. руб. (<i>стр. 2 + стр.3</i>)	8974	14189	21989
5. Коэффициент оборачиваемости ($K_{об}$), обороты	190	105	79
6. длительность кругооборота оборотных средств ($D_{об}$), дни	1,9	3,43	4,56

Как видно из таблицы 1 величины искомых показателей являются достаточно хорошими, хотя и имеют тенденцию к ухудшению, принимая во внимание тот факт, что для показателя «коэффициент оборачиваемости» положительной тенденцией является рост в динамике, для показателя «длительность одного оборота» положительной тенденцией является сокращение количества дней в динамике. Но при тщательном изучении данных баланса предприятия в разделе 2 «Оборотные активы» выявлено наличие дебиторской задолженности, которая по величине составляет порядка 40% от величины выручки.

И поэтому, несмотря на то что дебиторская задолженность относится по классификации к ненормируемым оборотным активам и не включается в расчет показателей, предлагаем учесть ее в расчётах, так как реально получается, что денежные средства на расчетном счете предприятия

отсутствуют, то есть пользоваться оно ими не может и оборачиваемость оборотных активов замедляется, так как оборотные активы иммобилизованы из оборота.

Для расчета скорректированных на величину дебиторской задолженности коэффициентов оборачиваемости предложено ввести два показателя (формула 3, 4).

- коэффициент оборачиваемости скорректированный ($K_{об\ кор}$), который рассчитывается по формуле 3, также измеряется в оборотах, но в расчет принят остаток оборотных активов включая дебиторскую задолженность.

$$K_{об\ кор} = V_{рп} / O_{Скор} \quad (3)$$

Где $O_{Скор}$ - оборотные средства, скорректированные на величину дебиторской задолженности, руб.

- длительность одного оборота скорректированная ($Д_{об. кор}$), измеряется в днях (формула 4)

$$Д_{об. кор} = T / K_{об\ кор} \quad (4)$$

где T – количество дней в исследуемом периоде, дни (месяц – 30 дней, квартал – 90 дней, год – 360 дней);

В результате получились следующие расчетные показатели по предприятию «Альфа» за период 2021–2023 гг. (табл. 2).

Таблица 2 – Расчетные показатели оборачиваемости активов ООО «Альфа» за период 2021–2023 гг.

Показатели	2021	2022	2023
коэффициент оборачиваемости ($K_{об}$), обороты	190	105	79
коэффициент оборачиваемости скорректированный ($K_{об\ кор}$), обороты	3,0	2,32	2,60
длительность кругооборота оборотных средств ($Д_{об}$), дни	1,9	3,43	4,56
длительность кругооборота оборотных средств скорректированная ($Д_{об. кор}$), дни	120	156	139

Из данных таблицы 2 видно, что показатели оборачиваемости (простой и скорректированный) показывают обратную картину по количеству оборотов и по длительности кругооборота оборотных средств.

На рисунке 1 показана динамика показателя «коэффициент оборачиваемости» и «коэффициент оборачиваемости скорректированный» по предприятию ООО «Альфа» за период 2021–2023 гг

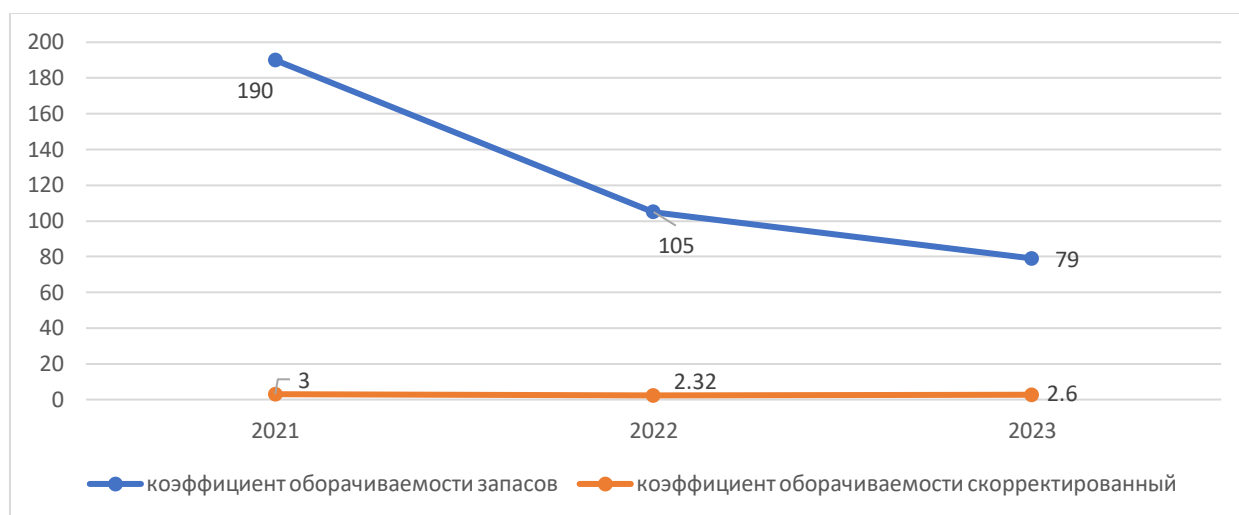


Рисунок 1 – Динамика показателя «коэффициент оборачиваемости» и «коэффициент оборачиваемости скорректированный» по предприятию ООО «Альфа» за период 2021–2023 гг, оборотов

Из рисунка 1 видно, что при учете только запасов и денежных средств в расчёте «коэффициента оборачиваемости» количество оборотов колеблется в пределах 79–190. На эту величину со стороны оборотных средств оказывает влияние строка «Запасы», так как их доля в общем объеме нормируемых оборотных средств составляет порядка 85–90%. Если же в расчет принимается дебиторская задолженность, то количество оборотов существенно снижается примерно до величины 3.

На рисунке 2 показана динамика показателя «длительность кругооборота оборотных средств» и «длительность кругооборота оборотных средств скорректированная» по предприятию ООО «Альфа» за период 2021–2023 гг.

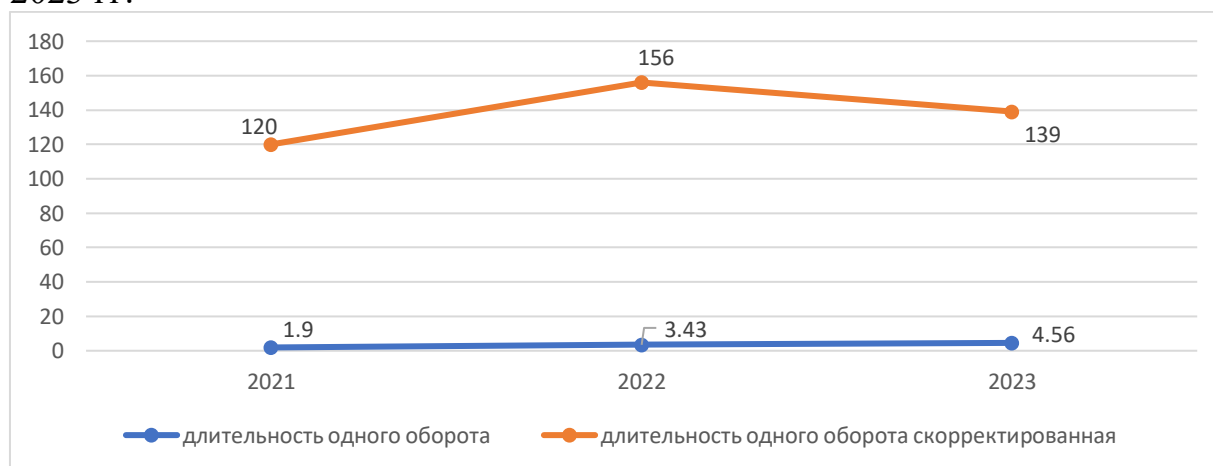


Рисунок 2 – Динамика показателя «длительность кругооборота оборотных средств» и «длительность кругооборота оборотных средств скорректированная» по предприятию ООО «Альфа» за период 2021–2023 гг, дни

Из рисунка 2 видно, что при учете дебиторской задолженности при расчёте длительности кругооборота его продолжительность существенно увеличивается и колеблется в пределах уже 120–156 дней вместо 5 дней простого расчета.

Из формулы расчета коэффициента оборачиваемости понятно, что чем больше коэффициент оборачиваемости, тем меньше длительность одного оборота. И такая же зависимость между скорректированными показателями. Но сам скорректированный на величину дебиторской задолженности показатель оборачиваемости существенно отличается от простого.

По итогам анализа показателей оборачиваемости ООО «Альфа» были сделаны следующие выводы:

- коэффициент оборачиваемости запасов ООО «Альфа» за период 2021–2023 гг. изменяется по-разному. Отмечается как увеличение данного показателя, так и его снижение. При учете только запасов и денежных средств в расчёте «коэффициента оборачиваемости» количество оборотов колеблется в пределах 79–190. На эту величину со стороны оборотных средств оказывает влияние строка «Запасы», так как их доля в общем объеме нормируемых оборотных средств составляет порядка 85–90%. Если же в расчет принимается дебиторская задолженность, то количество оборотов существенно снижается примерно до величины 3.

- при учете дебиторской задолженности при расчёте длительности кругооборота его продолжительность существенно увеличивается и колеблется в пределах уже 120–156 дней вместо 5 дней простого расчета.

Отсюда делаем вывод о том, что для более обоснованного понимания состояния оборачиваемости оборотных активов на предприятии с целью повышения эффективности управления ими актуальным является учет в расчете показателей оборачиваемости величины дебиторской задолженности. Обосновываем это тем, что дебиторская задолженность по экономической природе относится к собственному капиталу, в конкретный момент времени денежные средства отсутствуют на расчетном счете или кассе предприятия, то есть являются иммобилизованными и не участвуют в экономическом обороте, тем самым искажая ситуацию с оборачиваемостью.

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