FACTORS FOR THE FORMATION OF ERGONOMIC COMPETENCE IN THE TRAINING OF FUTURE COMPUTER SCIENCE TEACHERS.

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Abstract. Factors affecting the quality of the use of educational tools by an information technology teacher, his/her activity and motivational stability (consistency and rationality of the set of teaching aids, time spent on learning information, organization of feedback, student-teacher activity, motivational stability of the teacher's activity).

Keywords: ergonomics, computer, ergonomic competence, ergonomic approach, algorithm, block diagram, technological device.

With the automation of education, the growth of technical means and technological devices in the education system, and informatization, the need to conduct ergonomic research arises within the framework of the requirements for improving the educational process. The science of pedagogy deals with the problems of preparing a person for work, training, and education. These include the transfer and assimilation of educational information in the educational process, as well as methods of cognitive activity. It is intended to consider three

forms of cognitive activity of students: speech, mental, and cultural activity. Today, the optimal ratio and optimization of all these forms within the framework of ergonomic requirements of the educational process, and the improvement of the educational process have not yet been studied, and a practical solution to this issue can be implemented empirically, based on the accumulated pedagogical experience.

Mental activity is the leader in the study of the material. Speech activity is a means of expressing thoughts. Cultural activity is used to a limited extent in the actions of students during practical training. Thus, we see that there are “direct” and “inverse” relationships between the three forms of cognitive activity. In the learning process, in the assimilation of essentially new knowledge and methods of activity, the culturalized form gives rise to a speech form in which mental actions, after assimilation, precede speech and determine the effectiveness of practical activity. Since the study of human capabilities in systems in order to ensure the effectiveness of the learning process reflects the integrative nature of the modern stage of scientific knowledge, we can talk about the interdisciplinary unity of ergonomics and pedagogy. In this regard, the emergence of scientific pedagogical ergonomics - a synthetic subject that opens up the field of activity in the "educational-cognitive environment" of improving the educational process - is relevant. Pedagogical ergonomics is a generalization of the interaction of people in the educational process in order to ensure the well-being of human life and optimize the overall functioning of the pedagogical system. The use of an ergonomic approach allows us to consider the educational process and the content of education as a whole.

At the theoretical level, the validity of the content, methods and organizational forms of teaching is determined by the discipline of didactics, which studies the pedagogical theory of education and the practical activity of participants in the educational process. Increasing the theoretical level of the system of relations in teaching leads to a more effective impact on practice,

increasing the integrity and efficiency of the educational process, changing and optimizing it. The educational process takes place in the unity of the substantive, procedural and motivational aspects of didactics. oday, any educational process is meaningless without appropriate educational products. In order to form a positive and stable motivation in the student in the educational activity of the teacher, it is necessary to understand the role of educational material products in the structure, rationally organize educational activities, and develop the student's interest in learning. In this regard, the problem of creating qualitatively new educational materials arises. The system of relations “student-learning environment-teacher” gives a cognitive result from the pedagogical point of view, and from the ergonomic point of view, an effectively obtained synergistic result. Thus, improving the ergonomic properties of educational material is a factor in intensifying the educational process. Ergonomics studies the “man-machine” system in the environment as an ergative system. When studying the phenomena of the pedagogical process, it is necessary to take into account the relationship between four objects: teacher, student and educational material, environment. The introduction of computers into the educational process means that, from an ergonomic point of view, the educational process is considered as a “teacher-student-computer” system in the educational environment. Thus, when a computer is introduced into the educational process, it becomes a learning tool for both the teacher and the student.

The computer as a learning tool reflects the modernization of the traditional educational system. To activate and accelerate the learning activities of students with the help of a computer, technologies based on the didactic reconstruction of educational materials can be used. In the “Teacher - Student - Computer” system, the teacher organizes the student's educational and cognitive activity using a computer, thereby enhancing the student's effective work process.

If the learning process is organized correctly, then the student will develop a strong interest in the learning process, independent learning activities, which

contributes to increasing the effectiveness of the learning process. Pedagogical ergonomics in didactics and in pedagogy in general, ergonomic forms of presenting educational information pose a number of problems, such as searching for means of presenting them in the didactic process, in educational and cognitive procedures, in teaching methods and techniques. The problem of qualitative use of the five human senses in the learning process: vision, hearing, smell, taste, touch, and perception is becoming increasingly relevant.

Studies have shown that students learn more quickly from graphically presented educational information than from textual information. The requirements for working with symbols and sign systems, diagrams, and graphs that are actively used in the educational process are studied in pedagogical ergonomics. The use of automated educational systems and programs in the educational process leads to a review of teaching methods and forms, analysis, and improvement of the educational process from an ergonomic perspective. Ergonomic educational technologies require the development of an educational process based on ergonomic standards and requirements. The introduction of new information technologies into education forces us to view the pedagogical process as an information process in the educational environment. Informatization of education should be considered not only as the use of computers, but also as a new ergonomic approach to organizing learning in the “teacher - student - computer” system.

In conclusion, programmed learning occurs due to the individual mastery of knowledge according to the curriculum based on a special computer program. Computers equipped with special computer programs allow solving almost all didactic problems. The effectiveness of computer-based learning technology is determined by the quality of educational programs and computer technology. Modeling, designing, monitoring, analyzing, evaluating the effectiveness of the educational process from the perspective of a systematic approach is the most important condition for implementing the tasks of pedagogical ergonomics. The

educational process in modern higher education is an integral pedagogical system.

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