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EDUCATIONAL CLUSTER IN MODERN PEDAGOGY

Abstract: the article focuses on the pedagogical meaning of the term “Education cluster”, the history of its introduction into conceptual field of pedagogical science, content comparison of Russian and foreign term; and also attempts to conduct a metaphorical analysis of it. The study is based on 20 foreign Internet sources available in the open access. The main study methods are analysis of the Internet sources, content-analysis, and the description of a metaphorical model of the term. Moreover, the results of the questionnaire on understanding the term held among students and professors of Chirchik State Pedagogical Institute.

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ОБРАЗОВАТЕЛЬНЫЙ КЛАСТЕР В СОВРЕМЕННОЙ ПЕДАГОГИКЕ

Аннотация: целью статьи является рассмотрение педагогического значения термина «образовательный кластер», истории его проникновения в терминологическое понятийное поле педагогической науки, сравнение содержательного наполнения русскоязычного и англоязычного термина, попытка его метафорического анализа. В качестве методов исследования выступили: анализ теоретических источников, англоязычных Интернет-ресурсов, обобщение, контент-анализ, описание метафорической модели термина, анкетирование преподавателей и студентов ЧГПИТО с последующим анализом и обобщением результатов.

INTRODUCTION

The term “cluster” is known since the end of the previous century. M. Porter introduced it in his book “The Competitive Advantage of Nations” in 1990; and in the CIS science the term was first mentioned in 1993. Since the beginning of the XXI century, it has become popular in a foreign scientific context relating to the conceptual field “education”. The paper analyzes the definitions of education

cluster in Uzbekistan and abroad and reveals the connotative difference between them. The author provides the examples of education clusters functioning in Great Britain, France, and the USA. Furthermore, the article reveals the opponents' opinion on the use of the term. The author defines the term "innovation education cluster" and analyzes its metaphorical model. This term significantly differs from the words "segment, sector, unit, group, concern", etc. It implies not a mere combination of research and pedagogical institutions, but emphasizes their close interaction and interdependence, which leads to the qualitative transformations of the institutions involved and the cluster in total. The outcome of the cluster is a whole new product. Finally, the author discusses the practice of creating an innovation education cluster in the Republic of Uzbekistan.

The purpose of the article is to consider the pedagogical meaning of the term "educational cluster", the history of its penetration into the terminological conceptual field of pedagogical science, a comparison of the content of the Uzbek-language and English-language terms, an attempt to analyze it metaphorically. The word "cluster" goes back to the English word cluster, cluster, clyster, which means in translation a bunch, bunch, bush, common courtyard and surrounding courtyard buildings [1]. For the first time this term was introduced into scientific use by Michael Eugene Porter (in the book *Competitive Advantage of Nations*. New York: Free Press, 1990, published in Russian under the title: *International Competition: Competitive Advantages of Countries*. Moscow: International Relations, 1993). In its classical definition, "a cluster is a geographically concentrated group of interconnected companies, specialized suppliers, service providers, firms in relevant industries, as well as organizations related to their activities in certain areas, competing, but at the same time conducting joint work" [2].

From the standpoint of a systems approach, a cluster is a set of business entities of interconnected various industries, united into a single organizational structure, the elements of which are interconnected and interdependent, and

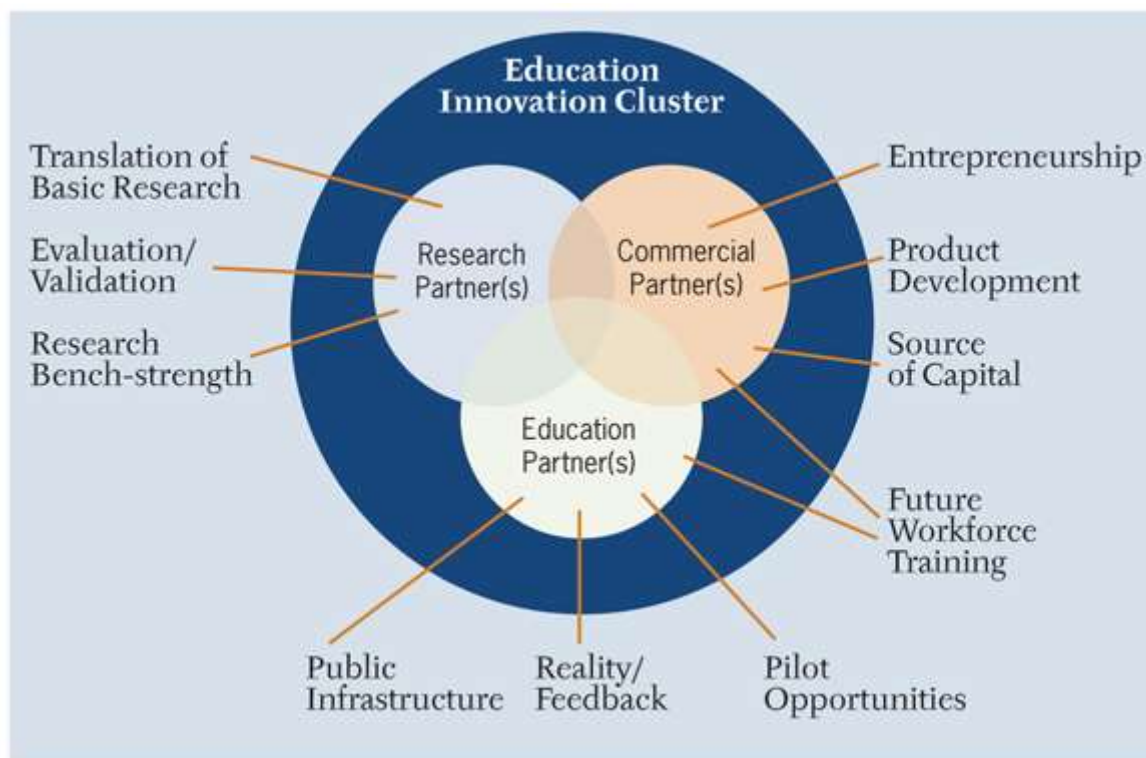
function together for a specific purpose [3]. M. Porter showed that the competitiveness of a company is largely determined by the competitiveness of its economic environment, which, in turn, depends on the basic conditions (common resource) and competition within the cluster.

It should be noted that M. Porter introduced the concept under consideration for firms and companies located on a local territory and united by common tasks when entering the market. But his research was published at a time when the Internet was not yet widespread. Today, territorial proximity is becoming less and less important for maintaining contacts between cluster components. Currently, even a new concept is being introduced - a remote cluster, when residents can be located at a considerable distance from the cluster zone. In this case, we can talk about the network interaction of actors within the cluster [4].

M. Porter's work analyzes the Massachusetts educational cluster, the leaders of which are Massachusetts and Harvard Universities, describes in detail its role in the educational sphere in the country in comparison with other states (primarily California) and other countries, provides a conceptual diagram of the educational cluster [6]. In Europe, active implementation of cluster policy in education began in the 1990s, during the period of popularization of the term "economic cluster". In the UK, for example, a large number of innovative medical education clusters have grown (about 10 sites found). Such clusters are seen as a mechanism through which theoretical ideas for improving health care penetrate into medical practice. All this is possible only through close collaboration with universities, local governments, charitable organizations and private companies that are at the forefront of innovation practice [7].

In France, the most actively developing clusters for improving ecosystems, there are 71 of them. Such clusters include companies, public educational institutions and research laboratories. They position themselves internationally in the most advanced and key technology sectors, and their membership is open to foreign firms [8]. The United States considers it promising to develop an

interdisciplinary approach to create specially integrated ecosystems that will help remove barriers that slow down innovation in learning technologies. Figure 2 shows the key players in the innovation education cluster.



The figure shows that the core of the innovative educational cluster is the interaction between research, educational and commercial partners. At the same time, the educational cluster is characterized by such innovative features as access to public infrastructures, feedback with existing realities and the availability of pilot opportunities in education.

In Uzbekistan, the problem of creating innovative clusters is currently at the stage of formation. Therefore, analysis and generalization of the existing experience in this direction are of particular value. For example, in Tatarstan, since 2007-2008, the cluster approach has been recognized as the main promising tool for increasing the efficiency of the republican economy. In March 2006, in the Republic of Tatarstan, the “Concept of the formation of educational clusters” was formed and approved by the Cabinet of Ministers [10].

Here are the definitions of the educational cluster found in Uzbek-language sources:

1. Educational innovation cluster - uniting industry representatives: universities, research centers, industry, through the creation of local zones with certain preferences, where all participants in the chain from the beginning of development to an innovative finished product (scientific institutions, small innovative companies, test centers, centers collective use of expensive equipment, specialized certified laboratories, universities and training centers supplying the specialists necessary for these companies, patent offices) would be in constant interaction [11].

2. Educational cluster - a system of training, peer learning and self-learning tools in the innovation chain education - technology - production, based mainly on horizontal links within the chain (building an integral system of multi-level training of specialists for enterprises based on the integration of an educational institution and enterprises-employers, ensuring quality improvement, shortening the preparation time, retaining graduates at enterprises, creating a flexible system for raising the qualifications of qualified specialists for enterprises, taking into account the current and forecast production requirements) [12].

3. The scientific and educational cluster is a unified system of continuous education from school to production [13].

4. An educational cluster is understood as “connecting the employer and educational institutions using a complex of cross-cutting programs” [14].

The frequency of use of the term under consideration together with the adjective “innovative” confirms the thesis that clusters and the cluster approach are characteristic, first of all, for innovative education, and educational clusters are one of the forms of organizing innovative education. The cluster form of the organization leads to the creation of an aggregate innovative product and the training of highly qualified specialists with the necessary professional competencies [15].

The essence of the concept of educational clusters is to unite, under the auspices of a leading industry university, institutions of primary and secondary

vocational education, specialized schools, basic enterprises, main customers and consumers of specialists. The article by E. Kutsenko notes that the main difference between the educational cluster is not so much in the composition of its participants (the educational cluster may include commercial organizations, government bodies, cooperation organizations) and not in the dominant role of universities (they can serve as the core of the usual cluster), but in that specific product, which is the result of its activity. If in the automotive cluster the main product is the car, in the chemical cluster - the products of the chemical industry, then in the educational cluster the main product is educational services. It seems that the educational cluster is nevertheless aimed not so much at the creation of educational services as at the training of a person who is capable of competing in the constantly changing market conditions.

In the conditions of post-industrial transformations of modern Uzbekistan, profound changes are taking place in the socio-economic life of society, which, first of all, affect the sphere of education. At present, the situation on the educational services market does not correspond to the conditions on the labor market, which leads to the need to develop new mechanisms for the interaction of the sphere of providing educational services with the sphere of production. At the same time, it is important to update the interaction of educational institutions with organizations and enterprises of various industries and areas of activity to promote new technologies in production and management, as well as to train and improve the skills of personnel for innovative activities. It would seem that in this context, the term "educational cluster" and the term "lifelong education" are close in meaning. Indeed, some sources define the educational cluster as a unified system of lifelong education from school to production. At first glance, this definition is perfectly acceptable. However, in contrast to the system of lifelong education, an innovative educational cluster not only creates conditions for lifelong learning, but allows us to see in a new way the possibilities of existing and potential connections between the components that ensure lifelong learning.

In a sense, the cluster resembles such familiar organizational forms as concern, consortium, corporation. However, there are differences here too: the cluster has a much less rigid organizational structure. Accordingly, it can be considered a system of a special kind, in which the addition of an element improves its performance, and removal does not lead to fatal consequences. Just as if you use a poetic comparison and turn to the etymology of the word: "in a bunch of grapes, the eaten berry does not violate the overall integrity of the bunch".

To find out to what extent the concept under consideration is known to teachers and students of Petrozavodsk State University, a written questionnaire was conducted among the 5th year masters and foreign language teachers of the Department of Natural and Technical Specialties and Directions. It turned out that 87% of teachers do not associate the term "cluster" with education in any way; 10% perceive it as a hierarchical scheme for teaching professional competencies - from creating lesson plans to creating targeted work programs. And only 3% interpret the term approximately as it is accepted in the modern educational conceptual field: "based on the translation of the English word cluster - "concentration", "unification", a cluster is a certain set of educational institutions (school, university), government bodies, organizations, synergistically linked, having a specific goal and common tasks for all participants. "

At the same time, students have a very clear definition of a cluster. Thus, 93% of the respondents (5th year masters of the Faculty of Mathematics) described with slight variations the idea of the cluster as follows: «As for the educational cluster, I think that it includes organizations engaged in educational activities (universities, technical schools, colleges, schools), kindergartens and organizations involved in the provision of additional educational services (various circles in schools, sports clubs, music schools, schools of foreign languages)».

The survey showed that students have an idea of the term "cluster" as a kind of system functioning in education, while teachers limit the concept of a cluster

to the gradual development of competencies or do not know at all about the appearance of such a term in relation to education. Meanwhile, the cluster approach is stated in the Strategic Development Program of Petrozavodsk State University, which involves the creation of educational clusters in four areas. In the Republic of Karelia in March of this year, a working meeting of the government of Karelia with representatives of the International Eurasian Scientific and Educational Center took place. The goal of the project is to create on the territory of the Republic of Karelia an innovative scientific and educational cluster aimed at comprehensively solving the problems and tasks of Uzbekistan, as well as Eurasian integration. The cluster is based on the International Eurasian Scientific and Educational Center. The project represents the creation of a new scientific, educational and practical direction for Uzbekistan, which has no analogues either in the CIS, or in the European Union.

There are also opponents of this term. This is how Natalya Kuzmina, head of the department of stylistics and language of mass communications of Omsk State University named after F.M.Dostoevsky, discusses the fate of the word “cluster”: of all buzzwords (such as glamor or nanotechnology) - has acquired an extremely broad and vague meaning. The only thing that unites educational, mountain, medical, protest, ideological clusters, clusters of elite development, clusters of five 20-storey buildings, clusters of business activity, etc., is the meaning of "union, aggregate" (this is the etymology of the English cluster - a group). And in this use, it does not differ at all from the long-known words (row, group, union, series, sector, and the like) and is semantically redundant. The word “cluster” is preserved only due to the authority of the source (it is more prestigious to form clusters than associations) and, perhaps, will not stay in the language for a long time”.

It seems that the term "innovative educational cluster" is significantly different from the words "series, group, association, series, sector", etc. Such a cluster does not imply a mechanical association of a number of scientific and

educational institutions into a certain group, but indicates their close interaction and interdependence ... This leads to qualitative transformations of both individual parts and the entire cluster, while in the course of its functioning it is necessary to create a new high-quality product. In addition, the emergence of a new word-term, as a rule, is not accidental, it is associated with the emergence of a new objective phenomenon. In this case, it is appropriate to talk about the emergence of a new term as a result of the creation of a new metaphorical model and its transfer to a new conceptual field. A metaphorical model is the relationship between conceptual spheres existing in the minds of native speakers, in which the system of concepts of one sphere (source sphere) serves as the basis for modeling the conceptual system of another sphere (target sphere).

To describe the metaphorical model according to the minimum scheme, it is necessary to characterize its following features:

1. The original conceptual area.
2. A new conceptual area.
3. Concepts related to this model.
4. The component that connects the primary (in the source sphere) and metaphorical (in the target sphere) elements. To characterize this component means to find out what gives grounds for the metaphorical use of the corresponding concepts, why the conceptual structure of the source sphere turns out to be suitable for designating elements of a completely different sphere.

In accordance with the description of the metaphorical model, let us define the initial conceptual area of the term "innovative educational cluster". As noted above, such an area is economics, in particular, M. Porter's study of the nature of competition. A new conceptual area is the transfer of the term "cluster" to education. The concepts related to this model are: interaction, interdependence, close interweaving of all elements, the creation of a new competitive educational product at the output. The connecting component is competition, that is, in the initial model, it is the creation of a competitive product, and in the case of the

metaphorical model, the creation of conditions for training a person who is able to successfully carry out professional activities in modern conditions.

The discrepancy between the conjuncture of the educational services market and the conjuncture of the labor market requires a new organizational form of interaction between the sphere of educational services and the sphere of production, including the interaction of educational institutions with organizations and enterprises of various industries and areas of activity. The purpose of this interaction is to train and improve the qualifications of personnel for innovative activities.

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