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Information technology and education  
Информационные технологии и образование

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**ENGINEERING STUDENTS HAVE SUCCEEDED  
IN CREATING A TECHNOLOGY CLUSTER**

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**Abstract.** *This article will focus on the main purpose of the cluster and the Educational-Scientific-innovative potential of its structure not only with a high level of civil and professional competence, but also on the training of modern educational specialists with competitiveness, the ability to receive innovations, the ability to design and implement new educational programs and technologies.*

**Keywords:** *cluster, strategy, technology, direction, approach, Master, doctoral.*

**INTRODUCTION.** Education will be able to achieve the results set by itself only if it is able to connect its roots with science and production, social life, in a word, life, enter into comprehensive integration with domestic and related industries, and the state, which is able to ensure deep, comprehensive continuous communication between science, education and the economy and apply it to all spheres. It is no secret that significant work is being carried out in the field of education of our country in this regard [7]. One of the most urgent issues is the radical improvement of the education system, the determination of the target areas for the training of specialists with higher education, especially the continuous improvement of the professional qualifications and level of knowledge of pedagogical personnel [7].

The study of the existing shortcomings in the educational system and their analysis showed that the Coordination of the directions of pedagogical education, the planning of prospects, the slowness of communication and integration between the stages of education, the prevalence in the activities of educational subjects led to the fact that the need for pedagogical personnel in the area was not satisfied and from this, pedagogical education defined the new system associated with the creation of an innovation cluster as its priority strategic direction and carried out certain work on the basis of this system [5]. This system provides for the implementation of the cluster method in the educational process, which is considered effective in light industry, a number of sectors of agriculture, as well as in the production sectors of the economy.

**MATERIALS.** In fact, in the production sectors there is a chain of sequence of cultivation, processing and transformation of raw materials into a finished product, as well as its realization, this sequence also exists in the system of pedagogical education in the form of human capital [2]. This shows that it is theoretically possible to introduce a cluster model that is effective in production into the education system.

Due to the high social significance of pedagogical education in the sustainable development of society, ensuring the connection between modern requirements, problems in the system and the links between science and education in their solution necessitates the need to transfer continuing pedagogical education to the cluster development system.

The innovation cluster of pedagogical education is a whole set of all types of education in the system of continuing education, scientific research institutes and centers, practice bases, scientific and scientific and methodological structures, the activities of which are distributed by joint tasks make it possible to raise the pedagogical education system to a qualitatively new level [1].

Consequently, the main goal of the cluster is to combine the Educational-Scientific-innovative potential of its composition not only with a high level of civil and professional competence, but also for the

training of modern educational specialists with competitiveness, the ability to receive innovations, the ability to design and implement new educational programs and technologies.

**RESULTS.** The cluster system of development of pedagogical education operates in general areas related to the provision of education, the creation of educational literature, the increase in the scientific potential of pedagogical personnel, the continuity of education and training. At the moment, these general directions are privatized in such areas as the management and organization of education, ensuring continuity and integration between types and directions of education, the use of teaching methods and tools [4].

The following are involved as subjects of the cluster system:

- pre-school, general secondary, secondary special, higher and additional educational institutions, where students, undergraduates and doctoral students undergo pedagogical practice, serve as an experimental base of training and experience conducting educational, scientific research, innovation and design activities;
- in accordance with the updates at different levels of education, institutions of additional education of adults, institutions of retraining and professional development of pedagogical personnel of preschool, general secondary, secondary vocational education of children and adolescents;
- scientific and scientific-methodological structures, centers, scientific research institutes that are engaged in collaborative scientific research activities and determine it;
- pedagogical Communities, initiative communities, public associations, state and non-governmental organizations;
- foreign higher educational institutions and scientific centers.

**DISCUSSION.** The cluster system unites the entities, each of which carries out individual activities, around a common goal, and at the same time each subject acts on the basis of private interest, based on a common goal. The subjects of the cluster system support and control each other, each creating a spiritual and intellectual space of a separate cluster, expanding social influence and significance.

The innovation cluster of pedagogical education is based on the principles of communication, continuity, consistency, succession, modernity, orientation, interest [6].

The main purpose of the activity of the pedagogical education cluster is as follows:

- ensure effective succession in the field of pedagogy and promote the best students to the pedagogical profession;
- to carry out the professional training of educators, relying on practice and intensively ensuring their effective communication with interested subjects;
- creation of an environment for training future education specialists on the basis of practices with innovative experience;
- reducing the period of acquisition of professional skills by young specialists;
- to ensure the direct participation of students in today's intensive development processes;
- creation of a new generation of educational, educational and methodological, scientific literature, a set of tools and didactic materials in pedagogical education;
- increase the scientific, scientific and pedagogical potential of pedagogical education;
- integration of intellectual resources around current issues of development of pedagogical education;
- search and application to education of various forms and types of Educational, Scientific and pedagogical practice;
- improvement of mechanisms that ensure the continuity of education and training;
- to create an opportunity for quick contact with preschool, secondary education and universities, as well as other applicants in the training of pedagogical personnel;
- scientific justification of the need for Communication, Connection and cooperation between the links of pedagogical education.

Based on these goals, the innovation cluster of pedagogical education performs the following tasks [3]:

- training of pedagogical personnel with modern knowledge and skills for educational institutions in the region;
- effective use of innovative pedagogical technologies in improving the quality of Education;
- consistent establishment of scientific activity in the field of pedagogy;
- basic (textbook) and auxiliary (dictionaries, Gamuses, electronic resources, etc.) of Education.) to ensure the continuity and continuity of the content and essence of the means in the context of the stages of Education;

- to organize term training courses in cooperation with the Regional Department of public education in order to fill the gaps in the level of knowledge of teachers of educational institutions in the region;
- to organize scientific and practical seminars in cooperation with the Regional Department of public education in order to eliminate problems related to the teaching of subjects in secondary schools;
- to strengthen scientific cooperation with research institutes, scientific centers and base higher education institutions in order to increase the scientific potential of professors and teachers at the Institute;
- involvement of teachers with the ability to conduct scientific research in secondary schools in research work;
- to carry out internships to leading foreign universities in order to master advanced foreign experience in the field of pedagogy.

At the moment, the innovation cluster of pedagogical education is defined as the main scientific research direction of the Institute, and now more than thirty professors and teachers are conducting research in this scientific research direction. All our efforts are to fully ensure the implementation of the tasks set by the decision of our esteemed president, to qualitatively satisfy the needs of the region for pedagogical personnel, to prepare modern competitive pedagogical personnel with the involvement of advanced foreign experience in the industry. With this, the team of the institute will make its modest contribution to ensuring the implementation and implementation of the priorities and tasks set in the "action strategy".

**CONCLUSION.** In conclusion, it should be noted that at the present stage of development of our society, the innovation cluster of pedagogical education is presented as the most important system in the near future, which ensures internal and intersectoral involvement in education, effectively realizes the experience gained in Scientific Research, Scientific and methodological institutions and the achievement of scientific achievements in education and In this case, it is advisable to create scientific, creative, spiritual, economic opportunities to ensure the mutual and continuous communication of educational institutions and other interested parties of society, to grow the ultimate product of the educational process – comprehensively mature pedagogical personnel and to provide an end to society. Because the level of knowledge and competitiveness of personnel is the basis of the development and competitiveness of economic production, industry, agriculture and other sectors of society. The experience of developed countries and, moreover, life itself clearly show that the quality and efficiency of each of our works are closely related to this issue.

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## **УСПЕХ СТУДЕНТОВ-ИНЖЕНЕРОВ В СОЗДАНИИ ТЕХНОЛОГИЧЕСКОГО КЛАСТЕРА**

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***Аннотация.** В данной статье рассматривается основное назначение кластера и образовательный и научный инновационный потенциал его структуры не только для специалистов с высоким уровнем гражданской и профессиональной компетентности, но и для специалистов в области образования, обладающих конкурентоспособностью, способностью получать инновации, способностью проектировать и внедрять новые образовательные программы и технологии.*

***Ключевые слова:** кластер, стратегия, технология, направление, подход, магистр, докторантура.*