



## SCIENTIFIC AND THEORETICAL BASES OF INNOVATIVE CLUSTER OF PEDAGOGICAL EDUCATION

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### Abstract

The article describes a set of territorially localized institutions and organizations interacting on the basis of agreements and participating in the implementation of scientific, educational and innovative goals of training educational specialists.

**Keywords:** modern system of continuous pedagogical education, territorially localized institutions, innovative goals, training of education specialists.

### Relevance and relevance of the research topic.

The traditional model of education is too static, focused on the disciplinary delimitation of knowledge in the form of relatively autonomous, closed systems for storing information, which should be "embedded" in the student's head. This model, being for the most part closed and close to equilibrium, turns out to be practically incapable of development, and therefore becomes more and more inadequate to the realities of the process of global changes in the world. During the period of reforming the economy and education in our country, the need arose for the effective development of the innovative component of the Uzbek system of higher professional education and increasing its competitiveness in the world market of educational services.

The expansion of forms of integration is one of the main trends in the development of lifelong pedagogical education. The modern system of continuous pedagogical education in the Republic is characterized by functioning in the development mode; it is distinguished by openness, stepping, multilevel and versatility. At the same time, the analysis of educational practice made it possible to identify a number of problems in the field of lifelong pedagogical education:

- Disunity of educational institutions in determining the strategy and tactics of training, retraining and advanced training of education specialists;
- Insufficient integration of educational and scientific-methodological institutions to improve the quality of lifelong pedagogical education;
- Underestimation of the potential of branches of departments, experimental and innovative sites in institutions of preschool, special, general secondary education, institutions of additional education for children and young people to create an environment for advanced personal and professional development of educational specialists. The transition to the cluster organization of cooperation has become an effective mechanism in ensuring the continuity of pedagogical education and productive interaction of all subjects participating in this process.



A cluster in teacher education is a set of territorially localized institutions and organizations that interact on the basis of agreements and participate in the implementation of scientific, educational and innovative goals of training educational specialists.

Cluster development of teacher education is a conceptual approach that involves the use of clusters as backbone elements of the development of a system of vocational training, retraining and advanced training of education specialists. A systematic analysis of foreign experience on the problem showed that the development of education based on the cluster approach began in Europe in the 1990s as a result of the extrapolation of the theory of clusters and cluster development developed by M. Porter. Over the past 20-30 years, both in Europe and in the United States, universities have been consolidating through their organizational merger.

The cluster model, which is effectively used in the manufacturing and service sectors of the economy of many developed countries of the world, is also applied to other industries. In particular, in the field of education, the cluster model is actively developing as a sector that enters into economic relations with the help of human capital. Increasing the competitiveness of educational institutions through the cluster model in the context of widespread introduction of international assessment programs into the education system (PISA - Program for International Student Assessment, TIMSS - Trends in International mathematics and science study, PIRLS - Progress in International Reading Literacy Study) is considered as a new innovative approach in the education system of the countries of the world. In connection with the high social significance of teacher education in the sustainable development of society, modern requirements, problems in the system and the interrelationships of science and education in their solution, the need to transfer lifelong pedagogical education to a cluster development model is dictated today. In the decree of the President of the Republic of Uzbekistan No. PF-5987 dated April 29, 2020, the creation of educational clusters is defined as a factor ensuring efficiency in this area. The creation of national and territorial models for the application of the cluster approach in teacher education, the development of mechanisms for its implementation necessitate an in-depth study of this problem by the scientific community.

This dissertation research to a certain extent corresponds to the tasks provided for in the Decrees of the President of the Republic of Uzbekistan No. UP-4947 dated February 7, 2017 "On the Strategy of Actions for the Further Development of the Republic of Uzbekistan for 2017-2021", No. UP-5712 dated April 29, 2019 "On approval of the concept of development of the public education system in the Republic of Uzbekistan until 2030", No. UP 5847 dated October 8, 2019 "On approval of the concept of development of the system

higher education in the Republic of Uzbekistan until 2030", Resolution of the President of the Republic of Uzbekistan No. PP 2909 dated April 20, 2017 "On measures for the further development of the higher education system", No. PP 3775 dated June 5, 2018 "On additional measures to improve the quality of education in higher educational institutions and ensuring their active participation in the large-scale reforms being carried out in the country" and other relevant regulations.



**The purpose of the study:** is the improvement of the scientific and theoretical base of the innovative cluster of pedagogical education on the basis of the priority principles of educational policy implemented in the Republic of Uzbekistan.

### **Research objectives:**

- Study of the concept of "innovative cluster of pedagogical education" as an important scientific and pedagogical problem and improvement of the scientific and theoretical foundations for ensuring integration at the educational, scientific and production stages through cluster directions;
- Development and description of the national model of the innovative cluster of pedagogical education and the principles of cluster interaction of educational institutions;
- Improvement of methods for organizing territorial interaction of educational institutions through a cluster based on the conditions of teacher education in our country;
- Illumination of the scientific and theoretical foundations of the concepts of "innovative cluster of pedagogical education", "innovative experimental platform school-laboratory", "laboratory of modular preschool education", improving the methodology for increasing the effectiveness of teaching and education in preschool institutions and secondary schools through the pedagogical educational cluster;
- The cluster tool is to improve the methods of improving the qualifications of students in secondary schools in our country in accordance with international literacy assessment programs (PIRLS requirement).

### **The scientific novelty of the research is as follows:**

- The concept of "innovative cluster of pedagogical education" (definition, classification, directions, principles) and the theoretical foundations of the integration of education, science and production through the cluster as a scientific and pedagogical problem on the basis of classification (by the form of relations, by the structure of interaction, by the nature of the activities of participants, by the nature of the emergence, by the type of the main resource, by the presence of a geographic component) cluster directions (organization of education, creation of educational means, science-production system, education management);
- National model of the innovative cluster of pedagogical education (interrelation of subjects, description of directions, implementation processes, effectiveness of results) is developed on the basis of cluster interaction of educational institutions (natural connection, continuity and continuity, consistency, modernity, direction, continuity, common goals, specific interests, mutual control), the priority of requirements for pedagogical educational activities (harmony of theory and practice, integration of science and industry in education, traditionalism in education and ensuring modernity in education);
- Methods of organizing territorial interaction of educational institutions (consent, practical empathy, preserving the partner's reputation, mutual complementarity, rejection of social discrimination) are being improved through an innovative cluster of pedagogical education in the system of lifelong education based on the direction of ensuring territorial integrity in education, and these methods are



based on scientific and practical aspects in accordance with the conditions of pedagogical education in our country;

-In accordance with the content (definition, description, signs innovations, areas of activity, goals and objectives) of the concepts "innovative cluster of pedagogical education", "innovative experimental platform school-laboratory", "laboratory of modular preschool education" improved the system of increasing efficiency in certain areas of activity by attracting the scientific potential of higher educational institutions in preschool educational institutions and general education schools based on methods (mutual control, workshop, questionnaire, expert list), allowing to ensure mobility and efficiency of training;

-The methodology for increasing literacy (PIRLS requirement) (the ability to understand, use, reflect and express attitude to the text) of students of general education schools through the innovative cluster of teacher education has been improved based on the requirements of the international PISA assessment program.

### **Scientific and practical significance of the research**

The scientific significance of the research results is determined by the novelty of the cluster model, proposed as an innovative approach to teacher education, as well as the scientific and theoretical substantiation, elaboration and characterization of its principles, directions, the certainty of its subjects, the significance of this model in the implementation of integration processes between types of education, increasing competitiveness in the educational services market.

The practical significance of the research results is explained by the following: the "school-laboratory" is used in the educational process of general education schools, preschool educational institutions, academic lyceums, the use of the results obtained on the basis of successfully tested scientific and practical projects, the development of methods for organizing regional cooperation of educational institutions based on the cluster approach ; methodological recommendations, developed on the basis of the requirements of the international PISA assessment program, serve the development of reading literacy (PIRLS requirement): secondary school students.

### **Conclusions of the Pending Study**

As a result of the conducted scientific methodological research on the topic of the dissertation "Scientific and theoretical foundations of the innovative cluster of pedagogical education", the following conclusions were made:

1. The cluster approach has the character of continuity, its application in the education system will become the basis for eliminating the existing fragility of the system of lifelong education, combining types of education around a common goal, finding consistency and continuity of decisions made, creating an environment of mutual competition and control, creating an integral system that ensures effective continuity in the pedagogical sphere;
2. In the course of the study, it was found that the cluster model is a phenomenon that occurs in conjunction with integration and innovation processes;



3. The introduction of the model of the innovative cluster of pedagogical education into practice has increased the possibility of regular updating of the content and forms of the educational process in accordance with the changing requirements of the state and society. As a result of its application in a specific geographic area, the features of increasing competitiveness were identified, such as compactness, speed, adaptability to requirements;
4. The model of the innovative cluster of pedagogical education includes the modification of education, conceptual - goals, methods, forms, means, axiological (values), psychological and pedagogical (mechanisms of assimilation of students' values), organizational and managerial - management of elements of the educational system. It turned out that this allows for reconstruction based on a complex system with the integration of components.
5. By virtue of educational policy and existing conditions in our country, the innovative cluster of teacher education includes the following principles (natural connection, continuity and consistency, consistency, modernity, focus, continuity, common goals, originality of interests, mutual control), directions (education, educational means, education and science, education and production, education management) and subjects (administration of regional public education, administration of regional preschool education, secondary schools, preschool educational institutions, regional administration of advanced training and retraining of personnel, research institutes, higher educational institutions, etc.).
6. If a particular subject in the education system is not interested in the success of other subjects equal to its status, then large-scale educational reforms cannot be carried out. Ensuring the interest in the success of other subjects of equal status is achieved using the cluster model. It turned out that the ultimate goal of this model is to involve subjects in the success of the entire system, to ensure their direct participation in the process of change.
7. The search for rational forms of interdependent interaction between higher education and schools and scientific research from the point of view of their development will become the basis for making important scientific conclusions. To implement such cooperation, based on the scientific conclusions obtained as a result of our research, a cluster approach to the organization of the educational process was proposed, and the fact that this is an effective model was based on the example of the experience of the Kashkadara region.
8. It was noted that the cluster management of the quality of education has an integrated, purposeful and coordinated impact on the process and key elements of the overall quality of education in the region in order to modernize and develop modern education based on the ideas of humanity, continuity, democratization.
9. The study and analysis of factors that negatively affect the quality of preschool and school education in the Tashkent region, the problems accumulated in the system, formed the basis of our conclusion about the lack of a scientific approach to them. It became known that the implementation of a scientific approach to solving existing problems in preschool and school education necessitates the implementation of an innovative cluster of teacher education in the region.
10. It was found that innovative experimental sites



"School-laboratory" is one of the forms of independent practical and research activities of professors and teachers of the system of higher education and public education, aimed at deepening and strengthening theoretical knowledge, developing skills, scientific approach to ongoing experimental work, researching the object in terms of causation, the use of new research methods.

11. The growth rate was 16% as a result of the chosen teaching methods and approaches to organizing lessons through the orientation of the academic potential of higher education to secondary school through the cluster. At the same time, it was proved that the purpose of the dissertation was set correctly, the correctness of the developed scientific and theoretical base, the basis of the recommendations proposed for its implementation in practice, the methods and techniques used in the experimental process are effective. Based on the scientific findings at the end of the study, the following suggestions and recommendations can be made:

1. Development of the implementation of the innovative cluster of teacher education in practice;
2. To draw the attention of the scientific community to this new problem with the aim of thorough research from a scientific point of view;
3. The introduction of an innovative cluster of teacher education in the educational plans of pedagogical universities;
4. Conduct regular approbation of scientific and practical projects aimed at eliminating existing problems in secondary schools within the framework of the "School-laboratory";
5. Introduce proposals for the creation of regional clusters of teacher education in the normative documents adopted on the cluster policy of our country.

## Literature

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