

# Development Of The Pedagogical (Educational) Cluster In The Regional Educational Space

Dustnazar O Khimmataliev<sup>1</sup>, Nasiba Kh. Elmurzayeva<sup>2</sup>, Anora K. Sharakhmatova<sup>3</sup>, Atabek A. Sotbarov<sup>4</sup>, Dilobad A. Khalmatova<sup>5</sup>, Sayyora N. Jamoldinova<sup>6</sup>

<sup>1</sup>Doctor of Pedagogical Sciences, Professor, Chirchik State Pedagogical University, Uzbekistan.

<sup>2</sup>Ph.D. in Pedagogy, Associate Professor, Chirchik State Pedagogical University, Uzbekistan.

<sup>3</sup>Lecturer, Chirchik State Pedagogical University, Uzbekistan.

<sup>4</sup>Lecturer, Chirchik State Pedagogical University, Uzbekistan.

<sup>5</sup>Lecturer, Chirchik State Pedagogical University, Uzbekistan.

<sup>6</sup>Lecturer, Chirchik State Pedagogical University, Uzbekistan.

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## Abstract

Based on the cluster approach, the paper presents the possibilities of forming a regional pedagogical (educational) cluster. Approaches to the formation of the concept of development of the pedagogical (educational) cluster, the main stages of its formation are described. The mechanisms of interaction between participants in cluster integration, the system for managing the development of a pedagogical (educational) cluster are presented. It is shown that increasing the attractiveness of cooperation between educational organizations of vocational education and industry enterprises can be achieved by providing interactions that contribute to the multiplier effect of transfers of innovative technologies of the industry in vocational education within the cluster and increasing the competitiveness of educational organizations within the cluster by improving the quality of specialized service and increase the professional competence of teachers.

**Keywords:** Cluster Integration of Educational Organizations; Cluster Approach, A System for Managing the Activities of Participants in a Pedagogical (Educational) Cluster within the Framework of Cluster Integration.

## INTRODUCTION

The efficiency of the modern economy is determined by the degree of development of innovation processes, for which both the acquisition of new knowledge and its transfer to the production sectors of the economy and the social sphere are equally important components. The experience of many countries shows that an important tool for increasing the efficiency of economic development is the active use of the cluster approach. According to the definition given by Michael Porter, a cluster is a group of geographically adjacent interconnected companies (suppliers, manufacturers, intermediaries) and related organizations (educational institutions, government bodies, infrastructure companies) operating in a certain area and complementing each other. Friend [10]. Porter proposes not the artificial creation of clusters from above, but their discovery in real life and support from government agencies and research institutes. The concept of development of regional clusters was developed by M. Porter's follower M. Enright. He defined a cluster as a geographically defined agglomeration of interconnected firms [17]. According to the American economist S. Rosenfeld, one territorial concentration of a critical mass of related firms is not enough to form a regional cluster. It is necessary to have active channels for business transactions, dialogue and communication [19]. Experts of the European Commission for monitoring the development of small and medium-sized enterprises, after analyzing various types of clusters and with the help of research by M. Storper, developed a development scheme "ideal" regional cluster, including six stages:

- Establishment of pioneer firms based on local specific production skills.
- Creation of a system of suppliers and a specialized labor market.
- Establishment of new organizations (often governmental) to provide support to firms operating in the cluster.
- Attracting external domestic and then foreign firms, highly skilled labor force to the cluster as incentives for organizing new cluster firms.

- Creation of implicit assets (knowledge) between firms that would stimulate the diffusion of innovations, information and knowledge.
- Possible period of decline of the cluster due to the exhaustion of its innovative potential and closeness to external innovations [18].

## LITERATURE REVIEW AND METHODOLOGY

After analyzing the works devoted to the development of cluster theory [4; 6; 7], we can distinguish the following key elements that establish relationships in the cluster:

- 1) Concentration on a geographical basis
- 2) Specialization
- 3) Many participants
- 4) Cooperation and competition
- 5) Critical mass
- 6) Cluster life cycle
- 7) Innovation

In general, the cluster approach is associated with the formation of a vertically integrated system consisting of organizations that perform different functions and are united by one technological process, the result of which is the final product created by the efforts of all participants. Thus, when implementing the cluster approach, the following key points can be distinguished:

- The presence of a common goal.
- Existence of a legal basis for joint activities of entities.
- Developed mechanisms of interaction of subjects uniting in a cluster.
- Developed mechanisms for managing the implementation of the cluster approach.
- Availability of technologies for implementing the cluster approach in accordance with common goals.

The relevance of introducing forms of network (cluster) interaction for the education system is determined by the following factors:

- The accelerated pace of higher education reform, in which adaptation to new conditions in a short time is possible only with the active interaction of all subjects of educational activity based on common goals and interests, which can be achieved precisely by using network interaction.
- The growth of requirements for the quality of education, which is associated with the very specifics of the educational service, which in each case (in relation to each student) is personally oriented. Thus, obtaining a high-quality educational result largely depends on an increase in the number of subjects of educational activity, since within the framework of one educational organization it is impossible to take into account all the educational needs of a person.
- The limited resources of a separate educational organization, which narrows the possibility of implementing the set educational goals, while network (cluster) interaction allows the exchange of resources, creating conditions for effective joint educational activities [1; 2; 13; 14; 15].

The entry into force of the Law of December 29, 2012 N 273-FZ "On Education in the Uzbekistan" in Article 15 secured the right to a network form of educational programs, which provides the opportunity for students to master the educational program using the resources of several organizations [8]. Order of the Ministry of Education and Science of the Uzbekistan dated July 1, 2013 No. 499 "On Approval of the Procedure for Organization and Implementation of Educational Activities for Additional Professional Programs" allows the implementation of additional professional programs using modular, distance educational technologies, e-learning and in network forms of education [12].

It should be taken into account that in the Strategy of the Uzbekistan in the field of development of science and innovation for the period up to 2015 of the Ministry of Education and Science of the Uzbekistan, flexible network structures - innovation clusters - created on the basis of multilateral agreements and uniting universities, scientific organizations are called the most developed form of integration., enterprises, innovative firms. It should be noted that, since in Uzbekistan the function of a regulator in the field of education belongs to the state, this allows the use of administrative tools for the effective implementation of cluster policy. This, in turn, increases the cluster potential of the educational sector as a whole. An

educational cluster today is understood as a system of educational activities in which there is an informal center (university) that consolidates educational and management structures into a single organism [13]. The main task of creating educational clusters is to increase the attractiveness of cooperation between educational institutions of vocational education and industry enterprises. This problem can be solved:

- Firstly, by providing interactions within the cluster that contribute to the multiplier effect of transfers of innovative technologies of the industry in vocational education.
- Secondly, by increasing the competitiveness of educational organizations within the cluster by improving the quality of the telecommunications infrastructure and specialized services, the productivity of competition in the field of technology and knowledge, and increasing the professional competence of teachers.

Accordingly, the pedagogical cluster is a set of interconnected educational organizations of general and vocational education, united by partnerships based on common goals and a balanced representation of the interests of participants in cluster interaction. Today, the pedagogical cluster is considered as an important system of interaction of a new type, based on voluntary cooperation, developed communications and social partnership. In general, the difference between the regional educational system and the pedagogical (educational) cluster lies in the fact that the cluster provides more cost-effective integration of educational institutions into a single system connected by the relationship of the provision of educational services and the formation of the pedagogical community, as well as the integration of other interested participants in the emerging innovative educational systems. Functionally, the regional pedagogical (educational) cluster is actively involved in the process of generating innovations in the field of education, while already at the stage of its formation, organizational and managerial innovations arise, and with the beginning of functioning, their other types (information technology, pedagogical, etc.). The concept of the development of a pedagogical (educational) cluster determines the initial setting, essence, goals, objectives, tools and indicators of the effectiveness of cluster interaction. Initial installation. Innovative development of organizations in the field of education accelerates with the activation of the interaction of participants in the innovation process located in the same territory. The territorial proximity of the elements of the pedagogical cluster increases the concentration of information and the speed of its exchange among the participants in the innovation process. Information exchange makes it easier to exchange information about changing characteristics of needs and to respond to them faster and more adequately. The purpose of creating a pedagogical cluster is related to ensuring the effective integration of educational institutions into a single system, which makes it possible to ensure high innovative activity of participants in cluster interaction. The finished product of the activities of the pedagogical (educational) cluster, in our opinion, will be innovative technologies introduced into the environment of educational organizations through cluster integration based on the formation of formal and informal links between the participants in the interaction.

An important role in the functioning and development of the pedagogical cluster is played by:

- Reducing the time for establishing stable relationships between cluster members and identifying their specific needs.
- Activities of the Coordinating Council and commissions, with the help of which reasonable and coordinated actions for the development of the pedagogical cluster will be provided.
- Distribution of risks in various forms of joint economic activity.
- Increasing investment.
- Joint use of knowledge and fixed assets, including the reduction of costs for the material base, infrastructure, information support, training and retraining of personnel in new technologies for educational and innovative activities, approbation of developed innovations.
- More active implementation of innovations in the activities of educational organizations of the pedagogical cluster.
- Increasing the competitiveness of all cluster members through the introduction of new technologies.
- Reduction of terms for processing information on innovative projects by creating and using a unified information system.
- Accelerating the exchange of information and establishing contacts, facilitating access to new technologies, accelerating and increasing the efficiency of knowledge transfer processes, the use of intellectual, material and information resources in the preparation of teachers and R&D.
- Accelerating the pace of innovative development through accelerated access to new technologies and methods of work.
- Acceleration and improvement of the efficiency and quality of education and professional training processes.
- Increasing the competitiveness of all participants in the interaction.

The development of the pedagogical cluster is based on the principles of interaction, integration, corporativity, self-development, self-organization and social adaptation. The organization of interaction between members of the

pedagogical (educational) cluster on the basis of these principles ensures the continuity and multi-level nature of pedagogical professional education, the improvement of the material and technical base of educational organizations, contributes to the selection and structuring of the content of professional pedagogical education, taking into account the interests of all subjects of the pedagogical educational cluster, stimulates professional growth teaching staff of educational organizations, provides educational organizations with a guaranteed paid order for the training of teaching staff of various qualifications, the possibility of developing an experimental and educational base, raising the level and diversifying the education provided. We believe that in this case the totality of educational organizations can be considered:

- As an element of the innovative educational cluster of the region.
- As an independent pedagogical cluster, which is also a part of regional and interregional educational systems, while having its own complex internal structure. Activities for the formation of a pedagogical (educational) cluster include the following stages.
- Assessment of the possibility of forming a cluster and the presence of its interested participants.
- Identification of participants interested in the development of integration.
- Determining the basic principles of cluster functioning, the strategic goal of integration, the goals of specific participants in cluster interaction.
- Identification of interconnections and interdependencies within the pedagogical cluster.
- Development of provisions, norms and rules for ensuring the functioning of the cluster.
- Determination of the functional responsibilities of the participants in the interaction.
- Allocation of creative teams in the educational organizations of the cluster for the implementation of specific activities.
- Formation of the cluster management structure and the mechanism of its functioning: –creation of the Coordinating Council; – formation of the composition of commissions; -assessment and selection of priority areas for the development of the pedagogical cluster; – efficiency monitoring.

## DISCUSSION AND RESULTS OF THE RESEARCH

Educational organizations are part of the pedagogical cluster as important elements that provide high-quality vocational training, conduct scientific research, provide support for the implementation of developed innovations, and contribute to the development of areas for training teachers for the education sector. Among the main areas of work of the pedagogical cluster, one should single out the organization of continuous mutual practices of students, bachelors, undergraduates and graduate students at the resource bases of the participants in the pedagogical cluster, the organization of joint meetings of departments on the development of pedagogical education in the region, the development of combined curricula, participation in an independent assessment of the quality of education, organization of analytical work within the framework of the cluster, increasing the quality of ongoing career guidance activities in the territories united in the pedagogical cluster. The types and forms of vocational guidance events are quite diverse: participation in the work of teachers' councils and methodological commissions of educational organizations, in district meetings of heads of public organizations, speeches at parent meetings in educational organizations, meetings with graduates of educational organizations, colleges, holding round tables, presentation of exclusive programs about the activities of participants pedagogical cluster, organization of communication clubs for pupils and students, field elective courses for representatives of educational organizations - participants in the pedagogical cluster in order to reveal the specifics and advantages of pedagogical work, attracting students of public organizations to participate in olympiads, competitions of pedagogical skills, to the work of youth scientific societies in organizations - participants in the pedagogical cluster.

By educational and methodological cooperation within the framework of the pedagogical cluster, we mean a set of targeted partnership actions to achieve the required quality of software and educational and methodological support of the educational process in educational institutions that are part of the pedagogical cluster, as well as the joint improvement of methods for preparing students in these conditions by organization of creative groups from among scientists and professorial and pedagogical staff of departments of higher education institutions of the cluster, teachers of basic educational institutions, representatives of education authorities. Within the framework of this area of activity, coordination of working curricula and programs of participants in cluster interaction is ensured, mutual assistance in the development of educational and methodological complexes of disciplines in the areas of training of pedagogical personnel, joint development of teaching aids, recommendations corresponding to the directions of modernization of the education system, examination of the developed materials and their completion, creation of electronic versions and placement of materials on the websites of the participants of the pedagogical cluster, exchange of work experience during scientific and methodological seminars, conferences, organization of master classes and open classes on the profiles of educational training, etc.

## CONCLUSIONS

The stability of cluster relations is ensured by monitoring the productive development of cluster integration participants. The monitoring function in the pedagogical cluster is associated with tracking the results of cluster interaction, identifying the satisfaction of the parties with the achieved effect and readiness to extend the concluded contracts and agreements. Thus, it should be noted that the formation and development of a pedagogical (educational cluster) on a regional scale contributes to:

- Speeding up the transfer (exchange) of information and establishing contacts for the participants in the interaction.
- Faster response to changes in the external environment, exits of educational organizations of the pedagogical cluster to foreign markets, joint marketing research and promotional activities.
- Simplification of access to new educational technologies.
- Distribution of risks in various forms of joint economic activity, including joint entry into foreign markets, organizations, joint R&D.
- Sharing of knowledge and fixed assets.
- Accelerating and increasing the efficiency of the processes of education and professional training of personnel through the concentration and physical contacts of high-level specialists, adjusting the curricula of organizations participating in the pedagogical cluster, joint organization of educational programs for retraining and advanced training of personnel, internships.
- Reducing transaction costs in various areas.
- Increasing investment due to the achievement of sustainable competitive advantages of cluster interaction participants.

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