

ACTIVITY OF THE SCIENTIFIC LABORATORY CLUSTER AS A PEDAGOGICAL PROBLEM

¹Usarov J.E., ²Turdiev U.Sh

¹Doctor of Pedagogical Sciences, Professor

Dean of the Faculty of Pedagogy of Chirchik Pedagogical Institute

²Intern teacher of the Department of Automation and Technological Processes, Yangier Branch
of Tashkent Institute of Chemical Technologies

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Abstract. *The cluster of scientific laboratories is aimed at unifying the activities of various vocational education institutions interconnected with industrial enterprises in a single space. The creation of clusters of scientific laboratories and their activity directly affects the competitiveness of educational organizations.*

Keywords: *cluster of scientific laboratories, innovative competence, competitiveness, integration of enterprises.*

The strategic goals of the innovative development of our republic until 2020, the doctrine of the development of science, the integration of science and education, and the principles of improving the integrated system of training qualified personnel at all levels were defined. The State Program "Development of Education" for 2013-2020 focuses on the training of qualified professionals, competitive in the global labor market, and the priority of education in the state policy. The target program of education development for 2016-2020 defines the provision of conditions for the effective development of education aimed at the formation of competitive human potential as the main goal.

The socio-economic development of the society determines the modernization of the educational system. In the concept of long-term socio-economic development until 2020, the task of forming scientific-educational centers that integrate advanced scientific research and educational programs, develop projects for the development of the socio-economic regional sphere through mutual cooperation, and integrate education, science and scientific laboratories is set. Promising ways to implement such projects are the establishment of regional, network and clusters of scientific laboratories.

At present, scientific communities and government bodies are increasingly interested in the problem of cluster activity. The list of innovative regional clusters approved by our government includes 25 clusters for various fields formed with the active participation of higher education institutions.

Special attention is being paid to the creation of educational clusters in regional, scientific research institutions and other HEIs, the purpose of which is to prepare competitive graduates. At the same time, the main task of such clusters is to bring the educational process closer to the customer and the consumer of qualified personnel - the enterprise.

In relation to companies and networks, the term "cluster" was introduced into scientific circulation in 1990 by the American business economist M. Porter. It defines the concept of "cluster" as a new object of implementation of the state cluster policy aimed at increasing national competitiveness at the microeconomic level. [4].

In 1998, groups of enterprises and organizations that are adjacent in a certain geographical area and united with them, operating in a certain area and characterized by complementary and common activities were called clusters [6].

The results of the study of the international experience of creating clusters of scientific laboratories of foreign countries and their activities show the feasibility of using the cluster method to increase the competitiveness of educational organizations and regions.

There are many types of clusters that differ in scale and orientation: industrial cluster, industry cluster, regional cluster, non-spatial cluster, spatial cluster, innovation regional cluster, educational cluster, regional research cluster, innovative educational cluster, scientific educational cluster.

Cluster mechanisms of development of science and education are considered in the works of D.Yu.Lapygin, E.V.Loginova, M.Porter, A.Thompson, V.P.Tretyak, D.A.Yalov and others. Ways to integrate education, science and production are highlighted in the researches of M.I. Makhmutov, G.V. Mukhametzyanova, E.A. Pushkareva, Z.S. Sazonova, I.P. Yakovlev and others. The activities of educational clusters in Russia and abroad are covered in the works of D.V.Smirnov, D.Yu.Trushnikov, E.V.Fedina, O.V.Yavorsky and others. In the works of V.L. Molojavenko, E.S.Simbirskaya, L.V.Fedyakina, various problems of the activity of educational and higher education institutions are highlighted.

The analysis of literature and pedagogical practice in the science of pedagogy shows that there are necessary conditions for solving innovative problems by the teacher in the context of the integration of science and education, and the necessary conditions for the creation and operation of clusters of scientific laboratories require the resolution of the following contradictions:

- the growing demands of branch enterprises for the training of HEI teachers who are able to solve innovative problems in the conditions of regional clusters, insufficient formation of their scientific and methodical competence;

- in the conditions of the activity of the cluster of scientific laboratories, the need to clarify the methodological bases determining the strategy of formation of the scientific-methodical competence of HE teachers and the lack of scientific researches dedicated to the experience of developing innovative competence;

- the need to organize the process of forming the scientific-methodical competence of teachers of higher educational institutions using the resources of clusters of scientific laboratories and the lack of conditions for its implementation;

- The existence of additional professional training programs for teachers of higher educational institutions and the absence of a scientifically based system that helps to form the scientific-methodical competence of teachers of technical higher education institutions with meaningful and process elements in the structure of clusters of scientific laboratories.

In an effort to find ways to resolve these contradictions, it is necessary to shed light on the above problem and to encourage teachers of technical higher education institutions to form scientific laboratories and to do the following:

- development of the structure of scientific-methodical competence of teachers of technical higher education institutions, taking into account the tasks of the cluster of scientific laboratories;

- to determine the approach and principles that are the methodological basis of the process of forming the scientific-methodical competence of teachers of technical higher education institutions within the cluster of scientific laboratories;

- to determine the means of forming the scientific-methodical competence of teachers of technical higher education institutions within the cluster of scientific laboratories;
- development of a system of formation of scientific-methodical competence of teachers of technical higher education institutions as part of a cluster of scientific laboratories.

Therefore, a cluster of scientific laboratories is a cluster of modern scientific laboratories, which includes educational and research organizations, network enterprises and companies, suppliers of infrastructure, resources and specialized services, and the entire cluster union, which are united on the basis of territorial proximity, complement each other and strengthen their competitive advantages. study of the international experience of creation and their activities determines the feasibility of considering the possibilities of using a cluster approach to increase the competitiveness of Russian regions and educational organizations. The cluster of scientific laboratories is aimed at unifying the activities of various vocational education institutions interconnected with industrial enterprises in a single space. The creation of clusters of scientific laboratories and their activity will directly affect the competitiveness of educational organizations, as well as help the integration of educational institutions, finance, scientific research, educational institutions and enterprises.

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