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## **THE PROBLEM OF APPLYING THE CLUSTER APPROACH TO THE MODERNIZATION OF CONTINUOUS TEACHER EDUCATION**

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**Abstract.** The problem of modernization of the system of continuous pedagogical education is proposed to be solved on the basis of the cluster approach. Analyses of literature, normative documents in the field of education, forecasting, comparison, cluster and competence approaches are used as research methods. The results of information search are presented. It is proved that the organization of the educational cluster provides a transition from the reproductive production of specialists to the formation of the creative personality of the teacher. To apply the cluster approach to the assessment of modern approaches to learning in the higher education system, an approach is used that focuses on identifying the impact of students' emotional state on academic performance. The development of the transition of the system of continuous pedagogical education into a cluster development model will ensure the implementation and development of the principles of continuity, continuity and system.

**Keywords:** pedagogical education; continuing education; education system; cluster; cluster model.

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The need for modernization of public consciousness requires adequate changes in the system of continuous pedagogical education. One of the most promising research areas is the cluster approach. The cluster approach to the training of teachers will ensure continuity and systematic training of teaching staff in the Republic of Kazakhstan; the competence approach will allow to focus attention on the results of education and upbringing, when the main result is not the sum of the acquired knowledge, but the person's ability to act in various situations, including professional ones [6]; the activity approach will ensure maximum disclosure of the person's potential in the activity [5].

Analysis of the professional functions of specialists shows that such qualities as competitiveness, responsibility, pragmatism, love for one's native land, patriotism are in demand. Accordingly, these important personal qualities of teachers should be able to educate modern schoolchildren and students, and

for this, first of all, teachers themselves must have these qualities and be an example for imitation. To organize continuous training of teachers, to provide competent and effective support in this matter, a system of continuous teacher education is called for.

The intensive development of the economy, technologies and social processes make new demands on the quality of the system of continuing education of teachers, which cannot be realized without transition to new principles and methodological bases of education. This process needs a serious scientific justification. The cluster approach is a great opportunity and perspective [1].

Why is the cluster approach chosen as the scientific basis for fundamental changes in the system of continuous pedagogical education? There are a number of reasons. The main feature of the system is its integrity, which, as it is commonly believed, is provided by numerous interrelations between its components. However, the weak side of the

pedagogical system (like any other social system) is that the exclusion or poor-quality work of one of the components can destroy the system, or, leaving behind it the formal role of the notorious “improving the qualification of pedagogical cadres” making the result of its work completely useless (formal) for the state and society. This, of course, will lead to inefficient spending of resources, time and the overall state budget.

In practice, it looks something like this: a teacher or a lecturer at a higher school has been instructed by a leader and has upgraded his qualification in professional development institution (according to existing standards, once every five years), and for the next five years their pedagogical education was interrupted, professional development stopped. At the same time, the institution of professional development is chosen not by the teacher himself, taking into account his requests, goals and opportunities, but the head of the educational institution, which, in turn, is also not free to choose. Of course, this does not apply to all educators and not to all managers, but is an important deterrent. There is no doubt that a teacher who learns from coercion and without inner motivation, desires and interests, is unlikely to pay back the budgetary funds spent for his education. One of the reasons for this state of affairs, in our opinion, is the lack of continuity, freedom of choice, integrity and prospects for personal growth.

The cluster approach is able to minimize this shortcoming by ensuring that all components of the system of continuous pedagogical education perform cross-functions and if necessary, can replace the retired or poor-performing element. For example, the same teacher or high school lecturer can improve their skills by visiting the master class of a more experienced colleague, using an “informal” channel, a digital or network resource. And if earlier the main obstacle to the implementation of the cluster approach in education was the requirement of geographical proximity of the cluster elements, but

now, thanks to the Internet and its capabilities, this requirement has been eliminated, the world of knowledge is open. However, there is one significant problem: how well a teacher can determine whether he uses a qualitative resource in his pedagogical education, and does not the pedagogical experience, method or technology that he or she collects contradict the tasks that the state and society are facing him? We believe that this function of monitoring the resource used in raising the qualification of a resource should be undertaken by one of the elements of the cluster of continuous teacher education, which is to be developed within the framework of the research.

These opportunities and prospects for the cluster approach are not limited. The cluster approach can significantly enhance the synergy of the system, lead to the appearance of such a unique result, which would not be possible in the conditions of traditional interaction in the system. Finally, it is the cluster approach that is the mechanism that will ensure vertical and horizontal continuity, and branching of the channels of informal pedagogical education, including the network channel, the Internet and other opportunities that are beyond the basic, vocational education.

This allows us to state that it is the cluster approach that can at the present time radically improve the existing state of affairs with continuing pedagogical education and solve some of its problems. Accordingly, the development of the transition of the system of continuous pedagogical education into a cluster development model is an actual scientific problem, the solution of which will prove to be an extremely useful and important step towards the further development of pedagogical science and practice in the twenty-first century.

An analysis of the domestic and world scientific literature on the problems of applying the cluster approach in education made it possible to identify the following prerequisites. The cluster approach is applied to the system of training the personnel of the tour-

ism industry, hospitality and service. On the basis of the «Nazarbayev University» in the Republic of Kazakhstan an innovation and educational cluster has been created that provides the possibility of continuous “immersion” of students in the sphere of their future professional activity, which in turn allows studying, summarizing and accumulating experience, testing scientific achievements, updating and generalizing organization and content of training.

The analysis of the definitions of the educational cluster in Russia and abroad was carried out, examples of functioning educational clusters in the United Kingdom, France, and the USA were given, and the argument of opponents of the term “cluster” in education was analyzed [2, 3, 9]. Conditions and factors that restrain the development of clusters, as well as ways of applying benchmarking, were considered; it was proved that the organization of the educational cluster provided a transition from mass reproductive production of specialists to the formation of a creative competitive personality of the teacher. A strategy for the development of a pedagogical university was developed in the context of five areas: modernization of the educational process, research and innovation activities, the formation of a positive image of the pedagogical university, modernization of infrastructure and improving the effectiveness of university management.

A significant number of scientific studies were devoted to the application of the cluster approach in the education of the Republic of Belarus. The Center for the Development of Pedagogical Education has been set up at the Belarusian State Pedagogical University named after Maxim Tank, which provides scientific and methodological support and resource support for the work of the educational, scientific and innovative cluster of continuous pedagogical education (here in after – ESIC CPE). The specifics of cluster interaction were examined, the features of the cluster complexity and branching indices were disclosed, the features of each stage of

its existence were analyzed, and the advantages of ESIC CPE were revealed (quality, modernity, accessibility, continuity) [8].

The work of Postareff Liisa, Mattsson Markus, Lindblom-Ylänne Sari [7] is devoted to the application of the cluster approach to the evaluation of modern approaches to learning in the system of higher education. The results of the research showed that it is not enough to focus only on supporting successful learning; we should pay attention to encouraging positive emotions and the well-being of students at this time. The use of cluster analysis to study interactive training joint discussion activities and subsequent problem solving using localized scenarios is presented in the work of Hou Huei-Tse [4]. Empirical methods have been used to study the effectiveness of collaborative interactive training activities to solve learning problems using scenarios available in higher education. Using analytical methods and a cluster approach, a quantitative and qualitative analysis of the contents of these scenarios was carried out. The work identifies and analyzes the various behavioral models associated with learning, the limitations of these activities, as well as specific recommendations for teachers and scientists.

The cluster model of the development of the system of continuous teacher education, developed within the framework of the research, will create conditions for more effective implementation of the “Mangilik El” program, the upbringing of new Kazakhstan patriotism, the modernization of public consciousness, spiritual revival. Neither in the world, nor in Kazakhstan such a model has yet been developed. In contrast to domestic and international counterparts, the components of the cluster model of the system of continuous pedagogical education will perform not only basic, but also additional, “cross” functions, and can, if necessary, replace the retired or poor-performing element of the system. The models of educational clusters proposed in modern scientific literature emphasize the proximity of the territorial

location of cluster objects; in the cluster model developed in the declared research, due to its innovative structure and content, the criterion of territorial proximity will be abolished. The cluster model developed in the stated research will be able not only to provide a synergistic effect of interaction of the elements of the system of pedagogical education, but also lead to the emergence of a unique result that would not be possible in the conditions of traditional systemic interaction. For the first time, the conditions for the transition of the system of continuous pedagogical education to a cluster model of development will be identified, scientifically substantiated and tested in experimental work.

The results obtained will have an impact on the development of pedagogical science, methodology and theory of pedagogy. In addition, the intensification of the work on the formation of competencies among pedagogical workers will significantly improve the quality of the professional training of teachers; will contribute to the development of their professional mobility and competitiveness in the labor market. As a result, the transition of the system of continuous pedagogical education into a cluster development model will allow educational institutions to carry out more focused training of specialists who are able not only to perform work in accordance with the requirements, but also to act as subjects of their own development.

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