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Formation of a Cluster Integration System of Educational Institutions within the Region

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ABSTRACT

The relevance of the investigated issue is caused by the need to explore new approaches to the development of integration processes in the field of education which are of great interest for the development of an environment conducive to the creation and the active use of innovations in the education system. The aim of this study is the development of organizational and pedagogical bases for the formation of a cluster integration system of educational institutions within the regional educational space. The basic guideline of the implemented scientific study is the system approach, which provides an integrated study of the cluster system of educational institutions as a highly organized and orderly object comprised of interrelated elements. This article presents organizational and pedagogical bases for the formation of a cluster integration system of educational institutions, which will allow adapting the internal processes of educational entities (participants in the interaction) to regional conditions and adapting particular features of cluster participants to external conditions and developments in the market-based educational environment.

KEYWORDS
An education cluster, an organizational and pedagogical model, the development of cluster integration

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Introduction

The evolution of integration processes in the world, the features of the laws of development of specific regional integrations, and globalization and regionalization processes are inter-related scientific problems that have a number of modern interpretations. For example, integration in the corporate governance format is seen as the management of a special organizational system that is formed as a result of specialization, cooperation, and diversification of

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economic entities represented by corporate structures; at the same time, the access to new levels of development of interaction participants requires a flexible response to market requirements (Mokronosov & Vershinin, 2014; Masalimova & Ivanov, 2016; Masalimova & Shaidullina, 2016). This involves the mobilization of resources of integration participants and the development of a corporate behaviour philosophy based on compliance with corporate ethics, reputation, and knowledge.

International experience of the management of innovative, scientific, and technological development of the regions demonstrates that the objective process of the synthesis of the scientific, industrial, economic, and social policy is currently underway at different levels today in the form of specific formations known as innovation clusters in order to create and to maintain an environment conducive to the creation and the active use of innovation in specific sectors. For example, EU countries are characterized by the three-level formation of an innovation policy that includes a regional, national, and supra-national component, which unifies all the EU countries. At the same time, the regional component increasingly acquires a structural rather than a redistributive nature. The federal government has priority in the fields of fundamental study and training of personnel, including study and development; on the other hand, the regions are increasingly implementing the innovation distribution policy (Commission of the European Communities, 2003).

Literature Review

According to Ye.F. Gershtein (1993), the essence of integration is shown through:

- establishment of connections between disparate elements of the system;
- deepening and the strengthening;
- increase in the number of connections and the establishment of new ones;
- emergence of new integrative (holistic) properties of the system; the coordination of relations between enterprises; and the modification of the system structure.

In strategic management, the integration is presented in terms of diversification processes that result in the transformation of individual organizations into integrated systems. In particular, A.D. Chandler (1998) wrote that strategic integration changes are often used in crisis situations: in certain stages of the economic cycle in case of an increase in the level of competition in order to reduce costs and to expand the market position (Chandler, 1998). N.Yu. Konina (2005) believes that all the known waves of integrations are generally associated with technological breakthroughs, industrial crises and rises, and inflation (i.e., with periods of organizational restructuring of the economy and the re-evaluation of its assets).

With regard to the education system, V.S. Bezrukova (1996) considers the integration as:

- ”the highest form of relationship” with the indissolubility of the various components and the new objectivity, structure, and function of the objects being connected;

– "the highest form of expression of the unity" of all the components that define the content of education;

– creation of large educational units by combining related components of the educational process.

Let us systematize the possible directions of development of integration processes in the field of education:

– achieving a corporate efficiency through the use of rational management policies and the improvement of internal corporate processes;

– obtaining synergies by providing increased specialization of educational processes. Vertical integration improves coordination when using low-cost highly specialized assets; horizontal integration reduces transaction costs; this results in a scale advantage. The result of revamping the technical base and the renovation of educational programs is an innovative synergy;

– diversifying or selecting areas for development. For example, a long-term decline in demand for specific educational services leads to a reduction in the competitiveness of interaction participants. The diversification results in a possibility to focus on the creation of new educational services that are in a higher demand in the market at a particular time;

– increasing the management mobility by increasing the role of decentralized management through delegation of powers (Davydova, Sinyakova & Fomenko, 2014; Davydova et al., 2016; Zakirova & Gilmiyarova, 2016; Zakirova, & Purik, 2016).

The effectiveness of the cluster integration in the field of education has been proven theoretically and confirmed by numerous foreign and domestic examples. The works of S. Borgatti& P. Foster (2003), D.J. Brass et al. (2004), F. Pallotti, A. Lomi & D. Mascia (2011), T.L. Proskurina (2011), A. Vos (2014) clearly demonstrate that different forms of networking, including clustering, enable the participants in integration processes in different countries to develop coordinated actions, to share updated content, technology, and activity results on the Internet.

Based on the foregoing, let us introduce the concept of a cluster of an educational integrated system as a special form of interaction between educational organizations that are based in the education cluster on the basis of compliance with corporate ethics and the harmonization of the interests of economic entities in the field of education that is aimed at the maximum disposal of available resources and connections in order to create a synergistic effect. This structure allows adapting internal processes of economic entities to regional conditions and adapting the particular features of cluster participants to external conditions and developments in the market-based educational environment. In addition, it is appropriate also to consider this system as a communication platform within which concerns of the development of education in the region are discussed by educational, governmental, and scientific communities because the fundamental condition for ensuring the sustainability and competitiveness of corporate cluster structures is the achievement of a balance of interests between integration interactors. In this context, developing organizational and pedagogical bases for the formation of a cluster integration system of educational institutions at the regional level becomes urgent; notably, the approaches to the development of this system should be formed depending

on the developmental stages of its life cycle with the identification of criteria for the coordination of interests, which will simultaneously stabilize the development of interactors.

Methodological Framework

Study Methods

System, activity, and cluster approaches have been used as targets, ideology, and the method of the scientific study being performed. The system approach is necessary to study the cluster integration of the educational institutions of interaction as a whole object comprised of interconnected elements (ordered and highly organized). In this case, the focus is on the identification of diverse connections and relationships that occur both inside the object and in its relationship with the environment; it is also taken into account that the properties of the object as a whole system are determined not so much by summing the properties of its individual elements but by the properties of its structure and system-specific and integrative connections of the object.

Since new ways of organizing social activity of people and co-organization of technology are becoming an important development vector in the modern world, which moves towards a post-industrial society, the study has used the activity approach, which is an important basis for the creation of conditions for the formation of new conceptual ideas on how to develop the cluster integration in the region.

Advantages of the cluster approach are a combination of diversification, functional coherence, and legal independence of interactors as well as the interest of the regions in the production of such integrated systems and the provision of various kinds of assistance when organizing and promoting the development of cluster participants by government authorities and other bodies: educational, financial, and municipal (Porter, 2001).

In this case, the harmonization of business interests in integrated systems allows interactors to obtain a synergistic effect, which will manifest itself:

- in the effective use of resources and flexible manoeuvring;
- in the possibility of a greater involvement and mobilization of resources;
- in the enhancement of an exchange of knowledge between interactors;
- in the provision of a mutual access of participants to skilled labour;
- in the reduction of costs;
- in the overall growth of competitiveness;
- in the stability and credibility of integration participants (Zolotaryova, 2014).

The basis for the selection of the methods and for the creation of a study methodology was both general scientific and specific methodological principles for social and social and educational spheres:

- objectivity (the desire to establish the truth);
- scientific rigor (penetration into the essence of the explanation of the causes and the factors leading to a particular phenomenon or influencing its development);

– unity of history and logic (based on the modern sense) of the approaches used;

– consideration of the continuous development and the dynamism of processes and phenomena;

– unity of description, explanation and prediction, aspect (from a certain point of view) and holistic, and multidimensional learning as well as a number of others.

Experimental Study Base

The experimental study base was Russian State Vocational Pedagogical University, 25 general educational organizations, and 5 vocational training organizations.

Stages of Study

The process of exploring the possibilities of a cluster integration of educational institutions provides for a specific sequence of actions, which include conceptualization, programming of the process of its development, and planning of activities. The study was conducted in three stages:

- during the first stage, a theoretical analysis of the existing methodological approaches in the philosophical, psychological and pedagogical literature and dissertations on the subject was performed; the problem, the purpose, and the methods of the study were highlighted; and a plan of the experimental study has been drafted;

- during the second stage, an organizational and pedagogical model of a cluster integration system of educational institutions was designed;

- during the third stage, an analysis, testing, and refinement of the findings obtained in the course of experimental work were performed, and the results were generalized and systematized.

Results

Based on the key ideas and bases for the construction of a model of a cluster integration system as well as on the previously selected features and principles of networking organization (Gnatyshina, 2011; Dmitrieva, 2015; Silkina&Vaganova, 2015; Fedorov&Davydova, 2014; Davydova&Dorozhkin, 2016), the developed model can be described through a broad set of elements, including the purpose and the objective of creating a cluster integration system, the basic principles of its development, functions, content, technology of creation, and dissemination of collective educational programs in the mass practice on the basis of a system scientific consulting support of cluster communicators (Figure 1).

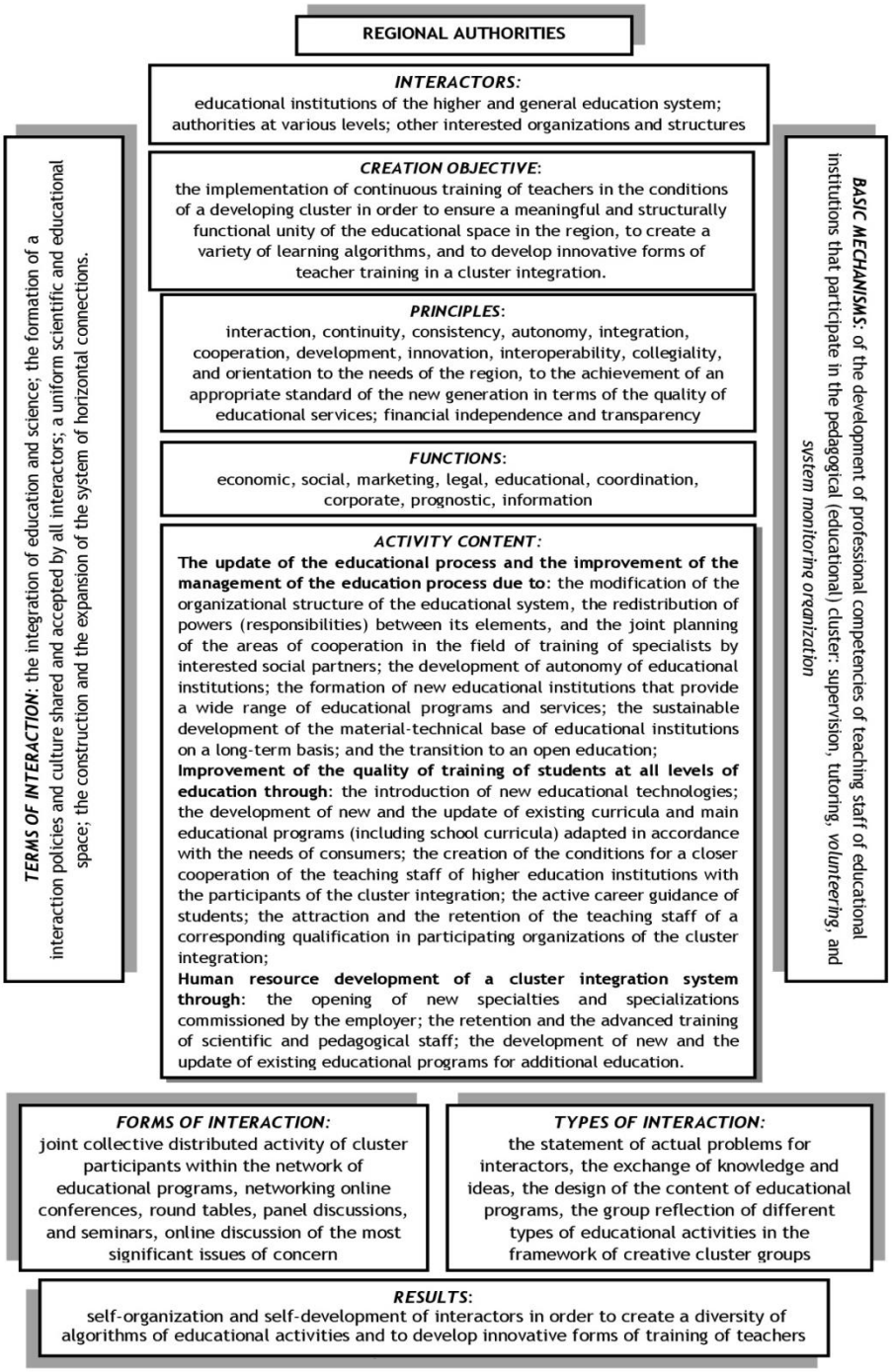

Figure 1. Organizational and Pedagogical Model of a Cluster integration system of Educational Institutions

Interaction of the participants of the educational cluster is based on the following principles:

- the continuity of education designed in terms of career growth of teachers in the conditions of the educational cluster;

- the principle of systemacity, which involves the integrity, the consistency, and the harmonization of actions of the cluster integration entities that are aimed at the joint solution of faced problems;

- the autonomy, which consists in the fact that almost all the activities under the conditions of the educational cluster are provided for by specialists from educational institutions (interactors);

- the principle of integration, which is implemented through the pooling the efforts of networking entities to achieve a set objective;

- cooperation involving the provision for the preparedness of education cluster entities for the formation of effective strategic relations in the field of training of qualified personnel.

These relationships include the effective use of internal and external resources of the cluster integration: human resources and study and information capacities of educational institutions, financing, own infrastructure, educational technology, technical training as well as the adoption of normative legal acts that determine the main directions of development of their cooperation;

- the principle of cluster integration participants, which means increasing the competitiveness of individual networking members;

- the principle of innovation, which involves a constant updating of the content of educational activities of the participants of the cluster integration in accordance with the latest achievements of the science of teaching and the educational technology;

- the principle of compatibility aimed at the accounting of specific features and the profiles of general and vocational education organizations involved in networking in order to create joint educational programs and corporate training systems; the organization of their direct involvement in the educational process. All the interactors should assist in stimulating the development of the cluster integration while maintaining a certain degree of their freedom;

- the principle of collegiality, which refers to the collective responsibility of networking participants for the adopted decisions in order to avoid possible conflicts;

- the orientation of education to the needs of the region;

- the achievement of a quality of educational services at educational institutions of the cluster that complies with the standards of the new generation, which is expressed in a constant conformity of the indicators of activities of educational organizations to the criterial values of the state accreditation;

- the financial independence of cluster interactors both at the expense of the state budget financing and on a commercial basis (particularly but not exclusively at the expense of internal funds);

- the availability to Russian and foreign citizens. According to this principle, educational organizations of the cluster are available to everyone.

Organizing cooperation cluster participants based on the above principles provides for:

– the continuity and the multilevel vocational teacher education;

– the improvement of the material and technical base of interactors;

– the selection and the structuring of the content of education adjusted for the interests of all the entities of the pedagogical (educational) cluster;

– the stimulation of professional development of teaching staff of educational institutions;

– the employment in one's chosen specialty with a clear prospect of a career growth, which contributes to the formation and to the improvement of the professional competence of interactors;

– the increase in and the diversification of education provided by educational institutions of the cluster.

Let us single out the basic functions of a developing educational cluster:

– the economic function, which is associated with the creation of a scope of educational services that timely fulfil the emerging demand;

– the social function, which provides guarantees for the graduates of vocational training organizations;

– the marketing function, which determines the direction of career guidance within the cluster;

– the legal function, which ensures the development of the legal framework of partnerships;

– the educational function, which is related to the collaborative design of educational activities in the field of teacher training;

– the function of coordinating the activities of networking participants, which takes into account the interests of interactors;

– the corporate function, which provides orientation of networking participants to common values and interests;

– the predictive function, which is aimed at improving the interaction philosophy depending on changes in the social order of the society;

– the information function, which provides networking participants with qualitatively new knowledge in terms of its rapid obsolescence.

The main objective of creation and to development of a cluster integration system of educational institutions is to improve the attractiveness of the cooperation between vocational education institutions. This problem can be solved:

– by providing interactions inside the cluster which contribute to the multiplicative effect of transfers of innovative educational technologies in the field of vocational training;

– by increasing the competitiveness of educational institutions within the cluster through the improvement of the quality of telecommunications infrastructure and specialized services; the efficiency of competition in the field of educational technology and knowledge; and the enhancement of the professional competence of teachers.

The specifics of an educational cluster as a form of social partnership require a new mechanism for the involvement of regional authorities in the process of formation and implementation of its development strategy. In our

case, the main objective of the authorities is to increase the attractiveness of cluster integration by developing interactions that contribute to the multiplicative effect of transfers of innovative educational technologies and increasing the competitiveness of educational institutions within the cluster by improving the quality of the telecommunications infrastructure and the specialized services, increasing the competition efficiency in the field of educational technology and knowledge, and enhancing the professional competence of teachers.

The specifics of an educational cluster as a form of social partnership require a new mechanism for the involvement of regional authorities in the process of formation and implementation of its development strategy. In our case, the main objective of the authorities is to increase the attractiveness of cluster integration by developing interactions that contribute to the multiplicative effect of transfers of innovative educational technologies and increasing the competitiveness of educational institutions within the cluster by improving the quality of the telecommunications infrastructure and the specialized services, increasing the competition efficiency in the field of educational technology and knowledge, and enhancing the professional competence of teachers.

The methodology for the creation of a cluster integration system of educational institutions of the vocational and general education system comprises the following stages:

At the first stage, the actual cluster integration system is created. The "cluster integration system core" is a university that serves as the focal point of networking and also acts as a scientific and educational platform for the interaction between the participants. At the same time, the Coordinating Council of an Education Cluster, which is designed to quickly solve problems and contradictions that arise in the course of the interaction and to ensure stable functioning and development of the system of interactors within the educational cluster, is formed through the delegation of representatives of all the interactors. In this period, it is especially important to ensure access to online notification of interactors. In case of the coordination of actions in favour of the formation of the general objectives of the created cluster integration system, timely notification is essential both for the university and the coordinator of the Coordinating Council and for interactors themselves. The activities of the Coordination Council of an Educational Cluster are specifically governed by agreements between the participants in the cluster integration. The main functions of the Coordination Council include the following:

– participation in the implementation of investment, innovation, and education policies in the educational cluster;

– participation in the preparation of agreements on cooperation with entities of the cluster cooperation;

– promotion of the development of a mutually beneficial cooperation with organizations from other regions;

– creation of a legal framework that governs the integrational development of the interacting structures in the educational cluster format.

Let us recall that educational institutions included in an educational cluster do not yet have sufficiently stable relations and are not competitive enough at

the time of formation of a cluster integration system. In this regard, special attention of the Coordination Council in this period is aimed at defining breakthrough points of interaction. At this stage, the development of each entity of the cluster interaction is ensured in the context of the operational strategy. Since the integration of this period is based on operational aspects, the effectiveness of corporate structures will primarily affect the increase in the quality of educational services and the reduction of costs. Through the implementation of joint development at the stage of emergence of the life cycle of a cluster integration system, the networking entities switch to the "development" stage for the formation of stable integrated relationships in a broader format, including the pricing in the field of provision of educational services, human resources management across the cluster, implementation of a coordinated investment policy etc.; the above contributes to further development of the products of interactors. The "development" stage assumes that the entities of a cluster integration system already possess sufficient resources and relationships in order to expand their shares in the market of educational services on the basis of mutually beneficial cooperation. Since the format of a cluster integration system provides for the participation of economic entities not only from the field of education, it is important to create a mechanism of coordination of interests of all the interactors. In this period, the role of the Coordination Council is to harmonize the interests of all the entities of cooperation, to coordinate their development, to participate actively in the development and the implementation of investment and innovation policies of interactors, which will create additional opportunities to strengthen the competitive position of educational institutions.Once growth points have been defined and the basic relationships established, the interactors will already have a strong position and will be able to develop independently. During this period, networking participants switch to the stage of "maturity" of the life cycle of a cluster integration system and independently develop economic relations within the cluster in the context of a business strategy. At this stage, the achieved results in the integration format orient the interactors to the further "self-organizing" development. One of the most important steps in optimizing the activities of entities in the format of a cluster integration system in this period is the improvement of the model of the harmonization of the interests of entities of integration, which begin to see themselves as full-fledged partners.

It should be noted that the interaction between entities in a cluster integration system in the initial stages of its formation and development will be more controllable because no stable harmonization of the positions of interactors in this period is observed while the need for interaction exists; at the self-organization stage, provision is made for a stability of interaction based on mutually beneficial cooperation.

The development of specific educational organizations that participate in interaction within an educational cluster proceeds as follows:

- the definition of an economic entity's mission in the integration process;
- the assessment of the current state of an educational organization;
- the study and the evaluation of the external environment of an economic entity;
- the administrative analysis of the strengths and the weaknesses of an educational institution;

– the analysis of strategic alternatives;

– the selection and the implementation of optimal development strategies;

– the monitoring of progress in the implementation of the selected strategy.

Discussions

The strategy of a long-term socio-economic development of a country implies an increase of its competitiveness, an improvement of the quality of human capital and labour productivity trends, and a conversion of innovative factors into the main source of economic growth. Solving these problems requires a system of clear interaction between the government, businesses, and science and education through the use of effective tools of innovation development, among which an important role is played by the cluster approach, which is based on the interpenetration and the intersection of economic interests and technological features of business entities. Let us emphasize that the cluster approach today is primarily regarded as a new management technology that allows improving the competitiveness of both a particular region or industry and the state as a whole. Moreover, it should be noted that the level of competitiveness of entities combined into a cluster interaction format is higher than that of local entities due to the accumulation of resources and the reduction of costs, the establishment of stable interactions positions, the active involvement of the infrastructure (services, consulting, supply and marketing channels that allow extending the range of positioning and full disposal of the existing potential of cooperation entities); and, finally, the acceleration of the development and the introduction of innovative products by providing state support for the development of a developing cluster integration system. It is important that the economic entities integrated into a cluster have a common feature: an ability to co-educate and, therefore, really to co-evolve. As a result of this integration, real and virtual systems emerge that are characterized by diverse competitive advantages, networking, and an ability to produce a synergistic effect.

According to the definition given by M.E. Porter (2001), a cluster is a group of geographically adjacent interconnected companies (suppliers, vendors, and intermediaries) and their associated organizations (educational institutions, government agencies, infrastructure-defining companies) that operate in a particular area and that complement each other. M.E. Porter (2001) suggests detecting clusters in real life and their support on the part of government agencies and research institutes rather than artificially creating clusters from the top. The concept of regional development of clusters has been developed by M. Enright (1992); this concept defines a cluster as a geographically outlined agglomeration of related companies and organizations. We agree with the opinion of S.A. Rosenfeld (1997), who believes that one territorial concentration of the critical mass of related companies is not enough to create a regional cluster; instead, active channels for business transactions, dialogue, and communication must be present (Rosenfeld, 1997).

Currently, there is a strong increase in the variety of cluster integration forms in which organizational and functional structures do not change but the joint cooperation process that creates favourable conditions for the development of corporate structures and the economy of their home territories is enhanced (Sapir, 2009). The trends of the expansion of the cluster integration contribute to

the creation of an environment of spreading of the region's "growth points," to the obtaining of a synergistic effect as a result of the cooperation of individual organizations in interaction circuits.

It is pertinent to note that the main concentration of educational resources in the knowledge economy is caused by the increase in the flow of information that circulates between interactors, and the complexity of a cluster integration system is the number of connections between these entities. Therefore, a cluster integration system of educational institutions with a sufficiently large number of participants in terms of its development model is an extremely complex system with a large number of internal interconnections that actively interact with the external environment. This system can be regarded as a special form created by the expansion of the educational space of interactors, which process new types of activities and forms of relations, exchange educational resources to ensure the integrity, the transparency, and the possibility of self-development of interactors. That is, the basic functional purpose of the cluster integration system is to create a set of conditions and mechanisms for the self-organization and the self-development of cluster integration entities.

The interests of corporate structures that are integrated into an educational cluster can be called synergistic due to the fact that they contribute to the commission of a kind of synergistic "breakthrough" for the participants of networking given their intangible nature (acquisition and preservation of reputation as well as the development of a cluster culture, corporate ethics etc.) (Davydova&Dorozhkin, 2016). The harmonization of corporate interests in the format of a cluster integration based on the expansion of vertical, horizontal, and diagonal interactions that ensure the sharing of educational and infrastructural capacities allows obtaining the results in the form of a synergistic effect, which is caused by the increase in productivity as a result of mutually beneficial cooperation of business entities in the cluster format (Petukhova, 2010).

The development of economic entities in cluster integration systems allows strengthening the level of competitive advantages both of educational organizations that participate in the interaction and of infrastructure entities. In general, the harmonization of corporate interests within a cluster formation involves the inter-relationship, the interdependence, and the mutual impact of businesses and is aimed at reducing the costs in the course of implementation of educational programs and increase in demand for the educational services in the region.

According to some authors, the following should be allocated among the main activities of a developing educational cluster: the organization of continuous reciprocal internships of students, bachelors, masters, and PhD students in the resource bases of the participants in the educational cluster; the organization of joint chairs meeting on the issues of the development of vocational education in the region; the development of combined curricula; the participation in the independent assessment of the quality of education; the organization of analytical work within the cluster; the increase in the quality of career-guidance activities in the territories combined into an educational cluster (Gnatyshina, 2011; Fedorov& Davydova, 2014).

The types and the forms of career-guidance activities are quite varied: the participation in the work of the teachers' councils and methodological

committees of educational institutions and in the meetings of heads of educational institutions of different levels; speaking at meetings of the staff meetings and parent meetings in educational institutions; meeting with alumni, round tables, presentations of exclusive programs on the activities of participants in the educational cluster; the organization of communication clubs for pupils and students; the participation in extramural elective courses of representatives of educational organizations participants in an educational cluster to demonstrate the specificity and the advantages of pedagogical work, to attract students to participate in competitions, contests of pedagogical skills, to engage in the work of youth scientific societies of the participants in an educational cluster as well as in the education, study, innovation and other activities (Rubin, 2007; Silkina&Vaganova, 2015; Dmitrieva, 2015; Dorozhkin, Zaitseva&Tatarskikh, 2016).

At the same time, the results of this study on the development of organizational and pedagogical bases for the formation of a cluster integration system of educational institutions have demonstrated the necessity to continue ensuring the inter-agency coordination and alignment of directions of actions of all the interactors.

Conclusion

Based on the foregoing, it should be noted that the success of the formation of educational clusters in the regions today is largely determined by providing for the following:

– the sharing of knowledge and key assets, including the reduction of the cost of material resources, infrastructure, information technology, training and retraining of teaching staff in new technologies for education and innovation

– the improvement of the competitiveness of all the cluster participants through the introduction of new educational technologies;

– the reduction of the deadlines for the processing of information about the implementation of innovative educational projects through the creation and the use of a single information system;

– the acceleration of the exchange of information and networking, the facilitation of access to new educational technologies, the improvement of the efficiency of knowledge transfer processes, the use of intellectual, material, and information resources in the course of teacher training and research implementation.

In general, the formation of an educational cluster comprises the following stages:

– the assessment of the possibility of formation of an educational cluster;

– the identification of participants interested in the development of cluster integration;

– the definition of the basic principles of cluster functioning, the strategic objective of the integration, and specific objectives of cluster interactors;

– the identification of interactions and interdependencies within an educational cluster;

– the development of regulations, rules, and standards that ensure the functioning of a cluster;

– the identification of the functional responsibilities of interactors;

– the selection of creative teams in educational institutions of a cluster for the implementation of specific innovative educational activities;

– the formation of a cluster management structure and a functioning mechanism: in the form of the Coordination Council, whose main function is the strategic planning and the adjustment of the activities of the relevant structures depending on the results and the degree of cluster adaptation to economic conditions.

A subsequent development of the integrated structures of an educational cluster involves the expansion of the local network interactions within the cluster through:

– the development of infrastructure by improving the level of service and creating interconnected technical means in accordance with the level of technical equipment of interactors;

– the development of information networks by improving the common information field for the entities of an educational cluster;

– the development of advisory networks, an increase of the qualification level of staff and profile training.

The main difficulties of the formation of an educational cluster today can be attributed to the problems of coordination of the activity of enforcement authorities and educational institutions in the field of cluster policies and to the limitation of a financial support toolkit for cluster projects in the field of education by regional authorities.

At the same time, one may highlight the following as the obvious problems of the management of development of a scientific and educational network:

– inadequate technical and technological support of the networking within a cluster integration system;

– difficulties with highlighting new teaching positions by some networking participants;

– unresolved issues of the search for the mechanisms of promotion of innovative educational programs and support for network groups by municipal and regional authorities.

Thus, the paper points out that the modern vocational education should be based on the study of professions' supply and demand in the labor market, their prospects in a specific region based on the forecast of its economic development; qualification requirements to the profession (basic knowledge, abilities, skills, i.e. basic professional competences, additional professional competences, specific regional requirements, etc.); modern material and technical support of the training process (equipment, raw materials, new technologies and methods of production); fundamentally different, independent from the education, training's quality assessment with necessarily involving of the employer; changing of the approaches to the employment of college graduates (they must either come into the industry, or to return the money spent on their training); analysis of the graduate's real success (the fact how is developed his professional career, how the specialist's self-realization is carried out in the profession influence the rating of the educational institution).

Analysis of the experimental research data suggests that performance in the experimental groups of students, in which additional tasks were introduced and worked out at the companies, became statistically better than in control groups, indicating that the greater effectiveness of training took place in terms of production, in comparison with traditional training in the educational institution.

Disclosure statement

No potential conflict of interest was reported by the authors.

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