ORGANIZING EDUCATIONAL INSTITUTIONS NETWORKING COOPERATION THROUGH DISTANCE LEARNING TECHNOLOGIES WITHIN REGIONAL EDUCATION SYSTEM

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ABSTRACT

The article considers topical issues of a new form of interaction of educational organizations within a regional education system – networking cooperation by means of distance learning technologies. The purpose of the research is to develop a networking cooperation model of educational organizations through distance learning technologies and its methodical support within a regional education system based on the principles of openness, regionalization, integrity, productivity and technological effectiveness. The methodological basis of the research is comprised of the main ideas of systematic, technological and activity approaches. The model provides educational organizations with an opportunity to use it in the geographically remote regions. This provides for a continual cooperation of educational organizations at the regional level, creates an integrated learning environment, expands a resource potential of educational organizations and contributes to the improvement of education quality.

Keywords: **Networking cooperation, distance learning technologies, distance learning, regional education system, educational organization, information and communication technologies.**

INTRODUCTION

Drive for the increase of education accessibility and quality has become an important factor for the search of new forms of educational organizations cooperation with the external environment. One of the solutions in the modern socio-cultural situation is the involvement of educational organizations into networking cooperation. Such kind of cooperation implies joint activities to obtain an opportunity to explore and apply different levels of educational programs by means of collateral resources usage.

The accessibility of a practical application of networking technologies has grown significantly due to the development of modern information and communication technologies. In the context of global informatization, the use of DLT has grown into a timely course of networking cooperation development which allows educational organizations to optimize their cooperation. It is planned to expand the use of information and communication technologies in order to develop new forms and methods of learning, distant or remote. Distance learning is considered to be a mechanism of continuing education based on the Internet by means of forming generally accessible information resources, facilitating learner-centered or self-study educational programs (The Concept of Long-term Socioeconomic Development of the Russian Federation up to 2020, 28. The Strategy for Innovative Development of the Russian Federation up to 2020).

The territories of the Russian Federation regions are characterized by large geographical areas and a different level of socioeconomic development. Unfortunately, some districts do not have proper conditions for professional and personal development. In this respect, the networking cooperation plays a very significant role in "development, testing and presenting innovative models of management of education system development to the educators' community" (Borlikov, Darzhinova, 2014), and in the renewal of contents, forms and means of organization of learning process based on conjoint collaborative distributed efforts of the networking cooperation participants. Networking cooperation by means of DLT makes a learning process possible even in the absence of subject teachers, helps students to prepare for the unified state exam, gives them an opportunity to do extra work related to their studies, provides an opportunity for enhanced studying of different subjects and a variability of subject-oriented instruction, facilitates a learning process in underfilled schools and provides individual training for students with special needs.

Networking cooperation is both a horizontal and a vertical cooperation among educational organizations; it facilitates "the expansion of students' virtual academic mobility and the development of unified educational space." (Mozhaeva, 2014: 1127).

Network forms of cooperation of educational organizations are determined at the domestic level. Thus, the federal law on education in the Russian Federation declares that "a network form of educational programs implementation provides students with an opportunity to use educational resources of several organizations implementing educational activities, including foreign organizations and, if necessary, the resources of other organizations." (article 15, Rozhdestvenskaya, 2014). Networking cooperation is viewed as an important factor in building successful, stable international collaboration. Nowadays a term "networking development" has become quite common." (Nascimbeni, 2014). Distance barriers and time difference have brought some organizational issues, but these issues have not presented any significant disadvantages, quite the contrary, they gave an incentive to the development of a distant form of networking cooperation. (Vereshagina, Kharitonova, 2013: 16).

Technologies of distance learning as universal online environments that support cooperation and collaboration of students through the Internet strengthen motivation, development and satisfaction of needs of students in the 21st century. (Beldarrain, 2006: 140): "formation of system thinking, acquisition of management, decision-making skills, effective communication, obtaining and critical evaluation of information, forming a capacity for an effective content self-study through real-world examples." (Burns, 2011: 57).

In Russian literature, a networking system of distance learning is specified as "a system of special soft and hardware that is responsible for the integrity of the learning process and proper succession of all the stages of the learning process. <…> Such systems are built on Internet technologies and are based on the Internet web servers that can be accessed by all

learning process participants using any available web-browser. The main role of such systems is to provide students with an opportunity to study individually and in groups led by a teacher." (Palchikova, 2013: 138).

Networking cooperation of educational organizations by means of DLT has grown into a modern highly efficient innovative technology (Osyak, Gazizova et al., 2015), which has given students an opportunity to choose individual learning directions (Akimova, Dorozhkin, Sikorkina, 2014), and has made it possible for educational organizations to establish cooperation, share advanced experience, knowledge and innovative solutions without close proximity or face-to-face communication (Sliwky, 2003).

The collaboration within a networking cooperation system by means of DLT implies "mutually beneficial relations between two or more parties with the purpose of reaching common goals by means of sharing and distributing responsibility, authority and accountability in order to obtain desired results." (Ogden, 2014). The cooperation of distance learning participants is not only the exchange of knowledge and information (communication) but also mutually beneficial relationship. It helps all parties to achieve their goals (cooperation and coordination). The goal of cooperation is to create a common vision and work out common strategies in order to solve the problems which exceed the individual competence level.

Nevertheless, it should be noted that while this research was conducted the networking cooperation of the learning process participants by means of modern information technologies was primarily random and spontaneous. The potential of networking cooperation by means of DLT was not studied and realized sufficiently for educational purposes. There was an absence of elaborated mechanism for using didactic opportunities of networking cooperation in order to ensure high-quality education.

Besides, despite the contemporary topicality of organizing the networking cooperation by means of DLT, not all educational organizations are ready to build such networking systems of communication. There is a number of challenges that can hinder the networking cooperation. The list includes the insufficient development of the issues related to the organization of networking cooperation through DLT, the absence of a functional organization model for cooperation of educational institutions within a regional education system. The two more problems are the insufficiency of methodological support for distance learning and poor or absent informational and communicative competence of the learning process participants.

The transformation of the existent fragmentary organization of networking cooperation by means of DLT into an integral ordered system is quite a timely objective. The goal of this research is to develop an educational organizations networking cooperation model by means of DLT and its proper methodological support at the level of a regional education system. It is quite urgent to develop such a model by means of DLT when "the Internet is viewed as social space for satisfying a learner's needs" (Vrocharidou, Efthymiou, 2012: 609).

This study contributes to the world science in respect of global efforts to create an international educational space that can be obtained regardless of a learner's place of residence. The model presented in this article is a pattern of communication of academic metropolitans at national, multiregional and international level. It predetermines an establishment of a consortium of educational organizations within regional and international world space which would make implementation of advanced educational technologies in remote and financially insecure territories possible.

Nowadays the term "networking cooperation" has become versatile. It can be used in multiple areas of science from networking planning in economics to managing models of cooperation

in pedagogics. In teaching practice, the idea of networking cooperation of educational institutions emerged at the end of the 1990s associated with the name of A.I. Adamskiy (Adamskiy, 2006), who identified essential characteristics of networking cooperation, its relevance and applicability.

In pedagogical science, many modern both Russian and foreign researches described the origin of the term "networking cooperation", its structure, components, conditions, forms, methods, functions, and the results of that among educational organizations. Among the those researches Alexeyeva T.A. (Alekseyeva, Nikonova, Ripinskaya, 2016), Asadullin R.M. (Asadullin, 2015), Bugrova N.S. (Akimova, Dorozhkin, Sikorkina, 2014), Gaisina S.V. (Gaisina, 2014), Goncharova N.Y. (Alekseyeva, Nikonova, Ripinskaya, 2016), Grebenshikova A.V. (Grebenshikova, 2014), Grushnikova E.V. (Grushnikova, Mokretsova, Shvets, 2015), Dmitriyeva E.A. (Dmitriyeva, 2015), Makoveyeva V.V. (Borlikov, Darzhinova, 2014), Nefedova V.Y. (Bugrova, 2007), NoskovaT.N. (Vereshagina, Kharitonova, 2013), Pankratova T.B. (Grebenshikova, 2014), Silikina N.V. (Silkina, Vaganova, 2015), Soshenko I.I. (Soshenko, 2016), Filina O.A. (Filina, 2014), Frolov Y.N. (Frolov, 2015) et al. could be mentioned.

The analysis of the body of pedagogical literature draws the following conclusion. There is no clear definition of the term "networking cooperation". The networking cooperation of educational organizations is viewed as a "system phenomenon which results from crucial challenges for modern the contemporary society development' (Shilova, 2015: 185). Another definition is a "new cooperation culture that implies being ready for partnership preserving your original uniqueness" (Gromova, 2008). It is also described as a form of specially structured relations among people, organizations, processes, actions and phenomena, implemented based on the voluntary pooling of resources, mutual responsibility and commitments (Bugrova, 2007). One more interpretation of the term sees it as "a system of horizontal and vertical relationships which provides education accessibility for all categories of citizens, openness of educational institutions and increase of teachers' competence level" (Adamskiy, 2006: 35).

In psychological and pedagogical literature, various models of networking cooperation are developed and described. Different types of these models are distinguished. The types namely include nuclear, junctional, cellular and gradual models (Abankina, Abankina, Osovetskaya, 2006) as well as an association model, a junctional model, a combinatory model and a complimentary model (Shilova, 2015: 184), with both a concentrated and a distributed network (Palatkina, Konnova, 2011), and a number of local models in different Russian regions added to the list. The examples of such a local model is that of "incremental development" within a "school–college–university" system and that of logistic and navigation territorial community" along with many other (Sikorskaya, 2015: 96–97). Using DLT for educational purposes is a common technology and distance learning is identified as "an educational – bringing-up process and a system, where the whole learning process or its part is handled remotely from a teacher both in terms of distance and time" (Burns, 2011: 9). Distance learning has some advantages over traditional education. Firstly, distance learning makes a learning schedule flexible regardless of location. Secondly, it decreases financial and time expenditures. Thirdly, it gives an opportunity for self-study and a learner-centered approach to education. Moreover, it allows an unlimited number of people to participate in the learning process (Lo, 2014: 77). Computer support of cooperative learning environment allows learners to cooperate while solving problems using appropriate hardware and software (Sinha, Rogat, Adams-Wiggins, Hmelo-Silver, 2015). A great demand expressed by potential learners for distance education is mentioned in the research works by Dare L., Zapata L., Thomas A. (Dare, Zapata, Thomas, 2005), Hung M. (Hung).

Nevertheless, despite the existent academic interest in the area of networking cooperation, it must be noted that there is a contradiction between the increasing popularity of educational projects built on the principles of networking cooperation by means of DLT and the lack of theoretical background necessary for successful application of such projects in large-scale teaching practice.

METHOD

The design of the model of networking cooperation by means of DLT is based on the following principles: openness, regionalization, integrity, productivity and technological effectiveness. These principles have determined the conditions for creating a structure of educational organizations networking cooperation within a regional education system by means of DLT. Besides, they have determined the resources distribution system at all levels: human resources, software, technical, administrative support, regulatory-methodological and financial support. Methodological basis of the research is comprised of the main ideas of systematic, technological and activity approaches.

The research of networking cooperation organizational process by means of DLT was conducted in a staged manner. The venue for the research comprise a higher education institution in Leningrad region – Pushkin Leningrad State University (Saint Petersburg, Russia) and Leningrad region network of information technology centres responsible for the informational support of education in the region, secondary schools, vocational education institutions and higher vocational education institutions.

Leningrad region consists of one city district and 17 municipal districts including 217 municipal entities. 876 schools and secondary vocational education institutions with a total number of 10,767 people were involved into the research on implementation of networking cooperation among educational organizations by means of DLT.

The research logic was based on the principles of distance learning. In the scientific perception, distance education is a planned learning process that is traditionally held at a distance from a teacher and has to be thoroughly planned. The whole process requires special patterns of methodology, a system of methodologically rationalized courses, adjusted methodological recommendations and special methods of communication by means of modern information and communication technologies together with special administrative agreements (Moore & Kearsley, 1996).

- **Design stage. At this stage, a general concept of networking cooperation by means of DLT was determined. The goals and objectives of distance were defined. The experience of educational institutions of Leningrad region and other regions of the Russian Federation was studied and analysed. Basic theoretical positions were determined. Regulatory support for distance learning was elaborated. Teachers' readiness to participate in innovation activities was examined. The possible problems that may occur during teachers' professional activity in the innovation working mode were identified and educational situations appropriate for distance learning have been verified.**
- **Organizational and administrative stage. The model of educational institutions networking cooperation by means of DLT was designed. The methodological support for teachers participating in networking cooperation was developed. The training manuals, appropriately formatted, were created and prepared for distribution among distance learning participants.**
- **Pilot stage. There was a test and assessment of the networking cooperation model within educational institutions of secondary, secondary vocational and higher vocational education.**

- **Analysis and generalization stage. The analysis of scientific results was conducted, the diagnostics to confirm validity and efficiency of networking cooperation developed model was performed.**

FINDINGS

The main goal of the article was to establish a scientific rationale and a practical application of educational organizations cooperation model by means of DLT named "Basic school – center of distance learning" within a regional education system. Besides that, it was necessary to develop a proper methodological support for a network format of educational organizations' operation. In order to achieve the goal, the authors have set the following objectives:

- **To elucidate the essence of the educational organizations networking cooperation determined by Russian and foreign scientists and to identify the mechanisms and models of networking cooperation among educational organizations.**
- **To determine the ICT role in educational organizations cooperation optimization in a network form and to define organizational and methodical problems in teachers' professional work in an innovation model of educational organizations operation within a regional education system.**
- **To develop an original concept of networking cooperation through DLT. The concept includes the essence of DLT application in networking cooperation, distance education regulatory support, scientific rationale of the design principles of a new networking cooperation model within a regional education system.**
- **To create an innovation model of networking cooperation within a regional education system by means of DLT named "Basic school – centre of distance learning".**
- **To generate the methodical support for the participants of the networking cooperation model within a regional education system using the resources of DLT "Basic school – centre of distance learning".**
- **To test the model of networking cooperation by means of DLT called "Basic school – center of distance learning" in the Northwestern Federal District of Russia (within Saint Petersburg and Leningrad region).**
- **To set up a monitoring system for tracking the effectiveness of networking cooperation model within a regional education system development using the resources of DLT "Basic school – center of distance learning".**

Upon elucidating the essence of the educational organizations networking cooperation determined by Russian and foreign scientists and identifying the mechanisms and models of networking cooperation among educational organizations, it became clear that there is a demand for an innovative model of networking cooperation among the parties to distance education within a regional education system in Russia. This lack can be fulfilled by the proposed "Basic school – center of distance learning" original model (Figure 1)

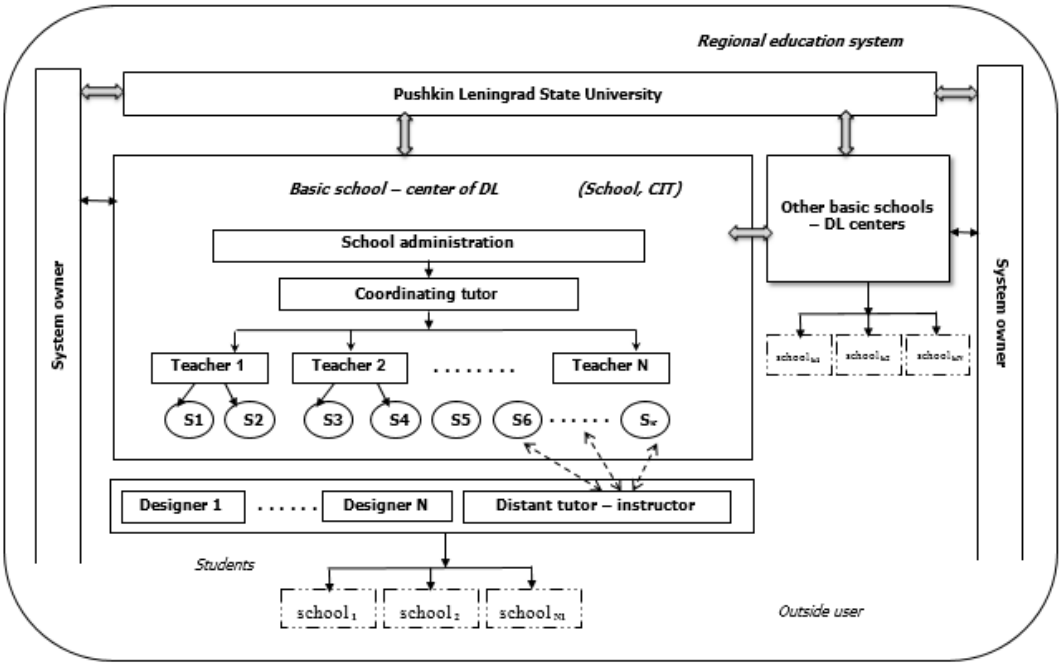

Figure 1. A model of a "Basic school – centre of distance learning"

The design of the original model is based on the principles of openness, regionalization, integrity, productivity and technological effectiveness (Table 1).

Table 1. Principles of model design of networking cooperation by means of DLT

Principle	Principle description
Openness	Voluntary participation in networking cooperation.
Regionalization	Specific aspects of educational space and economical and cultural factors of a region development are to be considered.
Integrity	Single regulatory and methodical database of networking cooperation participants.
Productivity	Personal approach based on a learner's interests and needs.
Technological effectiveness	The use of modern ICT to integrate a learner into the global information space.

Applying the principles of a model design used by the authors of this article can contribute to the creation of new cooperation patterns. These patterns would define scientific and educational centers coordination at the national, interregional and international levels. The academic novelty of the model suggested in this article is based on the fact that DLT usage peculiarity is considered as the determining factor of the model's design. Thereupon the model's participants and cooperation patterns are identified. DLT serve as the means of networking cooperation among educational organizations of a region.

A basic school as a center of distance learning is responsible for the centralized management and a single training materials database development. It plays an integrating and a coordinating role and supports the working capacity of special soft and hardware. Moreover, it works as a provider of distance learning services. In the model presented in this article Pushkin Leningrad State University acts as the main coordinator of basic schools – centers of distance learning.

Based on the organizational and methodical matters related to teachers' professional activities in the city of Saint Petersburg and Leningrad region in the innovation mode of networking cooperation by means of DLT the following participants of distance learning system and their functional duties have been determined: system owners, students, academic advisers, course authors and designers (software developers), tutors (teachers responsible for giving lessons and providing course participants with methodical and organizational help within the framework of a particular distance learning program) (Segoe, 2014), coordinating tutors (consultants who help teachers to prepare or to give a lesson), technical assistants and server administrators (maintenance specialists responsible for distance learning server settings, server resources distribution and managing the rights of the learning course participants), facilitators (teaching methods consultants), invigilators (specialists who uphold the integrity of academic results, develop control methods and tasks, render assistance to knowledge and skills control organizations), outside users.

The emphasis was laid on the issue of a regulatory system development which is essential for the organization of networking cooperation by means of DLT. As a result, the regulations for distance learning organization in Leningrad region education system together with program of testing and assessment of the innovation model "Basic school - center of distance learning" were developed. In addition, an electronic organizer for distance tutors was created (Palchikova, 2015). In order to provide distance learning system with methodical support the authors and the participants of networking cooperation developed electronic study materials for distance learning organization. The study materials are targeted at secondary school students and are divided into several levels: "Secondary school", "Profession-oriented school», "Subject-oriented state exam preparation" and "Elective professional courses".

As many as 546 learning and teaching tutorials were developed and published at the Blackboard distance learning server of Pushkin Leningrad State University. Tutorials include distance courses for secondary education in the following subjects: "The English Language", "The Russian Language", "History", "Social Science", "Mathematics", "Physics", "Chemistry", "Biology", "Information Technology", etc. As for vocational and higher education the following electronic educational resources have been developed and applied: «Informatics", "Information Technology", "Introduction to Electrical Engineering", "Introduction to Land Management", "Foundations of Information Science", "Electronic Distance Learning", "Information Computer Technology", "Software Development", "HTML Language", "Information Technology in Professional Fields", "Experimental Data Processing", "Organization of Research Work", "Innovation Process in Education", "Economic and Mathematical Methods and Modelling", "Geographic Information Systems", "Use of Technology in Education", "Electronic Document Handling", "Document Science", "Secretarial Practice", "Staff Records Management and Document Archives", "Theory of Modern Records Management and Archiving", "Computer Graphics", "Simulation Modelling of Economic Functions", "Experimental Data Processing", etc.

Besides, the methodical materials for distance training for the teachers willing to become designers and tutors have been developed. "In the course of networking cooperation a teacher becomes both a user and a producer of a network product – vocational-teaching knowledge. It results from the change in a teacher's role within the network space. A teacher can act as a learner, a self-learning person or as an expert, tutor, consultant, moderator, etc. A teacher's role can be chosen on their own or delegated in terms of networking cooperation" (Rozhdestvenskaya, 2014: 117). Teachers should study two programs: "Distance Learning Technologies in Practice" and "Tutor's Assistant". "In distance learning a teacher's competence and ability to satisfy the learners' needs is absolutely crucial. A teacher's role involves the following aspects as high-quality study materials for distance learners

preparation and students' on-line support during the whole course of studies" (Ustati, 2013: 293). A tutor's responsibility during cooperation with distance learning participants is to guide the learners, answer their questions, motivate and stimulate active teacher-student interaction (Lentell, 2003).

Special programs on advanced training called "Blackboard-based Technology of Educational Resources Development" and "Introduction to Distance Learning Technologies" were developed for the employees of information technology centers, teachers of secondary vocational institutions and university professors. The special focus of this article was the development of a monitoring system for regional education system networking cooperation by means of DLT. This type of monitoring includes statistical analysis of tutors' performance, students' involvement into a learning process level. Also participation in discussions, forums and chatrooms within the distance learning system participants cross-collaboration is monitored. Based on monitoring data it is identified whether update or modernization of distance learning courses is required.

DISCUSSIONS and CONCLUSION

The innovation model of networking cooperation "Basic school – center of distance learning" has demonstrated its effectiveness in the following areas of development: "Electronic and distance learning for students in educational institutions organization", "Distance teaching materials development and modernization", "Electronic and distance learning in educational institutions technical support", "Electronic and distance learning methodical support".

The main development and testing problems of the networking cooperation innovation model by means of DLT "Basic school – Centre of distance learning" were discussed during a videoconference of regional education system representatives held by Pushkin Leningrad State University. The topics of the videoconference included the following: "Study materials development and publication", "Test tasks development", "Distance Learning Assessment system", "Organization of learners' group work", "Distance learning participants networking cooperation" and "Distance learning's forms, methods and means". The performance indicators of the networking cooperation for various fields of study at different level are represented in Figures 2 and 3:

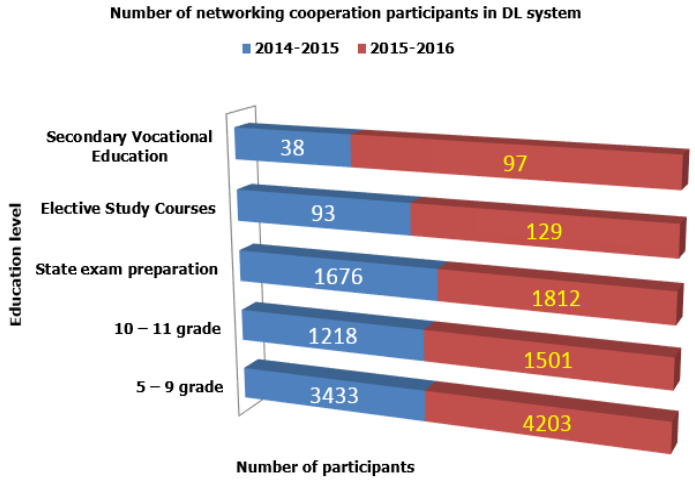

Figure 2. Number of participants of distance cooperation based on DLT located in leningrad region in 2014–2015 and 2015–2016 academic years

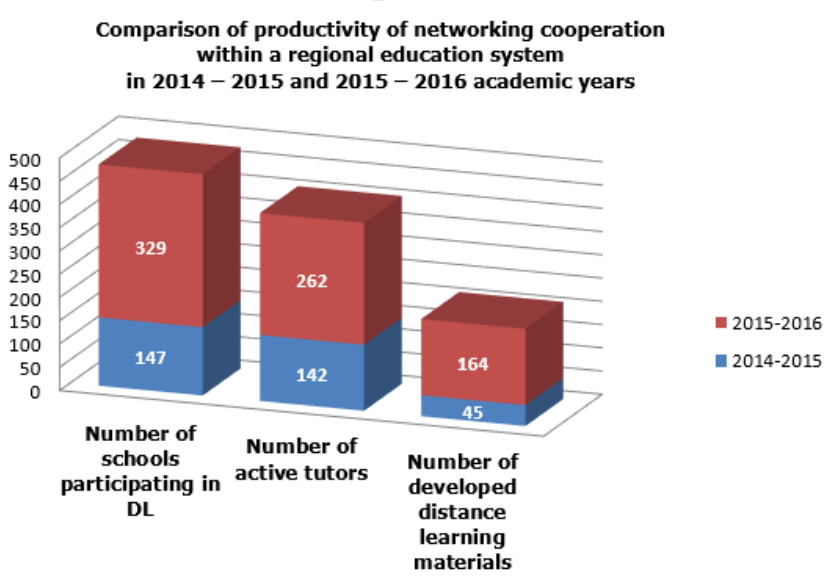

Figure 3. Productivity of networking cooperation in 2014–2015 and 2015–2016 academic years

Unlike the existent locally-based models of vocational-teaching educational institutions networking cooperation (Akimova, Dorozhkin, Sikorkina, 2014; Asadullin, 2015; Makoveyeva, 2012; Osyak et al., 2015; Sikorskaya, 2015; Shilova, 2015), the model presented in this article offers a system of networking cooperation at a regional level with an outlook for globalization in the context of modern education infrastructure development at the international level. Innovativeness of participants' cooperation can be determined by the modern ICT usage. The authors' scientific concept states that networking cooperation is implemented not only in the process of utilizing educational institutions and their study resources but also by means of applying distance learning technologies. This ensures that the system of education will remain open and attract highly qualified specialists and advanced technologies to teaching practice.

The research works by Dare L., Zapata L., Thomas A. (Dare, Zapata, Thomas, 2005), Hung M. (Hung), Lo C. (Lo, 2014), Palchikova I.N. (Palchikova, 2013) confirm the advantages of distance learning over traditional learning systems. Distance learning systems ensure the integrity of the learning and teaching process, the consistency of learning stages. Also, distance learning systems make it possible to combine and apply multiple study materials necessary for studying particular subjects. Furthermore, they provide such vital factors as interactivity, clearness, portability, low replication price and a great variety of assessment tasks and tests.

The validity of the obtained results related to the effectiveness of the model's practical application is determined by quantitative and qualitative indicators of the monitoring carried out among the participants of the "Basic school – centre of distance learning" networking model. The indicators are provided by some extra options of the distance learning system. Distance learning systems possess integral capabilities to obtain actual statistic reports on the progress of all the distance learning participants. Traditional model of educational institutions networking cooperation lacks such capabilities.

Traditional models of networking cooperation do not allow making conclusions concerning the validity of obtained results. It should be noted that sometimes DLT-based education is viewed as an occasional use of the Internet (E-mail, educational portals), which is not quite so. In the

attempt to allocate this research within the structure of human knowledge it must be mentioned that the research focuses on various distance learning systems (WebCT, Blackboard, Moodle, etc.). These systems provide such opportunities as educational content adding, students' performance prompt assessment, electronic study process methodical support, study process monitoring and its timely adjustment, an individual learning guideline for every student development. Also these systems provide a wide variety of communication means among students and teachers.

The results obtained through the research have theoretical and practical value for the system of general, secondary, higher education and supplementary education systems. In particular, ensuring support for educational process in a range of conditions is taken into account. The support should be provided in underfilled schools, in case of a subject teacher absence, to prepare for the Unified State Exams and State Final Examinations, to organize students' individual work or in-depth study of a particular subject, to select major subjects, to advance professional training and retraining, etc.

In the article, the essence of networking cooperation of educational organizations was researched by Russian and foreign scientists. Also, the mechanisms and models of educational organizations networking cooperation were identified. Alongside, the role of ICT in networking association optimization was determined and organizational and methodical problems in teachers' professional activities in the innovation working model of educational organizations within a regional education system were verified.

The elaborated original concept of networking cooperation by means of DLT includes the determination of DLT application in networking cooperation, distance learning regulatory support and a scientific rationale of design principles of the new networking cooperation model within a regional education system. An innovation model of networking cooperation within a regional education system by means of DLT named "Basic school – centre of distance learning" was created. Besides, the methodical support for the participants of the networking cooperation model "Basic school – centre of distance learning" was developed. The methodical support is targeted at different educational levels: secondary and vocational school, Unified State Exam preparation and elective courses together with courses for the students of secondary and higher vocational institutions and courses for teachers. Moreover, testing and assessment of networking cooperation by means of DLT model "Basic school – centre of distance learning" within the education system of the Northwestern Federal District of Russia has been carried out (based on the example of Saint Petersburg and Leningrad region). As a result, the model's effectiveness has been confirmed by the results obtained through the monitoring system.

Thus, educational institutions networking cooperation by means of DLT made it possible to develop a unified educational space at a regional level, provide the consistency of secondary and vocational education and increase accessibility of quality education for different categories of learners according to their abilities, individual features and needs regardless of their place of residence. Additionally, such kind of cooperation allowed learner-centered approach in education implementation together with the effectiveness of educational institutions resource usage and the quality of educational services increase.

The model described in this article can be improved by forecasting and developing the directions of its integration with model's integration with the research, development and production sector that includes scientific organizations, production companies, etc. The other way of such improvement is to allocate networking centers in order to use them as a ground for practical training and field work.

The research perspectives are to upgrade organizational and methodical support for distance learning based on the performance reports of all the participants of networking cooperation within the "Basic school – Centre of distance learning" model statistical analysis.

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