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ABSTRACT

The article considers problems related to the network organization of the educational process at the rural schools of the Russian Federation in conditions of digitalization. The aim of the study is to identify and justify the peculiarities of the network organization of the educational process at the rural schools in conditions of digitalization of education. The scientific novelty of research consists of the following points:

1. The peculiarities of the network organization of the educational process at the rural schools in conditions of their limited resource provision and partially closed educational space have been revealed.
2. The model of organization of educational process at the modern rural school is presented from the point of view of the optimal combination of network and system-activity approaches, the using of which provided the quality education and the personal development to the rural students in conditions of informatization of the education.

The theoretical significance of the study consists of the following points:

1. The trends of formation and development of modern rural school are defined and scientifically justified.
2. The theory of pedagogy is enriched by the introduction into the scientific circulation of the concept of the network organization of the educational process, the content of which emphasizes the presence of targeted impacts on its structural components by the normative body of the network school and the links between them in order to design and implement educational programs of various levels and directions.

Keywords: rural school of Russia, communications, methodology, network interaction.

INTRODUCTION

The emergence of the new technological way of innovation economy in Russia, informatization of all aspects of Russian life have made it urgent for sociocultural modernization of education aimed at improving the quality, accessibility and efficiency of educational services. In the period from 2000 to the present year these concepts have been changed and improved, at the same time remaining the main target indicators of efficiency of implementation of numerous linear and sociocultural programs and projects. The specifics of the implementation of the federal programs and projects are due both to the national-regional peculiarities of the constituent entities of the Russian Federation and to the existence of such a phenomenon as rural school. The ongoing reforms and demographic crisis have contributed to a significant change in the structure and content of the activities of educational organizations in rural areas. In the period 2001-2014, the number of small rural settlements increased in 48%. It contributed to the reduction of the number of rural schools by almost half of them (from 48.6 thousand to 26.1 thousand). The restructuring of rural schools created conditions for the mass formation of the numerous types of network educational organizations, but the task of improving the quality and accessibility of education has not been solved. More than 25% of all rural schools in Russia (primarily small and remote) have a low index of social well-being, including showing insufficient quality of implementation of basic educational programs [1].

However, despite accurately created requirements and an order of the organization of network and electronic training (orders of the Ministry of Education and Science of 09.01.2014, of 23.08.2017, etc.), the number of the educational programs implemented online at rural schools was less than 20% till 2020. The tasks of the developing modern Russian education, formulated in the National Project "Education" (2018-2024) related to the inclusion of the educational system of the Russian Federation are aimed to improving the quality of education of all schools, including rural schools. Geo-territorial, sociocultural specificity of the rural schools,

their small number makes it necessary to use mechanisms of the network interaction. The modern stage of the rural school development involves its digitalization, aimed to the developing the information culture of the subjects of the educational process, computerization, changing the content of education and methods of its implementation, forming the information space of rural schools.

The analysis of the scientific research allows arguing that pedagogical science adequately responded to the needs of practice in the implementation of network models of organization of education. Since the late 1990s, issues of network approach have been considered in the works of Western specialists (E. Brookman, T. Lukman, etc.), Russian scientists (G. V. Gradoselskaya, M. M. Chuchevich, A. M. Tsirulnikov, etc.). Nowadays the process of the network theory formation in pedagogy is under way [2], which created conditions for the formation of ideas about network interaction as a mechanism of the rural education development. Formation of the concept "network of the educational organizations" was carried out within separate educational theories, concepts: concepts of development of territorial educational systems, the metatheory of variety, the theory of network education, concepts of vocational training and professional development of pedagogical shots in the conditions of network interaction.

The problems of rural school are widely represented in modern pedagogical literature (L. V. Bayborodova [3], M. P. Guryanova [4], Z. B. Eflöv [5], R. M. Sheraizina [6], A. M. Tsirulnikov [7], C. Chaiklin [8], J. Coolahan [9], R. Laukkanen [10] etc.). The works of V. V. Gusenko, A. M. Ishchenko make it possible to state that more than 40% of the total theme of research in this area is devoted to various aspects of the development of the didactic systems. The analysis of scientific research showed that the problem of the network organization of educational process at modern rural school in conditions of digitalization of education was not the subject of independent research. The aim of the study is to identify and justify the peculiarities of the network organization of the educational process at the rural schools in conditions of digitalization of education.

As to the scientific novelty of research the peculiarities of network organization of educational process in rural schools in conditions of their limited resource provision and partially closed educational space have been revealed. The model of organization of the educational process at modern rural school is presented from the point of view of optimal combination of network and system-activity approaches, using of which provided quality education and personal development to the rural students in conditions of informatization of education. As to the theoretical significance of the study the trends of formation and development of modern rural school are defined and scientifically justified. The theory of pedagogy is enriched by the introduction into the scientific circulation of the concept of network organization of the educational process, the content of which emphasizes the presence of targeted impacts on its structural components by the normative body of the network school and the links between them in order to design and implement educational programs of various levels and directions.

METHODS

The methodological basis of the study is based on the main provisions of the network approach, the implementation of which allows identifying and justifying the network elements of the organization of the educational process at the rural school, leading ideas of the system-activity approach, the use of which provides an opportunity to characterize trends of development of the rural general education organizations and to develop an algorithm of design and implementation of network educational programs in modern rural school.

Methods of research are general theoretic (analysis of philosophical, psychological, pedagogical literature on the problem under study, analysis, generalization, classification, comparison, systematization, design and modelling) and empirical (survey methods, experimental work, direct and indirect pedagogical observation, methods of mathematical statistics).

RESULTS

Analysis of the works of N. A. Borodina, E. I. Bulin-Sokolova, Z. I. Gorbachev, V. N. Shestakov, etc. [11] made it possible to establish that digitalization of education puts certain requirements both to the model of a modern educational institution and to the content of educational programs and mechanisms of their implementation such as the need to create a network structure of an educational organization, the need to comply with modern requirements for the resource support of the educational process, the need to organize the educational process at the formal, non-formal levels, the use of mechanisms of informal education, the obligation to design and implement packages of variable educational programs that take into account the needs of all participants in training and education, the results of which are oriented to the achievement of specific results (methods of action, metapedagogic results, personal qualities, values, etc.), the need to use the mechanism of individual educational routes (programs), i.e. individualization and differentiation of education and education, mandatory formation of subject-subject relations between all participants of educational process. These requirements apply to all general education organizations of Russia, including the most mass - rural schools, the dominance of which, primarily small and small, is one of the leading features of the Russian education system [12]. Analysis of the concepts of development of rural educational institutions, ideas about the mechanisms of organization of educational process made it possible:

- A) to establish that the modern rural school in the conditions of digitalization of education is a set of various types and models of open-type general education organizations created taking into account the national-regional specificity of the subjects of the Russian Federation, which have a network structure, the activities of which are aimed at forming perceptions of social and personal success among the participants of the educational process;
- B) to identify and justify the trends of its formation and development such as the formation of a rural school of an open general education organization, the feasibility of modeling rural schools according to national and regional specificities, the need to develop an algorithm of network interaction in the educational process of a rural school, the use of a cluster-type network model in conditions of limited resource support and partially closed educational space, the focus of the content of the educational process on the formation of social and personal success of graduates, regulation of the intra-network educational process by the basic school;
- C) to present the peculiarities of the organization of the educational process at rural schools (the use of a mixed model of education as a combination of elements of a modernized classroom model; problematic, developing, different-age education; extracurricular, out-of-school classes based on the technology of a collective method of education; the weak degree of polysubjectivity in design and implementation of basic and additional educational programs; the use of mainly administrative mechanisms in the management of the implementation of educational services, including within the framework of network interaction, etc.);
- D) to propose the author's concept of network organization of educational process as a purposeful influence of network authorities in the framework of network interaction of organizations on processes of targeting, content design, implementation, resource provision of jointly implemented educational services in order to increase their quality, accessibility and efficiency;
- E) to develop a model of network organization of educational process in modern rural school, providing students with access to quality education as a set of several components interconnected.

The conceptual and target component includes the goal of creating variable or complementary networks for the implementation of various educational services in order to improve the quality the social infrastructure, accessibility and efficiency of general education in a low-level development, the methodological basis of model construction (system-activity and network approaches), leading principles in a low-level development.

The content component reflects the essence of the organization as a phenomenon and involves the process of forming a network and its center - a network school, which as a system includes a set of network and organizational subsystems and relations between them on the implementation of educational services and the organization of professional development of teachers, normative distributed responsibility of works on implementation of network educational programs among subjects of subsystems, legal and organizational and technical support.

The technological component of the model is presented as a system of algorithmically related steps for designing and implementing network educational programs, which determines the content of the simulated process, which is structured according to the directions and stages of work, principles implemented in the activity, conditions of efficiency of the simulated process, etc.

The resource component of the model includes conditions for effective implementation of the model, at the same time the systemically important is the organization of continuous professional development of teachers in order to develop skills of work in the network school in accordance with the requirements of the professional standard "Teacher," as well as monitoring the quality of implementation of the main and additional educational programs.

The efficiency and evaluation component of the model represents a set of criteria and indicators for assessing the level of network organization of the educational process.

The conclusion of the theoretical study became the conceptual and methodological basis of the experimental work. In the course of empirical research it was found that by 2014 "network" schools had been formed in rural educational systems to increase the availability of quality modern educational services. Conditions for networking have been created and a legal and regulatory framework has been established at the federal level to create new types of rural UUs; Network structures of management, in particular, management and pedagogical teams have been formalized. As a result of the creation of rural schools' networks the openness of the federal education system as a whole has been increased and its corporate and professional isolation in the definition of performance standards and performance assessment has been overcome.

At the same time, the most online educational programs were presented at the levels of "situational network communication" or "cooperation on a contractual basis" until 2018. They were of a short-term nature, implemented as an additional educational service (a cross-section of out-of-school programs). Coordination processes in the structure of the network educational process have changed. The mechanisms for designing individual educational programs have been established. In-school differentiation based on individual teaching strategies has been introduced in selected schools. Special online training programmes were used.

The testing of the model of network organization of the educational process took place on the basis of the municipal autonomous educational institution "Seafarers Secondary General Education School" of the Tomsk district of the Tomsk region in the period from September 2014 to May 2019. 518 pupils, 46 teachers of the school, as well as

network partners from the Siberian Federal District took part in the experiment. At the starting stage of the experiment it was found that the school had typical problems in implementing the main educational programmes of general education. They were not variable and were not oriented to the changed population of students. Their implementation was carried out by means of traditional, typical for the classroom system of training, technologies and techniques. The courses of the federal component of the curriculum were poorly correlated with extracurricular and extracurricular activities. Monitoring was limited to monitoring substantive results. Educational activities were mainly leisure activities and related to the social adaptation for children.

The forming stage of the implementation of the model developed by us reflected the essence of management activity on design and implementation of network educational programs. Conditions were created for the formation of the so-called "network school" (its development program, its resource support, including personnel was developed). The potential network participants in the design and implementation of network educational programs were identified. Their regulatory and legal foundations were formed. Network basic and additional educational programs were developed at three levels (the first is for the implementation of courses at the basic school level; the second one is to implement training subjects at the in-depth and expanded levels as part of networking; the third one is for the purpose of carrying out network educational services (organization of special courses of a developing nature, out-of-school and out-of-school classes)). Online education programs became the basis for the development of school curricula as a set of traditional lessons, online classes, consultations, in which individual educational programs for schoolchildren were designed by means of mechanisms of external (network) differentiation and internal, based on individual strategies of study of subjects. The set of individual educational programs for schoolchildren allowed to form classes/groups of replacement composition and accordingly a non-linear schedule of classes.

At this stage the implementation of the network has been regulated. The basis for the coordination activity of the network master was the materials of the electronic teacher (program of the automated workplace of the Deputy Director for Educational and Educational Work, "Electronic Journal," Electronic Diary, "etc.), the electronic educational and methodological center, which allowed to work with personal data of interaction subjects, electronic educational resources, documentation of teachers, etc.

In general it is possible to draw the conclusions on the impact of the implementation of the model of the network organization of the educational process at the modern rural school (the results of the implementation of the model of network organization of the educational process have increased to 0.84 units).

CONCLUSION

In general the results of the completed study show the achievement of the goal, obtaining theoretical and experimental data, which allow to draw the following conclusions:

- 1) Trends of formation and development of modern rural, peculiarities of network organization of educational process in rural educational organizations are defined and scientifically justified.
- 2) The theory of pedagogy is enriched by the introduction into scientific circulation of the concept of network organization of the educational process.
- 3) The model of network organization of the educational process of a modern rural school has been designed and tested, the distinctive characteristics of which are integrity, openness, variability, a set of interconnected structural components (conceptual-target, content, resource, technological and efficiency-evaluation).

The study does not cover the full range of issues related to the network organization of the educational process in the modern rural school. The prospects for the development of this study may be related to the development of a modern theory of the management of the educational process of a general educational organization including the rural school.

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