



Maria Osipova



Grigory Bayagantaev



Victoria Kopylova

Management of the system of additional professional education teachers: new models and trends

Abstract. At the present stage, additional professional education is an actively developing educational system that allows us to meet the needs of society for competent and competitive teachers. This article deals with the management of the system of distance education, in particular, the problem of distance education, as well as the design of the structure and content of the practical model of distance learning in the system of additional professional education in the realities of a remote region. The article analyzes the theoretical foundations of distance learning and the features of distance learning in the system of additional professional education of teachers and specialists. The article reveals the scientific justification and practical possibilities of organizing distance learning. The concepts of “distance education” and “distance learning” are separated, the differences between the distance form and the traditional full-time form are established.

Keywords: model, trend, management, distance education, distance learning, additional professional education, design, feature, region, online, offline, organization, process.

Introduction

The current socio-economic situation puts forward new requirements for the implementation of modernization of additional professional education, optimization of resources, changes based on the fuller use of potential and the introduction of distance education technologies

and new management systems. In the context of the modernization of the Russian education system and the increasingly complex economic situation in Russia and the world, the development of additional professional education is becoming more and more urgent, allowing for rapid response to changes in the external environment and solving problems of personal competence development, taking into account the needs of students and employers who form the labor market. The informatization of modern society, the development of information and communication technologies, changes in the education system have caused the need for the use of distance education technologies in additional professional education.

Today, distance education technologies in the educational process of additional professional education are a requirement of the time, the organization of which is carried out with the predominance of various distance forms, methods and means of teaching, as well as using information and educational arrays of the Internet. This possibility of distance learning allows you to flexibly respond to the educational process, for example, to train a large number of students, accessibility, mobility, reduction of material and time costs, individualization of training taking into account the pace of perception of information, performance of tasks, etc. Training in a distance format allows teachers and specialists to compare their professional capabilities, regardless of the region of residence, without interrupting their main work and forming their individual program. Thus, distance learning in educational centers of additional professional training provides students from remote and hard-to-reach regions with no difficulty to improve their skills and pass professional retraining. This is especially important for teachers and specialists of the Republic of Sakha (Yakutia), since the territory of this region is the largest and most sparsely populated and represents one of the largest subjects of the Russian Federation. Purposeful organization of adaptive distance education for citizens who are isolated from the center due to the inaccessibility of the transport scheme and the vastness of the territory, which concerns both nomadic people and people with special disabilities, should be necessary and indispensable. Weak Internet or lack of it, lack of qualified personnel, limited access to remote technologies-all this creates certain problems when organizing distance learning in real mode.

The pandemic of the new coronavirus infection, which affected the entire country, gave a powerful impetus to the development of remote

educational technologies used in the educational process. The emergency transfer of distance learning in the context of the pandemic showed significant differences from properly planned online training based on mass open online courses. If earlier we considered distance learning as an independent alternative learning system, now we define it as an integral part of the traditional education process, which allows us to optimize the educational process taking into account all modern requirements and requests of students. The creation and implementation of flexible modular programs of additional professional education, an individual approach, the creation and placement of convenient content, the availability of services and platforms for teachers and students, as well as the implementation of programs at the request of students and applications of educational institutions and municipal methodological services became important requirements for the DPO system.

The development of information technologies and distance learning in the system of additional professional education today requires the active formation of a network form for the implementation of educational programs. The implementation of distance learning opportunities for educational purposes requires the development of special approaches to the application of knowledge and methods. Various models and technologies of distance learning play a special role in its solution today.

Literary review

The system of additional professional education is an individual, socially significant, practice-oriented model for solving urgent problems in all spheres of the economy. The analysis of recent studies and publications that considered these aspects of this problem is reflected in the works of V. G. Domrachev, L. B. Osipova, M. V. Moiseeva, A. E. Petrov, M. Yu. Bukharkina, Yu. V. Aksenov, T. F. Gorbunkova, V. P. Tikhomirov, V. I. Soldatkin, S. L. Lobachev, O. G. Kovalchuk, O. M. Barbakov, O. M. Goreva, A. V. Khutorsky, A. A. Andreev, V. L. Uskov and others. The study of distance education as a part of the system of professional training of specialists made it necessary to study a large block of studies of teachers-theorists and practitioners devoted to the peculiarities of the organization of the educational process, among which we should mention A. Ya. Aizenberg, Yu. K. Babansky, V. P. Bepalko, V. I. Vdovuk, T. S. Nazarov, N. M. Platonov. Features of informatization of the learning process in the system of professional training are reflected in the works of A. A. Aronov, T. I. Baklanova, V. I. Zakutsky, L. S. Zo-

rilova, A. I. Kapterev, N. V. Krotova, N. A. Slyadneva, K. V. Tarakanova, V. I. Chernichenko, P. A. Chervatyuk, V. P. Chizhikov.

Materials and methods

The research on the design of the distance learning model was conducted on the basis of the Educational and Methodological Center of the Pedagogical Institute of the North-Eastern Federal University named after M. K. Ammosov. The Educational and Methodological Center is a structural division of the university, established in order to ensure the quality and development of the content of additional professional education. On the basis of the center, training is conducted on the programs of advanced training and professional retraining in various areas in the field of pedagogy, in the field of preschool, secondary general, secondary and higher professional additional education. The Center creates all conditions for the deepening and expansion of theoretical knowledge, the development of practical skills, thereby observing the principle of continuity of education. The main principle of the model of additional professional training should be the assessment of the level of individual development of the teacher. The implementation of these courses is now taking place with the use of e-learning and distance learning technologies. The popularity of distance learning is increasing. Many managers paid attention to the opportunities for developing their employees on-the-job, as well as reducing the organizational costs of training. Thus, with the growing popularity of distance learning, new forms and models should appear. The emphasis on the need to expand distance learning in the system of additional professional education, in particular, in the Training and Methodological Center, is due to the following factors:

- intensification of the educational process;
- the increased overall needs of the region for teaching staff and the need to provide teachers to remote localities;
- the systemic need for timely professional development and implementation of DPO programs for teachers working in remote localities;
- the need to ensure the constitutional rights to receive additional professional education for citizens with health restrictions, without leaving home;
- the need to develop adaptive pre-school programs for obtaining high-quality education at an individual pace.

At the university, the electronic information and educational environment provides for all types of classes, procedures for evaluating

learning outcomes, the implementation of which is provided with the use of e-learning, based on the Moodle learning management information system.

Any model of the process of additional professional education with the use of distance educational technologies should provide (Fig. 1):

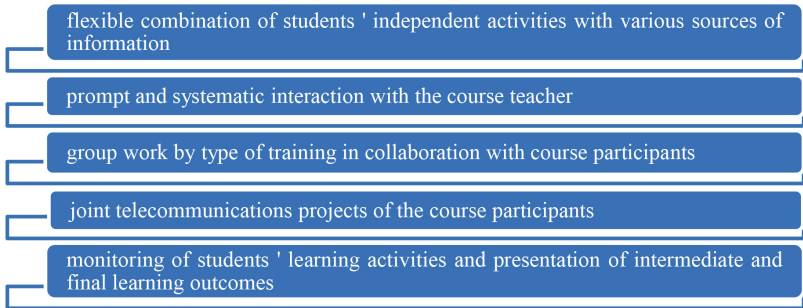


Fig. 1 Features of the DPO distance learning model

In difficult socio-economic conditions, distance education becomes especially relevant for remote regions, for people with low mobility, as well as for self-education and independent work of students. Effective implementation of distance learning is possible only with a purposeful program of creating high-quality multimedia products for educational purposes in fundamental, general professional and special disciplines. The educational system in such a society should be an advanced system. It is important for us to use models of full distance learning, which are relevant for students from remote, especially the Arctic regions of the republic, and flexible distance learning with partial use of distance educational technologies.

The model in which there is a partial use of distance learning technologies allows you to implement an educational program in which full-time classes alternate with distance learning. The use of such models by the organization is determined in each specific case by the conditions available to the organizations themselves, namely, the availability of a developed regulatory framework, material and technical base, the appropriate level of the organization's personnel, the organization of training and methodological support for teachers, the availability of developed training documentation using distance learning opportunities.

Thus, in order to build an optimal model of distance learning in the system of additional professional education, an information and communication subject environment is necessary, functioning on the basis of an electronic information and educational environment (EIOS), which is understood as interaction with the user as a subject of information communication and a person, provided that the components of the environment are filled with subject content and activities with the information resource of the subject area.

The main goal of designing a distance learning model is to form optimal connections and ensure complex interaction of subjects and objects of the educational process.

When designing the model of distance learning and interaction of its subjects, the following key functional subsystems are identified (Fig. 2):

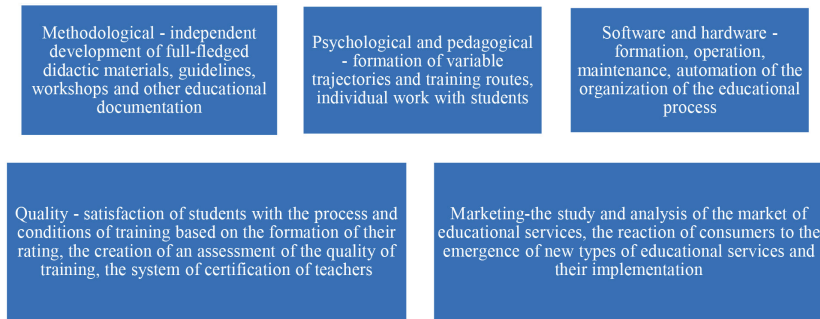


Fig. 2 Functional subsystems of the DPO distance learning model

The model should be a technological, convenient and modern form that takes into account the individual needs of both the teacher and the student, their specialization and different levels of qualification.

Designing a model of distance learning based on an Educational and methodological center is a promising direction for the development of a system of advanced training and professional retraining. This is primarily due to the territorial, climatic, demographic and national characteristics of the region. The peculiarity of the ways of developing distance learning is due to the fact that the region currently has [22]:

- the predominance of rural settlements (89% of the total), located at a sufficiently large distance from each other (the average distance between the centers of the ulus is 173 km;
- low population density, component 0.1 people per 1 sq. m.;

the lack of sufficient communication in the areas of (weak Internet, interruption of transport communication between settlements in the period of freeze-up and thaw, often lasting up to 5 months);

- the territorial remoteness of the North-Eastern Federal University from the leading university centers of the country poses the problem of scientific, methodological, and organizational support for distance forms of obtaining additional professional education, timely professional development to maintain the quality of education in the region and active professional interaction of teachers at different levels of the education system.

It is necessary to note a number of advantages of distance learning in our region:

- audience coverage: if during a live lecture, students are limited to the audience, then in online platforms and webinars the number of participants is not limited. At the same time, a traditional face-to-face session gathers about 30 participants, an open lecture attracts about 100 listeners, and a much larger number of listeners can participate in online platforms;

- there is no need for active movements of lecturers and students: representatives of different regions and students from other countries can gather at the same distance course. The organizers have the opportunity to get access to the best regional and foreign practices and prepare their speech without the cost of a lecturer's arrival, which is especially important in the conditions of the territorial remoteness of the Republic of Sakha (Yakutia) from the main centers of the country;

- capacity and flexibility: materials are easy to adjust to the needs of the audience. They consist in the fact that all communication during distance learning takes place via the Internet, and the presenter can almost instantly respond to the requests of listeners, presenting additional methodological or presentation materials. The openness of communication through a shared chat allows all participants of distance learning to be equally heard;

- visibility of the materials: given that all listeners are in an online environment, they are more immersed in what is happening. The level of concentration on the material in such training is much higher, since you do not need to adapt to the surrounding environment, for example, a lecture hall, and be distracted by what is happening around you. When conducting distance learning, you can simultaneously distribute test tasks, conduct an interactive survey and immediately analyze the

results. And within the framework of a comprehensive webinar or lecture, students have constant access to electronic materials, electronic libraries, which, of course, is a strong supporting factor that helps in their studies. Also, distance learning provides an opportunity to operate with any methodological and lecture materials, and thanks to a convenient management interface, when all the materials are collected in one place, it is easier to interact with them: view, download, upload, share files. A significant opportunity to save on printed materials in the preparation of presentation materials. And one of the most significant advantages is that distance learning is a cost-effective tool for employee development, which allows you to reduce the organization's costs for preparing and conducting face-to-face classes, as well as a flexible pricing policy for providing additional professional education services.

The standard model describes the basis for the development and provision of an instrumental model of distance learning in the system of additional professional education, as well as the main pedagogical, logistical, personnel, financial and organizational components and their corresponding tools. The model describes the main content-thematic areas of distance learning in the system of additional professional education that are relevant in the current situation and involve distance learning: the use of standard elements and their adaptation to specific conditions for the implementation of distance learning; the creation of an information space; the involvement of qualified specialists and teachers; financial support and organizational and managerial elements.

In the course of implementing the distance learning model, organizations of additional professional education should keep in mind the unity of content and approach, the importance of building training based on the implementation of the tasks set. The model unites specialists of different fields – methodologists, IT workers, tutors, lecturers, teachers-developers of additional professional education programs.

In the design and implementation of the model of distance learning with the use of distance educational technologies and e-learning in the Educational-methodical center will:

- creation of conditions for the functioning of the electronic information and educational environment that includes electronic information resources, electronic educational resources, a collection of information and telecommunication technologies, appropriate technological tools and to ensure the development of students educational programs in full regardless of the location of students;

- provide educational and methodological assistance to students, including in the form of individual consultations provided remotely using information and telecommunications technologies;

- independently determine the volume of the classroom load and the ratio of the volume of classes conducted through direct interaction of the teacher with the student, and training sessions using e-learning, distance learning technologies;

- to provide the appropriate applied technologies for the level of training of pedagogical, scientific, educational and auxiliary, managerial personnel in additional professional programs.

The model of distance learning in the system of additional professional education is based on the following principles (Fig.3):

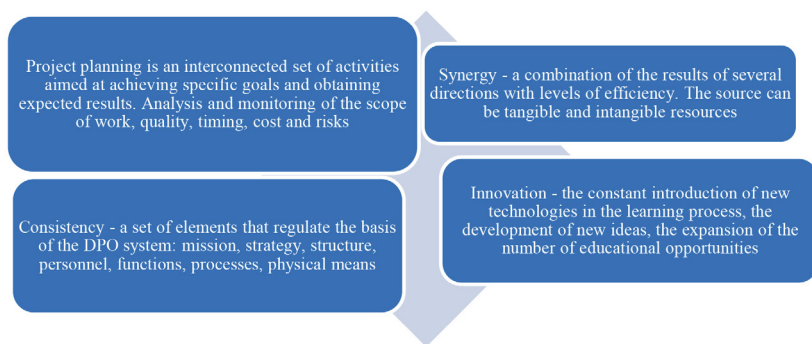


Fig. 3 Principles of the distance learning model

The model represents the interaction of participants in the distance learning process on different computer platforms, in our work mainly in Moodle. The variants of the organization of the educational process, the tools used and possible communication solutions are suggested.

For our project, the main technological types of work are related to the activities of teachers of the Pedagogical Institute - the creation of programs for additional professional education of teachers for advanced training or professional retraining, working with an electronic platform for placing programs, as well as the purchase of computer equipment, the maintenance of staff units, hourly payment to the teaching staff, the involvement of lecturers, listeners, etc. The overload of the staff of the Training and Methodological Center responsible for the documentation support of the department implies an increase in the staff. It is necessary to provide a human resource for information support of distance

learning of the DPO system, a specialist-a network tutor who owns the means of creating websites and programming, for servicing computer and telecommunications equipment that regulates the educational process.

The project should be developed due to a number of real reasons. It has already been noted above that it is necessary to organize e-learning with distance learning technologies for additional professional education of teachers. The project is aimed at a clear target audience – teachers who want to add to their knowledge base. The project is economical for students, classes are held remotely. The project brings tangible, measurable achievements for the Pedagogical Institute-improves the reputation of the organization in the university. The results can be measured and evaluated in the long term - the implementation of the state social order. The project does not require an excessively large amount of additional resources. The project is well connected with the education strategy in the region and creates conditions for other projects at the institute.

It is worth noting the positive impact of distance learning in cases where it complements and dilutes traditional learning. The force majeure educational situation, which arose against the background of the coronavirus pandemic and the development of its second wave, put the education system in front of the need to organize the educational process in the conditions of distance learning. In the context of the protracted COVID-19 pandemic, the implementation of additional professional education programs for teachers based on e-learning using distance learning technologies is the only means of organizing continuous training in the Training and Methodological Center. The implementation of the development of additional educational programs takes place in the most convenient form, regardless of the location, mobility, employment, health status, financial situation of students, etc. The previous theoretical substantiations of the formation of the digital educational environment, the presence of an integral electronic information educational environment of the university contributed to a worthy solution of the problems.

Currently, the center's prosperity is based on its development, which implies an inevitable increase in document flow in quantitative and qualitative terms, requires new approaches in the field of information support for the organization's activities and additional resources.

Conclusions

In the context of the analysis of the existing contradictions inherent in additional professional education, the features of distance learning in the system of additional professional education are determined, the factors and trends in the development of distance learning of additional professional education are determined.

Analyzing the theoretical foundations and features of distance learning in the system of additional professional education, we come to the conclusion that it is advisable to design a model of distance learning in the system of additional professional education using the regulatory framework of distance learning, distance educational technologies, material and technical base, personnel potential of the organization and training and methodological support of teachers using e-learning, where educational organizations of additional professional education will have the opportunity, based on standard models and mechanisms, to provide flexible distance learning with a differentiated approach in accordance with the available opportunities and specific needs of the population.

Based on this, when designing distance learning in the system of additional professional education, we found that distance learning, due to a number of objective conditions, becomes the most flexible, adaptive type of training, its distinctive features allow us to better solve the problems of additional professional education.

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