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# Using Distance Learning in the Process of Professional Training in the Context of the COVID-19 Pandemic

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**Abstract**: Due to the threat of the spread of coronavirus, in order to organize and conduct classes, as well as to ensure the continuity of the educational process during the quarantine period, educational institutions are recommended to conduct classes in the mode of remote support of the educational process. Distance learning is a form of education using computer and telecommunication technologies that provide interactive interaction between teachers and students at different stages of training, as well as independent work with information network materials. The article reveals the importance of using distance learning technologies at the present stage of development of information and communication technologies in the process of training future teachers. The place and role of distance learning technologies in the higher education system is determined. It is noted that with the development of the technical capabilities of the teaching methodology and technology, the means of the teacher's educational activity change. It became possible to use new organizational forms of the educational process, using information and communication technologies. The idea of what a postmodern person should be like, what competencies should have, is changing.

**Keywords:** *distance learning, information and communication technologies, higher education institutions, teaching methodology, COVID-19 pandemic, students.*

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## 1. Introduction

The global process of transition to the information society, as well as the economic, political and social changes that accompany it, accelerate the process of reforming the higher education system, in which teacher education occupies a special place. This feature lies in the fact that pedagogical education is directly related to the economic, social and political state of society, ensures the level of education of the population, determines the effectiveness of professional activities of specialists both vertically and horizontally of their functional responsibilities, accompanies the formation, development and flourishing (or neglect) of the nation. Pedagogical education ensures the assimilation of a certain social experience. That is why, in essence, addressing human problems, the modernization of pedagogical education in all its links and the fulfillment of the task of the fastest orientation of teachers to meet the needs of a rapidly changing society and its citizens is of particular importance (Sharan, 2017).

The postmodern information society is developing at a rapid pace, and therefore, there is a need to form a competent person who can actively participate in the development of education, science and culture. Today, the task of creating favorable conditions for identifying and developing the abilities of students, the development of their educational and cognitive activity is put forward to the fore in general educational institutions. As a result, in the process of professional training of future teachers, it is necessary not only to form subject knowledge and skills, but also to promote the development of those personal qualities of graduates that would allow them in the future to solve new pedagogical problems and reproduce new approaches to the process of general education (Ivanov, 2012). Future teachers should prepare and submit educational material, taking into account contemporary approaches to teaching, apply information and communication technologies in the educational process, namely, it is advisable to use educational tools that are posted on the Internet.

During the rapid development of technology, the key competencies of a person are the ability to learn, operate and manage information, therefore it is necessary to focus on activity and developmental technologies in the educational process (Gillett-Swan, 2017). The emergence and development of distance learning technologies occurs along with traditional ones; the use of the former allows teaching and learning on an individual basis, regardless of place and time. All over the world, there is an increase in the number of students studying in distance technologies, an increase in the number of higher educational institutions that use distance technologies in

the educational process. Teachers must constantly improve themselves, learn throughout their lives, raise the level of professional competence, and be creative in their professional activities. The manifold increase in information flows forces us to formulate fundamentally new priorities in the training of future teachers. Universities are faced with the task of forming a normative and motivational-value structure of the personality of a future specialist, the main component of which will be the need for constant self-improvement (Pettersson & Olofsson, 2015).

Among the leading features of the information society, researchers single out: the formation of a single information and communication space, an increase in the level of education and a change in its role in society, the creation of an effective system for ensuring the rights of citizens to freely receive, disseminate and use information. At the same time, the problem arises of the student's entry into the information field of a certain type of labor. This is especially important for pedagogical activity, "translates" into a social information flow into a set of special knowledge, skills and abilities that allow future teachers to realize their own belonging to pedagogical activity. Consequently, one of the important problems in the training of a teacher is the translation of the information flow into professionally significant knowledge. The process of such a translation is based not only on the readiness of the participants in the pedagogical process to perceive, process and reproduce information, but also on the availability of information technology support, which creates opportunities for the implementation of a set of pedagogical technologies (Borzenko, 2017).

Accordingly, this contributes to the formation of a new type of information field of activity - the pedagogical information field, which, first of all, is characterized by a specific selection of information, the assimilation of the information flow that is necessary for the implementation of the pedagogical goal. Hence the need arises to determine the essence and characteristics of information technology support for teacher training.

Today, the ministries of education of all countries of the world, without exception, are forced to respond quickly to changes in an unstable external environment and make adaptive decisions on organizing the educational process and providing distance learning. Distance learning is a form of education using computer and telecommunication technologies, educational platforms, online courses that provide interactive interaction between teachers and students at different stages of training and independent work with information network materials (Brammer & Clark, 2020; Hall, 2020).

However, in practice, higher education institutions have faced a number of problems in organizing high-quality distance learning. Three stakeholders in the field of higher education faced the problems of rapid adaptation to the conditions of the pandemic (Alasmari, 2021; Alvarez, 2020):

1) state institutions;
2) students;
3) scientific and pedagogical workers.

## 2. Reasons and prerequisites for the emergence of distance learning in the process of professional training of teachers

Socio-economic, political, socio-cultural changes taking place in postmodern society, the transition to an information society, as well as the processes of globalization explain the general crisis of the education system, the essence of which is primarily associated with the inadequacy of the content of education, as well as the levels of development of educational systems to the requirements of the information society. Note that the information society is characterized by a high level of information technology, developed infrastructures that ensure the development of information resources and the possibility of access to information, cardinal changes in social structures, and the expansion of the scope of information activities. In such conditions, informatization means changing the entire educational system with its orientation towards a new information culture, increasing the availability of quality education through the development of distance learning and means of information support of the educational process with contemporary information and telecommunication technologies. At the same time, the emergence of distance learning can also be explained by the fact that the conservatism of traditional universities has become an inhibiting factor in the system of training specialists in the context of intensive changes in society (Ferraro et al., 2020).

The development of the information society, the transition from the concept of "education for life" to the concept of "education throughout life" leads to a change in the paradigm of education. Each paradigm is formed depending on the element that is dominant in the system of basic parameters of education as a socio-cultural phenomenon. Such elements can be ideas about the system of knowledge, abilities, and skills necessary for a person in a particular historical epoch; awareness of the type of culture and methods of personality development in the process of its assimilation; principles of coding and transmission of information; understanding the values of education in society; idea of the place and role of the teacher as a carrier of

knowledge and culture in the educational space; the image and place of a person in the system of upbringing, training and education (Burkina, 2014).

The classical, or functionalist, educational paradigm was focused on ensuring the effective functioning of a person in a team, in production, in society, therefore, the invariability of the form of education and the quantitative composition of classes in school or groups in higher educational institutions leads to the fact that the desire to improve the content or teaching methods specific academic disciplines cannot significantly affect the level of their assimilation by the majority of students (Zhou et al., 2020).

Note that the competence paradigm in education was formed under the influence of socio-economic and informational factors, the main of which is the transition to a free labor market, to a competitive model of its formation. This leads to a change in the requirements for graduates of higher educational institutions: it is necessary not only to have certain knowledge and be able to apply it in practice, but also to constantly strive to update knowledge and be able to do it. Therefore, a personality-oriented approach in education becomes a requirement of economic realities, and its consequence is the possibility of forming an individual educational trajectory, which, accordingly, leads to significant qualitative and quantitative changes in the functioning of the teacher's professional training system, requiring the search for new forms and methods of teaching (El Refae et al., 2021).

Distance learning is one of the effective forms of teaching future teachers, which is due to such factors as: the process of computerization of educational institutions, the growth of the volume of independent work of students, the advantages of distance learning (flexibility in choosing the place and time of training, the possibility of various presentation of information by means of multimedia , the growth of the student's active role in learning, etc.). It is also necessary to take into account the peculiarities of the training system of the future teacher. Researchers consider it in several dimensions: as a process of professional development of future specialists: as the goal and result of the activity of a higher educational institution, as well as in the context of attracting a student to educational activities. Such a training system is distinguished by a high level of organization, has a complex structure, is an ordered whole, united by a variety of connections and relationships that are social in nature. It is characterized by dynamism, flexibility, controllability, orderliness and internal harmony of components.

## 3. Basic models of distance education that can be used during the process of professional training of teachers in higher education institutions in the context of the COVID-19 pandemic

Let's analyze the most famous classifications of distance learning models. The scientist considers the means of delivery and presentation of educational materials as the classification criterion.

The first model of distance learning focused on case technologies: a student receives a set of educational materials from a tutor, masters it under the guidance (telephone or e-mail) of the tutor and performs control tasks. Examinations are conducted in person, orally or in writing.

A distinctive feature of the second model is correspondence learning: the student receives educational materials, teacher's advice. Face-to-face contacts are not provided, and the final certification can be carried out both face-to-face and without the presence of the student. (Filipenko, 2016).

The third model is called radio-television, since the learning process is based on the widespread use of television and radio.

The fourth model assumes online learning, since it is based on the use of the Internet: on the website of the server of the educational institution, the applicant prepares and sends all the necessary documents in electronic form and after paying for the course receives a password and access to educational information, coordinates of a tutor for individual consultations and preparation of intermediate tests.

The fifth model is called mobile technology, since it involves the use of a mobile personal laptop by a student in the process of distance learning.

More generalized, in contrast to the previous classifications of distance learning models, is Bansak & Starr (2021)'s classification, which contains two models: a transformation model, according to which distance learning involves the exchange of information between a teacher and a student, the student's personal experience is not taken into account in such a model; a model of productive distance learning, the main characteristic of which is the student's personal productive activity, organized with the help of contemporary telecommunications; training occurs synchronously, in real time, as well as asynchronously.

Our studies have given grounds to assert that in the postmodern world practice of distance learning, six models of distance learning are used. These models are based on the use of both traditional and new information technologies (Arlinwibowo et al., 2020):

Model 1. Learning by the type of external studies. Training is focused on the requirements of higher and secondary schools and is

intended for those who cannot attend classes due to various circumstances. This is actually a part-time form of training as an external student. The model provides for consultation with a specialist, testing.

Model 2. University education (based on one university). This model assumes a learning system for distance students, learning is based on information and communication technologies. Learning environments of individual universities are being created.

Model 3. Education is based on the collaboration of several educational institutions. Such cooperation allows us to create a better and less costly educational environment.

Model 4. Education in specialized educational institutions, as specially created for the purpose of distance learning and focused on the use of multimedia technologies. Their competence also includes assessment and certification of students. The largest institution of this type is the Open University in the United Kingdom and the National Technical University in the United States (Colorado).

Model 5. Autonomous training systems. Training takes place by means of television, radio broadcasts, and the like. This model is common in US universities. Model 6. Informal, integrated distance learning based on multimedia programs. These are self-education programs. They are focused on teaching an adult audience, that is, those people who, for various reasons, could not get a school education. Such projects can be part of a formal educational program, or specifically targeted at a specific educational goal, or aimed at preventive health programs. The basis of this classification was the organization of distance learning according to the synchrony of interaction of subjects of the educational process (Arora & Srinivansen, 2020).

## 4. Benefits and features of use distance education that can be used during the process of professional training of teachers in higher education institutions in the context of the COVID-19 pandemic

It is important in distance learning that the use of new communication technologies provides an opportunity for interactive interaction of participants in the learning process, and the availability of contemporary interactive teaching and control tools (computer programs, interactive video discs, information bases and access to them via the Internet, etc.) organize training in accordance with contemporary principles of didactics. Note that it is appropriate to classify the principles of distance learning into three groups (Chaichumpa et al., 2021):

- general principles (common for traditional and distance learning). These include the principles of scientific character, clarity, conscientiousness

and activity, systematicity, consistency, connection between theory and practice, accessibility, problematic knowledge;

- the principles of distance learning, in traditional pedagogy, were not singled out as principles, but with distance learning they received the status of distance principles for the growth of their importance. This group of principles is formed by the activity on the formation of a supportive friendly environment, the optimal combination of "soft" and "hard" forms of management of the late activity of the student, person-mediated interaction, an individual approach to the created intellectual products, those who study, regulation of learning;

- specific principles of distance learning due to the intensive use of information technologies. This group consists of the principles of openness of the communication space, priority of standardization, interactivity, starting knowledge, identification, pedagogical expediency of using new information technologies, openness and flexibility of teaching.

Although distance learning and traditional education are based on the same goals and curricula, distance learning has characteristic features that distinguish it favorably from other forms of education, namely (Sutiah et al., 2020):

- flexibility - students study at a convenient time and place;

modularity, which provides the ability to select mods to form a curriculum that meets individual or group needs;

- parallelism - training is carried out without interrupting production or other type of activity;

- reaching a large audience;

- simultaneous access to many sources of educational information of a large number of students and their communication using telecommunications between themselves and with teachers;

- cost-effectiveness - effective use of educational space and technical means, concentrated unified presentation of information, use and development of computer modeling;

- manufacturability - the use in the educational process of new achievements of information technologies that contribute to the entry of a person into the world information space;

- social equality - equal opportunities to study regardless of place of residence, health and social status;

- internationality - the opportunity to get education in educational institutions of foreign countries and provide educational services to foreign citizens and compatriots living abroad (Langegard et al., 2021).

- a new role of the teacher - the teacher becomes a mentor-consultant who must coordinate the cognitive process, constantly improve the courses that he teaches, increase creativity and qualifications in accordance with innovations and innovations;
- positive influence on the listener - increasing the creative and intellectual potential;
- quality - the best teaching staff is involved in the preparation of didactic tools and the most contemporary teaching and methodological materials are used.

## 5. Conclusions

So, in the contemporary system of organizing education in higher educational institutions, the use of distance learning technologies is an integral part of ensuring quality education. The use of distance technologies reveals the possibilities of a positive impact on improving the quality of education, ensures the fulfillment of the needs of future specialists in educational services, increases professional mobility and activity. Distance technologies contribute to the formation of a single educational space within the framework of the individualization of education in the case of mass higher education. The development of information technologies in the postmodern world has caused a revision of traditional approaches to the definition of promising forms of organizing the educational process. The continuous increase in the amount of information data and information prompts the need to improve the training of teachers, the search for innovative technologies for advanced training, as well as constant, continuous improvement of the professional competence of specialists.

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