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DISTANCE EDUCATION AS A MEANS OF IMPROVING THE ORGANIZATION OF THE EDUCATIONAL PROCESS

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Abstract. The features of distance learning as one of the forms of modern education are analyzed. The research methodology consists in the use such methods as analysis, systematization and generalization of theoretical sources, comparison of traditional and distance learning, generalization of features of distance learning. Many scientists were interested in studying the features of distance learning. It was determined that in the conditions of the global Covid-19 pandemic and martial law in Ukraine, the need to implement distance learning and develop its methodical system became urgent. It is emphasized that distance learning is one of the forms of the educational process, which is implemented with the help of the use of information technologies at the physical distance of the teacher and students of education. Distance learning criteria are considered, including the popularity of information technologies today, scalability, convenience, and cost-effectiveness.

Key words: distance learning, principles of distance learning, information and communication technologies, Internet technologies, implementation of distance education.

Introduction. The rapid development of technology and science, the Internet of possibilities allows studying various scientific fields, introducing new forms of education that correspond to modern times. The use of digital technologies in education has been updated by the Covid-19 pandemic, ensuring the safety of students in wartime conditions. In the context of such difficult conditions, maintaining the continuity of the educational process is possible under the condition of distance learning. At the same time, the development of technology and science became an impetus for the study of information technologies and the introduction of distance learning. Distance education makes it possible to present educational information in the synthesis of graphics, video, sound, various interactive systems, and multimedia equipment. The basis of distance learning is global and domestic methodical experience, the use of modern technologies. «Modern trends – speed and mobility, transition to a digital economy, globalization and development of education without borders, digitalization of production and society, use of ICT to meet human needs in constant updating of knowledge and skills, acquisition of new competencies» (Vorotnikova, 2022, p. 27).

The pandemic of the corona virus disease opened mass access to information technologies, and presented how it is possible to combine the methods and techniques of teaching acquired over the years with new, modern information technologies. It was not easy, but nevertheless, everyone was interested in solving the question of how to continue existence online. The development of the Internet, devices (smartphones, tablets, laptops) made it possible to study from anywhere in the world.

The emergence of such platforms as Coursera, Prometheus Prometheus offers courses from leading universities. It is worth noting that distance learning as an independent component of education was formed at the end of the last century. The implementation of distance education in Ukraine is determined by such normative documents as the Regulation on distance education, approved by the order of the Ministry of Education and Culture of April 25, 2013 number 466 (Ministry of Education and Science of Ukraine (2013), the Concept of the Development of Distance Education in Ukraine (The concept of distance education development in Ukraine, 2000) the Law of Ukraine «On Education» (Verkhovna Rada of Ukraine, 2017). Significant resources of information and communication technologies of distance learning actualize the training of students in accordance with their tasks. The spread of information technologies and the need to continue the educational process in remote areas determined the need for distance education in domestic practice. At the same time, there are obstacles to the wide implementation of the distance learning system. In particular, there are no methods of its organization. Virtual classrooms, interactive whiteboards, video conferencing and online simulations increase the effectiveness of learning. Students learn to independently plan time, complete tasks and analyze results. Distance learning develops digital literacy, self-organization skills, which are critically important in the XXI century. Distance learning allows you to quickly acquire new knowledge and skills. J. Tondor notes that there is a certain gap between technical and pedagogical skills among teachers, teachers feel the need for training in methods of using digital technologies (Bykov, 2011).

Materials and methods. The purpose of the article is to analyze the features of distance learning as a means of organizing the educational process. The task of the research: to analyze the approaches to the definition of the concept of "distance learning"; outline the features of distance learning. To achieve the goal of the research, such methods as analysis, systematization and generalization of theoretical sources, comparison of traditional and distance learning, generalization of features of distance learning were used.

Many scientists were interested in studying the features of distance learning. Peculiarities of the distance learning implementation process have been studied by scientists such as V. Bykov, V. Kukharenko, N. Syrotenko, O. Rybalko, Yu. Bogachkov, O. Andreev, V. Kuharenko and others. The issue of training future teachers in the conditions of distance learning was considered by A. Kuzminskyi, O. Kuchai, O. Bidoyu, A. Chichuk, T. Kuchai, R. Gurevich, M. Kademiya, M. Kozyar, O. Bondarchuk, N. Mozgalova, A. Martyniuk, L. Gavrilova and others. In the works of the named authors, the peculiarities of the implementation of information technologies in the training of students of various specialties are considered. Foreign researchers Ch. Wedemeyer, B. Holmber, O. Peterson consider distance learning in the context of the philosophy of constructivism and define communication as the basis of distance education. At the same time, issues of distance learning technologies remain insufficiently studied.

Results and discussion. The state of modern education is controversial and complex. Expanding the opportunities of the educational sector requires radical changes and the search for new ways of its renewal. Thanks to the «release» of training programs on the Internet, the term eLearning – «electronic training» appeared. E-learning refers to its form, in which those who are taught and the teacher are distant from each other in space, and when working on educational material, I use Internet services. Another name for such an education scheme is distance learning. «Digitalization of society promotes active implementation of information and communication technologies in the educational process, teachers' interest in using them during lessons a variety of digital tools and online resources,

which in its own the first step is the development of modern methods and pedagogical technologies, which are based on the systematic application of digital technologies, and the corresponding training of teachers for their implementation» (Vorotnikova, 2022, p. 39).

In modern science, there is still no unified definition of distance learning. There are many approaches to the interpretation of this concept. The term «distance learning» was fixed in 1982 – the name of the International Council for Correspondence Education was changed to the International Council for Distance Learning. By distance learning, P. Luzan understands «a synthetic, integral, humanistic form of learning, which is based on the use of a variety of traditional and new information technologies and their technical means». At the same time, «the learning process is not limited in space and time and does not require the constant, mandatory presence of students in a specific educational institution» (Luzan, 2003, p. 85). Distance education is defined by O. Anishchenko as «education implemented with the help of distance learning» (Anishchenko, 2014, p. 261). In Clause 1.2 of the «Regulations on distance learning», distance learning is defined as «an individualized process of acquiring knowledge, abilities, skills and ways of cognitive activity of a person, which takes place through the mediated interaction of remote participants of the educational process in a specialized environment, the functioning of which is carried out on the basis of modern psychological and pedagogical and information and communication technologies» (Ministry of Education and Science of Ukraine, 2013).

Scientists note that the requirements for a teacher in distance learning differ from traditional ones. Practice shows that teachers working remotely must have universal training: master information technologies, be able to develop strategies of subject interaction between participants in the educational process, and also increase creative activity and their own qualifications. For example, lectures are a small part of the educational process. The main role belongs to the independent work of the students of education, their performance of practical tasks based on the acquired theoretical knowledge.

Distance learning is characterized by cognitive motivation. Its basic elements, first of all, are network computer technologies that allow applications located in geographically separated places to interact and provide access to them by remote users. For full distance learning, file sharing, e-mail sending, audio and video conferences in online mode are possible. The use of information technologies contributes to the saturation of educational material, the motivation of teachers and students of education to master modern technologies. «Distance learning involves the use of information and communication technologies, the use of various media sources, electronic resources» (Mozgalova, & Martinyuk, & Bondarchuk, 2022, p. 500).

V. Kukharenko notes that the necessary conditions for distance learning are:

- access to a computer;
- access to the Internet. If there is no such possibility, a case form is possible: when the student is given a so-called «case» containing all the necessary educational materials and manuals;
- the desire to learn and the ability to work independently. This is very important, because the effectiveness of the entire educational process depends on these two features (Kukharenko, 2001, p. 46).

Distance learning, as one of the forms of the modern educational process, is carried out with the help of information technologies at the physical distance of the teacher and students of education. At the same time, the effectiveness of this form is possible thanks to the complex work of all participants in the educational process, assimilation of the full volume of educational material, its consolidation, independent work. The difference between traditional and distance learning is the technological basis. However, if necessary, distance learning involves students visiting an educational institution, as well as a combination of traditional and remote forms of learning, integration of known learning methods at a new level.

One of the main advantages of distance learning is the independent work of students. At the same time, its effectiveness is possible under the condition of maintaining their dialogue with the teacher.

Education seekers get the opportunity to use information resources. Among them are audio and video recordings, electronic manuals and textbooks, teaching and methodical materials, electronic libraries. The world experience of distance education shows that with this organization of the educational process, the dialogue between the teacher and the learner, and the performance of individual tasks, the educational process is more effective. Distance education provides educational opportunities to everyone. It allows you to meet educational needs and is socially useful in the social context, it increases the intellectual and cultural level of the students of education. Distance education is of particular importance for the correspondence form of training of education seekers. For example, students can independently choose a course or several courses, get access to electronic educational resources and study the material at a convenient time. In many educational institutions, media libraries are created that store educational texts, presentations, audio and video recordings. The media library allows the teacher to conduct classes of different forms – group or individual, organize independent work of students. Thanks to such means of distance learning, a new learning environment is created in which the student feels like an integral part of the team. And this, in turn, sharply increases the motivation to study.

Educational institutions that use distance learning in their work can be conditionally divided into two groups. The first group is represented by educational institutions that combine distance and traditional forms of education. In particular, some courses of the educational institution are transferred to a distance form, while the credit and examination sessions are held in face-to-face format and vice versa. The choice of a study course, classes with students, the transfer of control tasks and their verification, as well as the passing of intermediate and final exams are carried out via the Internet. There are more and more such educational institutions every year. The second group includes educational institutions in which the Internet is a means of communication. In particular, on the website of the university, you can find the schedule of classes, educational programs, electronic library, etc.

In connection with the spread of distance learning, some teachers and scientists raise questions about the completeness of the knowledge of the student of education, the formation of his professionalism under the condition of taking electronic courses. For example, is it possible to admit to work a doctor who has mastered the profession exclusively with the help of electronic training courses? Undoubtedly, we will not find an answer to this question. Therefore, some educational institutions consider it possible to issue diplomas on the acquired qualification in some specialties only under the condition of full-time study.

After analyzing the scientific sources, we will highlight the following distance learning criteria:

The popularity of information technologies today. This becomes the basis for the expansion of forms of distance learning and the possibility of introducing new educational strategies.

Scalability. Information technologies with which students of education work are developing and becoming more and more complicated. The educational process is saturated with various alternative sources of information, programs, own web resources, which contributes to the mastery of educational material on a large scale.

Convenience. Distance learning allows you to master theoretical and practical topics at a convenient time, without limiting the student to certain time limits.

Economy. Access to electronic materials, use of other electronic means are cheaper than traditional forms of education.

An important feature of distance learning is interactivity. Information is provided in digital format – encyclopedias, handbooks, educational programs, interactive presentations, etc. It is worth noting that such materials contribute to the activation of students as participants in the educational process, and do not simply testify to their passive participation. We note that the types of presentations can be diverse. Traditional is a scripted presentation that uses slides, color charts, and graphs. During the demonstration, you can make certain changes to the presentation process itself, use titles

that contain additional information. The interactive presentation helps to find the necessary information by the deepening method. Automatic presentation is a fully completed informational software product that can be recorded on various types of media.

The scope of presentations can be very wide – consolidation of learned material, explanation of a new topic. Examples of educational presentations can be:

- presentation-seminar;
- presentation for specialists;
- educational presentation.

The presentation-seminar is an introduction to new material or its comparative analysis. Also, this type of presentation can be considered as one of the forms of education for distance learning students. The presentation for specialists is the development of educational or thematic media. An educational presentation can be:

- a) a presentation with a script – used in laboratory, practical, seminar classes and provides an opportunity to vary the educational material depending on the composition of the audience;
- b) interactive – educational courses for independent study.

We will highlight the following forms of work during remote classes:

1. Synchronous forms – involve the simultaneous participation of teachers and students in the educational process via the Internet (online lectures and seminars through the use of platforms such as Zoom, Google Meet).
2. Asynchronous forms – students tasks independently or study the material at a time convenient for them through video lessons, recorded lectures.
3. Individual work – discussion of issues with the teacher in chat or video communication.
4. Group work – work in chat rooms, modeling of cases.
5. Checking the level of acquired knowledge – testing.

It is worth emphasizing the use of Moodle, Google Classroom, Canvas, Jamboard, Google Drive, OneDrive. The Google Class service helps in systematization, planning and comfortable conducting of both online and asynchronous knowledge tests. There was an opportunity to record new material and help return to it without losing data. Giant companies such as Google have focused their attention on the development of educational software in recent years. It is worth noting Google Workspace for Education, which includes tools based on cloud technologies, which are designed for secondary schools, colleges and higher education institutions that use distance learning.

Google for Education tools work together to transform teaching and learning so that every learner and teacher can realize their personal potential. First of all, it is worth noting Google Meet. This service was created for video calling and video conferencing. One of the key features was to show the desktop to other users. The next advantage of this service is that it is important to note that up to 250 users can be present in a video conference at the same time, which in turn makes it possible to gather not just a class, but also an entire team of one or another institution to hold mass events.

One of the forms of distance learning is educational courses. In our opinion, to create an educational course, it is advisable to choose a working group of five people: two course developers, a programmer and two designers. When creating a course, it is worth taking into account the level of training of the students, their computer skills. For this, it is advisable to conduct testing to determine the available knowledge, the optimal form and content of the presentation of the educational material. It is worth emphasizing that educational courses should be created on the basis of students' previously acquired knowledge and not just repeat it, but ensure the availability of new information. The preparatory part of the educational course is writing its text, choosing reference material, illustrations. The next stage is the creation of a training program. It is worth noting the importance of visual material that will help students master the content of the educational course. It includes illustrative fragments, audio and video fragments. When working with the text of the training course, it is necessary to perform its

structuring with the determination of the exact list of all the necessary topics that should be covered in this course. The creation of this or that section should correspond to the purpose of the course, its tasks, the acquisition of skills and knowledge of students. The text of the educational course should be edited. The final edited text will turn into hypertext. In parallel with writing the text of the course, its multimedia component is created: animation, audio and video fragments, illustrations. The course text should contain references to concepts, topics, sections or concepts, illustrations, audio and video fragments, graphics, diagrams, etc.

The main stage of creating an educational course is defined by the authors as the work on its creation. Note that the form of writing educational material must comply with the laws of scientific style. Excessive text or graphic material should be avoided. Special attention should be paid to the background and color of the text. Therefore, the background should be light and plain, the color of the text should be dark. The main requirement for a font is its readability. The typeface, small fonts should be limited. When using graphic images, it is worth remembering about graphic formats, which will reduce the total volume of the educational program. It is worth using animation that has the ability to demonstrate the movement of objects and allows you to convey to the viewer the visual expression of text and sound fragments. Software and technical complexes of computer video editing are used to create video fragments. It is advisable to use Macromedia Flash (Server), Adobe Premiere, Ulead Media Studio.

It is also worth using sound effects in the form of phrases spoken by an announcer, dialogue between different characters, or an audio or video fragment. Don't neglect software that helps you create different sounds. Among the means of creating educational courses, the following are highlighted:

- Macromedia Flash – for creating animation fragments;
- Macromedia Fireworks a Freehand – editors for creating graphics;
- Macromedia DreamWeaver – for creating hypertext content for the introductory course.

Dividing the course into topics, creating hypertext links is the final stage of creating educational courses. After that, the course is tested and refined. It should be noted that in the process of studying the educational material, it is important to evaluate the intermediate results and, in accordance with them, correct the educational process. It is important to analyze the text from the standpoint of its content, qualitative description of the content of the educational material. Solving this issue is possible if clear educational goals and a hierarchical presentation of the material are defined. In particular, the hierarchical presentation of the material involves the relationship between different concepts, their arrangement according to the degree of complexity. It is also worth considering different types of educational activities. Among them are reproduction, memorization of the studied material, learning, recall, understanding, synthesis, evaluation. In particular, recall, memorization, and reproduction refer to specific facts or theories. Learning involves the reproduction of educational material, methods and facts. Understanding consists in studying and operating the rules, facts, principles of educational material, interpreting schemes of graphs and charts. Synthesis consists in the ability to combine knowledge from different areas, combine elements into a single whole, generalize the material. Evaluation involves determining the logic of building the educational material, the meaning of this or that concept, statements in accordance with the criteria. The assessment components are: outlining the goals of the educational process, tasks for checking their achievement and evaluating their achievement. Tasks to check their achievement can be created in the form of tests. Tests make it possible to assess the knowledge of students with the help of statistical methods in the distance learning system. They can include concepts, theories, laws, connections between objects. In order for the tests to reveal student achievements, the tests must meet the following requirements:

- compliance of the content of the test with the studied material;
- simplicity and clarity of questions;
- compliance with the knowledge control test.

The sequence of creating tests is as follows:

- determination of educational material from the chosen subject;
- creation of tests in draft form;
- correction of tests;
- analysis of created tests.

Conclusions. The modern period of education development requires a review of the content of educational programs, the use of computer technologies in education and, accordingly, a transition to electronic textbooks and methodical materials. Distance learning, which is the main educational link of modern times, involves the wide use of information technologies, electronic media, and Internet networks. A component of distance education is the independent work of students under the guidance of a teacher. In our opinion, distance learning has a positive effect on the quality of the educational process and improving learning outcomes. Distance learning is a powerful tool that allows for a broader education. A flexible study schedule allows students to study at a time convenient for them and to carry out this process from anywhere in the world. It is also important to take into account that distance learning requires a high level of self-discipline from students. It is important to balance the advantages and disadvantages of distance learning and find the optimal approach to learning that will take into account the individual needs and capabilities of each student.

Distance education has become an important tool in the modern education system. Students can choose a convenient time and pace of studying the material, which allows them to effectively combine studies with work and other matters. The use of digital platforms allows taking into account the needs and capabilities of each student. Distance classes are provided with multimedia materials, interactive tasks and access to a wide range of sources, which contributes to better assimilation of knowledge. Despite its advantages, distance learning has a number of challenges. For example, insufficient level of digital literacy of students and teachers, lack of access to fast Internet. At the same time, distance education is a powerful tool for improving the organization of the educational process, promotes effective assimilation of knowledge. It takes into account the challenges of modern times and promotes work on overcoming them.

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