

DISTANCE LEARNING AS AN EDUCATIONAL TECHNOLOGY: DEVELOPMENT PROSPECTS AND CHALLENGES OF TODAY

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INTRODUCTION

The relevance of the study of distance learning is due to several reasons. First of all, it is explained by the unwillingness of the participants in the educational process to comprehend and master modern pedagogical and information technologies for organizing the educational process in a remote form. The fact that in the Law on Education distance learning is equated to some kind of distance learning technology gives, as it

were, a completely legitimate reason for educational institutions not to think about the stage of designing the educational process, its methodological and technological support, training of teaching staff, limiting itself to digitizing ready-made traditional lectures and introduction automated testing system. What kind of intellectual development, the formation of critical and creative thinking can we talk about in such conditions? Under these conditions, how can we talk about the formation of such key competencies declared by the Council of Europe, such as communicative, informational competences, competencies related to the ability to learn "through life" (HARRIS, SUTTON, 1986)?

In addition, there are tendencies to establish a fashion for the term "distance learning" and "adjust" to it any form of education. No less dangerous are attempts to interpret this concept broadly, attempts to bring distance

learning into a kind of "free upbringing" that focuses only on individual needs, a kind of individual trajectory of development. Very few people care about the truly pedagogical content of this concept. The commercial side of the matter becomes the main one. That is why the time has come to seriously study the theoretical foundations of distance learning.

The educational information environment of DL is a systemically organized set of data transmission facilities, information resources, interaction protocols, hardware-software and organizational-methodological support, focused on meeting the educational needs of users. At the same time, the characteristic features of DOs are:

- flexibility,
- modularity,
- economic efficiency,
- new role of the teacher,
- specialized quality control of education.

The relevance and insufficient development of the theoretical foundations of DL determined the following choice of topic.

Purpose of the study: identifying the features of the use of computer technologies for distance learning.

Research object: distance learning.

Research subject: the process of organizing distance learning.

Research hypothesis: distance learning is a new form of education, along with full-time, part-time, external studies (IASECHKO, IASECHKO, SMYRNOVA, 2021).

THE INITIAL PRESUPPOSITIONS

In the article, the following research methods were used to solve the set tasks: theoretical (study and analysis of scientific and pedagogical, psychological and pedagogical, reference, specialized literature, regulatory documentation on the topic of research, additional professional advanced training programs; analysis, comparison, classification of the information received and generalization); empirical (pedagogical experiment, observation, questionnaire survey, survey, conversation, testing); mathematical (statistical data processing).

METHODS

The study of the content of scientific, educational and pedagogical literature, regulatory documents related to education, as well as the texts of journal articles and numerous speeches at conferences and seminars, showed that there is no common interpretation of the essence and content of the concept of "distance learning" (DL). There are numerous interpretations of this concept, reflecting the variety of approaches to its understanding. Before formulating our vision of the definition of DO, let us give the most famous interpretations of this term (HARRIS, SUTTON, 1986).

The Concept for the Creation and Development of Distance Learning provides the following definition: distance education is a complex of educational services provided to the general population in the country and abroad using a specialized information educational environment based on means of exchange of educational information at a distance (satellite television, radio, computer communications etc.). DL is one of the forms of lifelong education, which is designed to realize the human rights to education and information.

Distance learning is a set of information technologies that ensure the delivery of the bulk of the studied material to the trainees, the interactive interaction of trainees and teachers in the learning process, providing students with the opportunity to independently work on mastering the studied educational material, as well as in the learning process.

Distance learning is a new stage of distance learning, which provides the use of information technologies based on the use of personal computers, video and audio, space and fiber-optic technology.

Distance learning is a systematic purposeful learning that is carried out at some distance from the teacher's location. At the same time, the processes of teaching and learning are separated not only in space, but also in time.

Distance learning is a type of education based on educational interaction between teachers and students who are distant from each other, implemented using telecommunication technologies and Internet resources. Distance learning is characterized by all the components of the learning system inherent in the educational process: meaning, goals, content, organizational forms, teaching aids, a system for monitoring and evaluating results.

An analysis of the above definitions allows us to conclude that the most acceptable definition of the concept of "distance learning" is: "This is a form of learning in which the interaction of a teacher and students and students with each other is carried out at a distance and reflects all the components inherent in the educational process (goals, content, methods, organizational forms, teaching aids), implemented by specific means of Internet technologies or other means providing interactivity" (HARRIS, SUTTON, 1986).

Why is this definition the most appropriate? Learning is a two-way process in which the learner and the teacher interact and, during which education, upbringing and human development are systematically and purposefully carried out. This means that if we are talking about teaching, we assume the presence of a teacher in this process. This is the fundamental difference, the conceptual difference from the systems and programs of self-education, self-study, which we deal with when working with courses on videotapes, in television and radio courses, when working with computer programs and even programs on CD-ROM. In these programs, courses, the user can rely only on his own strength, on his own perception and understanding of the program. The learning process is characterized primarily by the fact that it is interactive in its organization, i.e. in the interaction of teacher and student

In the definition of distance learning, it is a new form of education, along with full-time, part-time, external studies. The author considers it unjustified that distance learning is presented as some kind of distance technology, which, accordingly, does not require additional funding. Distance learning is a specific form of education, since it involves the main reliance on the means of new information and communication technologies, multimedia, video communications, another form of interaction between the teacher and students, students among themselves. At the same time, like any form of education, any system of instruction, it has the same component composition: goals determined by the social order for all forms of education; the content, also largely determined by the current programs, standards for a particular type of educational institution, methods, organizational forms, teaching aids.

In addition, it should be noted that some authors were wrong to identify the concepts of "distance learning" and "distance education". Education is a broader concept that includes:

- education as a value;
- education as a system;
- education as a process;
- education as a result.

Therefore, distance education is a system in which the process of distance learning is implemented, and the individual achieves and confirms the educational qualification. Thus, distance learning should be considered in the general education system, and certainly in the system of continuous education, thereby providing not just a certain system, but the continuity of its individual links (HARRIS, SUTTON, 1986).

The purpose of distance learning is to provide students directly at the place of residence or their temporary stay with the opportunity to master the basic and additional professional educational programs of higher and secondary vocational education, respectively, in educational institutions of higher, secondary and additional vocational education (POLAT, 2021).

RESULTS AND DISCUSSION

The content of training can be defined as a pedagogical model of social order, the learning process, methods and organizational forms of its implementation are determined by its content. When selecting content for additional education, it is advisable to use general principles and recommendations. In this case, it is necessary to take into account additional restrictions on the object (subject) of training, which can be at a great distance, and (or) have a special time schedule of life, and (or) the physiological impossibility of learning traditionally, and other reasons. In addition, the circumstances should be taken into account that, with distance learning, it is not possible to train specialists in all specialties. The content of distance learning can be guided by the list of areas for training specialists and specialties in which obtaining higher professional education in correspondence form or in the form of external studies is not allowed, for which obtaining higher professional education in correspondence or external studies is not allowed "(HARRIS, SUTTON, 1986).

Obviously, the DL listener has high requirements for personal qualities: perseverance, purposefulness, honesty, etc. They must master the basics of methods and techniques of

independent work, independent acquisition and replenishment of knowledge with the highest motivation. In addition, for effective training, they must have the skills to work with the tools.

Learning in the DL system requires a certain readiness for learning, i.e. the starting level of education (a certain initial set of knowledge, abilities, skills) and, in addition, the technical support of the workplace. Obviously, there must be appropriate material and technical support for the student's workplace.

As in the traditional educational process, the teacher is the main link in ensuring the high efficiency of the educational process. The significant specificity of the didactic process of DL has caused the need to introduce the term "tutor" in practice to denote a teaching person. Since the most important element of the DL system is the institute of tutors (POLAT, 2021). Ideally, a tutor should demonstrate his ability to see the technological, organizational, socio-economic and socio-psychological possibilities of obtaining the maximum pedagogical result. The functions of a tutor depend on the learning model adopted in the distance learning system. Tutors can be both full-time teachers of universities, and persons with other professions and employed on a part-time basis or hourly wages. In conditions of preschool education, the main task of tutors is to manage the independent work of students, which presupposes that they perform the following functions: the formation of motivating motives; setting goals and objectives; transfer of knowledge, experience; organizational activity; organization of interaction between listeners; control of the learning process.

Studies have shown that for distance learning, as well as for traditional learning, five general didactic teaching methods are applicable, namely: information-receptive, reproductive, problem presentation, heuristic and research. They cover the entire set of pedagogical acts of interaction between a teacher and students.

For DL, the following methods can be recommended: demonstration, illustration, explanation, story, conversation, exercise, problem solving, memorization of educational material, written work, repetition (POLAT, 2021).

In the educational process of distance learning, the following teaching aids are used [6]: books (in paper and electronic form), online teaching materials, computer teaching systems in conventional and multimedia versions, audio educational and information materials, video educational and information materials, laboratory distance workshops, simulators, databases and knowledge with remote access, electronic libraries with remote access, didactic materials based on expert training systems, didactic materials based on geographic information systems.

The educational and material subsystem is an important component of DL, inextricably linked with the content and methodology of the educational process. She is in a subordinate position in relation to the goals of learning. The half-century experience of all developed countries of the world has clearly demonstrated that the systematic expansion and complication of the educational and material subsystem of an educational institution is an indispensable condition for the normal functioning of education, increasing its economic and social role.

The traditional educational material subsystem includes material conditions, teaching aids and objects of study, i.e. a set of material and technical means necessary for training in the established areas of training in accordance with the curriculum. It includes training and educational support facilities; laboratory equipment, technical teaching aids, textbooks, teaching aids and other teaching materials. The importance of the educational-material subsystem is emphasized in the allocation of the principle of "compliance with the content of education and the didactic system" and its inclusion in the list of elements of the didactic system. Because DL is largely based on means, and the importance of this subsystem is especially growing.

The analysis and design of large man-machine systems, including the distance learning system, at the present stage is unthinkable without a financial and economic assessment, since the modern theory of the economics of education considers education as a commodity. Today, new technical and pedagogical opportunities and tools have appeared that make it

possible to implement any learning technologies and new learning content. The main question that needs to be addressed is how much it will cost and how long it will take to implement these ideas.

The significance of this subsystem is determined by the fact that in the conditions of the educational services market and lack of funding, the practical activity of an educational institution of distance learning, as an analogue of an industrial enterprise, is based on the sale of educational services and thereby "earning" money to conduct and improve the educational process. In addition, every teacher and administrator in market conditions should be familiar with the economics of education in terms of the organization and remuneration of labor, financing of education costs, methods of assessing the socio-economic efficiency of education.

Domestic and foreign experience has shown the economic efficiency of subsidiaries. Nevertheless, the economic assessment of DL, as well as the pedagogical one, should be done when designing a distance learning system, while monitoring the educational process.

In education, as the most important institution of society, the legal form is becoming increasingly important. Improvement and development of the education system is impossible without improving the legislation on education. It is obvious that all innovations will be doomed to failure if the necessary attention is not paid to legislation in the process of development of the education system.

Control over the assimilation of educational material by students, trainees and cadets and the assessment of their knowledge and skills is an integral part of DL. Distance learning determines both the increased requirements for the control system and gives it a certain specificity. Control, as well as in the traditional educational process, has a testing, teaching, educational, organizing function and can be input, current, periodic, final (output).

A feature of DL is entrance control, the goals and objectives of which are the assessment of the incoming knowledge, orientations and motives; analysis and assessment of the level of development of his professional qualities and abilities, construction of an appropriate socio-psychological portrait in order to choose effective means and methods of teaching with an output to the maximum individualization of work with each student. All this is in contrast to the purpose of the entrance examination in the traditional process, where it mainly serves to select candidates for study.

In the conditions of DL, the likelihood of falsification of education increases, as well as problems of monitoring the educational process at a distance. Therefore, special technical means, techniques and techniques are required to solve these problems. Currently, the issue is being resolved haphazardly, on an empirical level.

With regard to the education system, marketing should be interpreted in a broad sense, understanding it as a system of knowledge about the organization of the educational process and its management in the context of intense competition and the need to consider the requirements of consumers as a matter of priority.

The marketing subsystem at DL performs the traditional functions inherent in the marketing of an industrial enterprise, for which it is traditionally a system for managing the production and sales of products focused on the customer's market. The product in this case is educational services, which are understood, as follows from the regulatory documents, - "training in accordance with state educational standards" (POLAT, 2021).

The following set of types of marketing activities is inherent in the marketing of educational services: marketing research, which includes the collection, processing, accounting and analysis of all information, planning specialties and the number of trained specialists, promoting educational services, referred to in traditional industrial marketing as sales and distribution in the national and international scale, advertising and promotion of educational services.

In the pedagogical practice of universities, well-known forms (types) of education have been developed. The most common of them are: lectures, seminars, laboratory exercises, tests, exams, etc.

The effectiveness of distance learning depends on the quality of the materials used (training courses) and the skill of the teachers involved in this process. Therefore, the pedagogical, meaningful organization of distance learning (both at the design stage of the course and in the process of its use) is a priority. Hence the importance of conceptual pedagogical provisions on which it is supposed to build a modern distance learning course. They can be briefly summarized as follows (POLAT, 2021):

At the center of the learning process is the student's independent cognitive activity (learning, not teaching).

It is important that the student learns to independently acquire knowledge using a variety of sources of information; knew how to work with this information, using various methods of cognitive activity and at the same time had the opportunity to work at a convenient time for him.

The independent acquisition of knowledge should not be passive; on the contrary, the student from the very beginning should be involved in active cognitive activity, not limited to mastering knowledge, but certainly providing for their application to solve various problems of the surrounding reality.

The organization of independent (individual or group) activities of trainees in the network involves the use of the latest pedagogical technologies that are adequate to the specifics of this form of education, stimulating the disclosure of the internal reserves of each student and at the same time contributing to the formation of social qualities of the individual. The most successful in this regard are learning in cooperation (to activate the cognitive activity of each student in networks), the project method (for the creative integrated application of the knowledge gained), research, problem methods.

Distance learning provides for active interaction with both the teacher - the course coordinator and with other partners, cooperation in the process of various kinds of cognitive and creative activities. Socialization problems are very relevant in distance learning.

The control system should be systematic and built on the basis of both operational feedback (provided for in the structure of the training material, prompt appeal to the teacher or course consultant at any time convenient for the student), and delayed control (for example, during testing). There are a number of characteristics inherent in the distance course if it claims to be effective:

- more thorough and detailed planning of the student's activities, its organization, clear statement of tasks and learning goals, delivery of the necessary training materials;
- the maximum possible interactivity between the learner and the teacher, feedback between the learner and the teaching material, providing the opportunity for group learning;
- the presence of effective feedback that allows the student, the student to receive information about the correctness of their progress along the path from ignorance to knowledge. Such feedback should be both operational, operational, and delayed in the form of external evaluation;
- motivation is also an essential element of any distance learning course. For this, it is important to use a variety of techniques and means: the structuring of the distance learning course should be modular so that the student has the opportunity to clearly understand his progress from module to module. Bulky modules or courses significantly reduce the motivation for learning;

the peculiarities of the technological base on which it is planned to use a particular course have a direct impact on the content and structuring of the entire educational material. If the course designer assumes that the course will function entirely in networks, without relying on other means of computer and other information technologies, there may be one solution. If it is planned to use, in addition to purely network resources, some additional sources of

information (print, video, sound, media) as components of the course, then the structure of the course and its content, as well as the organization of the learning process itself will be somewhat different.

In any case, no matter what distance learning courses are developed, it is objectively necessary to provide invariant components. These include the following (IASECHKO, SHELUKHIN, MARANOV, 2021):

- General information about the course, its purpose, goals, objectives, content (structure), conditions for admission to training groups, final documents. This information is completely open on the server for review. Often the courses themselves are open, but only registration gives the right to receive your own password, your own Web page on the server and become a full participant in the learning process under the guidance of a teacher with the prospect, subject to successful completion of the course, to receive the appropriate certificate of the training organization.
- Reference materials (in the form of databases) on the subject area of the course.
- Blocks of questionnaires (in a separate file), allowing you to establish contact with users, obtain the necessary information and process it.
- The actual training course, structured in more or less autonomous modules.
- A block of tasks aimed at assimilating the material and checking its understanding, comprehension.
- A block of creative tasks aimed at the independent application of the acquired knowledge, abilities, skills in solving specific problems; implementation of projects individually, in cooperation groups; practical work (individual, joint).

The successful creation and use of distance learning courses should begin with a deep analysis of the learning objectives, the didactic capabilities of new technologies for the transmission of educational information, the requirements for distance learning technologies in terms of teaching specific disciplines and adjusting the learning criteria. When planning and developing distance learning courses, it is necessary to consider that the main three components of the teacher's activity, namely the presentation of educational material, practice, feedback, retain their significance in DL courses. The problem of creating distance learning at this stage is the creation of a conceptually new methodological material based on the step-by-step perception of information and full control of the student's knowledge. Educators and methodologists should restructure their lectures and textbooks, taking into account the peculiarities of the new teaching method.

The most important problem in organizing distance learning is the training of teachers - coordinators of such courses. Currently, no pedagogical university has such specialists in its training programs. At the same time, the success of the distance learning process itself largely depends on the professionalism of such teachers. Consequently, the concept of distance learning must necessarily include the need to train specialists in this particular profile (IASECHKO, KHARLAMOV, SKRYPCHUK, FADYEYeva, GONTARENKO, SVIATNAIA, 2021).

CONCLUSION

Speaking about distance education, we should talk about the creation of a single information and educational space, which should include all kinds of electronic sources of information (including network): virtual libraries, databases, consulting services, electronic teaching aids, cyberclasses, etc. training should be understood as the presence in the system of a teacher, a textbook and a student. This is the interaction between teacher and students. It follows that the main thing in organizing distance learning is the creation of electronic courses, the development of didactic foundations of distance learning, and the training of teacher-coordinators. One should not equate the distance form with the correspondence form of education, because it provides for constant contact with the teacher, with other cyberclass students, imitation of all types of full-time education, but with specific forms. Consequently,

theoretical studies, experimental tests, serious research work are required. Unfortunately, what we see today on the Internet and mostly on CDs does not in any way meet the elementary pedagogical requirements. Hence the importance of the problem associated with the development of the distance learning courses themselves and the methodology for their use for various purposes of basic, advanced, additional education.

Consequently, distance learning is a new form of education, along with full-time, part-time, external studies, which confirms the research hypothesis.

In modern literature, developmental learning is understood as "a direction in the theory and practice of education, which focuses on the development of physical, cognitive, moral abilities of students through the use of their potential." (IASECHKO et al., 2021). Developmental education is carried out in the form of involving the student in various activities, the use of didactic games, discussions, as well as teaching methods aimed at enriching the creative imagination, thinking, memory, speech in teaching.

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Distance learning as an educational technology: development prospects and challenges of today

O ensino a distância como tecnologia educacional: perspectivas de desenvolvimento e desafios da atualidade

El aprendizaje a distancia como tecnología educativa: perspectivas de desarrollo y desafíos de hoy

Resumo

O objetivo da pesquisa foi discutir a educação a distância como objeto atual e necessário para a educação contemporânea. No artigo foram utilizados os seguintes métodos de pesquisa: estudo da literatura, análise, síntese, métodos de generalização teórica. De acordo com a hipótese de pesquisa de solução, as seguintes tarefas principais foram: definir o conceito de "ensino a distância"; revelar as vantagens e desvantagens da EAD na educação. Conclui-se que: embora existam divergências sobre a educação à distância como ferramenta na escola presencial; seu uso é um caminho sem volta. Professores e técnicos devem estar preparados para atualizá-los e utilizá-los de forma comum no dia a dia.

Palavras-chave: Ensino inovador. Ensino superior. Tecnologia de ensino.

Abstract

The objective of the research was to discuss distance education as a current and necessary object for contemporary education. The following research methods were used in the article: literature study, analysis, synthesis, methods of theoretical generalization. According to the solution research hypothesis, the following main tasks were: to define the concept of "distance learning"; to reveal the advantages and disadvantages of distance learning in education. It is concluded that: although there are disagreements about distance education as a tool in presential school; its use is a path of no return. Teachers and technicians must be equipped to update and use them in a common way in their daily lives.

Keywords: Innovative teaching. Higher education. Teaching technology.

Resumen

El objetivo de la investigación fue discutir la educación a distancia como un objeto actual y necesario para la educación contemporánea. En el artículo se utilizaron los siguientes métodos de investigación: estudio de la literatura, análisis, síntesis, métodos de generalización teórica. Según la hipótesis de la investigación de solución, las siguientes tareas principales fueron: definir el concepto de "aprendizaje a distancia"; revelar las ventajas y desventajas de la educación a distancia en la educación. Se concluye que: aunque existen desacuerdos sobre la educación a distancia como herramienta en la escuela presencial; su uso es un camino sin retorno. Los profesores y técnicos deben estar equipados para actualizarlos y utilizarlos de manera común en su vida diaria.

Palabras-clave: Enseñanza innovadora. Educación superior. Enseñanza de la tecnología.