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Development factors and directions for improving distance learning in the higher education system of Ukraine

Factores de desarrollo y direcciones para mejorar el aprendizaje a distancia en el sistema de educación superior de Ucrania

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Abstract

The article reveals the trends in the development of modern education, to substantiate the social and scientific-theoretical prerequisites for distance learning, on this basis, a systematic didactic design of distance learning was carried out. It has been determined that the implementation of a system-information approach to learning will ensure the construction of a holistic, multi-level model of distance education; identification of reserves for improving the quality of education will be based on its content and procedural components; the use of the latest teaching methods and technologies will be subordinated to the task of forming the intellectual and personal spheres of the student.

Keywords: higher education, education system, distance learning, distance education.

Resumen

El artículo da a conocer las tendencias en el desarrollo de la educación moderna, para fundamentar los requisitos sociales y científico-teóricos de la educación a distancia, sobre esta base se realizó un diseño didáctico sistemático de la educación a distancia. Se ha determinado que la implementación de un enfoque de sistema de información para el aprendizaje asegurará la construcción de un modelo holístico de educación a distancia de múltiples niveles; la identificación de reservas para el mejoramiento de la calidad de la educación se basará en su contenido y componentes procedimentales; a la tarea de formar el ámbito intelectual y personal del alumno se subordinará el uso de los métodos y tecnologías de enseñanza más modernos.

Palabras clave: educación superior, sistema educativo, aprendizaje a distancia, educación a distancia.

1. Introduction

The problematic situation that has arisen in education is associated with the difficulties of the transition from traditional to innovative education, with a change in the system of values that sanctify human life, with a lack of consensus among scientists and practitioners regarding the goals of education, with a reassessment of the established forms and methods of education.

The way out of this situation in education, reflecting the fundamental contradictions of the development of civilization and society, is associated with the search for such forms, methods and technologies that create conditions for learning, carried out through one's own activity, for the student's creative self-realization. Not a person adapts to the education system, but the education system adapts to him. Thanks to this, it becomes possible for a person to preserve and increase his sovereignty, individuality, uniqueness, originality.

It seems methodologically unacceptable to ignore the basis of individual cognitive activity, to lose sight of the fact that "on this basis all systems of social life are 'built on'" (Gao, 2021).

Solving the problem of developing the intelectual potential of society as a factor in the development of civilization, the formation of humanistic globalism, uniting countries, peoples, communities by coordinating interests and interpenetration of values, is impossible without education, the function of which in modern conditions is to introduce students to the "world of embodied values" through the "world embodied knowledge. The unity and interconnection of these worlds not only become a way to unite people around the experience of expedient activity in the context of humanistic globalism, but also make it possible to assert the cultural mission of the cognitive activity of a person as a person, individual and subject of activity.

In order for education to create in society the intellectual background that allows setting and solving socio-economic problems, for education to lay the foundations for scientific, technical and socio-moral progress, it is necessary to introduce such learning technologies that, meeting the requirements of reforming modern education, solve the problem of forming a post-classical thinking, with its postulates of "generation", "contextuality" and "polyphony" (Palvia et al., 2018). An analysis of real pedagogical practice shows that it is not fully possible to solve this problem by means of only lectures and seminars in higher educational institutions, since the continuity of knowledge does not combine with its discontinuity, and therefore this contradiction cannot be resolved saltationally. The reflexive nature of this problem is obvious.

A new (intensive) way to solve the problem of raising the educational level of the population to a higher one lies in the plane of the latest educational technologies, based both on fundamental and applied achievements of the late 20th century (Internet, satellite television, computer technology, etc.), and on the achievements of philosophy, which formulated such neutral problems as the demand for the theory of reliable knowledge and its method, as the place of man in the Cosmos, as human freedom.

Distance education has grown out of television education in the West, correspondence education and correspondence education. In Ukraine, it has been enriched with modern didactic theories, human achievements in the field of information technology. Distance education is actively developing and used in numerous foreign and Ukrainian universities. There are various forms of distance education. This is an absolutely remote distance education, asynchronous, when the student and the teacher are separated in space, but at the same time coexist in time; synchronous distance education - a student and a teacher are in a joint local space, and educational products (textbooks, videos, supertutors) are created and sent from one center to all local points (to universities, branches, to an individual student) (Hillier, 2018).

The analysis of scientific literature and real pedagogical practice shows that the essence of distance education, which fits into modern trends in the development of education, is most concentrated: "Distance education is a synthetic, integral, humanistic form of education based on the use of a wide range of traditional and new information technologies and their technical means that are used for the delivery of educational material, its independent study, the organization of a dialogue exchange between the teacher and students, when the learning process is not critical to their location in space and time, as well as to a specific educational institution (Atieku-Boateng, 2021), (Shoufan, 2019).

In the system of relations between a teacher and students in the conditions of distance education, the position of the question is realized, which is not exhausted by any answer, but reveals the meaning of the communicative connection between them and generates an understanding of the ways of knowledge movement, ways of forming the student's subjectivity.

As mentioned by M. Mohammed and N. Ja'ashan (2020), in the activities of a university teacher working in the distance education mode, there is a contradiction between understanding the role of systemic didactic design of the educational process and the mastery of real design mechanisms in such a way that the activity of teaching students allows them to analyze what they are learning, to determine what education is built for.

As the analysis of the experience of the activities of universities operating in the distance education mode shows, even those teachers who purposefully form the position of the question among students still do not create such a varied educational space that it corresponds to the individuality of each student.

The desire to find ways to resolve these contradictions determined the problem of the study. This is an understanding of the theoretical and methodological foundations for designing distance education in a higher educational institution (Shehab & Khalifa, 2021).

2. Literature review

Despite the obvious advantages of online learning in higher education institutions, the introduction of the educational process in electronic format involves solving a number of issues for both students and for academic staff of educational institutions (Riera Guasp, Ardid, Vidaurre & Dueñas, 2018), (Rajab, 2018).

For academic staff, the real challenge of online learning was the significant increase in the time required to provide a quality learning process. In particular, the time for preparing lecture classes, checking homework, and maintaining electronic and hardcopy records of attendance and success of education applicants has doubled (Ali, Khalil & El-Sharkawy, 2020).The major reasons for the suspension ofthe educational process during warfare are considered to be the lack of a clear plan of action for the use of online learning for all participants in the educational process and the lack of adequate facilities of institutions of higher education that could ensure the proper quality of online education (O'Doherty, Dromey, Lougheed, Hannigan, Last & McGrath, 2018), (Nikadambaeva, 2020), (Morin, 2020). Considering the challenges of online learning organization, scientists pay attention to the issues of qualified support of the student by the educator or other authorized persons during online learning. Such qualified support should begin at the stage of searching for proposals of distance learning programs and accompany the student during the entire learning process (Langegard, Kiani, Nielsen & Svensson, 2021). However, a review of the literature on the development of online education in times of war has shown that the issue of developing special strategies for working with higher education applicants during military conflicts remains unresolved. This is due to the lack of specialized software and information developments for working with students that take into account the specifics of receiving education specifically during military conflict (during its exacerbation especially) in the territory where the educational institution or students studying at such institutions are located.

3. Aims

The Aim of the article is a theoretical substantiation of the structure and principles of distance learning, which is primarily aimed at forming the experience of expedient activities of students, as universally significant.

4. Materials and methods

Research methods: analysis of philosophical, psychological and pedagogical literature; system-information analysis of the distribution of intellectual resources; dialectical analysis of trends and contradictions of the modern educational process; sociological methods (questionnaire, interviewing, testing), participant observation; rating and expert evaluation; pedagogical experiment: ascertaining, searching, forming; statistical methods for processing the obtained results.

5. Results

One of the characteristic features of the third millennium was the global informatization of all spheres of human activity. A consequence of the use of information technologies in education and an indispensable attribute of the phenomenon of informatization has been the development and increasing distribution of a distance learning system. It represents a new direction in the

development of pedagogical theory and practice, quite attractive and in demand by social practice (Alqahtani & Rajkhan, 2020).

Distance learning is understood as a complex of educational services provided to the general population in the country and abroad with the help of a specialized information and educational environment based on the means of exchanging educational information at a distance (satellite television, radio, computer communications, etc.). The essence of distance learning technology is the organization of learning using telecommunications, in which learning subjects (students, teachers, tutors, moderators, etc.) remote from each other carry out the educational process, accompanied by the creation of educational products and their internal changes (increments).

The high efficiency of distance learning is ensured by active pedagogical activity in the information environment, the purposeful nature of learning in relation to educational information and activities.

This affects the perception of educational material and its significance, and through them - on the motivation, activity and actualization of students' independent work.

Features of distance learning are that it

- provides an opportunity to undergo training without leaving the place of residence and without interrupting the process of production activities;
- provides the possibility of wide access to domestic and world educational resources;
- provides an opportunity to get an education to solve various life problems and at any level of primary education and training;
- allows you to organize the process of self-learning in the most effective way for yourself and get all the necessary tools for self-learning;
- provides the opportunity to interrupt and continue education, depending on individual capabilities and needs;
- reduces the cost of education due to the wide availability of educational resources;
- allows you to create unique educational programs by combining courses provided by educational institutions;
- allows to increase the level of the educational potential of the society and the quality of education;
- increases the social and professional mobility of the population, its entrepreneurial and social activity, broadens the horizons and the level of self-awareness
- makes learning more motivated, interactive, technological and individualized;
- creates more comfortable than traditional emotional and psychological conditions for self-expression of the student, removes psychological barriers and problems, eliminates the errors of oral communication;
- contributes to the preservation and enhancement of knowledge, human and material potential accumulated by the domestic educational system;
- maintains and develops a single educational space on the territory of Ukraine and foreign countries where the Ukrainian population lives.

The basis of the educational process with distance technology is the purposeful and controlled intensive independent work of the student. At the same time, he can study in a place convenient for himself, according to an individual schedule, having with him a set of special teaching aids

and methodological support and an agreed opportunity to contact the teacher and other students by phone, fax, e-mail or regular mail.

Distance learning organically fits into the system of continuous education and meets the principle of humanism, according to which no one can be deprived of the opportunity to study due to poverty, geographical or temporal isolation, social vulnerability and the inability to attend educational institutions due to physical disabilities or being busy with production and personal affairs.

There are three main integrating factors or components in the distance learning system: 1) technological, 2) pedagogical, 3) organizational.

The technological factor in the distance learning system is determined by the information technologies used to develop, deliver, support training courses and the educational process as a whole.

Main types of technologies. They can be divided into three broad categories:

1) non-interactive (printed materials, audio, video media);
2) computer learning tools (e-mail, electronic textbooks, asynchronous e-mail, computer testing and knowledge control, the latest multimedia tools, etc.);
3) videoconferencing - advanced means of telecommunication via audio channels, video channels and computer networks.

Currently, the Internet allows the use of hypertext information in multimedia. Consider what it is.

Hypertext technologies, hypertext systems in computer training programs are one of the components of information technology, and are used in the development of reference systems, collective decision-making systems, training systems, electronic documentation and diagnostic systems. The use of hypertext technology in education has led to the creation of a new class of educational programs: electronic books, electronic encyclopedias, etc.

The term "hypertext" was coined in 1963 to denote the concept - "a combination of natural language text with the ability of a computer to interactively select the next piece of information or dynamically reproduce non-linear text that cannot be printed in the usual way on a sheet of paper." “Hypertext is a way of storing and manipulating information in which it is stored as a network of interconnected nodes.” A hypertext document has links between individual small fragments (word, phrase, part of a picture, icon) of one element (frame) and another element (frame) or a specific place in the frame. These fragments on the display screen are highlighted by color or by other means and are called differently in different systems: reference or selected fragments, buttons, icons, etc. Selecting such a button displays the content of the element associated with it (frame, node). The called frame can also contain selections. The reader of the document thus views the document in the sequence of interest.

Initially, the concept of "hypertext" referred only to information presented in the form of text. However, it has now extended to information presented in graphical form. Application of hypertext technology to work with information presented not only in the form of computer data, but also in other media - multimedia.

On the basis of the listed telecommunication and information means, it is possible to use various pedagogical forms of activity. For example, remote business games, laboratory work and workshops, virtuales tours, the issuance of electronic newsletters, conferences.

The pedagogical factor in the distance learning system is determined by a set of methods and techniques used in the course of the educational process, which can be classified as follows:

1. Teaching methods through the interaction of the student with educational resources with minimal participation of the teacher and other students (self-learning). The development of these methods is characterized by a multimedia approach.
2. Methods of individualized teaching and learning, which are characterized by the relationship of one student with one teacher or one student with another student (teaching "one to one"). These methods are implemented in distance learning mainly through technologies such as telephone, voice mail, e-mail. The development of telementoring (a system of "tutors"), mediated by computer networks, is an important component of the educational process in e-universities.
3. Methods based on the presentation of educational material to students by a teacher or an expert, in which students do not play an active role in communication (one-to-many learning). These methods, characteristic of the traditional educational system, are being developed on the basis of modern information technologies. Thus, lectures recorded on audio or video cassettes read on radio or television are supplemented by the so-called “E-lectures” (electronic lectures). An e-lecture can be a collection of articles or extracts from them, as well as educational material that prepare trainees for future discussions. On the basis of electronic bulletin board technology, a method of conducting educational electronic symposiums, which are a series of presentations by several authorities, is also being developed.
4. Methods that are characterized by active interaction between all participants in the educational process (many-to-many learning).

Interactive interactions between the students themselves, and not only between the teacher and the student, in this case becomes an important source of knowledge.

The development of these methods is associated with conducting educational collective discussions and computer conferences, which allow all participants in the discussion to exchange written messages both in synchronous and asynchronous mode, which is of great didactic value.

Computer-mediated communications allow more active use of such teaching methods as debates, simulations, role-playing games, discussion groups, brainstorming, forums, etc.

The main problem in the development of distance learning is the creation of new teaching methods and technologies that meet the telecommunications environment of communication. The previous model of learning should be replaced by a new model based on the following provisions: the student is at the center of learning technology; the essence of technology is the development of the ability to self-learning; students play an active role in learning; collaboration is at the heart of learning activities.

Successful creation and use of distance learning courses should begin with a deep analysis of learning objectives, didactic capabilities of new technologies for transferring educational information, requirements for distance learning technologies in terms of teaching specific disciplines, and adjusting learning criteria (Ratheeswari, 2018).

6. Discussion

The didactic features of the distance learning course lead to a new understanding and correction of the goals of its implementation, which can be described as follows:

- stimulating the intellectual activity of students by defining the goals of studying and applying the material, as well as involving students in the selection, development and organization of it;
- strengthening learning motivation, which is achieved through a clear definition of values and internal reasons that encourage learning;
- development of abilities and skills of learning and self-learning, which is achieved by expanding and deepening educational technologies and techniques.

Of fundamental importance for the success of the entire system of distance learning is the solution of the problem of quality control of distance learning. To exercise control, a unified system of state testing should be created. As forms of control, remotely organized exams, interviews, practical, course and project work, external studies can be used.

Among the didactic principles affected by computer technologies for the transmission of information and communication are:

- the principle of activity;
- the principle of independence;
- the principle of combining collective and individual forms of educational and cognitive work;
- the principle of motivation;
- the principle of connection between theory and practice;
- the principle of efficiency.

The content of the distance learning course proposed for mastering is pedagogically worked out and systematized and consists of a set of psychological tests, a training program and an electronic textbook that satisfies the above principles.

The curriculum is one of the most important materials for trainees. It includes:

1) information about the system and methods of distance learning;
2) biographical information about the teacher;
3) technology for building a training course;
4) course objectives;
5) criteria for graduation;
6) time of telephone consultations;
7) description of examinations, projects of written works;
8) other instructions.

The electronic textbook contains the actual learning materials for distance learning, it is divided into independent topics-modules, each of which gives a holistic view of a specific subject area and contributes to the individualization of the learning process. Thus, the student himself can choose from the proposed training options to study the full course in this discipline or only its individual specific topics.

Distance learning is the most progressive technology of correspondence education using modern technical means of communication, information transfer and the latest teaching methods. It is a holistic training complex on the foundation of state educational standards (Shehab & Khalifa, 2021).

The distance learning system is not antagonistic to the existing full-time and part-time education systems. It naturally integrates into these systems, complementing and developing them, and contributes to the creation of a mobile educational environment. Distance learning technology is the most promising form of education for the general population of Ukraine in the 21st century, it contributes to the integration of educational structures and the development of continuous education of citizens.

Distance education is extremely relevant in Ukraine. The reason for such success lies in the mass retraining and training of the maximum number of specialists throughout the territory of Ukraine with the use of minimal funds. Sociologists conducted a survey among Ukrainian school graduates and found out that 65% of respondents want to get a higher education. Meanwhile, the current system of higher education allows accepting only 35% of future students for full-time and part-time study. As a result, almost half of those willing do not get into universities.

7. Conclusions

Theoretical significance of the study. The results of the study will allow for a broad approach to the creation of a varied educational space. The substantiation of the systemic didactic design of the educational process at the university will serve as the basis for the formation of broader scientific ideas about the possibilities of distance education in shaping the ability of students to generate new ways and types of activities through which they enter new professional areas for them. The results of the study will allow, on a theoretical basis, to carry out the choice of criterion grounds for solving the problem of the formation of post-classical thinking among students, and will contribute to the disclosure of the mechanism of the movement of scientific knowledge.

The practical significance of the study lies in the fact that its results are aimed at improving pedagogical activity in the aspect of the formation of the subjectivity of students, the formation of their position on the issue; in determining the methods by which the intellectual resources of Ukraine are determined; in the implementation of recommendations to improve the quality of distance education.

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