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DISTANCE LEARNING INTRODUCTION INTO THE MODERN EDUCATIONAL ENVIRONMENT

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ЗАПРОВАДЖЕННЯ ДИСТАНЦІЙНОГО НАВЧАННЯ У СУЧАСНОМУ ОСВІТНЄОМУ СЕРЕДОВИЩІ

Summary. A large number of scientific works in modern professional pedagogy are devoted to the study of such innovative educational technology as distance learning. The history of this phenomenon in education is analyzed in the paper, the main pedagogical categories are identified, the advantages and the difficulties encountered in the process of this technology implementation are highlighted. The pedagogical potential of distance education despite the subjects' remoteness has been outlined; the attention has been drawn to the fact that disconnection in space does not imply the separation of the learning and teaching processes. The importance of mutual teacher-student dialogue in distance learning has been emphasized. The paper analyses distance education as a pedagogical system able to satisfy the educational needs regardless of spatial and temporal location.

Анотація. Дослідженню дистанційної освіти як інноваційної освітньої технології присвячено велику кількість наукових праць із сучасної професійної педагогіки. У статті проаналізовано історію цього явища в освіті, визначено основні педагогічні категорії, висвітлено переваги та труднощі, що виникають у процесі впровадження цієї технології. Окреслено педагогічний потенціал дистанційної освіти, незалежний від відстані між його суб'єктами; привернуто увагу до того, що віддаленість у просторі не означає розділення процесу навчання. Підкреслено важливість взаємного діалогу викладач-студент у дистанційному навчанні. У статті проаналізовано дистанційну освіту як педагогічну систему, здатну задовольнити освітні потреби незалежно від просторового та часового розташування.

Keywords: distance learning, distance education, higher education, online course materials, professional competencies, professional training, spatial and temporal location, university

Ключові слова: дистанційне навчання, дистанційна освіта, вища освіта, матеріали онлайн-курсу, професійні компетенції, професійна підготовка, просторове та часове розташування, університет

Statement of the problem. Modern education systems employ distance learning technologies as a necessary and already accessible way of learning. Since 1963, distance education has been used for teaching the humanities and technical sciences, art, and business. The business training is widely implemented all over the world. It began with the distribution of postal services and existed as correspondent training. The advent of radio and television has made changes to distance learning methods. The number of people wishing to receive education using radio and television broadcasts for training has increased significantly. The only serious problem was the lack of feedback. Since the late 80s, the development of personal computers greatly simplified the learning process. The world educational space has opened access to distance learning programs.

The idea of distance learning development in the national educational systems came about after the 1996 UNESCO Congress. A range of issues possible to be solved by applying this educational technology was identified. For instance, "the population of any region should be provided with equal educational opportunities through the insurance of the scientific potential of the country's leading educational institutions" [11].

The growth of educational institutions employing the distant system is increasing every year due to the greater need in education and limited opportunities to obtain qualifications in traditional full-time education. The reasons for this fact are obvious for the world educational space: specialists have the busy working schedule, the remoteness of educational institutions, and the high cost of traditional educational, impaired health and life disabilities. Despite the wide amount of the research in distance learning development, there is a need to analyze in more detail the significance and essence of this innovative approach.

Analysis of recent research and publications. Since the early 1970s, a significant number of studies have been devoted to the theory of distance education. In various countries, numerous attempts have been made to justify the phenomenon of distance learning. Despite the significant contribution of such scientists as O. Peters, M. Moore, B. Holmberg, D. Keegan, R. Garrison and others, most of the scientific studies

are still descriptive, which necessitates the further development of the fundamental research of distance education. The latest changes associated with the introduction of information and communication technologies into the educational process raise the question of the existing theory relevance and ability to explain the nature of the changes that take place, evaluate the possibilities, potential advantages and disadvantages of computer-supported distance and traditional training implementation.

It is difficult to understand the essence of new educational outside the cultural, economic and political contexts without analysis of works by O. Peters, who was one of the first to identify distance education as a result of the influence of the industrialization process. According to his concept, distance training has a number of characteristics similar to the process of goods production in an industrial society: responsibilities division (teaching and development of training materials are carried out by different people), standardization and mass production (production of a large number of standardized educational materials for any category of students), technological effectiveness (the widespread use of computer and audio technologies in the course of training). Consequently, O. Peters proposed to consider the phenomenon of distance education not within the framework of traditional education but to analyze it from the point of view of the economic theory of industrialization [10, p.19].

Unlike the technocratic approach of the other researches, M. Moore and B. Holmberg considered the special factor in distance learning not so as the geographical remoteness between the teacher and students but as the degree of interaction between them. The existence of a distance between the educational subjects, according to M. Moore, is a positive factor contributing to the development of the student's independence, and autonomy, necessary for the successful goals achievement, while the lack of autonomy can have a negative impact on the process of knowledge acquisition. The distance, changing the training structure, requires from its participants special personal qualities permitting them to act independently [8; 9].

B. Holmberg regarded education as an individual student activity without a prerequisite of the teacher's physical presence for the successful implementation of distance education. Following the concept of independent learning developed by the scientist, geographical distance cannot be considered as a significant obstacle for the lack of education, but rather conducive to the individual's development, and increase the level of independence in the process of knowledge acquisition. However, in order to avoid the student's isolation, both researchers emphasized the need for providing feedback and the obligatory external evaluation of the results of the educational activities, regardless of the autonomy degree. Adequate psychological and pedagogical support of the distance learning process can neutralize the effects of isolation. At the same time, M. Moore insisted on building of close interpersonal interaction between the teacher and the student as the main condition for high learning outcomes, while B. Holmberg considered the educational dialogue to be a structural element of learning, declaring the possibility of interpersonal communication embedding through a more informal presentation style of educational material [5, p. 56].

Studying the pedagogical potential of distance education, and the advantages of the subjects' remoteness of the educational process, D. Keegan drew attention to the fact that disconnection in space implies the separation of the learning and teaching processes. This destroys one of the central principles of education, which is the close contact between the students and teacher, and consequently, the effectiveness of training is reduced. In traditional learning, the teaching-learning continuity creates a special educational environment supporting the learning process and which is also mandatory for the implementation of distance education. The communication between the students and teacher should be restored through careful structuring of interpersonal communication and re-creating communication channels [6, p.128].

In modern studies, distance education is considered as the educational process, regardless of the subjects' geographical remoteness. According to J. Verduin and T. Clark, the distinguishing feature of distance education is the asynchronous learning, the nonobligatory of teaching-learning simultaneously. R. Garrison considers the spatial gap between the participants of the educational process as an irrelevant characteristic of distance education and considers the concept of distance only in the context of the computer-based learning potential of computer technologies.

The conditions of such an integral component of distance education as space are considered by many scientists as the necessity of the proper level of two-way communication provided between the subjects distant of education, and most of them agree that the value of spatial distance must be minimized. With the implementation of modern electronic means of communication, it is possible to eliminate the spatio-temporal boundaries between its subjects.

Many researchers emphasize the importance of dialogue in distance learning but they describe the potential of its implementation in different ways. B. Holmberg, the founder of the guided didactic conversation concept, regarded the dialogue in the student-student mode as a direct classical didactics element. Without live interaction while training, educational communication can be organized through specially structured training materials. Moreover, specially prepared textbooks for distance learning can not only ensure the educational process organization but also support students' motivation and facilitate dialogue development. However, by such interaction, which assigns leading roles in learning to the teacher and curriculum developers, B. Holmberg reduced the role of students' independence and participation in the educational process construction.

M. Moore, criticized the ideas of B. Holmberg for an attempt to embed "a teacher in a book", expanded

the boundaries of educational communication and concluded that for successful teacher-student interaction it is important not only to develop special teaching materials but also to establish interpersonal contacts for reduction of communicative and psychological gaps [8, p. 667].

According to D. Keegan, distance education, unlike traditional, is initially devoid of a communicative environment that ensures the successful educational process. The traditional classroom interaction, the natural integration of teaching and learning processes can be restored with modern computer technologies.

Unlike D. Keegan, who tried to bring distance education closer to traditional didactics, the British researcher D. Sewart explained the absence of a permanent communicative environment in distance education by the students' needs. In the process of traditional teaching, students can resort to the constant support of a teacher or group, which is a favourable environment, which D. Sewart considered as artificial. On the contrary, distance students, deprived of instant help and the opportunity to evaluate their results, and cannot compare their achievements in knowledge and skills acquisition, based on real life and work experience, with the other students. Therefore, such students need to create an additional channel of communication, different from classroom conditions for the effective educational process [13, p.176].

F. Saba noted that the communicative environment recreated through modern computer technologies does not mean the automatic appearance of interaction between the distance educational process subjects. Overcoming the audio-visual barrier between students is not an achievement if there is no mutual dialogue which often becomes a problem for traditional educational institutions as well [12, p.13]. Therefore, to ensure a high-quality distance educational process, not only two-way student-teacher communication is necessary, but also a specialized learning environment that meets the distance students' requirements.

Later, R. Garrison, developing the concept of two-way distance learning communication, pointed out the close relationship between educational interaction and communicative environment. Owing to technological advances, bilateral communication in distance education is no longer limited to text messaging between a student and teacher and can be implemented in real-time interactive ways. With the introduction of various interactive types of submitting-receiving information, conducting online seminars, virtual conferences and round tables, in particular, the network communities' functions featured not only strong interpersonal student-teacher, student-student interaction but also a full-fledged existence of real educational environment in distance education [4].

The scientist outlined the historical process of distance education development. In contrast to the traditional education, which is an attribute of the traditional (pre-industrial) society, it arose as a new form of learning in the context of the transition of civilization to the industrial era. Socio-economic transformations required a change in the status of education from elite, based on personal communication in small groups, to mass, democratic [4, p. 35]. Targeting distance education to a wide audience with its indifference to the spatio-temporal framework seemed the only way to satisfy the social order for a large number of highly qualified specialists.

Unsolved aspects of the problem. Nowadays the researchers recognized the right of the existence of both traditional and learning, with interpersonal interaction between the subjects of the educational process, and distance, where knowledge and skills are obtained without direct physical contact, employing computer technologies. O. Peters believed that the computer-based training and the educational material standardization will solve many problems related, in particular, to providing a wide range of educational opportunities for individuals. However, being enthusiastic about the model of mass computer-based learning, depersonalizing the educational process, he overlooked the pedagogical component of distance education, deliberately depriving students of the possibility of individual creative development and receiving psychological and pedagogical support.

Currently the development of various approaches considering individual aspects of distance education take into consideration most common elements of distance learning: geographical distance between the subjects of the learning process; the availability of a new type of educational communication, due to the separation of the processes of teaching and learning in time and space. In order to structure the existing knowledge, a retrospective analysis of the phenomenon of distance education from the perspective of three approaches seems to be significant: the theory of industrialization, the concept of distance, and the nature of educational communication.

Beginning of the post-industrial era has fundamentally transformed the social structure. Along with the general tendency towards globalization with the creation of a single world space, intensified aspirations for uniqueness and individuality have appeared as the features of modern culture. The task of creating a unique personality, which the education system faces now, contradicts to the concept of technocratic industrialized training aimed at standardized education. The value of the O. Peters' concept is that he tried to develop a structural model of the distance education organization. In the modern rapidly changing society, many of his ideas require a thorough review and correction.

The concept of distance, being a key to the theory of distance learning, goes beyond geographical space designation. For instance, the spatio-temporal disunity of the educational process subjects exclusively as a new opportunity for the financial enrichment of educational institutions by increasing the number of distance students. In his opinion, the lack of interpersonal interaction and a high level of the educational process standardization could minimize the distance learning value among its participants. According to O. Peters, the space-time barrier can be overcome through

carefully structured training courses and the use of computer communication technologies.

Thus, the role of distance education has transformed from a tool of mass education to an individual type of obtaining the required professional knowledge and skills. This transformation makes distance learning a very promising type of education, alternative to the traditional system that has existed for centuries, which has been accumulating the principles of the modern technological society.

However, the importance of the geographical distance between the educational interaction participants decreases due to the computer technologies development and requires the creation of new conditions of the educational process. It is necessary not only to develop the special educational materials and pedagogical techniques but also organize a special educational environment for the diminution of negative consequences of the distant students' isolation and high-quality psychological and pedagogical support provision.

The introduction of computer technologies has changed the nature of educational communication from direct to indirect, shifting the focus from bridging the distance between subjects of education to finding ways of effective implementation through modern communication tools in training and establishing feedback in the interpersonal interaction of the distance educational process participants.

Ukrainian teachers, focusing on the experience of foreign colleagues, have created regulatory and legal documents regulating the technical, technological, educational, methodological and organizational support of distance learning. These include the Concept of distance education in Ukraine [3]. The development of the provisions of this concept brought to the concept of *information and educational environment for distance learning*. This term can be considered as "a systematic organized set of data transfer tools, information resources, interaction protocols, hardware-software and organizational and methodological support, focused the educational needs satisfaction" [1].

The concept of *computer-based educational environment* is not identical to the concept of *computer-supported educational space*. The researchers interpret *the computer-based educational environment* as "the location of simultaneously existing interconnected objects affecting human education" [9]. The concepts presented analysis permits to conclude that the educational space surrounds the educational environment and makes possible to implement distance educational activities. This fact is confirmed by the definition of distance learning as the process of obtaining knowledge, skills and abilities through an interactive educational environment based on the modular training programs and the latest computer technologies, providing exchange of educational information at a distance and implementing a system of support and administration of the educational process.

Considering the concept of *distance learning*, researches as a rule mean a set of educational services

provided to students that are distant (in time and space) from the sources of educational and methodological information, implemented by various means of its transmission, storage and processing (television, radio, modem communications, computers, etc.) [2]. Analyzing the essence of the relationship between computer-supported educational technologies and pedagogical environment, we can conclude that the concept of *distance learning*, and more specifically *distance education*, reveals this interdependence as a new form of pedagogical interaction. Realization of the goals of any education is carried out through the learning process.

Distance learning is characterized by all the components of the educational process: goals, content, organizational forms, teaching aids, and evaluation and monitoring system. Three types of technologies used in distance learning are being exploited. The first is based on paper and audio media (teaching aids, textbooks), where the pedagogical interaction is directly supervised by the teacher through telephone and cellular or live communication. The second is a television technology, which has begun its way in education since the late 60s. The third is online learning or network technology. In distance learning, all of the above approaches have been used in different proportions.

In our country distance education has long been perceived as learning through printed, audio and video material sent as correspondence by post. Advances in information technology have significantly affected the education process in general and the improvement of distance learning in particular. The impetus for such a scientific breakthrough was the mass emergence of business schools, which, as a form of training organization, were brought from Western educational systems. The world pedagogical experience and commercial investments have permitted to train business specialists via Internet and multimedia technologies. This was the beginning of the introduction of distance learning as such in the national educational information environment.

The Internet space development demonstrated that distance learning can and should be used not only as an independent educational technology but also in the framework of traditional full-time, part-time and external education many researchers consider this innovative approach as a useful method of training. While implementing the educational process through distant technology, the information is exchanged between all participants via a range of Internet resources, which permit quickly to gain access to any educational resources.

The interaction with teachers employing computer technologies confirms that distance learning is constantly expanding its boundaries in the educational environment due to some features which permit to maintain the inclusiveness of this approach. Among them, we should mention such as a flexible educational schedule, which permits real-time work at evaluative tests or practical and laboratory work. Distance learning is an important addition to traditional studies as one can obtain education through communications at

the place of work or residence. The possibilities of organizing discussions, students' group work, the result submitting periods are unlimited and do not depend on distance, participants' employment, and training periods duration. The style of interactive and operational communication permits to individualize the learning process and assists in successful studying.

Conclusions and prospects for further development. Ukrainian educational institutions have adopted these opportunities, which added to the popularity of distance learning. Analyzing benefits of distance learning, we can conclude that distance education is a pedagogical system, which can satisfy the educational needs of individuals, regardless of its spatial and temporal location and comprises the appropriate technical and methodological tools. Distance education is provided through computer-based technologies as a teacher-student interaction carried out in a specific educational environment [7].

The environment specifications impose certain requirements for distance learning implementation:

– Online educational communities' expansion and the creation of motivational mechanisms for teachers' introduction to the computer-based technologies;

– Research of education system demands for information and communication aimed at these needs satisfaction;

– Creation of special methods and techniques for students' preparation for the special educational activities implementation;

– Personnel training for creating distant learning resources and able to accompany the learning process;

– Implementing a systematic approach to education and developing a concept of principles and requirements for distance learning as a part of the pedagogical process.

Despite significant progress in the development of theoretical principles of distance education, it has developed the proper scientific base yet. The specialists are faced with the difficult task of comprehending the rapidly changing education, where the concept of *distance* has already ceased to play a major role. Further research and development of distance learning and training, due to its potential, should be continued.

The problem of distance learning introduction into the modern educational environment is mainly theoretical in nature and requires more thorough analysis for practical implementation of distance education technologies, which concerns the active employment of traditional methods of training in combination with technology and methods of distant learning.

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