SOME ASPECTS OF IMPLEMENTING DISTANCE LEARNING METHODS IN HIGHER EDUCATION INSTITUTIONS

Abstract. Distance learning is a method of implementing the learning process that utilises modern information and telecommunication technologies to enable learning at a distance without direct personal contact between the teacher and the student.

This publication aims to highlight the specificities of implementing distance learning in higher education institutions. The educational process in distance learning relies on purposeful and controlled intensive independent work by students. They can study in a convenient location, according to an individual schedule, with access to special teaching aids and the ability to contact the teacher via phone, fax, email, regular mail, or in person. The article analyses the works of domestic and foreign scholars and systemises the forms and methods of technologies for implementing distance learning in higher education institutions.

Achieving learning goals is challenging without the use of information and telecommunication technologies. These technologies can help students obtain necessary information at any time and distance, broaden their horizons, improve their skills, and even acquire a new profession. Distance education has a humanitarian focus, providing equal learning opportunities for all, regardless of financial, geographical, or social barriers. This encompasses individuals who may be temporarily isolated or have physical disabilities, as well as those who are unable to attend traditional educational institutions due to employment or personal commitments.
The conclusion summarises that distance learning meets the basic principles of modern learning, such as activity, independence and creativity. It is an open humanistic approach to learning, where both the teacher and the student play an active role at all stages.

**Keywords:** education, distance learning, participants of the educational process, higher education institutions.

Mельник Людмила Вікторівна кандидат педагогічних наук, доцент, доцент кафедри іноземних мов, Вінницький державний педагогічний університет імені Михайла Коцюбинського, м. Вінниця, тел.: (067) 858-11-45, https://orcid.org/0000-0002-4690-2101


Головська Ірина Василівна кандидат педагогічних наук, завідувач кафедри германської та слов'янської філології, Комунальний заклад вищої освіти «Вінницький гуманітарно-педагогічний коледж», м.Вінниця, тел.: (096) 947-97-79, https://orcid.org/0000-0002-8454-6232

**ДЕЯКІ АСПЕКТИ ВПРОВАДЖЕННЯ ДИСТАНЦІЙНИХ МЕТОДІВ НАВЧАННЯ У ЗАКЛАДАХ ВИЩОЇ ОСВІТИ**

Анотація. Дистанційне навчання – засіб реалізації процесу навчання, в основу якого покладено використання сучасних інформаційних та телекомунікаційних технологій, що дозволяють навчатись на відстані без безпосереднього, особистого контакту між викладачем і студентом. Метою публікації є висвітлення особливостей впровадження дистанційного навчання у навчальний процес закладів вищої освіти. Основу навчального процесу у процесі дистанційного навчання складає цілеспрямована та контролювана інтенсивна самостійна робота студента, який може вчитися в зручному для себе місці, за індивідуальним розкладом, маючи при собі комплект спеціальних засобів навчання і узгоджену можливість kontaktu з викладачем по телефону, факсу, електронній і звичайній пошті, а також очно. Аналізуючи праці вітчизняних і зарубіжних учених було систематизовано форми і методи технологій впровадження дистанційного навчання у ЗВО. Досягнення цілей навчання важно узяти без застосування інформаційно-телекомунікаційних технологій, які можуть допомогти студентам в будь-який час не тільки отримати необхідну інформацію на відстані, але й розширити свій кругозір, підвищити кваліфікацію і навіть
_statement of the problem._ Our society is an information-based one. To keep up with the growing demand for highly qualified specialists, all parts of the economy, especially education, must be informatised. This requires the development and implementation of innovative educational methods and technologies that allow for unlimited learning in both space and time. Today, education has a rich history with information and communication technologies (ICT) and networks (ICN). Distance learning is one of the most contemporary forms of education. Distance learning is a means of implementing the learning process based on the use of modern information and telecommunication technologies. It allows learning at a distance without direct, personal contact between the teacher and the student. Distance learning is a new organisation of the educational process based on the use of both the best traditional teaching methods and new information and telecommunication technologies, as well as on the principles of self-study, intended for the general public.

_analysis of recent research and publications._ Previous studies indicate that a considerable number of educational institutions now provide distance education services. This issue has been addressed in studies by R. Hurevytch, M. Kademiiia, A. Kolomiiets, V. Kukharenko, V. Bykov, L. Shevchenko etc.

_the aim of the article_ is to analyse implementing distance learning methods in higher education institutions.

_presentation of the basic material._ The foundation of distance education is the purposeful and controlled independent work of the student, who can study at a convenient location and according to an individual schedule. The student has access to a set of special learning tools and can contact the teacher through various means, including phone, fax, email, regular mail, and in-person.

There are five main groups of technical support for distance learning: case technology, radio technology, TV technology, network technology, and mobile technology. Case technology involves clearly structured and appropriately packaged teaching and learning materials in a special set (“case”, “portfolio”) that are sent to
the student for self-study and periodic reference. In this type of training, students seek clarification from specially trained teacher-consultants (tutors or instructors) as questions arise. The communication between the student and the teacher is carried out through electronic correspondence or telephone communication. The educational process can also be carried out through radio technology by broadcasting audio recordings of lectures in the radio frequency range [7].

The Internet has revolutionised knowledge dissemination technologies, providing students and teachers with electronic textbooks, libraries, testing systems, and communication tools. It has combined and expanded upon previously known learning tools, significantly impacting the information culture in the educational environment.

Network technology is the use of the wide possibilities of Internet technologies and the latest achievements in the field of multimedia to provide students with teaching and learning materials, constant contact with the learning centre and interactive interaction between teachers and students. Mobile technology is a technological extension of the networked form of learning by introducing new wireless data transmission standards into the e-learning technology base.

Currently, students already have the opportunity to use Internet television (WEBTV) technologies, which allow them to receive educational programmes via the Internet directly on their home computer using a specific set of software tools. The widespread use of the Internet as a global computer network in education has led to the emergence of networked learning technologies via the Internet (e-learning). In turn, e-learning has actively stimulated the development of information support systems for the educational process – networked electronic libraries of web courses and other information resources.

When analysing the process of development of the global Internet, it can be noted that the aims of creating web sites of educational institutions are: optimisation of management activities of the head of the educational institution; representation of the educational institution on the Internet; increase of competitiveness of the educational institution; exchange of information and materials among teachers, students; inter-university exchange of information; exchange of experience among teachers in order to determine the priority areas of development of educational systems.

Nowadays the world has gained significant experience in implementing distance learning systems that utilise computer networks, live television broadcasting systems, and telecommunications technologies. The main providers of distance courses include the Open University of Great Britain, the British Space Virtual University, the Open University of Phoenix, the California Virtual University, and others [1]. Harvard University and the Massachusetts Institute of Technology are leaders in the field of distance education. Microsoft Corporation closely cooperates with these institutions. The distance learning system is
implemented through the infrastructure of virtual schools, universities, and academies.

Achieving the objectives of vocational education and training is inconceivable without the use of information and telecommunication technologies, which can help a person at any time in his or her life not only to obtain the necessary information at a distance, but also to broaden his or her horizons, to improve his or her qualifications and even to acquire a new profession, and the most promising area in vocational education and training is the introduction of ICT-based distance learning.

Distance education has a humanitarian focus as it aims to provide equal opportunities for all to study, regardless of financial, geographical, or social barriers. This includes those who may be temporarily isolated or have physical disabilities, as well as those who are unable to attend traditional educational institutions due to employment or personal commitments.

Distance learning aims to address several socially significant tasks, including improving the level and quality of education, meeting the educational needs of the population, producing well-trained specialists to meet the country’s demands, and increasing social and professional mobility, entrepreneurial and social activity, self-awareness, and broadening of outlook. The aim of the national higher education system is to preserve and enhance knowledge and human and material potential. It also aims to develop a single educational space within Ukraine, CIS, and the entire world community to preserve the possibility of obtaining education anywhere in the educational space. Additionally, it aims to solve geopolitical problems [6].

After analysing the theory and practice of ICT application in higher education institutions, it has been concluded that ICT includes the following main tools for communication in distance education processes: postal correspondence, fax, telephone, traditional textbooks, electronic teaching materials, and e-mail communications. These tools are used to some extent by almost all HEIs. It is important to note that this conclusion is based on objective analysis and not subjective evaluations. The methods of accessing educational resources include the use of the Internet, electronic textbooks, and the educational institution’s information website. Active communication methods such as tele-seminars and conferences are also available. Full virtualisation of learning on the Internet and the use of satellite educational television are additional options.

The rapid introduction of Internet technologies has created a global communication platform that has paved the way for a revision of traditional educational methods. There is a need for new knowledge to enter the education system directly in the learning process. A new generation of software connected to the Internet has made it possible to create a new model of learning – distance learning.

Today, the world has accumulated considerable experience in implementing distance learning systems using computer networks, live television broadcasting systems and telecommunication technologies. The main providers of distance
education courses are Open University of Great Britain, British Space Virtual University, Open University of Phoenix, California Virtual University and others [5, 34]. The leaders in the field of distance education are Harvard University and the Massachusetts Institute of Technology, with which Microsoft Corporation closely cooperates. In these educational institutions the system of distance education is implemented through the infrastructure of virtual schools, universities and academies.

Traditional educational content is concentrated in monotonous sources, such as textbooks and manuals, whose main purpose is to convey selected content. The progressive increase in the volume and accessibility of educational information available on the web, on CD-ROM and DVD media, in e-books and virtual libraries no longer requires students to assimilate it. It is more important to select or construct the personalised educational content that corresponds to each student’s programme of study.

Remote forms of selecting and structuring educational content allow the use of data that does not have a single source of information, which significantly expands the potential educational environment. For example, the use of “web-quests” as teaching aids – thematically selected hypertext materials with links to local or global resources – allows students to individualise their educational path as much as possible [7].

Distance education is often considered the most humane form of knowledge acquisition due to its flexibility. It allows individuals to move freely in the learning space, including ‘forward movement’ where one can improve their qualifications and professional skills while remaining at the same educational level (e.g. a doctor, lawyer, teacher, engineer). This allows individuals to adapt to changes in socio-economic conditions. It is possible for movement to occur simultaneously in multiple directions. The individual’s freedom in this model is also based on the knowledge gained during the result-oriented learning process, which allows the learner to develop their personal ‘concept of learning’. This contributes to the emergence of a stable sense of self-sufficiency, and the sphere of education becomes a social sphere where the necessary conditions for designing human activity are created.

In the context of distance learning, the importance of individual creative cognitive activity of students is increasing significantly. Therefore, the role of the textbook and the entire set of learning materials is also becoming more crucial. In computer-based learning, hypertext technologies have enabled the integration of various learning components into a single interactive environment. This allows students to explore and gain the necessary knowledge and skills [3]. Therefore, a new educational process is being developed. The role of the textbook as an intermediate link between the student and teacher has become more prominent. This is due to the redistribution of some of the teacher's functions in favour of the learning environment. Simultaneously, there is no justification for discussing the
replacement of teachers with computers. However, we can confidently predict that the challenge of integrating technology into the learning process, particularly in distance learning, will soon be resolved. The most productive models will likely involve the teacher becoming an integral part of the learning environment model.

When constructing a distance learning model, the multimedia complex of interactive computer-based learning materials, including systems for testing and consolidating knowledge and skills, carries the main information load and forms a complete learning environment. The computer facilitates a dialogue mode of learning and enables individualised learning. The evaluation of the computer’s role and position in the learning process has evolved. Currently, there are tens of thousands of distinct learning systems available, with no universally accepted classification. Nevertheless, the majority of authors differentiate between the following types of systems: training, mentoring, problem-based learning, simulation and modelling, and game programmes.

At present, researchers-theorists of DL and practitioners-methodologists are actively developing several concepts of development of learning based on computer network technologies. The concept of Internet-based education relies on client-server interaction. All educational information is available to students in HTML format on the server of the educational organization. Control over the process of knowledge acquisition, including intermediate and final testing, is carried out during face-to-face contacts. It is believed that imitation of full contact between a teacher and a student is ineffective and cannot be compensated by any technical means. This concept involves combining an online database, educational computer programs, and courses with reference and teaching materials that are not online, such as textbooks, reference books, problem books, and other teaching materials on traditional carriers. The model primarily focuses on traditional distance learning methods and uses interactive Internet capabilities only for solving special tasks, such as testing. It can be defined as a polymodal model based on Internet technologies that provide prompt interactive interaction between servers and users, including video conferencing.

Considering the history of computer-based learning, it is important to distinguish between two types of learning systems: traditional and intelligent. The key characteristic of intelligent learning systems is their ability to manage learning activities, taking into account all aspects throughout the process of solving a learning task, from setting and searching for the principle of the solution to evaluating the optimality of the solution. Intelligent learning systems aim to provide an individualised learning experience through a dynamic student model. These systems distribute management functions between the computer and the student, transferring new learning functions to the latter as the learning activity progresses. This ensures an optimal transition from teaching to self-learning. Unlike traditional computer systems that operate based on predefined algorithms, intelligent tutoring systems organise the management of learning activities as a heuristic process according to a predefined system of rules [1].
Computer-based learning has a significant impact on all components of the learning process. This impact is due to the fact that much of what was previously considered feasible only for a highly qualified specialist has become available to students. The computer's ability to visualise educational content, the implementation of artificial intelligence ideas through computer tools, such as expert systems that facilitate the acquisition of declarative and procedural knowledge, and the provision of students with access to vast amounts of information have made this possible. On the other hand, computers allow for the inclusion of various heuristic tools in learning, primarily strategies for problem-solving. Additionally, computers facilitate the creation of integrated subjects and the development of vocational training content based on real production processes. They also make the student's own learning activities the object of study.

The development of the information society necessitates significant changes in the education system. The demand for highly qualified professionals is increasing globally. Additionally, it is crucial that individuals can acquire new knowledge and skills throughout their lives, not only before entering the workforce but also as needed in response to the constantly evolving economy and society. Regrettably, some higher education institutions are unable to meet the increasing demands of society due to limited resources, inflexibility, and the high cost of traditional methods, as well as outdated educational policies.

Foreign experts predict that higher education will soon become the minimum level of education required for humanity’s survival [5, 37]. The sustainability of teaching such a large number of full-time students is unlikely to be feasible even for the most prosperous countries. As a result, the number of part-time students has grown faster than that of full-time students in recent decades.

It is important to note that as ICT develops and the country becomes more computerized, the infrastructure for implementing Internet technologies is expanding. Educational materials are increasingly being made available in electronic form. Universities, recognizing the inevitability of the spread of online learning, are converting their best courses into an online format [1].

Virtual universities are best suited to meet the educational needs of society in the 21st century. By utilizing the capabilities of the internet, the entire university education system can significantly expand in the future [7]. To prepare for the new needs of society, universities should start using the global computer network today to improve the quality of their services. However, traditional universities may face challenges in organising online learning and may need to make significant efforts to attract the necessary capital for technical support. Additionally, traditional universities may lack experience in marketing and providing online educational services, which is a key factor in the success of e-learning. Large multimedia companies are better equipped to carry out e-learning activities. Traditional universities should exercise caution when getting involved in e-learning because it can break the link between different parts of the higher education system and destroy
the old economic model of education, which is based on the close link between teaching and research, general education, and professional training. The e-learning economy, which is dominated by business and IT-based courses, does not require universities or other institutions to combine teaching and research.

**Conclusions.** Based on various definitions, distance learning can be defined as a modern active learning process that utilises advanced information and pedagogical technologies. It is also an open humanistic learning approach where both the teacher and student play an active role at all stages. Additionally, it involves interactive participation of all learning process participants. Finally, distance learning adheres to the basic principles of modern learning, such as activity, independence, and creativity.

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