

Comparative Characteristics Of Information Technologies And Technologies Of Distance Learning Of Higher Education Institutions

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Summary

The article discusses the features of the use of distance technologies to intensify the learning process of students. The advantages and disadvantages of distance learning are shown.

The role and functions of the teacher in distance learning have been adjusted.

Information and methodological support for distance learning of students is proposed.

Analyzed pedagogical, psychological, methodological and philosophical literature, educational standards, charters of higher educational institutions and other documents.

Studied foreign experience in conducting classes using information technology.

Key words:

distance learning, distance education, higher education, local network communications.

1. Introduction

The transition of modern society to the information era of its development, an increase in the volume of professionally significant information, its structural complication puts forward as one of the main tasks facing the education system, the task of increasing the level of information training of students and graduates of universities.

The current socio-economic and socio-cultural conditions on the labor market require the training of specialists with high professional and social competence, well-focused on the use of information resources of the world community. A university graduate will have to live in an information society and he not only needs to master the methods of receiving and processing information, but,

first of all, he needs to learn how to rationally use information and information technologies to maintain and develop his intellectual and creative potential.

Analysis of scientific and pedagogical literature, normative documents on education, dedicated to the use of information and communication technologies (ICT) in the information training of students, shows that the main goals of information training of students are:

- the formation of a scientific worldview based on an understanding of the unity of the basic information laws in nature and society;
- training of specialists with a high information culture, mastering the basic concepts and methods of computer science as a scientific discipline;
- increasing the efficiency of the educational process through the use of educational information systems;
- formation of the need for constant self-education and raising one's intellectual and professional level using ICT tools and methods.

Information training should provide the necessary skills and abilities to work on a personal computer. It contributes to the development of active, independent forms of acquiring knowledge, increases the motivation of learning, allows you to independently choose the mode of work, provides orientation to the personal needs of students, multilevel and profiling of education.

The issues of introducing new information technologies into the educational process are considered in the works of many famous authors K. Evelin, V. Oliver, J. Higgins, S. Papert, T. Russel and others.

Many researchers see a rational combination of traditional educational technologies with modern information and telecommunication technologies as one of the possible

ways to solve the problem of modernizing education based on informatization.

Information technologies currently used to intensify the learning process have great didactic opportunities for improving the training of university graduates. Nevertheless, specific methodological approaches to the use of information and communication technologies in order to improve the professional training of specialists have not been sufficiently developed.

Distance learning is one of the promising areas of using information and communication technologies in the field of education.

The works of researchers V. Holmberg, M. Moor, O. Peters, J. Daniel, D. Keegun are devoted to the problems and prospects of distance learning.

Purpose of the article: to analyze and draw qualitative conclusions on information and methodological support for distance learning of students.

2. Theoretical Consideration

The development of modern society takes place in the era of informatization, characterized by the use of information technology in many areas of human activity, including education.

In the context of the informatization of education, one of the tasks facing a higher educational institution is to prepare a graduate for quick perception and processing of incoming information, depending on the direction of the chosen specialty. In order to freely navigate the information flow, a modern specialist needs to have a high level of information culture as one of the components of culture in general.

The concept of "information culture" is closely related to the concept of "general culture". Modern cultural studies is a teaching about culture as a phenomenon that permeates all phenomena of human life, understood as sensory activity, practice. At the same time, the specificity of a cultural phenomenon lies in the fixation in each of the reality phenomena of the aspect of its development and transformation by a social subject, which changes itself in this process. Information culture in the broad sense of its understanding means the realization of the social essence of a person through all types of social activities, since in modern conditions of informatization they are covered by the electronic computing or computer technology used in them and outside the channels of interchange of various types of social information cannot exist [1-3].

I.V. Robert considers information culture as a means of increasing the efficiency of the entire education system, humanizing learning in the context of implementing a personality-oriented approach when using information and communication technologies for educational purposes [11].

Ensuring the necessary level of information culture of a specialist of any profile cannot be the goal of only one academic discipline in an educational institution. It is necessary to introduce information technologies into all special disciplines of the educational process, which will allow training a specialist who not only has special knowledge in the subject area, but is also ready to use this knowledge in his professional activities.

At the present stage, the importance of educational information is increasing, which, being distinguished by its conservatism and long duration of educational cycles, is rapidly becoming obsolete. Previous knowledge, skills and abilities do not provide vigorous activity in a world dominated by computers. Losses from functional illiteracy of workers who are unable to effectively fulfill the tasks assigned to them in the era of the information society are increasing. The informatization of education is designed to solve this and many other problems. That is why, in the concept of reforming science, much attention is paid to "informatization of various spheres of educational and scientific activities" [5].

Informatization is the implementation of a set of measures aimed at ensuring the full and timely use of reliable knowledge in all socially significant types of human activity. The informatization of education is understood as the process of preparing a person for active life in an information society.

Necessary conditions for the informatization of education are:

- readiness (operational, motivational, reflexive) of educators to use informatization means;
- the willingness of students to work in a computerized environment;
- creating conditions for improving the professional level of educators in solving the problem of informatization;
- providing the process of informatization of education with scientific, educational and methodological literature on this problem;
- creation of conditions for creative intellectual activity of participants in the pedagogical process [4-6].

It is customary to refer to the pedagogical conditions of informatization of education as a set of measures necessary for the effective functioning of the educational process using new information technologies in education. That is, the informatization of education implies the use of new information technologies.

By methodological support of distance learning, we mean an educational and methodological complex intended for the study of a specific academic discipline, which includes a set of various types of pedagogically useful, meaningful educational information on various media, interconnected in terms of goals and objectives of education and upbringing. For distance learning, methodological support consists of:

- teaching materials;

computer support based on modern information and communication technologies [7-10].

We consider information support of the educational process of student managers as two interrelated components. The first component is the content of the subject, corresponding to the goals and objectives of education, aimed at the assimilation of a certain amount of scientific knowledge by students, the formation of a worldview, cognitive activity, new economic thinking, ingenuity, enterprise, the development of the need to constantly replenish knowledge, the formation of interest in professional activities, development technical, economic and other abilities.

The second component is DL software: system and applied programs and software complexes used in one form or another of distance learning, including instrumental environments for creating training programs and software complexes. In the software, a subsection is distinguished - technical support, which means computing, telecommunication, satellite, television, peripheral, multiplying, office and other equipment used in the educational information environment, as well as data transmission channels. Software information support of educational activities of universities in the field of distance learning largely depends on the type of university, the system of organizing the educational process, the level of informatization of the university and the distance learning technologies used.

Methodological support of DL is divided into two sections: educational and organizational support. Educational support - a base of educational materials, a management system for this base, DL methods, tests, recommendations on distance learning technology, taking into account didactic and psychological aspects. Organizational support of DL - forms of organization of the educational process with the use of DL technology, corresponding to the legislation, as well as recommendations for their use. Thus, methodological support is a system of methods, means, methods that allow purposefully, consistently to achieve a high-quality result in the training system.

Based on the above, we consider it expedient to present information and methodological support as a system consisting of 3 subsystems:

- 1) meaningful
- 2) software
- 3) methodical.

For the successful functioning of the training system, effective work of each subsystem of information and methodological support (IMS) separately and their joint work is necessary.

In the technology of creating IMS, the following stages are distinguished:

- preparation of educational material;

- development of a software structure;
- computer preparation of the content and the layout of the software;
- approbation of the program and its revision;
- development of guidelines for students and teachers [12, 13].

Based on the results of the theoretical study of didactic possibilities and psychological and pedagogical features of the use of DL tools in the educational process and the developed information and methodological support, we formulated the tasks and hypothesis of the experiment.

The objectives of the experimental part of our study:

1. To reveal the level of information competence of students.
2. To analyze the psychological readiness of students to work with the means of DL.
3. Check the effectiveness of information and methodological support of students.
4. Carry out the processing and analysis of the obtained experimental data.

Experiment hypothesis: the use of information and methodological support based on the principles of multilevel, modularity, humanistic and professional orientation of the content, contributes to the optimization of educational and cognitive activities of students, the development of independence and creativity, the formation of information competence of future specialists. The pedagogical experiment was carried out in three stages.

At the first, the analysis of pedagogical, methodological, linguistic literature was carried out, the topic of the dissertation research was formulated, its object and subject were determined, the goals of professional language training of students were specified, a program of experimental work was developed.

Based on the analysis of scientific literature on the informatization of the educational process and existing educational software, the expediency of using educational software for the intensification and improvement of the quality of professional language training was determined, the tasks were determined and a hypothesis of the study was formulated.

The ascertaining experiment was started with a multilateral study of the contingent of students. The volume of knowledge and skills acquired during the study of a foreign language at school was revealed, the motivational sphere of the personality of each student was studied (the main motives of educational activities, interest in obtaining a future profession, self-esteem, methods of interpersonal communication, etc.).

In the process of observations and conversations, students' motives for studying disciplines, their thematic preferences, as well as their opinion about the need for knowledge for a specialist were revealed. As a result of observations and conversations, it was found that the

majority of student's associate knowledge of special disciplines with future professional activities (85%).

The study of students' readiness to use the means of DL for teaching took place in two directions: first, the identification of the level of information competence of students; the second is to determine their psychological readiness to use innovative teaching aids.

Conclusions

Thus, the features of distance learning methods have been determined, which consist in: the special nature of the interaction of learning subjects; the student's ability to independently work with information; creating and maintaining a positive emotional background in the process of educational activities; organization of guided, corrected and controlled independent work of the student. The conditions that improve the quality of distance learning are identified: the organization of effective interaction between the teacher and the student; formation and maintenance of sustainable motivation; mastering the students' skills of conducting independent work.

The advantages of distance learning methods in comparison with traditional methods have been established: ensuring individualization and differentiation of the learning process;

implementation of the principle of visibility at a qualitatively new level; providing an opportunity to get education for a diverse contingent of students; implementation of constant control and self-control of educational activities;

guaranteeing the objectivity of the assessment of knowledge.

The disadvantages of distance learning methods have been identified:

lack of a small amount of face-to-face communication with the teacher; low level of information competence of students; difficulty in identifying students; lack of students' skills in conducting independent work.

The definition of the concept of "distance learning" has been clarified, which consists in the fact that the didactic capabilities of distance learning tools in organizing the educational process of students have been identified and analyzed: receiving, storing, processing, prompt transfer of an unlimited amount of educational information; access to various sources of information; organization of interactive communication of subjects of study, through operational feedback, e-mail, teleconferences, computer audio, video conferencing.

A system of principles for selecting the content of information and methodological support of distance learning for students is revealed: multilevel, modularity, professional orientation, ensuring the implementation of a personality-oriented approach to learning.

Information support of the educational process, consisting of: content based on the principles of multilevel, modularity and professional orientation; a "man-machine" interface

providing simplicity and convenience of work and a psychologically comfortable working atmosphere; the algorithm of work, contributing to the activation of the student's independent work and the development of his creative activity.

References

- [1] Moodle is a distance learning system. Open technologies. Access mode <http://www.opentechnology.ru/products/moodle>.
- [2] Organization of distance learning using modern ICT. Access mode http://uotashtagol.3dn.ru/doc/PDF/Dist_Obuch/metodicheskie_rekomendacii_dlja_pedagogov_obrazova.pdf.
- [3] Education at a Glance 2016. Oecd indicators.
- [4] Polat E.S. Distance learning models. Access mode <http://hr-portal.ru/article/modeli-distancionnogo-obucheniya-polat-es>.
- [5] Index of Codes. URL: http://www.ecgi.org/codes/all_codes.php
- [6] An approximate program of basic general education in computer science and information technology <http://window.edu.ru/resource/183/37183/files/09-o.pdf>.
- [7] What is distance learning. Access mode <http://ra-kurs.spb.ru/2/0/8/1/?id=28>.
- [8] Distance learning. Access mode <http://5fan.ru/wievjob.php?id=48465>.
- [9] Methodology for using an electronic textbook in physics lessons. Access mode <http://works.tarefer.ru/64/100534/index.html>.
- [10] Anisimov, A.M. Work in the Moodle distance learning system: textbook. Allowance, Kharkov, KhNAGKh, 2009, pp. 292.
- [11] Technology of creation of electronic teaching aids [Electronic resource]. - Access mode: www.ido.rudn.ru/nfpk/tech/t1.html.
- [12] Improvements in version Moodle 1.9 [Electronic resource]. - Access mode: http://docs.moodle.org/en/Release_Notes#Moodle_1.9.1.
- [13] Bogomolov, V.A. Review of free learning management systems. Educational Technology & Society, 2007, pp. 188.