

ESSENCE, CHARACTERISTICS, DIDACTIC PRINCIPLES AND TYPES OF DISTANCE LEARNING

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ABSTRACT

The development of the Internet - global computer network, has opened up new prospects for improving the global educational system. Currently the Internet has a large number of specialized educational networks located all over the world, including Uzbekistan. The USA, Canada, Japan, Eastern European countries have significant experience in using the Internet for the purposes of higher and secondary education. As for the Uzbek education system, the role of the global Internet network is growing.

INTRODUCTION, LITERATURE REVIEW AND DISCUSSION

The first experiments on practicing computer-based telecommunications were conducted in the U.S.: in 1969, an experimental computer network ARPANET united the first host-machines of universities in California, Utah and Stanford Research Institute. This project was funded by the US Department of Defense. ARPANET was designed to combine mentioned resources and service users that were geographically located over a very large area. The purpose of the project was to create a network that would remain operable in the event of communication failure between its individual parts, as well as to exclude (wired) connections and include new ones with minimal cost, regardless of the type of computers used [173].

Widespread introduction of computer-based telecommunications in the sphere of education, both in the USA and in other countries, began only in the end of 70-s. Because it was then that the necessity for mass development of national telecommunication infrastructure (well-developed telephone, satellite and radio network) had been formed and a high level of computerization of society as a whole had been achieved.

The term “distance learning” (DL) appeared in Uzbekistan in the late 80s. Distance learning was understood to be the implementation of an educational process for students who were at some distance from the teacher [180]. The first experiments related to distance learning in Uzbekistan were conducted in the early 90s. In recent years, there has been a rapid development in DL, and this is primarily due to technical progress: due to the changes in information and communication technologies (ICT) types of DL are transforming, which requires a review of the forms of its organization. As a result, the definition of DL given by foreign colleagues has now lost its relevance and needs to be defined more clearly. Thus, this definition can also include the aspect of extramural (external) education (*is a form of study that combines the features of self-study and full-time study. In the first phase, a knowledge base, educational literature is obtained, in the second stage, the learned material is checked (test-examination session at the university) or “correspondence education”*). In addition, the role of technical tools used to implement DL needs to be reflected. Before defining DL, let us look at the factors that characterize the concept, namely: characteristics, didactic principles and types of DL. For this purpose, we have analyzed the formation and development of DL in the field of higher education, as this is where DL found its first application. Since the 1990s, higher education institutions have accumulated significant

theoretical and practical experience in organizing and conducting DE. They also conducted research in this field.

Researchers have identified various advantages of DL. Thus, V.D. Orekhov believes that distance learning provides highly effective fundamental on-the-job learning at a very high level of access and low cost [136]. A.E. Abrameshin, T.P. Voronina, A.D. Ivannikov, O.P. Molchanova, A.N. Tikhonov identify active information exchange between learners and teachers, as well as between learners themselves as an advantage [184]. M.I. Nezhurina believes that distance learning is a qualitatively new kind of learning [126]. A.A. Andreev says that it is a synthetic, integral, humanistic form of learning [2].

All the above-mentioned features of DL have allowed it to win the market of educational services. Today almost every higher education institution has its own Distance Learning Center (DLC). Every year the number of both public and private institutions specializing in DL is increasing. Uzbek universities are developing numerous distance courses on various disciplines. It should be emphasized that all extramural (external / correspondence) courses based on the classical model were initially classified as distance courses: students received a set of educational materials including several manuals and, audio or video materials in addition to them (if available). Distance learning courses are now referred to as ICT-based courses that provide continuous contact between participants throughout the learning process.

With this in mind, we can say that the higher schools have accumulated sufficient experience in organizing and conducting distance learning. Besides, the higher schools widely uses experience of foreign colleagues [220], [221], [222], [223], [224] and others.

Publications [2], [4], [55], [56], [65], [129], [146], [147], [173], [181], etc. discuss the features typical for DL. In our opinion, this question is most fully disclosed in A.L. Andreev's work [4]. The author lists the following features typical of DL: *flexibility, modularity, parallelism, continuity, asynchrony, coverage, profitability, and novelty of the role of the teacher, novelty of the role of the learner, technological, sociality, and internationality.*

Considering the purpose and objectives of our research, let us consider in detail such characteristics of DL as *modularity, novelty of the role of the teacher, and novelty of the role of the learner.*

Modularity. The DL programs are based on a modular principle. Distance learning material should be broken down into appropriate modules to allow a set of independent educational courses to form a curriculum that meets the individual or group needs.

The novelty of the role of the teacher. The role of a teacher in a distance learning has changed significantly. Thus, the interaction between teacher and learners is carried out mainly asynchronously by means of e-mail or communication systems. In this regard, the teacher is in charge of such functions as coordinating the cognitive process, adjusting the course being taught, consulting the learners, and continuous improvement of courses taught by him/her, increasing creativity and skills in accordance with innovations.

The novelty of the role of the learner. The role of the learner is also changing significantly in comparison with traditional learning. Thus, in order to obtain knowledge in distance mode, a learner should be exceptionally motivated, self-organized, and hardworking as well as should have a certain starting level of education.

The characteristics of DL make it possible to define its didactic principles, among which the followings should be noted: the principle of upbringing and developing education, the principle of connection of learning with life, the principle of scientific research and feasible challenges, the principle of systemic-basis and consistency, the principle of consciousness and creative activity of students under the leadership of the teacher, the principle of visibility of learning and development of creative thinking of students, the principle of substantiality of learning results and the development of cognitive forces of students, the principle of collective learning and taking into account the individual characteristics of students, the principle of positive atmosphere for education [156]. The didactic principles of DL, in our opinion, are quite completely revealed in the works of A.A. Andreev [2], [4]. Let us enumerate them: *the principle of humanistic learning, the principle of ensuring openness and flexibility in learning, the principle of pedagogical expediency in the use of new information technologies, the principle of non-antagonistic approach with existing forms of education, the principle of interactivity, the principle of basic knowledge, the principle of individualization, the principle of identification, the principle of regularity of learning.* We shall focus on more in detail on such didactic principles as *the principle of humanistic education, the principle of pedagogical expediency of applying new information technologies, and the principle of individualization.*

The principle of humanistic education. The essence of this principle is included in circulation of teaching and educational process as a whole to the person and in necessity of creation of maximally favorable conditions for students to master the socially saved up experience.

The principle of pedagogical expediency of application of new information technologies. This principle requires a pedagogical evaluation of the effectiveness of each step of designing and creating a distance learning system (DLS). First, it concerns the appropriate content of learning courses and educational services.

The principle of individualization. Distance learning allows for maximum consideration of the individual characteristics of the learners. For this purpose, in the learning process in the DLS there is an entrance and current control (exams). The entrance exam allows defining the initial level of knowledge, skills and abilities of learners and if necessary to make an individual teaching plan with the purpose of filling up of missing knowledge and the skills required for effective learning. The current exam allows adjusting the educational trajectory of the student in the process of teaching.

Implementation of the didactic principles considered above in DL for classroom-lesson system allows considering such individual-typological features of the learners such as *capabilities, interests, inclinations, features of intellectual activity* etc.

The development of ICT resources made it possible to improve the types of DL. E.S. Polat [143] lists five types of distance learning, which have been developed to so far:

1. *Courses based on "case studies" and ICT tools.* The means of communication in this context are e-mail and fax. The learners receive learning materials by e-mail and send written reports and the results of their own practical work and assignments back. Video and audio cassettes, laser disks and diskettes with educational computer programs are available.

2. *"Broadcasted" courses.* Educational TV programs are used in the process of teaching, which are integrated into the teaching schedule of full-time courses, thus supplementing the learning programs. E-mail channels are used as feedback, through which learners receive assistance from teachers and submit reports.

3. *Educational teleconferences and videoconferences.* These two types of conferences are often combined in the learning process: teleconferences are used at the initial stages of teaching

activities to broadcast theoretical material, audio and video conferences, for seminar or project work in small groups. The learners work on their projects, and with the help of conferences they gather together to demonstrate reports, discuss them, coordinate learning and research activities, get advice from the teacher, etc.

4. *Courses based on computer-based educational systems.* With electronic educational publications, as a rule, included in the teaching and methodical set and consisting of a textbook, curricula, didactic materials, a student can work independently on his/her computer or directly on the Internet. E-mail and teleconferences are widely used for feedback.

5. *Internet courses.* In this context, distance learning is organized in the Internet environment using interactive Web-based tutorials, e-mail, mailing lists, chat rooms and teleconferences to provide feedback, computer models and simulations.

Nowadays the most common types of educational courses are “*case studies*” and *ICT tools, the Internet courses*. This is because the given technologies are rather inexpensive. Besides, at the same time, they are with advantages: it is possible to allocate operative transfer of information of any volume and kind to any distances; long storage of the information in memory of the computer by means of e-mail; possibility of editing, printout of information, etc. In addition, they provide possibility of access to various sources of the information (remote databases, numerous conferences, etc.) through the Internet system; possibility of interactivity and operative transfer of the information on the Internet.

When it comes to the essence of the very concept of “distance learning”, there are still discussions both among foreign and local specialists. There are such variants of this term as “distant learning”, “distance learning”. Some foreign researchers, who give a special role to telecommunications in organization of distance learning, define it as “teletraining”. However, the term “distance learning” is considered to be most commonly used. When revealing the essence of DL, we cannot overlook the fundamental category of didactics like ‘*learning*’ (training). What is meant by ‘*learning*’ in pedagogical literature?

We have analyzed a number of fundamental sources that reveal the essence of the concept of *learning*, in particular, authors such as Yu.K. Babansky [10], [140], V.P. Bepalko [13], M.G. Garunov, L.G. Semushina, Yu.G. Fokin, A.P. Chernyshev [39], N.A. Davydov [50], A.A. Zolotarev [68], B.C. Lednev [99], I.Ya. Lerner [105], [106], [107], V. Okon [135], V.P. Stresicosin [174], M.N. Skatkin [107], [204], I.S. Yakimanskaya [216], [217]. The analysis of the studies of these authors revealed that *learning* is understood as a process or interaction. So, Yu.K. Babansky defines *learning* as purposeful, consistent, changing interaction between a teacher and a learner, V. Okon - a combination of external and internal actions. M.G. Garunov, L.G. Semushina, Yu.G. Fokin, A.P. Chernyshev say it is a two-way process in which the learner and the tutor interact. N.A. Davydov - purposeful process of managing the active educational and cognitive activity of learners, A.A. Zolotarev - the process of interconnected activity of the teacher and learners. According to V.P. Bepalko, I.Ya. Lerner, V.P. Strekozin, M.N. Skatkin, I.S. Yakimanskaya it is the process or act of interaction of the teacher and the learner. B.C. Lednev sees learning as a triune process. Through such a process or interaction, carried out *education* (Yu.K. Babansky, M.G. Garunov, L.G. Semushina, Yu.G. Fokin, A.P. Chernyshev), *upbringing* (Yu.K. Babansky, BC Lednev, M.G. Garunov, L.G. Semushina, Yu.G. Fokin, A.P. Chernyshev), *the development of a person or personal qualities* (Yu.K. Babansky, BC Lednev, M.G. Garunov, L. G. Semushina, Yu.G. Fokin, A.P. Chernyshev, V. Okon, I.S. Yakimanskaya), *transfer of social experience or social culture* (B.C. Lednev, I.Ya. Lerner), *mastery of professional knowledge, skills* (N.A. Davydov, V. Okon), *development of creative abilities* (N.A. Davydov, V. Okon), *the formation of a worldview* (N.A. Davydov), flowing in the framework of the pedagogical system (A.A. Zolotarev).

In our research, we will count on the definition given by B.C. Lednev: “*Learning* in its process is characterized by such aspects as *mastering of experience, teaching* of behavioral qualities, physical and mental *development*” [99, p. 25]. Thus, the key words in the definitions are the *process, interaction, pedagogical system*, as well as words and phrases that reflect in different interpretations the *learning objectives*. Further, we will be guided by these key concepts when revealing the essence of the concept of distance learning.

Today, there are a large number of definitions concerning distance learning, and they are all different in content. We have analyzed the definitions formulated by the following authors: A.A. Andreev [2], [4], A.E. Abrameshin, T.P. Voronina, A.D. Ivanni-kov, O.P. Molchanova, A.N. Tikhonov [184], xxi. Davydova [51], M.I. Nezhurina [126], V.D. Orekhov [136], E.S. Polat, M.V. Moiseeva, A.E. Petrov, M.Yu. Ku-kharkina, Yu.V. Aksenov, T.F. Gorbunkova [145], A.V. A.V. Khutorkoy [179].

The research analysis revealed that the authors, considering distance learning, focus their attention on various aspects of this concept. So, L.P. Davydova considers *distance learning* a new stage of extramural education (part-time), and V.D. Orekhov considers *distance learning* as a symbiosis of full-time and extramural education (part-time), using the concept of problem-based education, an individual approach, business games and other methods of active learning. However, we do not agree with these approaches. Distance learning cannot be confused with extramural education (part-time), since distance learning provides a systematic and effective interactivity not only between the teacher and the student, but also among the students, and the interaction is based on computer technology.

The majority of authors, when defining the concept under consideration, rely on such characteristic features of distance learning as spatial remoteness and remoteness by time; use of information and communication technologies in the learning process.

In fact, according to A. A. Andreev, distance learning is learning at a distance from the teacher’s location: delivery of teaching material, independent study, organization of dialogue between the teacher and students when the learning process is not critical to their location in space and in time, as well as to a specific educational institution. Other scientists, for example, A.E. Abrameshin, T.P. Voronina, A.D. Ivannikov, O.P. Molchanova, A.N. Tikhonov consider that teaching that is carried out at a certain distance from the teacher’s location, the teaching and learning processes are separated not only in space but also in time. A similar point of view is held by E.S. Polat, M.V. Moiseeva, A.E. Petrov, M.Yu. Kukharkina, Yu.V. Aksenov, T.F. Gorbunkova, indicating that distance learning involves an active exchange of information between learners and the teacher, as well as between the learners themselves. A.V. Khutorkoy notes spatial remoteness and remoteness by time when talking about distance learning.

For distance learning, according to some authors, the following ICT tools should be used: a wide range of traditional and new information technologies and their means (A.A. Andreev); information technologies based on the use of personal computers, video and audio equipment, space and fiber optic technology (L.P. Davydova); modern information technologies and modern means of communication (M.I. Nezhurin); modern means of new information technologies to the maximum extent (audiovisual means, personal computers, telecommunications) (E.S. Polat, M.V. Moiseeva, A.E. Petrov, M.K. Bukharkina, Yu.V. Aksenov, T. F. Gorbunkova); telecommunication facilities (A.V. Khutorkoy).

Proceeding from the afore-mentioned, we would say that the definition of DL should address both the concept of learning and the characteristics of DL (remoteness, ICT). We believe that this

requirement is more in conformity with the definition given by A.V. Khutorskiy. He says: “By distance learning we mean learning by means of telecommunications, in which a subject of education (pupils, teachers, tutors, etc.), having spatial remoteness or remoteness by time, carry out a common learning process, which is aimed at creating by them external educational products and corresponding internal changes of the subjects of education” [179, P 315]. We will stick to this definition in further explaining various aspects of DL.

The scientific literature has well coverage of the following issues: organization and holding DL in higher education institutions, use of DL in extracurricular activities in schools (Olympiads, telecommunications projects, distance courses). What is more, it is justified that distance learning opens new possibilities for both learning and self-study significantly expanding both the information space and the information sphere of learning, and also opens up new possibilities for implementing a differentiated approach to students. However, questions concerning the use of elements of DL in classroom-lesson system for any subjects, including computer science, in order to implement intra-class differentiation, is practically not disclosed in scientific literature.

Differentiation in teaching allows to organize educational process on the basis of the consideration of individual features of the person, to provide mastery by all learners of the educational content (which can be different for various learners), but with obligatory part for all. Questions regarding the implementation of intra-class differentiation against the background of the use of distance learning elements in the classroom-lesson system are of great importance to consider.

REFERENCES

1. Andreev A.A. Introduction to distance learning. C.P. - M.: MESI, 1997, - p.50.
2. Andreev A.A. Didactic bases of distance learning in higher educational institutions: Author's thesis of Dr. Ped. - Moscow, 1999. - p.39.
3. Ogorodnikov E.V. Information technologies in teaching activation of schoolchildren on the basis of parallel activity cycles: Dr. Sci. -M., 2002. - p.38.
4. Ogorodnikov I.T. Increase of efficiency of the lesson. - Moscow: Knowledge, 1960. - p.39.
5. Okolelov O.P. Learning process in virtual educational space // Informatics and education. - 2001. - №10. - p.66-70.
6. Okonyon V. Introduction to general didactics: Per. from Poland. L.G. Kashkure-Vicha, N.G. Gorina-M.: Vysh. shk. 1990. - p.382.
7. Orekhov V.D. Remote technology of retraining of managers for work in market conditions // Mashinostroitel. - 1995. - № 4-5. - p.44-45.
8. Osmolovskaya I.M. The organization of differentiated training in co-temporal general education school. / Academician pedagogical and social sciences. Moscow. Psychological-sociological in-t. -Moscow: “MODEC” Publishing House, 1998. – p.155.
9. Sokolova G.Yu. Theory and methods of teaching to work in the Internet (on the example of training a teacher of informatics, methodologist-organizer of NIT). Cand. ped. of sciences. - Spb., 1999. – p.184.
10. Tikhomirov V.P. Distance Education: History, Economics, Trends. // Proceedings of the II International Conference “Standards in Education: Problems and Prospects” - Moscow, 1997. - p.201 -205.