

Organization of Virtual Information-Educational Environment in Distance Education Process

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Abstract

Informatization and globalization processes of society form a new educational model, the distance education model. The basis of this model is the world, society, human cognition and the dynamism of education, the idea of transition from "lifelong education" to the principle of "lifelong education". Open and distance education is currently one of the fastest growing forms of education, and its potential impact on all education systems has been appreciated by the development of Internet-based information technologies, especially digital libraries. E-libraries are one of the main sources of information for students, and they contain a large amount of educational information (text, audio and video materials). Therefore, the organization of electronic libraries is very important for easy and quick access to the right information. And electronic libraries make the process of distance education possible. In the article, the development of the distance education process, which is a new direction in education with the application of new technologies, its relevance in modern times, technological models, the importance of technological and personnel infrastructure in the development of library services in the implementation of distance education are studied. At the same time, the directions of the implementation of this process, the role of digital libraries in the formation of the information education environment, and the creation of a teaching methodical base were reflected in the libraries, which are the main information providers of distance education.

Keywords: distance education, internet, information-educational environment, educational methodological base, synchronous education, web-based education, digital library

Організація віртуального інформаційно-освітнього середовища в процесі дистанційної освіти

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Анотація

Процеси інформатизації та глобалізації суспільства формують нову модель освіти – модель дистанційної освіти. Основою цієї моделі є світ, суспільство, людське пізнання та динамізм освіти, ідея переходу від «освіти впродовж життя» до принципу «освіта впродовж життя». Відкрита та дистанційна освіта наразі є однією з форм освіти, яка розвивається найшвидше, і її потенційний вплив на всі освітні системи було оцінено завдяки розвитку інформаційних технологій на основі Інтернету, особливо цифрових бібліотек. Електронні бібліотеки є одним із основних джерел інформації для студентів, вони містять великий обсяг навчальної інформації (текстові, аудіо- та відеоматеріали). Тому організація електронних бібліотек дуже важлива для легкого і швидкого доступу до потрібної інформації. А електронні бібліотеки роблять можливим процес дистанційної освіти. У статті розглядається розвиток дистанційного освітнього процесу, який є новим напрямом в освіті із застосуванням нових технологій, його актуальність у сучасності, технологічні моделі, значення технологічної та кадрової інфраструктури у розвитку бібліотечного обслуговування, вивчається впровадження дистанційної освіти. При цьому напрями реалізації цього процесу, роль електронних бібліотек у формуванні інформаційного освітнього середовища, створення навчально-методичної бази були відображені в бібліотеках, які є основними інформаційними провайдерами дистанційної освіти.

Ключові слова: дистанційна освіта, Інтернет, інформаційно-освітнє середовище, навчально-методична база, синхронна освіта, веб-орієнтована освіта, електронна бібліотека

Introduction.

The Internet, which is considered the greatest discovery of the 20th century, is a global network that serves to satisfy the information needs of all layers of society. Scientists rightly compare the importance of this discovery with the discovery of electricity. The transformation of the Internet into one of the largest sources of information is based on the Web technology founded by Tim Berners-Lee in the 90s of the XX century. He is also the author of HTTP, URI/URL and HTML technologies. As a result of the application of these technologies, new types of services, including electronic banking, electronic commerce, electronic government, distance education, electronic library services, etc. performed.

The activities of the libraries that carry out the task of searching, collecting and transferring information resources have been further improved through the use of the Internet. Professor Abuzar Khalafov notes in his book "Library and Society" that: *"The Internet has the largest information resource after libraries, and this resource, collected in a corporate way, is available to every member of society, regardless of gender, age, social status, ethnic origin, with convenient and convenient means. ensures availability. The Internet is a phenomenon that has no analogues in human history, cannot be compared with any means, and its development, effects, prospects, and dangers cannot be accurately predicted. It does not recognize any political, religious, or national restrictions, and offers its information services to users directly where they live and work, crossing the country's geographical boundaries, and has the opportunity to penetrate more into the spiritual world, way of thinking, morality, and psychology of the members of the society"* (Khalafov, 2011).

There are a number of types of services provided by the Internet through wireless technology, the most widespread of which are electronic mail (e-mail), World Wide Web, chat services, telnet, ftp, Internet commerce, distance education. Among these services, distance education has become more relevant in recent years.

Research methods.

When writing the article, historical, systematic and comparative analysis methods were guided. In the study of the library information provision of the continuous education system in Azerbaijan, an analysis of the scientific and theoretical literature was carried out, detailed information on the activities of local and foreign libraries in the relevant field was collected and analyzed, the results were compared and summarized.

Research results.

Development of Information and Telecommunication Technology.

The development of information and telecommunication technology, starting from the 70s of the 20th century, led to the emergence of a new direction in education at a distance - distance education. It should

be noted that distance education is one of the main components of continuous education, and today it is the most widespread form of education in the countries of the world. Distance education is applied to those who do not participate in the learning process conducted individually in the classroom. Distance education is the education that the teacher (the teacher) and the student (the learner) receive from a distance, located in geographically different places. In Europe, this method of education is used more by those who cannot directly go and study in another country. At the same time, distance education is intended for people with physical disabilities and certain health problems. The main goal here is to attract those with disabilities to distance education without removing them from home, to achieve their integration into society and to show them that they are an integral part of society. The presence of the Internet is one of the important conditions for the implementation of this educational system. The distance education system provides equal opportunities for schoolchildren, students, civilian and military specialists, and the unemployed to study in all regions of the country, abroad, and is evaluated as a system that can adequately and flexibly respond to the information needs of society.

The first signs of the distance education system in the world were already evident in the 18th and 19th centuries, and there were many facts about distance education. For example, B. Holmberg and J. Boat referred to the announcement made by Phillips Caleb in the Boston newspaper of March 20, 1728. According to this reference, Phillips Caleb, a shorthand teacher, advertised to teach shorthand to all people, regardless of where they lived. The first attempt to create a form of distance education was made in 1840. At that time, Isaac Pitman started teaching shorthand to students in the United Kingdom through postal letters (Archibald, & Worsley, 2019). C. Toussaint and G. Lanchensteidt took the next step in the development of distance education, and in 1856 they created an institute providing correspondence education in Berlin. Today, this form of education is widely used in most countries of the world. Distance education combines various educational programs, technologies and teaching methods. This increases its efficiency. For example, 70% of the population studying in France prefer this type of education (Huseynova, 2008). This is due to the fact that distance education allows people to get higher education in different higher education institutions in several specialties at the same time without leaving their daily activities. Online education makes it universal regardless of geographical distance. Distance education has a humanitarian character and allows everyone from all sections of society to study, regardless of age, gender, race.

Scientific basis of distance education.

The scientific foundations of distance education were formed only in the 20th century. In the modern sense, distance and open education means more internet

education, electronic education. The use of higher quality services and marketing of information technologies and educational methods had a great impact on the development of the DT system. At the end of the 1960s and the beginning of the 1970s, open universities providing distance education appeared in accordance with correspondence universities operating in the USSR and the CAR. The first open university was opened in Great Britain in 1969. This educational institution created an opportunity for people who previously did not have the opportunity to get a higher education, and was more reminiscent of the Soviet correspondence education. The only difference was that the teaching places were located close to the students' residences and they were engaged using special equipment. Also, it was not necessary to separate them from their main occupations for a long time. In addition, it should be noted that the main role in the teaching process falls on tutors (assistant teachers). And they also live in places close to the students, guide the students in the teaching process and hold seminars. The tutor acts as a mediator in the distance education process and is considered the main figure. It implements the educational process based on information and communication technologies, organizes the scientific-methodical expertise of resources. The tutor is responsible for the successful completion of distance education. It monitors the loading of the course databases, cracks, organizes dynamic lessons. At the same time, it determines the level of preparation of teachers and those who need special and additional training. In modern times, distance education is implemented using the Internet and computer technology as the main form of online education, and up to 80 percent of the materials are delivered online (Allen, & Seaman, 2011).

In the distance education process, a great responsibility falls on the teacher. He coordinates the educational process, adjusts the educational program, and gives advice on the preparation of an individual educational plan. For a teacher, online classes show the possibility of self-expression and the ability to transfer knowledge and experience without restrictions. In addition, teachers should have active teaching methods, inculcate the appropriate teaching form and software for each learner online, and help overcome existing difficulties in electronic communication.

Usually, classes conducted during distance education are carried out according to the following scheme:

- the teacher informs learners about the topic according to the calendar plan, recommends literature and adds the electronic version of the material to the file section opened for the group on the platform;
- the learner learns the given topic freely. At this time, he uses the materials placed by the teacher. If any issue related to the topic is not clear, he can learn from the teacher during the next lesson;
- evaluation is done by the teacher at the end of each subject. Evaluation is done on 10 points. Depending on

where the student is, the exam can be conducted in a contact manner (face-to-face) or virtually.

Distance learning students benefit from the following advantages of this education system:

- to have the opportunity to study in any place;
- to have the opportunity to study without leaving the main work activity;
- high mobility;
- availability of educational materials;
- individual approach;
- social equality, etc.

In addition to these advantages, there are also disadvantages of the distance education system:

- lack of practical knowledge;
- user identification problem;
- lack of computer knowledge;
- lack of motivation;
- lack of constant control;
- low level of communication, etc.

Distance education is a complex of educational services provided to wide sections of the population in the country and abroad with the help of a specialized information-educational environment based on means of information exchange (satellite communication, television, radio, computer network, Internet, etc.). The information-educational environment means a set of systematically organized information resources, means of data transmission, interaction protocols, software-technical and organizational-methodological guarantees aimed at meeting the academic needs of users, that is, students. The characteristic features of distance education are convenience, modularity, comprehensiveness, social balance, economic efficiency, internationalism, technology, the new role of the teacher, parallelism, remote influence, asynchrony, new information technologies, etc. can be shown. Due to the purpose of distance education, they are large-scale and selective (fragment) in nature (Gasimov, 2005).

The large-scale educational system ensures the training of specialists, bachelors, and masters in certain specialties based on the full implementation of the curriculum. This technology is based on interactive exchange between teacher and student, as well as between students. Improvement courses to the optional educational system, obtaining II education, organizing individual training for users on separate courses, etc. belongs to.

The distance education system is divided into asynchronous and synchronous teaching methods:

- Synchronous systems involve the participation of the teacher and the student at the same time in the teaching process. At this time, students can be in a group that is in charge at the same time or in a distance learning group (in different classrooms, different cities and countries). Such systems include interactive TV, videoconferences, audiography, computer teleconferences, ICR, MOO, MUD.

- in the asynchronous teaching method, the student prepares according to an individual plan using teaching-methodical materials at a distance in the educational institution. Asynchronous systems do not require the simultaneous participation of the teacher and the student. The student makes the time and plan himself. These systems of distance education include courses based on printed materials, audio-video cassettes, e-mail, WWW, FTP (Asagli, 2020).

Each of the above methods has a special educational technology - distance learning technology. So both methods complement each other.

Regular postal service, books and publication materials in distance education; radio tapes, television, video, teleconference, computer, internet, etc. such technologies are used.

Regular mail service, books and printed materials: education in distance education was first organized through the regular mail service. Books and publication materials were mailed to students. Despite the high level of development of technologies, the use of books and printed materials still continues.

Radio-audio cassettes: The area where these tools were most widely used was the study of foreign languages.

Video: By using video, unlike television, the time barrier has been removed and the learner has the opportunity to acquire knowledge at his own will.

Teleconferencing: This is when groups in separate locations communicate with each other and both audio and video conferencing are used.

Satellite TV network: this technology has become very popular and is used by many organizations to acquire knowledge.

Computer-based education: Computer-based education is delivered to the user on CDs and DVDs. Various types of documents can be sent from one place to another through a camera or scanner connected to a computer. Exams can be taken via computer and scored instantly.

Internet education: this technology is sometimes called "web-based education", "online e-classrooms" or "virtual education". Internet education technology supports all three education systems mentioned above. Various databases, links, electronic publications, magazines, libraries play an auxiliary role.

In distance education, information learners are provided with printed materials, electronic materials, electronic textbooks, TV shows, etc. are presented in forms and, accordingly, there are carriers of educational information such as books, discs, audio-video cassettes. Teaching here consists of a methodological complex, computer, television, audio-video tape recorder, multimedia equipment, etc. such training tools are used. Basic teaching literature and teaching-methodical literature fund in the form of publications prepared in different types of carriers to the database for distance education; specialized textbooks equipped with

multimedia observation tools, electronic teaching-methodical complexes including electronic textbooks, teaching aids, computer training programs, computer laboratory practicals, educational videos, audio recordings, periodicals relevant to personnel training profiles, survey-bibliographic publications, as well as a fund of central and local mass public and political publications, a fund of scientific literature represented by monographs on the profile of each educational program and periodic scientific publications.

As mentioned, due to the remoteness of the students, the main part of the scientific and teaching-methodical base of distance education is the virtual information-educational environment. Computer systems, including virtual information-educational environment based on the Internet, i.e. electronic teaching-methodical fund, electronic catalogs, electronic libraries, electronic databases, etc. creation is the basis of distance education.

The services that electronic libraries can provide can be grouped as follows:

- preparing enough librarians for planning, coordination and improvement of library services for distance learners;
- organization of the opinion, reserve and general collection resources in the library in such a way that they can be used by distance learning individuals;
- continuous training of librarians in terms of improving the quality of library services provided to students and professors;
- development of help pages on how to use data sources;
- preparation of access-exit cards to libraries to be used regionally and nationally within the framework of contracts with other libraries;
- creation of short descriptions and request forms for selective information service;
- provision of easy access to databases and online library catalog from any place the user wants.

Electronic interlibrary subscription and the method of electronic delivery of documents are also of great importance for students studying with the distance technology system. Electronic document sending has undergone a rapid evolution and is used today in almost all countries as a means of long-distance information exchange and is the main and cost-effective type of service implemented in modern libraries. Sending electronic documents does not require a lot of technical support. To organize this service in libraries, it is enough to have a computer connected to the Internet, fax-modem, telephone communication, scanner, printer. An efficient electronic delivery method is of great help to the distance education system. The method of electronic delivery of documents provides access to the source stored in the traditional way. This is done in the following manner:

1. The user goes to the library's website and selects the necessary documents from the independent catalog or from the list of resources provided by the organization;

2. The user buys the necessary material and formalizes the order from the library's website to the information or publishing organization. Complete bibliographic information about the ordered document, as well as information about the customer, form of delivery, delivery and payment of the order are attached to the order. It should be noted that information about the user who made the order is automatically generated in case of registration for the order formalization.

3. After receiving the order, the organization - the owner of the document is sent a letter by e-mail stating where the order will be paid (they talk about the need to formalize the contract, form and method of payment, terms and order of execution of the order) and the terms of execution.

4. User organizations pay and confirm their order to the owner of the document.

5. The user receives the ordered copy and fulfills the terms of the concluded contract (for example, prints the document on paper and removes the electronic copy).

The role of electronic databases and digital libraries in providing information to students in distance education.

As I mentioned, electronic databases and digital libraries are also important in providing information to students in distance education. In the payment of personal education requests, the majority of requests are made to databases. Regardless of the technology used in the teaching process, libraries remain the main and leading laboratory of education. Because the main volume of information is concentrated here, and the formation of the case, the creation of scientific-methodical program complexes is impossible without the library. It is very important to provide the necessary technological and personnel infrastructure for the development of library services in the process of implementing distance education. Their application allows to create Web-servers in libraries, to organize remote use of databases, to form electronic protection of information.

The basis of the activity of higher school libraries is the inquiry-information fund, which is adapted to the reader's request in terms of quantity and quality. Today, for the successful implementation of distance education, it is important to solve the following issues in libraries (Center for Distance, 2011).

- computerization of library-information processes, application of new technologies in sending documents;
- organization of electronic reading rooms, electronic workstations with Internet access for readers;
- creating a personal database, expanding the use of debt information resources;
- formation of information culture of students and teachers;
- to expand the traditional and non-traditional assembling of the fund.

In the conditions where the danger of the virus is widespread in the countries of the world, the members

of the society have continued their work in the direction of non-stop reading, getting acquainted with innovations, and conducting scientific research. In this regard, information institutions and libraries have implemented the following online service forms to meet the requests of millions of readers and users:

- preliminary ordering and booking of documents;
- extension of the available literature;
- electronic sending of documents;
- access to complete databases reflecting books, magazines, newspapers, notes, photos, digital, normative publications;
- inquiry-bibliography services: use of electronic catalog, bibliographic, reference resources;
- remote socio-cultural, cultural-educational service (Huseynova, 2004).

Conclusions.

Implementation of distance education in Azerbaijan today is one of the important issues in order to strengthen the scientific and cultural potential of the people. This is required by the globalization of the world and the building of an informed civil society (Alieva, 2020).

In order to switch to the DE system in Azerbaijan, the material and technical base of higher education institutions should be adapted to this form, and information support for distance education should be created. This means, as a first step, the creation of electronic resources related to the teaching of any specialty, the establishment of an electronic database suitable for the subjects to be studied. For information provision of distance education, all libraries should be converted to modern electronic form, new electronic libraries and corporate library systems should be created. In our republic, the lack of specialist personnel in this field, financial difficulties and problems in the Internet field are among the reasons that prevent the formation of the DE system.

In addition, in order for the DE system to be effectively applied to educational practice in Azerbaijan, it is necessary to implement the following measures:

- to study the demand for DE in Azerbaijan, its situation and development prospects;
- to reveal the leading trends in the development of DE systems of developed countries;
- to create a state program for the development of DE;
- to develop teaching-methodical, scientific-methodical and software-technical support of DE for basic teaching subjects for different levels of higher education: video recording of lectures of leading teachers, video bank, CD bank, CD-copies of literature used in the educational process, distance education start the work of creating a bank of computer tester-trainers for the educational subjects to be studied based on technologies;
- to organize the training of specialists who will work in the DE system;
- to determine the financial mechanisms that ensure the development of the DE system in the country and to form the organizational-management structures;

- create traditional-current and final control mechanisms, specific electronic control mechanisms for DE system;
- to activate the development of international cooperation in the field of DE, participation in international educational projects;
- positive public opinion about DE in the country, creating favorable investment conditions for organizations and individuals who have expressed their desire to participate in the development of the DE system (Asaqli, 2020).

The application of DES in the Republic of Azerbaijan, its social importance, the growing role of education in society, the informatization and democratization of society, the globalization of the world and the need to create an international uniform educational and informational environment as a result of this, the gradual integration of Azerbaijan into the European and world educational space, etc. it is related to the realities.

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