Pedagogical Conditions for The Implementation of the Use of Digital Tools in Distance Learning

Nilufar Fayzullaeva[1], Dilorom Ergasheva[2], Akram Ishnazarov[3]

[1,2]Department "Innovative Education", Tashkent State University of Economics
[3]Department "Mathematical methods in Economics", Tashkent State University of Economics
Emails: n.fayzullayeva@tsue.uz; d.ergasheva@tsue.uz; a.ishnazarov77@gmail.com

Abstract

The article deals with the issue of practical application of Internet technologies in the educational process. The main directions of using computer networks in teaching students are indicated. Particular attention is paid to the use of distance learning systems based on the Internet.

Keywords: Internet technologies, computer network, information technology, distance learning system

1. Introduction

Modern education is called upon to form an independent, full-fledged personality, capable of constant independent learning throughout life, of adaptation and socialization in the surrounding changing reality. To achieve this goal, the educational space of the lesson must also change. It is impossible to educate and educate an active person with the help of only traditional technologies; a great variety of innovative technologies come to the aid of teachers.

In the second half of the 20th century, mankind entered a new stage in its development - the transition from an industrial society to an information society. The process that ensures this transition is called informatization.

Informatization in the broad sense of the word can be considered as a process of restructuring the life of society based on the active and full use of reliable, comprehensive and timely knowledge in all socially significant types of human activity that require the formation of an infrastructure for the means of accumulating, storing, processing and transmitting information as the most important indicator of the level of scientific and technical development of any country. At the same time, information becomes the most important strategic resource of society and occupies a key place in the economy, education and culture.

There is no alternative to informatization. This is an objective stage of social progress in all areas of human life. Speaking about informatization, it should be understood that this is not only the creation and development of a technical base, it is a programmable change in the information basis for the functioning of various social systems and subsystems, the replacement of paper information with computer systems within acceptable limits, the creation of new, incomparably more efficient models of people's activities.

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2. Literature Review

There is no doubt that the use of modern information technologies and means of telecommunication interaction opens up new prospects for improving the education system, acquiring such new knowledge about the world that is more difficult and sometimes impossible to obtain without computer and communication tools.

Information has been an object of research interest since the late 40s of the last century, when cybernetics started talking about it as an independent category. In sociology, the methodological concept of "information society" as a scientific definition was introduced by D. Bell [1]. He connects the main reason for the transformation of society with the new role of theoretical knowledge, which has become the main source and mechanism of innovation.

The widely used term "information society" was used and developed in the works of such scientists as A. Touraine, M. Castells, J. Habermas, N. Luhmann.

M. Castells [2] notes that the key point for the structure of the entire network society system is the placement of technological innovation complexes, in which the innovation environment plays a special role. This environment is a fundamental source of innovation and value creation in the process of industrial production in a networked society.

The foundations of the sociological approach to the study of the educational system were laid by a number of scientists. Among them, the functionalist approach to education stands out, represented by the works of E. Durkheim, J. Alexander, K. Davis, R. Merton, T. Parsons and others.

Somewhat later, modern society was defined as a “knowledge society” (P. Drucker, R. Hutchins, T. Husen), in which the most important thing is “learning to learn”, and new information technologies should contribute to “constant renewal of personal and professional competence”. New technologies are accelerating the creation and dissemination of knowledge everywhere. Learning is becoming a key value of knowledge societies.

It is from these considerations that Peter Drucker's concept of the "knowledge society" stems [3]. Today, the concept of a "knowledge-based society" implies further capacity building for the identification, production, processing, transformation, dissemination and use of information for the development of man and society. Information, communication and knowledge are at the core of human progress, action and well-being.

Grandon Gill in his work [4] describes the features of using the Internet as an educational technology in the system of higher education, gives recommendations for their application.

UNESCO defines knowledge as a person's ability to use information effectively. Knowledge is a special, ideal form of information representation in human activity. In the knowledge society, the ability to navigate the flow of information, cognitive abilities, and a critical mind, which makes it possible to distinguish useful information from useless, become important.

Once upon a time, Henry Ford solved a similar problem by dramatically increasing labor productivity by switching from handicraft assembly of cars to an assembly line. The essence of the idea was the specialization of each worker, who, in a certain range of requirements, developed his own capabilities to the maximum using specialized, most effective tools within the given functionality. Based on the analogy, it is possible to design the backbone links of an organized educational process: a teacher - educational materials - an educational institution.

Along with this, in the process of informatization, a number of problems arise that hinder its development. In particular, there is a problem of a psychological nature - the unwillingness of the population to move into the information society. This transition is currently hampered by the low level of information culture of the population, insufficient computer literacy, and hence the low information needs, as well as the lack of desire to develop them.

What do we mean by "information culture"?

Information culture is a comprehension of the modern picture of the world, the widespread use of information flows and their analysis, the implementation of direct and feedback links with the aim of adapting them, adapting to the outside world, competent command of the languages of communication with a computer, understanding its capabilities, place and role of a person in an intellectual environment.

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3. METHODOLOGY

The work analyzes the work of developers of educational content, summarizes their professional experience, explication of meaning, methodological identification, peer review allowed the article to scientifically and convincingly reveal the essence of the influence of psychology as a science on the created content of the online platform, analysis, synthesis, classification of information.

4. RESULTS

Naturally, in the process of informatization of society, one of the central places should be occupied by the digitalization of education.

The digitalization of education is considered as a purposefully organized process of providing the education sector with methodology, technology and practice for the creation and optimal use of scientific and pedagogical, educational and methodological and software and technological developments focused on realizing the possibilities of information and communication technologies used in comfortable and health-saving conditions. This process of intellectualization of the activities of the teacher and the learner develops on the basis of the implementation of the didactic capabilities of information and communication technologies. Among the ideas and trends inherent in the field of education and influencing the digitalization of education, the following can be distinguished:

- humanization of education;
- multi-level and advanced training of personnel;
- continuity of education, the need to replenish knowledge throughout life;
- socialization and professionalization of the individual.

Often, informatization of education means the introduction of information and telecommunication technologies into the educational process. This is really important, having a decisive influence on improving the quality of education, but not the only direction of informatization of education. Informatization of education is a broader concept, by which we understand it as a process aimed at improving the quality of the content of education, conducting research and development, introducing, maintaining and developing, replacing traditional information technologies with more efficient ones in all types of activities in the continuous education system of Uzbekistan.

The global goal of informatization of education is to radically increase the effectiveness of the quality of education that meets the requirements of a post-industrial society. According to the international organization ITU6 (International Telecommunication Union; translated as the International Telecommunication Union), today there are 2,095,006 thousand Internet users in the world - this is almost a third of the world's population. In terms of the share of Internet users among the population of the region, the largest number of users in North America is 78.3%; in Oceania and Australia - 60% of the population have access to the Internet, in Europe - 58%, in Latin America and the Caribbean - 36%, the Middle East - 32%, Asia - 24%, Africa - 11%. The above data on the number of inhabitants of the globe who have access to the Internet and related services and services, we can conclude that today there is the possibility of active use of the Internet in the educational process, and there is a need to revise teaching methods and create new pedagogical methods and technologies that take into account modern opportunities and realities.

How can informatization affect changes in the education system?

In the information society, the goal of learning is not only the assimilation of ready-made knowledge, but also the mastery of methods of research, exchange, use of information as the main material for obtaining new knowledge, as well as creating an image of the world around.

This approach does not exclude the use of traditional sources of information, it only balances the natural processes of cognition, such as analysis (traditional approach to learning) or synthesis (new approach).

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The digitalization of education has become especially noticeable since the start of the coronavirus pandemic. Schools and universities were forced to move online, and this affected everyone - schoolchildren and their parents, teachers, students and university professors.

But in fact, digitalization processes began much earlier. The use of digital media in education is a worldwide phenomenon. The scale of the phenomenon is at least evidenced by the size of the market for educational digital technologies (this market is called EdTech) - by 2025, according to the World Economic Forum, it will reach 342 billion US dollars. Last year, 100 million listeners studied online on the Coursera platform alone.

Studies conducted among TSUE students directly involved in distance forms of organization during the pandemic showed that 70% of students highly appreciate the created learning platform, highly appreciate the benefits of e-learning, 30% of students still believe that traditional learning is better than e-learning resources. With distance learning, 21.3% of students encountered technical difficulties and technical problems. 48% of students experienced technical interruptions in the learning process, 34.7% - this was due to a large number of users simultaneously online. Among the most frequent problems, 28% had a difficult level of tasks. 16.7% noted an insufficient amount of training material, 10% feedback error. 7.3% untimely receipt of an answer to the question posed.

The surveyed students generally demonstrated satisfaction with the online learning process and positively assess the presentation of the content of training programs in the virtual learning process. The technical difficulties that arise during the development of educational programs are mainly related to technical issues due to the high load on the Internet. According to the majority of students, distance learning cannot replace the practical part of education (usually in the banking system), which is important for the future specialty.

Analyzing the processes of formation of the information society, we can distinguish five main areas of radical changes in the education system:

1. The development of non-formal education, due to the impact of information technology;
2. Strengthening the individualized nature of education, which allows taking into account the capabilities and needs of each individual person;
3. Adoption of self-education, self-learning as the leading form of education;
4. Orientation towards education based on the knowledge economy;
5. Formation of a system of continuous education, i.e. education throughout life.

It is to the development of these areas that Internet education is directed, which can be defined as the education of the general population, obtained with the help of information educational resources of the Internet. The Internet provides access to inexhaustible electronic information resources. With the help of the Web server, educational institutions provide the necessary information for organizing the learning process (class schedule, consultation schedule, etc.), structured educational information on academic disciplines, as well as links to useful resources (electronic libraries, educational portals, etc.), conduct a network educational process. The Internet provides other opportunities, for example, in USENET mode - newsgroups (newsgroup). Unlike mailing lists accepted in e-mail, newsgroups work in real time: members read messages sent to the group by other members, send their answers there, discuss problems, etc., but everything happens “now and immediately”, without requiring time to send letters.

The most significant for us is the concept of "Internet technology". Internet technologies are an automated environment for obtaining, processing, storing, transferring and using knowledge in the form of information and their impact on an object, implemented on the Internet.

The educational community has already accumulated some experience in overcoming the problems of digitalization and the peculiarities of communication in the electronic environment. Such experience includes, among other things, research on network ethics based on the development of norms of behavior characteristic of several simultaneously working participants (groups).

It should be said that the existence of norms and rules of network ethics presupposes and often ensures mutually envisaged and expected ways of behavior for those who are familiar with them. As a result of anticipating the

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reaction of some users of Internet technologies to the behavior of others, interpersonal interaction or interaction in small groups acquires an organized and mutually agreed character.

Research and teaching in the field of communication is just beginning to appear in the world of science and education, and is driven by increased interest, mainly in the social sciences and humanities. Studies of digital communication, as an applied direction in the field of communication, show that a special culture of learning is being formed, in which the role of the teacher is changing, the organization and methodology of teaching and learning are changing.

Distance learning undoubtedly increases the availability of educational services and contributes to the development of the student's personality, as well as his adaptation to the application of existing knowledge, skills and abilities in modern conditions of life, but the question of the effectiveness of distance learning and the quality of educational services remains open.

Studies conducted among teachers directly involved in distance forms of organizing and conducting training sessions with students showed that against the background of the positive aspects of the digitalization of the educational process, there are shortcomings. These include:

- distance learning increases the workload of students several times in comparison with traditional education at a university;
- many students are not adapted to independently search for the necessary information on the academic discipline and feel the need for mentoring from the teacher;
- each student cannot master the program at his own pace independently of others;
- the teaching and methodological and research load on each teacher has sharply increased;
- the created professional Internet groups as a new form of communication do not comply with the time regulations for the work of the teaching staff;
- the uniformity of distance tasks in most academic disciplines does not contribute to the growth of interest and motivation of students to independently study the material.

It is also important to change the traditional roles, the emergence of new positions in the schemes of interaction teacher-student, student-student. The ethics of behavior in the digital environment are influenced by the emerging norms of behavior characteristic of the Internet user community, as well as the educational and business communities. Manifestations of ethical behavior are expressed by some expected actions, formed in a certain way by text messages (address, tone, structure and content of the text, questions asked). Digitalization in communication has not only limitations (non-verbal, emotional), but also a number of didactic advantages that make it attractive for use in educational practice.

5. Conclusions

The Internet provides a variety of services to the modern user. These services, in turn, affect education, opening up many opportunities for improving and intensifying the educational process, stimulating the emergence of new teaching methods. As a result of Internet innovations, it is possible to increase the motivation of students to learn new things, intensify the process of studying and learning, and also influence the improvement of the quality of learning and learning.

The advantages include flexibility, speed, written nature, personal orientation, opportunities for cooperation, which are manifested in self-improvement of the communicative component of the electronic educational environment.

The problems include the use of computer slang, which often hides language illiteracy and demonstrates the desire to somehow stand out from the general flow of communication participants - as a way to be recognizable. In addition, computer Internet addiction, hacker syndrome can have negative consequences, indicating a change in the psyche of the individual as a whole.

We must not forget about the possible negative consequences of the use of digitalization tools in education. This direction involves the study of the possible negative impact on students of the use of information and communication technologies in the physiological, hygienic, psychological and pedagogical aspects.

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The negative psychological consequences of the use of digital tools in the educational process can be caused by: emotional overstrain when working with information-intensive saturated educational material; with incorrect distribution of information on the screen; oversaturation of information intended for assimilation.
Pedagogical negative consequences can manifest themselves in the case of improper organization of educational activities at the computer, with incorrect organization of joint activities of students with digital tools.
To make the use of digital tools the most successful and effective way in the educational process, it is necessary to take into account some criteria:
1) regular review of training materials in order to update them;
2) improving and simplifying communication between the teacher and students through the use of e-mail resources, instant messengers, videoconferencing on electronic platforms;
3) storage, provision and joint processing of educational materials in real time;
4) checking the progress of students through electronic control and online tests, regardless of location.
However, the successful use of these technologies is impossible without an appropriate IT infrastructure. In our opinion, cloud technologies enable business organizations to successfully conduct their business, and educational institutions to organize educational activities based on the experience of the best universities.

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