MODERN TENDENCIES OF EDUCATION USING INFORMATION TECHNOLOGIES

Niyazova Naima Abdullajonovna

Tashkent State Pedagogical University named after Nizami, Candidate of Pedagogical Sciences, Ph.D

Abstract. In this article, the analysis of modern guidelines for the development of the information society and the education system, the existence of a process of transition from the traditional education model to electronic education, and then to Smart-education in a smart society are discussed.

Keywords: smart, ICT, information society, E-learning, distance learning, computer telecommunications, smartphones, means of communication.

INTRODUCTION

The changes taking place in the education system of our country related to comprehensive informatization impose new requirements on the professional activity of future teachers, including the use of innovative technologies in teaching using information and communication technologies (ICT). It is important to train, to take into account the individual characteristics of each student, and to exchange advanced pedagogical experience.

METHODS

In the article, it was studied that the idea of Smart-society expresses the desire to improve all aspects of human life in the information environment, it is defined not only as a transmitter of information, but also as an area where information activity of a person has an active influence. Also, the analysis of modern instructions for the development of the information society and the education system, it was noted that there is a process of transition from the traditional education model to electronic education, and then to Smart-education in the Smart society. Smart learning is "flexible learning in an interactive learning environment with free content from around the world. Smart educational technologies allow students to form the identity of a smart person who is good at ICT to form new knowledge and search for information, analyze and create innovations.

Informatization is the priority direction of the development of the modern education system, which is characterized by the following innovative processes:

- introduction of information education services based on electronic education and distance learning technologies;

- production of open digital educational content and software and methodological support based on interactive and multimedia technologies;

- creation and implementation of telecommunication structures (information-educational environment, educational portals).

In such conditions, special importance is attached to the teacher, whose professional activity is related to the preparation of students of professional education for life in the modern information society. Let's analyze the current aspects of the informatization of society, which determine the current trends in the informatization of education.

The concept of "information society", first formed in foreign research in Japan, defines a society in which high-quality information prevails and modern tools are used for its storage, distribution and use based on computer technologies. This approach is determined by the theory of information explosion, according to which the increase in available information leads to a change in its quality. In the information society, computer technologies provide access to reliable information sources and automated data processing in all areas.

According to another approach, the main feature in the concept of information society is the economic component. E. Toffler, one of the founders of the theory of information society, expressed the specific characteristics of this society, calling it the "third wave": high-level innovations in all spheres of political and economic life; directing the nature of work, interpersonal relations to psychological, social and moral goals; the impact of information overload on human culture; directing culture and society to everyone. Thus, the information society is a society in which the service economy focused on social spheres such as health care, education, and management is a priority.

A.I. Rakitov's research confirms the main features of the modern information society. The author notes that a person, a group of people or an enterprise in the information society has the ability to automatically access the information and knowledge needed to solve important problems anywhere and at any time. Developed infrastructures ensure the creation of national information resources in the amount necessary to ensure rapidly developing scientific-technical and socio-historical progress. Social structures are changing due to the expansion of people's sphere of information activity. These signs describe the transition of society to the use of radically new means of information technology and a qualitatively new level of interaction processes. The information industry (IT industry) is of primary importance as a field of human activity based on technical means, methods and technologies for the production of new knowledge.

The process of informing society is based on the introduction of theoretical, methodological and practical rules of computer science, which has been rapidly developing over the past fifty years. In the publications of K. Kolin, informatics is defined as the science of the laws and forms of information movement in nature and society. Academician A.P. Ershov was the first to speak about the fundamental nature of computer science, emphasizing the general scientific nature of the concept of information and its processing processes [1]. A unique feature of computer science is that its methods can be used in almost all areas of scientific knowledge, and this qualitatively enriches the results of research. Informatics is an interdisciplinary field that ensures the effectiveness of research in almost all areas of fundamental and applied science. Changes in society related to information are directly related to scientific achievements in the field of informatics.

RESULTS

Thus, drawing an interim conclusion, it should be noted that informatization of society is a socio-economic and scientific-technical process of creating optimal conditions for meeting the needs of citizens and information needs based on the formation and use of all types of information technologies, computer telecommunications and information sources. The process of informatization is being implemented in all countries of the world, realizing the importance of information and information and communication technologies in socio-economic development. Undoubted leaders in this direction are Japan, USA, South Korea and Western European countries. Based on the global principles of the implementation of the informatization program (the economy

is based on knowledge-intensive sectors; significant financial investments supporting public and private informatization; the growth of citizens' well-being depends on the possibilities of communication and information processing, etc.) an important document of the systematic state approach to information processes was developed.

The priority tasks to be solved in the way of building an information society are as follows:

- provision of high-quality services that ensure a high level of use of information and technologies to the population based on the formation of modern information and telecommunication infrastructure of the society;

- to improve the quality of education, medical care, and social protection of the population through the development and use of information and telecommunication technologies;

- development of the economy based on the use of information and telecommunication technologies;

- development of science, technology and technology, training of qualified personnel in the field of information and telecommunication technologies.

The technological innovations of the last decade indicate that the process of informatization of society has begun in the 21st century and has moved to a qualitatively new stage of its development. Thus, at the G20 summit in Seoul in 2010, a new stage of the information society was called Smart-society, in which the use of high-tech technical tools and the Internet by people will increase the interaction between citizens, government bodies, and private companies. determines the new quality. Improvement of social and economic spheres of life "Smart" concept "Change of social paradigm, formation of new ideas, knowledge and intellectual capital by people specially trained to implement and support these processes with the help of IT management technology emphasizes the nature of the current stage of society's development.

The idea of a smart society expresses the desire to improve all aspects of human life in the information environment, which is defined not only as a transmitter of information, but also as an area in which information activity of a person has an active influence. Modernization of the information environment based on the Smart-society concept and modern IT technologies, which have become priorities in many countries, is emerging as a global trend today.

DISCUSSION

Let's take a look at the main features of the Smart-society, which are manifested in social life and should become the conceptual basis for the informationalization of the training and education of pedagogical personnel. The smart economy is based on highly environmentally friendly and energy-efficient technologies, where citizens of a smart society produce services in cooperation with government agencies and private businesses. The use of modern information and communication technologies allows enterprises to achieve high economic results through the use of remote offices, continuous Internet communication with consumers and partners. Employers distribute the powers of employees through an intelligent information environment and select the tasks that need to be solved remotely.

The priority values in the smart society are human qualities such as adaptability, originality and creative potential. Therefore, the ability not only to quickly and efficiently find and use information, but also to effectively cooperate in the information environment, using modern interactive ICT and technical tools, is an integral part of human information culture. In modern publications devoted to the problem of education in the information society, the fact of the existence of "digital" people whose natural elements of their habitat are networks and mobile

means of communication is presented. V.P. Tikhomirov presented his vision of what a graduate of an innovative educational institution should be: "A citizen of a smart society (intelligent) learns throughout his life, creates innovations, looks for ways to solve social problems together with the authorities, will be a citizen of the world. People ready to use the Internet and technologies will bring new economic and social interests, create a new culture." In the pursuit of a smart society, it is necessary to develop the information culture of the population in a targeted manner.

The analysis of global problems at the modern stage of society's informatization shows that the educational system should have a number of fundamentally new qualities defined as a new educational paradigm oriented to the conditions of the 21st century:

1. Orientation of education to solving the problems of formation of information civilization.

2. Quality change of higher education necessary for the conditions of the 21st century, the number of qualified specialists.

3. Foundationalization of education, focusing on the study of the latest achievements of science in the field of information laws of nature, human and social development.

4. Openness of the educational system to the general public.

5. Development of an open education system based on electronic and distance learning technologies.

In the conditions of the information society, the education system is acquiring new features. The concept of education is expanding by removing the identification with formal professional education aimed at imparting knowledge and developing skills. Education is based on the use of modern computer and telecommunication technologies for storing, processing, and transmitting information supplemented by traditional information technologies. Formation and development of the market of educational services and products is important for the educational system. The solution to these problems is based on large-scale informatization of education.

Academician A.P. Ershov defined informatization as a measure aimed at ensuring the full use of reliable, comprehensive and timely information in all socially significant types of human activity. emphasized that it is a means of solving, it allows to qualitatively change the methods and organizational forms of pedagogical activity. This idea became the basis for the modern interpretation of this concept. Informatization of education is the creation of scientific-pedagogical, educational and methodical developments aimed at realizing the possibilities of ICT tools used in the field of education and providing them with the methodology, technologies and practices of their optimal use. is a purposefully organized process.

Taking into account the current state of the problem of informatization of the educational system, it is necessary to emphasize the large scale and complexity of the introduction of information technologies that ensure the achievement of two strategic goals: increasing the efficiency of all types of educational activities and training specialists who meet the requirements of the information society. improve quality.

ICT tools used in education are "microprocessors providing operations on information collection, production, storage, processing, transmission, software and technical tools and devices based on computer technologies, as well as modern information exchange systems" is understood". One of the important tasks to be solved in this field is the creation of new content of the information-educational environment with modern technical tools, interactive and multimedia electronic educational content.

Mobile technologies make it possible to use smartphones, communication devices, laptops in educational processes due to the possibility of quick connection to information networks and the emergence of software and services for organizing the common use of information resources. Mobile devices are effectively integrated into the learning process if the network-based storage of learning resources and interactions between teachers and students are used to facilitate the use of e-learning and distance learning technologies.

Centralized production of high-quality digital educational resources and software and their open use allows teachers to introduce educational methods and educational technologies aimed at active independent and effective activity of students. A global trend is the creation of open learning portals by educational organizations (professional education, universities, etc.), where electronic classes (massive open online course (MOOC)) are held for everyone. The advancement of this direction comes from the understanding that the content should be made available to a wide audience. This reflects the current trend in education: the role of the learning process prevails over the role of the learning material, which helps to form the ability to search, evaluate and interpret information.

Visualization of educational information from a traditional, pictorial, passively accepted form becomes a cognitive teaching tool actively used by the student. The main requirements for the content of e-learning are multimedia and interactivity that improves its visual presentation. Virtual models of studied objects, processes, events are one of the brightest examples of modern visual tools in the educational process.

The introduction of the above-mentioned modern computer technologies into the educational system will help the active development of electronic education and distance learning technologies. The concept of "electronic education" appeared in the 90s. At the beginning of the last century, it became more and more relevant due to the development of information and communication technologies. During this period, e-learning was considered as a technological support for distance learning, providing teachers and students with remote access to multimedia teaching aids, e-textbooks, automated testing systems, etc. provides. The development of this direction led to the spread of complex software systems that solve the problems of electronic education: educational content management systems, test systems, interactive support systems for the educational environment, and knowledge management systems. This is the active introduction of electronic education into the educational process of traditional educational institutions (universities, professional education, additional education and training institutions, etc.) allowed at the beginning of the 21st century.

The modern interpretation of the concept of "electronic education" is the organization of an educational process based on the use of pedagogical technologies based on the information-educational environment (learning on a problem and project basis, collaborative learning, forming student and teacher portfolios, etc.) refers to the systematic solution of issues.

Distance learning technologies are understood as "educational technologies implemented using information and telecommunication networks with indirect (remote) interaction between students and teachers". Distance education is considered as an extreme case of electronic education, its main feature is the absence of elements of traditional education in terms of the organization of the educational process and the interaction of its subjects with educational resources. Thus, the priority of electronic and distance education was shown as a direction of informatization of education.

Along with the concepts of e-learning, distance learning, the term "blended learning" is widely used, which refers to the combination of traditional training sessions and electronic learning technologies. As Deputy Lapchik noted, "this is blended learning, which increases the importance of electronic education as a modern technology. It is not only related to distance learning in the clear sense, but also important for other forms and types of training." [2, p. 5].

Despite the fact that there were no normative regulations for a long time, electronic education and distance education were introduced as part of experimental activities:

- use of distance learning technologies for disabled children;
- organization of remote management of students' educational achievements;
- introduction of distance learning technologies in additional education, organization of extracurricular activities of students (educational initiatives in the network);
- organization of specialized training using electronic education and distance education;
- conducting remote classes for children who left professional education due to illness and during quarantine;
- remote support of talented children and students' research activities;
- organization of a virtual communication system in professional education;
- introduction of distance education into full-time education (on the basis of mixed technologies).

Creation of telecommunication structures of individual educational organizations and the field as a whole. Design and implementation of various types of educational organizations and regional educational structures is a characteristic feature of education informatization at the current stage. The information-educational environment is one of the directions of the activity of the educational organization, which includes organizational and methodological tools, software and software tools designed to store, process, transmit, and implement educational and scientific communications considered as.

Under the influence of the large-scale introduction of ICT in education, the role of the teacher in the educational process is changing significantly, demands are being placed on the compliance of their professional training with the level of modern informatization. The role of the teacher as the sole carrier of educational information delivered directly to students during the lesson is a coach whose main task is to support and correct the independent work of students, replaced by the important role of the moderator. In this regard, the main task of the teacher is to organize "high-quality navigation in ICT and world information resources". The development of information technologies in modern conditions requires continuous improvement of ICT competence by teachers. Today, virtual working method associations (WMOs) play a special role in self-education, they implement the following forms of work: teleconferences, webinars, Internet conferences, conversations, remote consultations, master classes, etc.

CONCLUSION

Thus, the analysis of modern guidelines for the development of the information society and the educational system emphasizes the existence of a process of transition from the traditional educational model to electronic education and then to Smart-education in the Smart Society. Smart learning is "flexible learning in an interactive learning environment with free content from around the world. Smart learning technologies enable students to use ICT to create new knowledge and search for information, analyze and innovate. allows to form the personality of a well-informed, intelligent person."

The following main features of smart education are noted:

- as a set of electronic educational technologies, it is filled with completely new content and provides interactive access to it;

- most of the educational content is located on web resources on the Internet;

- conditions are created for the synchronous delivery of knowledge: relevant information posted on the site is quickly included in the educational material;

- pedagogical Internet communities are developing, in which specialists of the educational system will have the opportunity to exchange interactive content to ensure diversity in the understanding of content and teaching methods for each specific subject;

- educational institutions and teachers unite to implement joint educational activities on the Internet based on common standards, agreements and technologies;

- the collective learning process is carried out using a common repository of learning materials;

- students can participate in the development of educational content that allows them to acquire knowledge, skills and activity methods in accordance with the competency model.

The theoretical analysis of the global changes taking place in the education system in the context of informatization reveals real contradictions:

- between the changing goals of the information society and their reflection in the educational environment;

- between the awareness of the changing requirements for teachers and their role in this process, and the desire to form the qualities required in the modern information society.

The new higher directions of educational informatization, reflected in the concept of "smart education", place high demands on the qualifications of teachers in terms of professional competences in the field of using electronic education and distance learning technologies.

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