



CONTENT OF USING INFORMATION TECHNOLOGIES IN EDUCATION

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Abstract:

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This article provides information on the requirements for a modern teacher, on the special qualities that he must possess, on the role of the information society and the educational process. Provides details on important information and telecommunication technologies used in education.

Keywords: informatization, education, science, personality development, asynchronous systems, synchronous systems, audiography, electronic textbooks, multimedia systems, expert systems, automated design systems, electronic libraries, databases, local and global computing systems, electronic communications, voice electronic communications, electronic board, teleconferencing system, electronic printing.

The unified information system is aimed at training personnel who have solid fundamental knowledge and are able to apply it in their work, by mastering a wide range of educational programs and

specialties. Today's teacher must be talented in all respects and be able to fully meet modern requirements. Because a modern teacher teaches mature and competitive young people.

REQUIREMENTS FOR A MODERN TEACHER:

- *Good knowledge of methodology*
- *Good knowledge of the content of innovative technologies*
 - *Be able to create scripts for creating multimedia*
- *The ability to independently create animated, animated images in Power Point*
- *Be able to establish theoretical and practical unity*
- *Be able to create creative assignments aimed at creative thinking*

The requirements for a modern teacher today are very high, and this is inextricably linked with informative education.

Informatization of education involves the use of modern information technologies aimed at achieving the pedagogical and psychological goals of education, providing them with practice and methodology for their creation in the field of education.

This process consists, firstly, in improving the management mechanism of the education system based on the use of scientific and pedagogical databases, and secondly, in improving the choice of organizational forms, methods, content and teaching

methodology in a modern information society for personal development.

The process of informatization of education and the use of modern information technologies leads not only to a change in organizational forms and teaching methods, but also to the formation of new methods.

The informatization of sciences leads to the improvement of educational activities, the integration of the cognitive process on the basis of modern information technologies, the expansion, deepening and integration of sciences. This, in turn, requires a change in the selection criteria for the content of educational materials.



Thus, the development of the process of informatization of education leads to a change in the content and volume of educational materials, the development of subjects, programs, the integration of certain topics or subjects. This leads to a change in the content and structure of disciplines and, as a consequence, to a change in the content and structure of education.

In parallel with this, it will be necessary to introduce an innovative approach to the problem of students' knowledge based on computer technologies.

Changing ideas about the content and structure of training, organizational forms of control and training, methods also requires the improvement of specific methods in the educational process.

The use of modern information technologies in the educational process, and hence the expansion of educational activities, leads to a qualitative change in the didactic requirements for teaching aids and textbooks.

The above circumstances lead to a change in the components of pedagogical theory, that is, a change in the paradigm of pedagogical science.

The introduction of telecommunication technologies can be considered as an important direction of informatization of teacher education and the education system as a whole. Telecommunication technology is a network technology that uses local and global Internet networks in synchronous and asynchronous modes.

Telecommunication Technologies provides distance learning, videos and animations on various educational portals, educational telecommunications projects, and distance learning contests. The use of modern telecommunication technologies allows you to effectively organize the educational process.

The use of modern technology in the classroom and beyond requires the teacher to increase the interest and activity of students through the use of certain methods.

Telecommunication education projects usually combine interdisciplinary knowledge, that is, knowledge related to different disciplines.

There are two types of learning: synchronous and asynchronous.

Synchronous systems require the simultaneous participation of both the student and the teacher in the learning process. Such systems include interactive television, audiography, computer teleconference, IRC, MUD, MOO.

Asynchronous systems do not require the simultaneous participation of a student and a teacher in the learning process. The student chooses a

lesson plan and time. Such systems may include printed materials, audiotapes, videotapes, electronic communications, www, FTP-based courses.

Audiography today is less common and is a method of transmitting audio, computer and graphic information over transmission channels. Graphic information is transmitted using faxes, televisions, computer displays and electronic boards. Students draw graphical information on whiteboards that are displayed on computer screens. Voice communication is carried out using a microphone and amplifiers. Faxes are used to conduct tests and transfer textbooks. In some cases, these systems use a video projector.

New information technology tools (NIS) include microprocessor technologies, telecommunications systems and modern means of information exchange, software, hardware and software that collect, collect, process, store and transmit information.

Currently, a large number of new information technology tools are being developed and used in education. Their number is growing every year. The list may include: computers of all classes, display, printer, memory, computer sound input device, scanner, keyboard, data warehouse, knowledge store, multimedia systems, video text, teletext, TV information, modem, computer networks, electronic communications, electronic conferences, information retrieval systems, digital cameras, expert training systems, graphic display devices, hypertext systems, television, radio, telephone, fax, voice electronic communications, teleconferencing, whiteboard, Internet software, automated libraries, training software, editorial and publishing systems, CDs, software packages (programming languages, translators), data transmission media, radio stations, etc.

There is no end to this list. But the list of different aspects of new IT tools and systems is endless.

The pedagogical goals of using new information technologies are:

- intensification of all levels of the educational process;
- comprehensive development of the student;
- preparing future primary school teachers for life in the information society;
- Meeting social needs.

Important information and telecommunication technologies in the educational process are:



- electronic textbook;
- multimedia systems;
- expert systems;
- computer-aided design system;
- electronic libraries;
- database;
- local and global computing systems;
- electronic communication;
- voice electronic communication;
- electronic board;
- teleconferencing system;
- electronic printing.

By their didactic characteristics, the tools of new information technologies actively influence all components of the educational system: goals, content, methods and organizational forms of education, as well as personality development, his intellectual development, which is a more complex and urgent problem. Pedagogy, creativity allows analytical and critical thinking, independence in obtaining knowledge, development of independence when working with different sources of information.

Modern computer and telecommunication technologies contribute to the development of educational content.

Modern technology is increasing the activity of both teachers and students. Such an environment of activity raises the quality and efficiency of creative collaboration to a new level.

Rapidly evolving technology requires rapid improvement in the learning process and adaptation to the new technological environment. The organization of a flexible educational process is based on modern information technologies, the creation of a variety of educational materials:

creation of the architecture of computer training systems;

development of practical computer training programs;

requires the principle of flexibility at the stages of the formation of a specific educational process using various teaching methods and tools. Learning materials based on this principle will integrate the level of knowledge, skills, psychological characteristics of the student, characteristics of study groups and socio-cultural aspects of learning.

When choosing learning technologies, it is important to consider the following factors:

the importance of using new technologies in the learning process to achieve educational goals, and not the technology itself;

In addition to the most modern and expensive technologies, both cheap and traditional technologies can be effective;

Learning outcomes depend on the quality of course creation and delivery, not on the type of telecommunications or information technology;

when choosing a technology, it is necessary to take into account the individual characteristics of the student, the specifics of a particular field of science, the content of training, tasks and exercises;

One of the most effective ways to choose technology is through a multimedia approach.

While improving the content and quality of education is a priority, the introduction of new information technologies in education will open the way for its development and efficiency.

The widespread use of computers in education has led to the emergence of the term "new information technologies in education." In general, any pedagogical technology is information technology, because the technological process in education is based on information and its movement (change). In our opinion, the term "computer technology" is suitable for computer learning technologies.

Computer technology develops the idea of teaching software, opens up completely new technological learning opportunities associated with the enormous potential of computers and telecommunications. Computer (new information) technologies are the process of preparing and transferring information to a student on a computer basis. Computer technology can be expressed as follows:

1. Incoming technologies (the use of computer learning to solve specific didactic questions on specific topics, sections).

2. Identifies the most important part of the underlying specific technology used.

3. Monotechnology (based on the use of computers in education, learning management, diagnostics and monitoring).

Among the models based on the use of computer technology, the following can be noted:

- Lessons using computer demonstrations to explain new teaching materials;

- Lessons based on Internet training and management software products;

- Methodical preparation of teachers for lessons, search and systematization of additional information, preparation of didactic materials;

- The use of computer technology in the organization and management of the educational process.

Each model has its own technically equipped computer workstations. Based on our experience of introducing computers into the



educational process, we consider it expedient to organize subject computer classes and classrooms with computer equipment. The computerization of learning is the narrower use of computers as a teaching tool, while the wider use of computers in the learning process is the multi-purpose use of computers.

The main goal of computerization of education is to prepare the young generation for the information society and to increase the effectiveness of education through the introduction of information technology tools.

Electronic communication is a means of remote communication. This is one of the services (cases) of computer networks. Electronic communication allows users, i.e. teachers and students, exchange text and graphic information. To implement the electronic communication service, the user's workplace must be equipped with equipment: a computer, a printer, a modem, a monitor, a keyboard, a mouse with a manipulator and appropriate software.

The following possibilities of electronic communication can be summarized by the didactic features of computer networks:

- ✚ Transfer data prepared directly using a computer keyboard or previously saved in the form of files and computer programs;
- ✚ Storing educational information in computer memory with the ability to print on a printer;
- ✚ Display of text and graphics on a computer screen;
- ✚ Edit the received text information;
- ✚ Preparation and editing of sent text messages;
- ✚ Submit and use tutorials on your computer.

From a didactic point of view, it is possible to combine the above and create classes called "virtual classrooms" using electronic communication. For example, using mailing lists on the Internet allows groups of users to exchange ideas. The number of discussion groups can be very large and limited by the capabilities of the devices. The rules and methods of subscribing (membership) to the created research group will be explained, and a message sent by the volunteer to the discussion group will be automatically sent to all participants. One of the participants is a teacher.

So, to use electronic communication, you need to be able to work with a simple text editor and a few commands to send.

The widespread use of distance learning as an important part of the open education system in the world, as well as the use of modern information technologies and the Internet in education is one of the factors in improving its quality. Modern information and communication technologies are widely used in teaching various subjects in the system of higher pedagogical education.

The use of new information technologies in the educational process leads to an increase in the effectiveness of pedagogical methods, a change in the work of teachers, an improvement in their methods of work, and structural changes in pedagogical systems. This poses specific tasks in the organization and management of the pedagogical process.

Effective organization of pedagogical processes in the environment of modern information technologies:

- division of labor between teachers;
- uniting teachers, programmers and professionals into a community that creates distance learning courses and e-books;
- Improving the organization of the pedagogical process and monitoring the effectiveness of the teacher's work.

Teaching activities based on new technologies:

- simplicity of complex processes, such as the creation of new courses associated with the rapid development of the technological base of training;
- the formation of special skills in the creation of training courses;
- compliance with the requirements for the quality of distance learning courses and quality control of educational materials due to the openness of distance learning courses;
- the priority of the student's activity in the educational process, the transfer of the weight of the educational process from teacher to student;
- provides teacher feedback to each student based on the use of new communication technologies.

Today there are a number of unresolved issues that are directly related to improving the efficiency of education. These problems are associated with the informatization of education, the



training of teachers in the field of modern information technologies, and the lack of teachers' skills in using modern information and communication technologies.

One of the important aspects of these problems is the attitude of teachers to the informatization of their education. It should be noted that the role of the teacher in the information environment will increase.

Currently, educational institutions are equipped with modern computer and telecommunication technologies. This, in turn, requires teachers to take a new approach to their work. The introduction of new technologies into the educational process does not lead to the displacement of the teacher by technical means, but to a change in his tasks, roles, and the complexity of teaching.

Now from the teacher:

- lesson builder - lesson creator;
- facilitator - consultant on teaching methods;
- Specialist in interactive training courses;
- observer - requires experience in methods of monitoring learning outcomes.

One of the promising areas for the introduction of modern information technologies in education is the computer modeling of events and processes. Computer models are synchronized with the content of a traditional lesson and help the teacher to show many effects on the computer screen, organize new, non-traditional educational activities for students.

The introduction of information and communication technologies in the educational process can be carried out in 3 main areas:

- Use of information and educational systems (database, knowledge base, expert educational programs);
- Use of electronic educational publications and programs;
- Use of communications.

Currently, the directions of informatization of the educational process are being determined, and this process is carried out in the following areas:

1. In the learning process:

- to determine the didactic foundations of Internet technologies that can be used in the educational process;
- Development of distance learning methodology;

- Improving the effectiveness of lessons in teaching teachers based on modern information technologies;
- Implementation of electronic, educational, methodological and organizational work of distance learning.

2. In the field of supporting general and secondary specialized education:

- methodological assistance to teachers based on modern technologies;
- Creation of electronic literature for general and secondary specialized education and the formation of electronic educational materials.

3. In the field of continuing teacher education:

- training of teachers of computer literacy;
- training in synchronous (video conferencing) and asynchronous (information and educational portal, INTERNET) modes;

4. In the field of development of informatization of education as a scientific direction:

- to determine the main directions of the development of pedagogical sciences in the information technology environment;
- Improvement of organizational forms, methods, teaching methods, personal development in the new information system.

• Thus, the directions of the introduction of modern information technologies in the pedagogical process can be determined as follows:

- Implementation of modern information technology tools in the educational process;
- Increasing the level of computer (information) training of participants in the pedagogical educational process;
- System integration of informatization of educational, research and management processes;
- creation and development of a unified information space for pedagogical education;
- Improving the ability of teachers to teach based on modern information technology;
- Creation of an electronic educational and methodological complex of pedagogical education (electronic literature, virtual laboratory work) and the implementation of related organizational work;
- determination of key directions for the development of education in the information technology environment;



○ requires the improvement of organizational forms, methods, teaching methods, a new information system for personality development.

The process of informatization of education requires, first of all, the solution of the personnel problem. Computer labs are usually staffed by computer science teachers. But other science teachers don't always take advantage of this.

Computer educators have many options. For example, a teacher who is proficient in information technology can organize all of his lectures visually.

The modern information society makes special demands on the quality of teacher training. Modern teachers should be able to use the information resources of the Internet, to acquaint with the possibilities of information and communication technologies in the process of acquiring independent knowledge.

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