



Information Technology in Education

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Abstract

Modern information technology of teaching is not the technology of the student, it is, first of all, the technology of the teacher. The student does not learn modern information technology, but uses its products as a technical means of teaching. The teacher prepares for the lesson using modern technologies, organizes the lesson, monitors the knowledge of students, and his task is to bring the highest level of computerization of information technology into the educational process to improve the content of education.

Keywords: information technology, student, student, teacher, modern, lesson, knowledge, improvement, computerization, educational process.

Introduction

Today, information technology is one of the most important factors influencing the development of our society. Information technology is also present at different stages of human development, and the peculiarity of today's information society is that information technology takes a leading place among all existing technologies, especially new technologies.

Extensive use of didactic materials that determine the effectiveness of information technology and technical means is one of the main features of modern pedagogical technologies. The national program emphasizes this important tool for managing the educational process. The level of use of information media (computer, electronic communications, radio, television) is determined by two factors:

1. Development of didactic materials on topics for which the media is effective for the learning process.
2. To check the readiness of teachers to use methodically correct technical means and didactic materials in their practical work.

The goal can be achieved only if the process of informational education is pre-designed pedagogically. Computerization of the pedagogical process is one of the main directions and areas of modern pedagogical technologies.

Information technology is the methods and techniques of organizing, storing, processing, restoring, transmitting information that enhance people's knowledge and expand their ability to manage technical and social processes. Also, information technology is a creative activity that consists of a chain of processes that are carried out to achieve a specific goal. The efficiency of any technology will increase if the processes that make up the technological chain, the



organization of information exchange between them and the use of computers in their harmonization are created. Of course, this requires a careful study of this technology, the analysis of the information exchange in processes and between them, as well as the management of the process chain (i.e. technology).

The basis of modern information technology is the following three technical achievements:

1. The emergence of an environment for the accumulation of information in machine-readable concepts (magnets, tapes, movies, magnetic disks, etc.);

2. Development of means of communication, ensuring the transmission of information to any point of the world without significant restrictions on time and distance, wide coverage of the population by means of communication (radio, television, data transmission networks, satellite communications, telephone networks, etc.);

3. Increase the possibility of automated processing of information (sorting, classification, representation, creation, etc.) on a given algorithm using computers.

Information technology is, firstly, a set of information circulation and processing, and secondly, a description of these processes.

Information technology plays an important role in the educational process and helps to solve the following tasks:

- The discovery, preservation and development of individual abilities of students, consisting of unique qualities of each person, the formation of cognitive abilities, the desire for self-improvement;

- Ensuring a comprehensive study of events and phenomena, the close relationship between the exact, natural-scientific, technical, social, humanities and the arts;

- Constant and dynamic updating of the content, form and methods of educational processes.

From the point of view of the education system, the following problems that arise with the introduction of information technology are important:

1. Technical problems - these determine the requirements for computer and microprocessor technology used in the education system, the characteristics of their practical application;

2. Software problems - they determine the composition and types of software for use in the education system, the structure and characteristics of their application;

3. Training problems - these are related to the ability of teachers and students, educators and students to use information and communication technologies, including computer technology.

Today, the main direction in the informatization of education is the creation of tools for pedagogical programs in various disciplines. However, pedagogical software tools based on existing and developing computer technology can lead to significant shifts in terms of teaching as education. One of the reasons for this is that computer technology has begun to be introduced in the traditionally organized learning process. It is not focused on these technologies in terms of its core content and methods and does not feel the need for them.

Educational technologies have always been informative because they involved the storage, transmission, and delivery of a wide variety of information to users. With the advent of computer technology and communication tools, learning technologies have changed radically. The implementation of information technology in the educational process requires the following:

- Computers and communication tools as technical means of education;

- Systematic and practical software for the organization of the educational process;



- Appropriate methodological developments for the introduction of new teaching aids in the educational process.

Recently, the concept of "computer technology of teaching" has spread, which means the technology of teaching based on computers. However, the concept of information technology is broader than the concept of computer technology in teaching because computers are an integral part of information technology techniques.

Today, various optical memory devices (video discs, optical discs) are widespread. Using them allows you to write textual graphic information together at the same time, while producing a high-quality image when you reproduce it. Unlike magnetic recording, recording on optical discs does not deteriorate even in any number of resets. Software and mathematical software for computers is becoming an important direction in the development of high-tech manufacturing.

There are also technical and software information technologies, which include:

Exposure networks. Nowadays, computer or computer (local or global) networks are widespread in all fields of knowledge. Local area networks will be implemented in a small space and will be an integrator of various information service networks. They integrate all the information technology tools in organizations and increase their efficiency. Global computer networks, on the other hand, allow information to be transmitted over long distances.

Satellite communication systems. It includes many terrestrial stations and terrestrial satellite repeaters. Today, these systems are used to collect data to communicate between computers and to transmit television programs.

Artificial intelligence systems. The element of artificial intelligence ICT differs from others in that ordinary ICTs produce only statistical data, while artificial intelligence systems produce knowledge. A special area of computer science is artificial intelligence. Software and hardware are being developed to perform certain types of human mental activity.

Email. "E-mail" is the use of electronic methods of transmission and processing of mail, such as the transmission of printed materials, spreadsheets and magazines, as well as the service of collecting, processing and presenting messages and information. transmission network system.

Information services such as electronic newspapers and magazines were provided to the population on the basis of e-mail. In recent years, electronic publications are gaining more and more ground in the world market. This process was accelerated by the proliferation of compact optical discs.

Teleconferences. Teleconferences are an example of the implementation of modern information technologies. The following equipment is used for teleconferencing: terminals, television cameras, graphic displays, large display screens. There are also opportunities to quickly organize the discussion of current issues through teleconferences, the use of any pictorial materials for discussion, expanding the range of experts involved in the discussion of current issues, the use of any information in international databases.

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Factors in the development of information technology, computerization and information support of the educational process on the basis of computer networks depend on the need to develop both areas of computerization. To do this, it is necessary to create a "concept of computerization" at all stages of the system of continuing education, based on the regulations adopted in this area.

Computer technology develops the ideas of programmed learning, opening up new technological options of education that have not yet been explored in relation to the unique capabilities of modern computers and telecommunications. Computer (new information) technology of education is a process of preparation of information and its transfer to the learner, the means of its implementation is a computer, ie:

- The formation of information skills in students, the development of their communication skills;
- training of the "information society" personality;
- providing students with sufficient and sufficient information to master;
- Formation and development of research skills, the ability to make optimal decisions in students.

The content of computer technology is based on the application of a number of shaped models, which are manifested through pedagogical software tools and the capabilities of the telecommunications network, written in computer memory.

Information technologies can be used not only in the educational process, but also in information work, management of the education system and in the system of professional development and retraining of teachers, providing them with scientific, technical and specialized information in the system of continuing education.

In developed countries, the integration of their technical means is becoming a key direction in the introduction of information technology in education. In this regard, even the concept of 'multimedia' has emerged, which implies the complex use of most technical means in teaching. The most important thing in using multimedia is to teach students to choose the information they need. The task of the teacher (pedagogue) is not to provide information, but to help find it, the teacher (pedagogue) is also a guide in the field of knowledge.

Using such a set of teaching aids, the impact on the student is carried out only through information channels (sight, hearing, etc.). This increases the effectiveness of education.

The problem of restoring the forms of organization of students' learning activities when using information technology in the educational process should be addressed in a new way. If in the context of traditional education the most common forms of organizing cognitive activities will be individual and frontal forms, in the context of the use of information technology, both of them can be used simultaneously.

Also, the introduction of information technology in the educational process will lead to a change in the role of the teacher (educator), that is, the educator will become more of a researcher, organizer, consultant and programmer than a teacher. All this requires a change in the system of retraining and advanced training of teachers. According to the researchers, the basis of information culture of teachers should be methodological, general, cultural in nature, and should be formed in the study of all disciplines in the process of professional training, retraining and advanced training of teachers.



In recent years, great positive changes have taken place and are taking place to equip higher and secondary special educational institutions with information technology, to improve the content of the education system, the forms and quality of its organization.

It is known that a lot of time is spent on laboratory and practical work of teachers in the traditional way of teaching. This is a very important component of specialist training. It not only helps to strengthen the theoretical knowledge of the student, to increase the effectiveness of mastering the material, but also to develop practical skills in a particular field. However, we cannot say that such trainings give full results. The reason is that the laboratory equipment is insufficient and many laboratories and classrooms are not equipped with modern facilities and equipment, and most of the existing ones are obsolete and do not fully meet today's requirements. At a time when technology is evolving rapidly, laboratories and stands for practical training need to be improved each academic year. This requires additional costs. Another important factor is that due to the slowness of work or processes in some laboratory studies, learners find it difficult to re-analyze or test in the allotted time, whereas practical training needs to be repeated over and over again to gain sufficient work skills and experience in a particular field. Unfortunately, this is not always the case due to the frequent breakdown of laboratory materials and equipment and the additional costs associated with them under normal operating conditions.

Given the above, we can say that there is a need to introduce a new effective, universal pedagogical method, which can help the new system to solve important tasks for the training of specialists. To do this, laboratory stands and training workshops should be not only fun, but also convenient and easy for all students.

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