Mechanism for the Use of Digital Educational Resources by Future Primary School Teachers

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Abstract: This article discusses the mechanism for using digital educational resources by future primary school teachers.

Keywords: EXSTO – electronic communication systems, teaching tools and technologies, "technology", informatization of society.

The development of new technologies has always followed new discoveries in other, sometimes related areas of the development of human thought and the needs of society. Learning technologies have always been built on new theories of learning psychology. The second half of the twentieth century was marked by a discovery that had a very strong influence on the development of all aspects of society - the emergence of the personal computer and modern means of communication. The word "technology" comes from the Greek " techne ", which means "art", "skill", "skill". From a certain point of view, all of the above concepts can be interpreted as processes. A process is usually understood as a set of specific actions aimed at achieving a set goal. The technology of material production is understood as a process determined by a set of means and methods of processing, manufacturing, changing the state, properties, form of raw materials or materials. Technology changes the quality or original state of a material. Information is one of the most valuable resources of society, along with such natural resources as oil, gas, minerals, etc. Consequently , the process of processing information, by analogy with the process of processing material resources, can also be defined as technology. Then the following definition is true: Information technology is a process that uses a set of means and methods for processing and transmitting primary information to obtain new quality information about the state of an object, process or phenomenon.

The goal of material production technology is to produce products that satisfy certain needs of a person or a system. The purpose of information technology is the production of information for its subsequent analysis and, based on it, making a decision to perform any action. In modern society, the main technical means of information processing is the personal computer. The introduction of the personal computer into the information sphere and the use of telecommunications determined a new stage in the development of information technology, which from that moment on received the names "new" and "computer". The term "new" emphasizes the radically innovative rather than evolutionary nature of this technology. Its implementation significantly changes the content of various types of activities in institutions and organizations. The scope of new information technology also includes communication technologies that ensure the transmission of information by various means, such as telephone, telegraph, television, fax, etc. The definition of "computer" emphasizes that the main technical means of implementing information technology is a computer. There are three basic principles of

computer information technology: −interactive (dialogue) mode of working with a computer; −integration with other software products; −flexible change of data and assigned tasks. Information technology, like any other technology, must meet the following requirements: −ensure a high degree of division of the entire information processing process into stages (phases), operations, actions; −include the entire set of elements necessary to achieve the goal; −be of a regular nature. Let us give several definitions of the concept "information technology". Information technology (IT) refers to the processes of accumulation, processing, presentation and use of information using electronic means. They are characterized by the environment in which they are carried out and the components that it contains: −technical environment (the type of technology used to solve basic problems); −software environment (a set of software tools for implementing ITO); −subject environment (content of a specific subject area of science, technology, knowledge); −methodological environment (instructions, procedures for use, effectiveness assessment, etc.). Information technology is a system of procedures for transforming information for the purpose of generating, organizing, processing, distributing and using information. The basis of modern IT is: −computer processing of information according to given algorithms; −storing large amounts of information on computer media; −transmission of information over any distance in a limited time. The technological process of material production is implemented using various technical means, which include: equipment, machines, tools, conveyor lines, etc. By analogy, there should also be something similar in information technology.

The role of technical means of information production will be hardware, software and mathematical support for this process. With their participation, primary information is processed into information of a new quality. Among these tools, we will single out software products and call them software tools. Information technology tools are a set of software products, the use of which allows you to achieve the goal set by the user. 13 Tools include, for example, all known general-purpose software products: word processor (editor), desktop publishing systems, spreadsheets, database management systems, electronic notebooks, electronic calendars. Information technology is closely related to information systems, which are its main environment. At first glance, it may seem that the definitions of information technology and systems given in textbooks are very similar to each other. Actually this is not true. Information technology is a process consisting of clearly regulated rules for performing operations, actions, stages of varying degrees of complexity on data stored in computers. The main goal of information technology is to obtain the information necessary for the user as a result of targeted actions to process primary information. An information system is an environment whose constituent elements are computers, computer networks, software products, databases, people, various types of technical and software communications, etc. The main goal of an information system is to organize the storage and transmission of information. An information system is a human-computer information processing system. It is necessary to understand that mastering IT and its further use should boil down to the fact that you first need to master a set of elementary operations, the number of which is limited. From this limited number of elementary operations in different combinations an action is made up, and from the actions, also in different combinations, operations are made up that determine one or another technological stage.

The set of technological stages forms a technological process (technology). In the scientific and methodological literature devoted to the problems of informatization of education, one often encounters such synonymous expressions as "new information technologies in teaching", "modern information technologies in education", "computer learning technologies", "computer 14 pedagogical technologies", "EXSTO - electronic communication systems, means and technologies of education", etc. This indicates that the terminology in this area of research and the concepts corresponding to it have not yet been established. The introduction of new hardware, software, and communication tools into education gradually led to the displacement of the term "computer education technologies" by the concept of "information technologies of

education." Information technologies for education (ITE) are a set of methods and technical means for collecting, organizing, storing, processing, transmitting, and presenting information that expands people's knowledge and develops their capabilities to manage technical and social processes. E.I. Mashbits and N.F. Talyzin consider ITO as a certain set of training programs of various types: from the simplest programs that provide knowledge control to training systems based on artificial intelligence. V.F. Sholokhovich proposes to define ITE from the point of view of its content as a branch of didactics that studies the systematically and consciously organized process of learning and knowledge acquisition, in which the means of informatization of education are used. A substantive analysis of the above definitions shows that currently there are two clearly expressed approaches to defining ITO. The first of them proposes to consider it as a didactic process, organized using a set of fundamentally new tools and methods of data processing (teaching methods) introduced into educational systems, representing the purposeful creation, transmission, storage and display of information products (data, knowledge, ideas) with at the lowest cost and in accordance with the patterns of cognitive activities of students. In the second case, we are talking about creating a certain technical learning environment, in which the information technologies used occupy a key place. Thus, in the first case we are talking about information technologies for teaching (as a learning process), and in the second case about the use of information technologies in teaching (as the use of information tools in teaching). ITE should be understood as an application of IT to create new opportunities for the transfer and perception of knowledge, assessing the quality of training and comprehensive personal development. It is possible to talk about a new educational information technology only if : –it satisfies the basic principles of pedagogical technology (preliminary design, reproducibility , goal setting , integrity); –it solves problems that were not previously solved theoretically or practically in didactics; –The means of preparing and transmitting information to the learner is computer and information technology. The functional properties of modern information technologies provide the educational process with many opportunities that can help improve the quality of education. Russian and foreign scientists studying the processes of informatization of education offer many assessments of the capabilities of information technologies. Let's look at some of them.

Systematizing the above facts, it is advisable highlight the main areas of use of information technology in secondary schools (Figure 1):

1. Computer and information technology as an object study (computer science course).

2. Computer and IT as a tool for teaching various disciplines, as a tool to support subject lessons and other types of classes (use of IT as part of the basic courses of the general education school program).

3. Computer and IT as a means of development and education.

4. IT as a means of diagnosing various functional systems of the child's body .
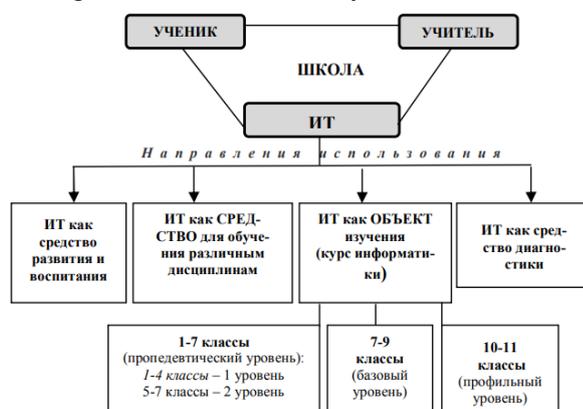
Rice. 1. The main directions of using computers and IT in the educational process of a secondary school.

The modern period of development of a civilized society is characterized by the process of informatization.

Informatization of society is a set of interconnected political, socio-economic, and scientific factors that provide free access to every member of society to any sources of information, except legally secret ones.

Informatization of society is a global social process, the peculiarity of which is that the dominant type of activity in the sphere of social production is the collection, accumulation, production, processing, storage, transmission and use of information, carried out on the basis of modern microprocessor and computer technology, as well as based on various means of information exchange.

Informatization of society provides:

➢ active use of the ever-expanding intellectual potential of society, concentrated in printed fund, and scientific, industrial and other types activities of its members,

➢ integration of information technologies with scientific ones, production, initiating the development of all spheres of social production, intellectualization of labor activity;

➢ high level of information services, accessibility of any member of society to sources of reliable information, visualization of the information presented, the materiality of the data used.

One of the priority directions of the process of informatization of modern society is the informatization of education.

Informatization of education is one of the most important conditions for the successful development of processes of informatization of society. After all, it is in the field of education that those people are trained and educated who not only form the new information environment of society, but who themselves will have to live and work in this new environment. The first steps in the field of informatization of education were made in our country in 1985

year, when an extremely important government decision was made to send several thousand of the first Soviet personal computers to the education sector and to introduce a general course in the fundamentals of computer science and computer technology in secondary schools.

Informatization of education is the process of providing the education sector with the methodology and practice of developing and optimally using information technologies focused on the implementation of psychological and pedagogical goals of training and education.

Informatization of education is the process of providing the education system with the theory and practice of developing and using new information technologies aimed at realizing the goals of training and education.

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