

## USE OF INFORMATION TECHNOLOGIES IN EDUCATION

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### Abstract

In the article there are considered about new aspects of information and methodological support of the learning process, educational and training applications in telematic systems, some approaches to the active development of information technologies in training and education, education informatization equipment and technical support of the educational process. The modern period of development of society is characterized by a strong influence of computer technologies that penetrate into all spheres of human activity and ensure the distribution of information flows in society, forming a global information space. An integral and important part of these processes is the computerization of education.

**Keywords:** Information technologies, training and education, methodological support, education informatization, technical support, the role of IT, human cognitive activity.

### INTRODUCTION

In a real post-industrial society, the role of information technology (IT) is extremely important; today they occupy a central place in the process of intellectualization of society, the development of its education system and culture. Their widespread use in various fields of human activity dictates the expediency of getting to know them as soon as possible, starting from the early stages of learning and cognition. The education system and science are one of the objects of the process of informatization of society. Informatization of education, due to the specifics of the very process of transferring knowledge, requires careful development of the used IT (informatization technologies) and the possibility of their wide replication. In addition, the desire to actively apply modern information technologies in the field of education should be aimed at improving the level and quality of training. "Testing" IT used in the field of

education should aim at the implementation of the following tasks:

- support and development of systematic thinking of the trainee;
- support for all types of human cognitive activity in acquiring knowledge, developing and consolidating skills and abilities;
- implementation of the principle of individualization of the educational process while maintaining its integrity.

Therefore, it is not enough just to master this or that information technology. It is necessary to identify and most effectively use those of its features and capabilities that can to some extent provide a solution to the above problems. Ultimately, all achievements in the field of application of information technologies in the field of education, the creation of telecommunications networks and the support of information flows in them, the creation and

maintenance of data banks and knowledge bases, expert systems and other types of IT should serve one goal - to develop a methodological basis for the application of information technologies in the process of education and training. In essence, at present, society is faced with the task of learning how to correctly, optimally and harmlessly use the computer in the entire education system as a whole.

## MATERIALS AND METHODS

The active policy of manufacturers of computer equipment and software, especially in the clone of personal computers, as well as companies providing telecommunications services, has led to the fact that a person in the modern information society can no longer do without a computer. However, most users cannot answer a fairly simple question: "What new and necessary things have computer technologies brought into his life?" Only one thing is obvious - just the use of these technologies requires large material costs. But why should they be used, how to realize the new opportunities provided by these technologies, and, most importantly in the field of education, how can new technologies be effectively used in education and training?

Even specialists in the field of education in developed countries today cannot unambiguously answer these questions and assess the consequences of using computers and information technologies in the field of education. This is despite the fact that their education system uses computers much longer and more efficiently than ours. Experts from all over the world so far unanimously state only one thing - the use of a computer in this area of human activity has created more problems than it has solved. Here we are talking about the process associated with the use of information technology in education as such, and not about the organization and maintenance of the educational process.

The main problems that arise in this case are:

- how to rework the curriculum for its computerization;
- how to build a learning process using a computer;

- what proportion of educational material and in what form to present and implement using a computer;

- how and by what means to control knowledge, assess the level of skills and abilities consolidation;

- what information technologies to use for the implementation of the pedagogical and didactic tasks.

In order to transfer the course to computer technology of education, the teacher who sets the course must have an idea not only about the subject area, but also be a good methodologist, have the skills to systematize knowledge, be well informed about the possibilities of information technology, and also know by what means of computer support one or another task is achieved. different didactic approach. In addition, he must be informed about the technical means and software that will be available to him both when creating application software (SW) and when accompanying the educational process. It is obvious that one person cannot do this.

A computer as a learning tool can only be used if the appropriate software is available. The application of IT in education and training, ultimately, is the development and use of software for educational purposes. The peculiarity of this type of software product is that it must accumulate, along with the computer program as such, the didactic and methodological experience of the subject teacher, the relevance and correctness of the information content in a particular academic discipline, and also meet the requirements of the educational standard and implement, at the same time, the possibility of its application both for independent work of the student and in the educational process.

A huge amount of software is being created in the education system to support the educational process. These can be databases (DB), traditional information and reference systems, storages (depositories) of information of any kind (including graphics and video), computer training programs, as well as programs that allow you to administer the educational process.

## RESULTS AND DISCUSSION

The modern stage of the application of computer learning technology in the educational process is to use the computer as a learning tool not occasionally, but systematically from the first to the last lesson in any type of education. The main problem in this case lies in the method of computerization of the course, which is to be mastered by the trainee. It is possible either to completely restructure and focus on the creation of new computerized courses, or to implement the methodology with partial computer support for the course. In other words, we are talking about a form of computer support for the learning process. Currently, the practice of using computer technology in education reveals two trends:

- the use of industrial universal computer programs designed to solve a wide range of practical and scientific problems from various subject areas, and adapted to academic disciplines;
- application of training programs specially developed for the purposes of training and implementing the appropriate methods laid down in them by the developers.

To date, there is a wide range of programs from the simplest, controlling to complex multimedia products.

In modern software slang, the term “application” refers to any application software created by users to implement their “corporate” tasks. The creation of educational applications in accordance with modern requirements, even with the help of instrumental systems by individual teachers and small creative teams, does not give the desired results, because the creation of a quality product requires the participation of specialists from various branches of information technology. Therefore, for their production it is necessary to organize stable technological chains (publishing laboratories). These laboratories should include the following specialists:

- manager of the application creation project;
- a project designer who ensures the unity of design tools and the overall structure of the application;

- a computer artist preparing graphic illustrations and animation fragments;
- application installers who are proficient in working with software development tools;
- consultants in the subject area independent of the developer of the subject scenario;
- technical editors and proofreaders who know how to work in the field of information technology;
- a sound design specialist who performs recording of sound (speech, music, noise) fragments, their editing and editing;
- a computer video processing specialist who knows how to work with hardware and software for input, processing and integration of video into a software product.

Of course, the basis for the implementation of such software is the course computer support script prepared by the teacher, which provides information, didactic and methodological components of the course.

With sufficient qualifications in the field of new information technologies, the ability to work on a computer with application systems and if there is an initial version of the training program, as well as standard graphic fragments prepared by specialists of libraries to provide a general direction for the design and libraries of fragments of educational material, modification of a specific training program (while maintaining high quality of the original product) will be within the power of individual teachers and small creative teams. The purpose of the modification is to create computerized courses to ensure their personalization and customization for each student.

Now there is a trend in which commercial firms, having invested huge funds in the technological chains of developing multimedia CD-ROMs, fill the market for educational and, in some cases, educational software products, about which teachers and teachers in schools are poorly or not informed at all. Pupils and students, having acquired them, can use them. But whether such a “computer textbook” corresponds to the program of a particular subject or course, as well as how to apply it in the educational process conducted in a particular educational institution, often does not know either the head teacher, or the director of

the educational institution, and, moreover, the teacher. They perceive, as a means of supporting the educational process, only the software for educational purposes, which is developed by themselves, or tested and recommended by colleagues. However, professional teachers and methodologists do not have such technical capabilities as commercial firms to create software that is necessary and useful, from their point of view, to the learning process.

Therefore, we need a system for the development of computerized courses, supported by the state, for computer technology of education and, in parallel with it, a system for the training and retraining of teaching staff who are able to apply information technology to implement computer technology of education.

With the advent of the possibility of communication between educational institutions through telecommunication networks, servers are created and function in the education system, presented by their creators as servers for educational purposes. They usually contain several information pages implemented in HTML. It is almost impossible to use these materials directly for the learning process.

The forecast of specialists of the European community for the prospects for the development of telematic systems (systems that, along with the telecommunications infrastructure, implement a subject-oriented information component) at the end of the 90s of the XX and the beginning of the XXI century includes, among other priority areas for their use, the following:

- adaptation of existing educational applications for their wide use in telematic systems of the present and future;
- personification of educational and training computer programs;
- integration of training systems into personal workstations, both local and networked;
- development of new forms of education related to the use of learning environments ("microworlds");
- provision of remote multimedia access via networks to libraries and other sources of

information from personal multimedia workstations.

Creating applications for educational and educational purposes is a very laborious process, and installing them in networks entails additional problems associated with the conditions for their distribution. At present, the foundations of methodologies for developing, distributing and using such applications are being formed. However, this is only a small part of the many other problems that accompany the development and distribution of educational applications. No one in the country deals with their comprehensive solution.

In the world community, much attention is paid to the discussion of approaches to solving these problems. Conferences, seminars and other events are held to exchange experience in the use of computer learning technology in the real educational process, where the positive and negative aspects of informatization of education are evaluated.

It is impossible to set up such a multitude of educational and educational experiments and evaluate their results in one single system of education. Especially if these experiments were carried out using the developed infrastructures of Western countries. The high cost of conducting educational experiments using the capabilities of advanced information technologies puts our teachers and specialists-researchers of these problems in a very difficult position. Hence the fragmentation, and the lack of a systematic approach to the implementation of at least the basics of computer learning technology, the inability to replicate the successful results of educational projects, and simply replicate individual computerized courses in other educational institutions.

One of the approaches to solving the creation and distribution of educational applications in the telecommunications networks of the country is the adaptation of the educational software product already existing in the system of general and vocational education to the features of telematic systems. Adaptation of software is primarily that it should be open for modification and maintenance, perceived and supported by the appropriate browsers. As for the methodological aspects, it (this software) must be carefully edited, informationally verified and support the principle of

personification and dosing of educational material. Along with these issues, it is necessary to solve the problems of copyright, the right to use the application by educational institutions, as well as to implement various ways of accessing and distributing it in networks.

## DATA ANALYSIS

If we talk about the state of affairs with the use of information technologies in our country, then, despite the economic difficulties and lack of proper funding, the education system is actively mastering information technologies and no less active attempts to apply them in educational and educational processes. The brake here is the lack of a systematic approach to solving the whole complex of problems mentioned above.

If we evaluate the resources and capabilities for creating and distributing software for educational purposes of the education system, then now the most effective way to do this is to analyze the information and evaluate the software that is declared or posted on the servers of leading educational institutions. However, this will only be informational information.

For the purposeful use of the huge potential and experience in creating software for educational and educational purposes, as well as for coordinating the work carried out in the education system for the active use of IT, it is necessary to revive the practice of selecting on a competitive basis the best software for educational and educational purposes that has been tested in the educational process of educational institutions with the aim of disseminating it in the education system. For an objective assessment of the quality of the developed software for educational purposes, there are certain indicators and criteria, which, in turn, also require constant improvement and adjustment. Our experience in this area shows that it is possible to create an educational software product that is necessary and useful for the education system only through the involvement of representatives of at least several scientific and pedagogical schools in each subject area, and the implementation of this project is carried out on the basis of a state order, the requirements for which and methods

of implementation of which have been worked out.

The initial stage of the implementation of a systematic approach to the use of IT in education and training is associated, first of all, with the implementation of the following proposals:

- Establishment of an educational and methodological center on the problems of developing methods for computer technology of education, technologies for developing software for educational purposes and educational applications for telematic systems;
- development of a system of indicators for assessing the quality of educational software;
- development of organizational and legal norms (principles) for the creation and use of educational applications for their installation in telematic systems.

The implementation of these proposals does not require the creation of another institution in the education system. The functions of the center can be integrated by the parent organization under the relevant subprogram within the framework of the interuniversity program "Information Technologies", which will coordinate the activities and summarize the experience of those organizations and institutions where research is being conducted in this direction.

AOS hardware is built in accordance with client/server architectures. In distance learning, component-oriented and service-oriented architectures are used.

The technical support of the educational process includes the following types of equipment.

1. Computers. In AOS, personal computers are predominantly used at client sites. Shared educational resources are placed in the memory of servers.
2. Network equipment. In local networks and for communication with Internet nodes, hubs (hubs), switches, and routers are used.
3. Peripheral equipment. The main types of peripheral equipment used in computerized lecture halls and distance learning studios: plasma panels, interactive and touch screens,

multimedia projectors, laptops, document cameras, video cameras, microphones, etc.

#### Touch screen

Touch screen - a device for entering information about the place where an object (pointer or finger) touches the computer screen. Other device names: touchscreen, touch screen, touchscreen, touch panel, touch screen monitor, touch screen monitor, touch screen panel.

The touch screen may be in the form of an infrared touch panel. The grid formed by the horizontal and vertical infrared rays is interrupted when the monitor is touched. The device controller calculates the X and Y coordinates of the touch point.

Thus, the touch monitor, along with the output of information, carries out its input.

The operation of a touch screen is similar to that of a conventional monitor using a mouse, but the user can control the computer and enter what is "drawn" on the screen by touching the screen.

#### Speech synthesizers

A speech synthesizer in automated learning systems is designed to synthesize the sound representation of printed text. Synthesis is based on programmed knowledge of acoustic and linguistic rules and constraints.

There are two approaches to synthesis. The first approach - articulatory synthesis - is aimed at building a model of the human speech-producing system. The second approach is formant synthesis according to rules. The intelligibility and naturalness of such synthesizers can be brought to values comparable with the characteristics of natural speech. Rule-based speech synthesis using pre-memorized natural language segments is a variation of rule-based speech synthesis.

#### Braille keyboard.

A Braille keyboard is a device for entering text characters (Braille characters) using embossed keys. Used by people with impaired or lost vision. An example of a computer Braille keyboard is a product from Syscom. In the upper part of the computer there are keys for typing, in the lower part there is a Braille line, which is necessary for reading texts and

checking the correctness of the information entered using the keys. In addition to the braille line, a speech synthesizer is used to display information.

#### Computer for the blind

The BrailleNote computer from Pulse Data International is a compact handheld computer specifically designed for the blind. BrailleNote PK dimensions - 174x92x32 mm, weight - 450 g. It runs under Windows CE, has 24 MB of built-in ROM memory and 64 MB of RAM, 1 GB disk memory. BrailleNote supports Wi-Fi and Bluetooth.

Orientation to the blind is expressed by the presence of an 18-character Braille display that allows you to "read" the text with your fingers. A dedicated 8-key keyboard allows you to enter Braille characters. The PDA is equipped with a convenient means of searching for the desired line, sentence or paragraph using the thumb. The text can be voiced using a speech synthesizer.

Maestro by VisuAide. The Maestro is based on the standard Windows CE iPAQ PocketPC, which is equipped with text-to-speech technology (Victor Reader) and a tactile keyboard. The tactile keyboard is mounted on top of the computer's touchscreen. The input device can be an external keyboard (Braille or standard), or with the keyboard removed, a stylus and a touchscreen.

## CONCLUSION

In order for the education system to be ready to accept the challenges of the 21st century, certain transformations of the system based on the use of modern information technologies are necessary. The main hopes are placed on the creation and maintenance of information and educational environments (IEE) for open and distance learning, on the development of new object technologies for creating databases of educational materials (BMA), along with the development of traditional technologies for developing electronic textbooks and multi-agent technologies for educational portals.

So, information technologies and education - these two trends together become those areas of human interests and activities that mark the era

of the XXI century and should become the basis for solving the problems facing humanity.

In the light of the foregoing, a new promising subject area is beginning to form - "Information Technologies in Education". This area includes the problems of intelligent learning systems, open education, distance learning, information educational environments. This area is closely connected, on the one hand, with pedagogical and psychological problems; on the other hand, with the results achieved in such scientific and technical areas as telecommunications technologies and networks; computer systems for processing, visualizing information and interacting with a person; artificial intelligence; automated systems for modeling complex processes; automated decision-making systems, structural synthesis and many others.

## Reference

- [1] Kupriyanov M. Didactic tools of new educational technologies // Higher education in the Country. 2001. No. 3.
- [2] Modern Humanitarian University - the center of new educational technologies // Education. 2007. No. 1.
- [3] Tikhomirov V., Rubin Yu, Samoilov V. The quality of education in a virtual environment: computer technology in education // Higher education in the Country. 1999. No. 6. \_\_