MODERN INFORMATION AND COMMUNICATION TECHNOLOGIES AND OPPORTUNITIES FOR THEIR USE IN THE EDUCATIONAL PROCESS

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Abstract. *In this work we discuss the information and communication technologies (ICT) in the educational processes. Innovative pedagogical processes create the basis not only for the competitiveness of any educational services market, but also for the intensive development of the personality of a teacher and a student, the democratization of interaction and communication between a teacher and a student, the humanization of the educational process, the orientation of students to active learning and self-education, the modernization of educational technologies and, as well as the material and technical base of education, the professionalism of teachers, their creativity determines the direction of development of their searches, plays an important role in the development of students as individuals. Multimedia is the ability to work with different forms of information on a computer: color graphics, dynamic effects in text and graphics, sound output and synthesized music, animation, as well as full-length video clips and videos. Multimedia is a modern computer information technology that allows you to combine text, sound, video, graphics and animation into a single computer system.*

Key words: *graphics capabilities,video technology,computer,video and audio, techniques and technologies, sound and images*

Today, innovative pedagogical processes are becoming one of the important components of the educational system. After all, innovative pedagogical processes create the basis not only for the competitiveness of any educational services market, but also for the intensive development of the personality of a teacher and a student, the democratization of interaction and communication between a teacher and a student, the humanization of the educational process, the orientation of students to active learning and self-education, the modernization of educational technologies and, as well as the material and technical base of education, the professionalism of teachers, their creativity determines the direction of development of their searches, plays an important role in the development of students as individuals. The mode of operation in multimedia practice is a hardware-software environment, which is the input, processing, storage, transmission of information to a computer and the transmission of text, drawings, video, sound and speech in a necessary and convenient way. First, it is a software product that provides the user with interactivity, that is, a dialogue environment that allows the exchange of commands and responses between a person and a computer. Second, the environment in which various video and audio effects is used. It reminds the

viewer of a video that allows them to choose this or that app on their own. In addition, multimedia technology allows the user to design, as well as to create static (still) and dynamic (moving) images, and to translate the results of their creative work into the external environment through communication channels. The rapid development of multimedia systems was due to the expansion of the capabilities of personal computers and the development of hardware and software. In recent years, the speed of the computer and the capacity of memory devices have increased dramatically, as well as the graphics capabilities have expanded and the technical performance of external storage devices has improved. The development of multimedia technologies has been greatly contributed by the development of video technology, laser discs, as well as the development of recording techniques and technologies for the production of sound and images. It was also important to create ways to quickly and efficiently change information in order to store and store information compactly (densely) in memory.

Interest in teaching computer science in higher education is the basis for the formation of this activity in the performer:

- ❖ The transfer of basic knowledge in schools, vocational colleges (academic lyceums) to the development of advanced knowledge leads to the understanding that the student can expand the acquired knowledge;
- ❖ Explanation of the theory and practice in the specialty, practical exercises, attention to the performance of laboratory work, develops in students such features as independence of decision-making, the ability to express their own opinion, creativity;
- ❖ Knowledge of "Methods of teaching computer science", "Technology and design of teaching computer science", "General Pedagogy", "General Psychology" and other specialties helps students to form managerial activities and understand the requirements for a modern teacher.

The implementation of "Pedagogical practice" in the 3rd year of the university, "Undergraduate practice" in the 4th year will form the managerial skills of the future computer science teacher, the problems of organizing and organizing pedagogical activity and will become real masters of their craft.

professional activity teacher of informatics applies the acquired knowledge directly in practice. During this period, the teacher:

- ❖ uses innovative educational technologies in the organization of educational, independent educational process, spiritual and educational, extracurricular activities;
- ❖ develops and facilitates the use of electronic learning tools, learning process control tools.

- ❖ effectively uses innovative pedagogical and information technologies, methods and teaching aids in its activities;
- ❖ make independent decisions in pedagogical activity, know the modern methods and means of education entering education, be able to organize their activities, design their professional activities.

In the process of advanced training , a computer science teacher gives special courses on informatization and education management, and also masters innovative pedagogical and information and communication technologies, new software tools, creative activity in their use, creativity, studies the development of topics in the field of science on the use of innovative pedagogical technologies and interactive methods, as well as the wide promotion of their innovative activities. When preparing a computer science teacher, the main attention should be directed to the formation of managerial activities. Management activity is one of the components of the didactic process: when modeling lessons and extracurricular activities, when designing a lesson, when designing a lesson, when designing technological maps, when analyzing a completed educational process. , control and evaluation tools (testing, computer test, self-assessment, etc.) is reflected in the process of diagnosing the results of the course [1-3].

1. Modern information and communication technologies and opportunities for their use in the educational process

Today, with the rapid introduction of information and communication technologies (ICT) in the educational process, it remains one of the most favorable factors in increasing the effectiveness of education. Bringing the education system up to world standards is one of the important tasks of the modern education reforms. A characteristic feature of modern education in the world is the informatization of education and training taking into accounts the needs of the information society. Therefore, research on the effective use of computer technology, modern information and communication technologies in the education system of developed countries is ongoing. These facts show the importance of the role of computer science in the training system [4].

Wide introduction of modern information and communication technologies in education:

- ➢ Informatization of science;
- ➢ Intellectualization of educational activities;
- ➢ Deepening integration processes;
- ➢ Improving the infrastructure of the education system and its management mechanisms.

Effective organization of pedagogical educational processes on the basis of modern information technologies:

❖ The computer acts as a "supervisor" and displays on the monitor the results of didactic tasks, test questions, answers to problematic situations, ie the level of mastery;

❖ serves as a tool to manage the activities of students in the classroom, and the number of tasks to be performed increases sharply, resulting in an increase in the amount of knowledge to be acquired;

❖ Modification of the structure of teaching, ie the fact that most of the organizational work performed by the teacher is carried out with the help of computer technology reduces the problem of time constraints [5];

❖ The student becomes an active participant, expands the opportunities for independent learning and becomes a partner who can communicate freely and equally with the teacher.

2. Multimedia technologies and their types. Multimedia technology (multi - multi, media - environment) allows you to use several ways of presenting information at the same time. These include text, graphics, animation, video and audio. The most important feature of multimedia technologies is interactivity, the ability to have a high level of interaction with the user, reader, working in the information environment.

Multimedia is the combination of several means of presenting information into one system. As a rule, multimedia is a combination of means of representing information in a computer system, such as text, sound, graphics, animation, video, and spatial modeling. The combination of such means provides a new qualitative level of obtaining information: a person is not only passively obsessed, but also actively participates [6-8].

Programs that work with multimedia applications are multimodal, that is, they attract the attention and attention of the audience, as they affect several senses at the same time. The content of the multimedia application is carefully thought out by the author when preparing the scenario and is specified when developing the technological scenario. If the traditional form of presentation of educational information - text and static graphics - has a long history, then the experience of using multimedia is measured in years.

3. Possibilities of using multimedia technologies. The model of coverage of educational materials at the initial stage of their design using multimedia technologies allows:

➢ *A clear definition of the content of the material* : the definition of lectures, practical, laboratory, self-study, control tasks;

➢ present content, slides, presentations created in various animation programs *in a visual , clear and transparent form;*

- Define *the content of the components of a multimedia application* : determine what content on the topic is presented in the form of animation, video, text, graphics, etc.

Taking into account the achievements of psychology in the development of methods for visualizing information on a computer screen allows us to form a number of general recommendations. They are:

- information displayed on the screen is entered into the system;
- periodic exchange of visual information for audio information;
- periodic changes in brightness and color volume;
- The content of the rendered material should not be too simple or too complex.

A beautifully designed multimedia application with animation elements, tables and diagrams, accessible animation elements and sound accompaniment facilitates the perception of the material being studied, contributes to its understanding and memorization, increases the student's activity in studying subjects, provides a clearer and more complete understanding of the material being studied [5].

The importance of using multimedia applications created by experienced educators in educational institutions is as follows:

- ✓ educational information is fully reflected on the screen using modern multimedia tools;
- ✓ it is possible to control knowledge in an interactive mode;
- ✓ it can be used by more than one student at the same time.
- ✓ it becomes possible to rationally use time, i.e. learn a large amount of educational information by students in less time.
- ✓ students can learn learning information by repeating it more than once, etc.

4. Multimedia technologies as a tool to improve the effectiveness of learning. Today, applications based on multimedia technologies are created in almost all disciplines, proving that they are more effective in the learning process than traditional educational materials. In this regard, the following advantages can be shown in improving the efficiency of education [6]:

- simplification of the speaker's explanation of educational material in the lesson;
- the ability to observe the simulated objects in their original place in the learning process;
- the possibility of repeating the studied material;
- a high level of skill of students in the classroom;
- creation of a base for practical and laboratory work using virtual stands;

- virtual stands do not require a special equipped room;
- enrichment of the educational process with video and animation to stimulate students' interest in the lesson;
- ensuring the humanization of education;
- development of communication and social skills of students;
- look at the student as an active student, recognize his dignity;
- to develop students' skills in using modern educational technologies that help them adapt to today's rapidly changing social conditions in order to successfully fulfill their professional tasks;
- creates opportunities such as individual control of students' knowledge.

The set of tools that make up multimedia technology provides a new level of quality for extracting information learned by students, where the student is not only passively interested in it, but also actively participates in it.

Multimedia electronic educational resources are created on the basis of multimedia technologies, and researchers expressed their opinion on the effectiveness of their use [9].

CONCLUSION

Stimulants and e-textbooks are now widely used in education. Testing systems are used to check and evaluate students' practical and theoretical knowledge using special programs. Internet distance learning portal is a special Internet sites (online resources). The main task of these sites is to organize the educational process or to establish electronic online communication between student and teacher, to include in the site teaching materials for teachers, to provide students with this to work on data and to use other distance learning services. Multimedia tools are a set of hardware and software that allows a person to communicate with a computer using a variety of environments that are natural to him: sound, video, graphics, text, animation, and more.

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