



POSSIBILITIES OF USING MULTIMEDIA TECHNOLOGIES IN THE EDUCATIONAL SYSTEM

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Muhabbat Atakhanovna Tayirova

Tashkent Economy Under The Tashkent State University Of Economics And Industrial Technical School, Uzbekistan

ABSTRACT

The use of multimedia technologies opens up new opportunities in the organization of the educational process, as well as in the development of student's creative abilities. The joint efforts of educators, scientists, programmers, producers of multimedia instructional materials, and practitioners create a new educational information environment, in which the integration of educational and informational approaches to educational content, teaching methods, and technologies is decisive. is important.

KEYWORDS

Multimedia technologies, educational process information base, interactive interface, presentation of visual materials, imaginative thinking, multimedia equipment, electronic educational systems.

INTRODUCTION

The development trends of the modern higher education system are inextricably linked with the widespread introduction of various forms, methods and tools of active teaching into the educational process.

One of the leading trends in the information society is the development of multimedia technologies, and their penetration into various spheres of society's life: production, business, science, education, and mass consumer culture. These technologies, which provide a wealth of content form, provide a combination of various types of text, graphics, speech, music, video,



photo information and various methods of obtaining them, forming a multimedia perception of the world.

The use of multimedia technologies opens up new opportunities in the organization of the educational process, as well as in the development of student's creative abilities. For the effective implementation of active educational methods, a large and serious work should be carried out on equipping with a sufficient amount of computer equipment, as well as preparing a methodical and information base for the organization of the educational process. This ensures the introduction of active training methods to improve the quality of specialist training, taking into account the growing demands of the market.

Currently, multimedia technologies are one of the rapidly developing directions of new information technologies in the educational process.

The first task is to create such models of knowledge representation that can describe both the objects inherent in logical thinking and the images described by the same means of visual thinking.

The second task is the visualization of human knowledge.

The third task is to look for ways to pass from the images of the observed pictures to the formation of some hypotheses about the mechanisms and processes hidden behind the dynamics of the observed pictures.

Thus, the clear advantages of using multimedia technologies in the organization of the educational process (quick access to information, connecting audio and visual materials, etc.) are indisputable. The use of such technologies significantly activates educational information, makes it more visual for perception and facilitates learning.

With the joint efforts of pedagogues, scientists, programmers, producers of multimedia training manuals and practical teachers, a new educational information environment is being created, in which education and information on educational content, teaching methods and technologies integration of approaches are crucial.

Multimedia technologies are one of the most promising and popular areas of computer science. They are "management aimed at creating a product that includes images, text and data sets, audio, video, animation and other visual effects (simulation) together with an interactive interface and other mechanisms". This definition was developed in 1988 by the largest European commission dealing with the problems of the introduction and use of new technologies.

Knyazeva G.V. In his article, the ideological condition for the emergence of multimedia technology is the concept of the memory organization "MEMEX" proposed by the American scientist Vanniver Bush in 1945. It envisages searching for information not according to its formal signs (in numerical order, index, or alphabetical order, etc.), but according to its semantic content. This idea found its expression and implementation on the computer first in the form of the hypertext system (a system for working with a combination of textual materials), then hypermedia (a system that works with a combination of graphics, sound, video and animation) and finally, this multimedia that combines both systems. However, the increased interest in the use of multimedia technologies in the humanities in the late 80s is undoubtedly associated with the name of the famous American computer scientist and businessman Bill Gates, who created and successfully implemented the idea [1]



The modern education system is increasingly using information technologies and computer telecommunications, which is facilitated by a number of factors, and first of all, the equipping of educational institutions with powerful computers and the development of the Internet community.

The scope of computers in teaching and conducting scientific research is limitless. The following priority issues of integrating computer technologies into the educational process can be distinguished:

- psychological-pedagogical cycle;
- systematization of educational computer tools;
- to consider the role of the global INTERNET network in education.

Every teacher has his own way of working. Someone is used to working on a blackboard, someone prefers to explain the material by sitting at a desk or standing on a podium, someone is easier and more accustomed to moving freely around the audience.

But, no matter what, many teachers are faced with the need to present visual materials. The lecture and seminar form of teaching should be combined with modern innovative solutions.

Studying the foreign experience, the following important aspect can be highlighted: the teacher is not a disseminator of information (as traditionally accepted), but works as a consultant, sometimes even as a student's colleague. This gives some positive aspects: students take an active part in the learning process, learn to think independently, put forward their own points of view, and simulate real situations.

V.S. According to Zaitsev, "the use of multimedia technologies allows the teacher to more effectively manage the presentation of visual material, organize group work, and create his own innovative

developments, while not disrupting the usual rhythm and style of work"[2].

Multimedia programs use a certain method of information transfer:

1. Interaction of various information blocks (text, graphics, video clips) through hyperlinks. Hyperlinks are provided as specially designed text or clear graphic images. Multiple hyperlinks can be placed on the screen at the same time, and each of them defines its own route.
2. Interactivity, that is, the user's interactive mode of working with the source, in which he can independently choose the information he is interested in, the speed and sequence of its transmission.

A multimedia computer for education includes additional equipment: CD-ROM, headphones, speakers. A special projector and screen are required for classroom presentations.

The use of multimedia programs in the classroom makes high demands on the computer: memory capacity, sound equipment, CD-ROM or DVD-ROM.

Increasing the productivity of computers has made it possible to widely use multimedia technologies in education.

With a wide visual range, the active inclusion of imaginative thinking in the educational process helps the student to perceive the offered material in a holistic way. The teacher has the opportunity to combine the presentation of theoretical information with the demonstration of visual material.

Multimedia technologies ensure the presentation of information in such a way that a person receives it not sequentially, as in traditional education, but in parallel with several senses at the same time. By influencing the student through sight and hearing and involving



him in active activities, the rate of mastering the educational material can be 75%.

Educational multimedia programs are used in the classroom for face-to-face, group and individual training, as well as for independent work at home. They offer the user many possibilities for individual adjustment: the student mastering the learning material determines the learning speed, the volume of the material and its level of difficulty.

Knyazeva G.V. identify the following positive factors supporting this method of learning:

1. a Better and deeper understanding of the studied material.
2. Encourage the student to contact the new field of knowledge.
3. Saving time due to a significant reduction in training time.
4. Acquired knowledge is retained in memory for a longer period of time, and is then more easily restored for practical use after short repetitions [1].

Advantages of a lesson conducted using multimedia technologies.

Computer Supported Lessons (UCL) is one of the first names for lessons that use computer hardware and software. This term was formed under the influence of the term CBT (Computer Based Training), which is widely used in English-speaking countries. The widespread use of multimedia tools later led to the emergence of a new name for such lessons - "multimedia lesson". The name has been shortened to make it easier to pronounce and is now the most used media lesson. In general, all three terms can be used in the same sense. The media lesson has its own methodological possibilities and advantages:

- increase the effectiveness of the educational process due to the simultaneous presentation of theoretical information by the teacher and the demonstration of visual material with high accuracy; the emergence of the ability to model objects and events; automation of routine operations, etc.;
- the possibility of teaching students to use computer technologies in solving educational and labor problems through practical processing of educational data on a computer;
- organization of individual work of students, development of their cognitive independence and creativity;
- increasing learning motivation due to the increased attractiveness of the computer due to multimedia effects;
- development of visual and figurative thinking and oral communication skills of students;
- formation of skills for working with information (search, selection, processing, arrangement of semantic groups, the establishment of logical connections, etc.).

Two new components of the educational process are involved in the transmission and acquisition of educational information during the media lesson:

1. The computer organically takes the place of new universal technical means of teaching.
2. The software complements the traditional technology of teaching any subject of the educational system or its separate sections and topics. They contain clearly structured educational information in the form of text, many visual images in the form of diagrams, pictures, tables, video clips with animation and sound effects.



At the same time, both the computer and programs should be inextricably linked with other components of the educational process: goals, content, forms, teaching methods, teacher and student activities.

What changes require the use of computers and multimedia programs?

First of all, the didactic principles of teaching are being expanded and enriched. In recent years, in didactics, the meanings of such principles as appearance, existence, systematicity, consistency, and consciousness have been revised. Also, two new principles were defined - individualization of education and activity.

Currently, the principle of integration in the formation of components of educational activities using computers is placed in the leading position. It allows the teacher to show the characteristics of the subject more clearly, to show the connection between the content of individual subjects and modules, between the subject education and the general information preparation of students. implies installation. The established connections allow the organically introducing of the computer into the educational process, combining traditional and computer teaching methods, to create a special information pedagogical environment that helps to activate the educational process.

Taking into account integrative relations leads to the correction of pedagogical goals. The primary goal of media classes is to develop the ability of students to perform effective independent creative activities in a modern information-rich environment during the educational process. Taking this into account, in the development of the media lesson, the teacher covers not only the educational tasks in science but also the tasks of forming the components of information culture. This can be the following: development of

skills to select the necessary information, familiarization with new methods of processing technical information, formation of practical skills for processing information on a computer, etc.

If the teacher uses computer technology only for the visual presentation of educational information, the lesson is conducted in a classroom with one set of technical tools.

Students' work can be organized as follows:

- view frontal video fragments, and observe changes in objects;
- individual - performing practical work, solving problems,
- in small groups - carrying out a general educational project, setting up a model experiment, etc.

S.V. Krivonogov, V.A. Petrovs divided the structure of the lesson into the following:

- actualization (repetition of educational material, primary mastering of material) - computer and (or) without a computer
- formation of knowledge, competence, and skills (understanding and comprehension of the block of educational information, strengthening of educational material) - with and (or) without a computer;
- application (practical application of educational material, checking the level of mastery of the material) - on and (or) without a computer [3].

It is up to the teacher to choose the optimal organizational forms and methods.

The software and technical tools used in the lesson create their own characteristics and contribute to the improvement of traditional teaching methods. The role of the teacher is also changing. In the media lesson, he often works as a consultant, which helps to develop



the cognitive activity of students and to absorb educational information more fully.

The table below shows how teaching methods are being changed and supplemented by the use of computer technologies and multimedia programs in the classroom.

Traditional teaching methods	Joint use of software and technical tools in traditional tools and multimedia technologies.
Verbal: story, conversation, explanation, instruction.	Presentation of text information from the screen, transfer of knowledge (audio lecture). The ability to repeat exactly the same content over and over again. Hyperlinks that allow you to quickly find the information you need.
Visual: show layout, display.	Multimedia presentation of techniques and operations. Visualization of processes that cannot be considered in real conditions. Learning information is better absorbed because all senses are involved.
Practical and laboratory work.	Virtual practical movement, spatial modeling of objects, automation of individual operations
Control methods: oral and written inquiry, test.	Checking the process and results of students' acquisition of theoretical and practical educational material. Quick and objective assessment of results. Quick self-assessment and correction of results

Viewing theoretical material consists of providing the student with pages of information in the form of text and graphic elements, animation effects, video clips and visual programs. Students have the ability to turn forward or backward through the pages of information, review the theory from the beginning or the end, and find the desired section of the table of contents. This mode uses elements of hypermedia technology. According to the keyword (a specified term of the educational text), the student can get its definition, see pages of any type (text, graphics, etc.) related to it. In the process of working with hypertext, the skill of working with a multimedia computer is formed automatically, with the help of which the student can return to any stage of viewing the theory. Viewing theory can be stopped at any time at the request of the student.

In theory, the teaching method involves providing the student with exercises (multiple-answer questions and tasks, questions and tasks with structured answers). After each exercise is completed, a message will appear about the correctness of its implementation, and the student will be given the opportunity to see comments (explanations of common mistakes, etc.) corresponding to this exercise. Information pages can also act as comments.

In a complete exercise, all exercises of a multimedia product can be presented in the order prepared by its developer. Selective workouts provide exercise selection using elements of randomness. The number of exercises in the sample is determined by the student. Thus, the obvious advantages of using multimedia technologies (operational use of information, combination of audio and visual materials, etc.) in organizing the educational process is



unquestionable. The use of such technologies significantly activates educational information, makes it more visual for perception and facilitates learning.

Multimedia is a new direction, but it has already begun to divide into genres: electronic textbooks, educational and test programs, and presentations. Each genre has its own characteristics, laws, and problems. Modern equipment, including multimedia projectors, screens, etc., should be used to organize the educational process at the required level.

The educational process model using multimedia technologies can be divided into five consecutive stages:

1. Teacher training. At this stage, the courses "Multimedia technologies in the organization of the educational process" are organized, and subject teachers-pedagogues are trained in them.
2. Installation and configuration of multimedia equipment.
3. Preparation of multimedia materials. At this stage, each teacher selects materials for his topic and prepares multimedia presentations, as well as can purchase branded software products for use in the classroom.
4. Use of multimedia materials. This is the main stage of organizing the educational process, and the prepared materials are used in lectures, practicals and laboratory work. Also, students can get some materials in electronic form for use in homework.
5. Control of educational process indicators. At this stage, according to the indicators of the educational process, the impact of the use of multimedia technologies on the quality of the educational process and the level of knowledge in science is evaluated.

E.S. According to Polat, "the educational process based on the use of multimedia and information technologies in the educational information environment of additional educational institutions allows the following compared to the traditional educational process:

- increase the selection of teaching tools, forms and paces;
- providing access to various information from the best libraries, and museums, participating in virtual schools and master classes;
- to increase students' interest in studied subjects, strengthening interdisciplinary relations at the expense of exhibitionism, entertainment, and interactive form of presentation of educational material:
- increasing educational opportunities for children with disabilities;
- increase motivation for independent education;
- more active use of mutual education methods (discussing problems in forums, getting advice quickly);
- the abilities and interests of students increase in the development of the educational initiative" [6].

CONCLUSION

In conclusion, it can be said that the relevance of introducing multimedia technologies into the educational process depends on a number of advantages: stimulating the cognitive interest of students, increasing the level of individualization of learning, and comprehensive use of audio and visual effects in the educational process.

Features that significantly distinguish the educational process from the main one in the organization of education determine the demand for multimedia technologies in almost all areas. The active introduction of multimedia technologies into the



educational process in educational institutions allows ensuring the transition to a qualitatively new stage of the pedagogical activity, significantly increasing its didactic ability.

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