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COMPUTER TECHNOLOGIES IN TEACHING OF PHYSICS

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ABSTRACT
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.

Keywords: graphics capabilities, video technology, computer, video and audio, techniques and technologies, sound and images

КОМПЬЮТЕРНЫЕ ТЕХНОЛОГИИ В ПРЕПОДАВАНИИ ФИЗИКИ

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АННОТАЦИЯ
Мультимедиа — это возможность работы с различными формами информации на компьютере: цветная графика, динамические эффекты в тексте и графике, звуковой вывод и синтезированная музыка, анимация, а также

полнометражные видеоклипы и видеоролики. Мультимедиа — это современная компьютерная информационная технология, позволяющая объединить текст, звук, видео, графику и анимацию в единую компьютерную систему.

Ключевые слова: графические возможности , видео технологии, компьютер, видео и аудио, техники и технологии, звук и изображения

FIZIKA O‘QITISHDA KOMPUTER TEXNOLOGIYALARI

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ANNOTATSIYA
Multimedia - bu kompyuterda axborotning turli shakllari: rangli grafikalar, matn va grafiklardagi dinamik effektlar, ovoz chiqarish va sintezlangan musiqa, animatsiya, shuningdek, to'liq metrajli videokliplar va videolar bilan ishlash qobiliyati. Multimedia - bu matn, ovoz, video, grafik va animatsiyani yagona kompyuter tizimida birlashtirish imkonini beruvchi zamonaviy kompyuter axborot texnologiyasi.

Kalit so'zlar: grafik imkoniyatlari, video texnologiya, kompyuter, video va audio, texnika va texnologiyalar, ovoz va tasvirlar

INTRODUCTION

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].

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.

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. 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 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 [5].

The activation of educational activity in informatics is a purposeful, purposeful learning process that occurs in the learning process. Concepts such as activity, activity and learning activities form the basis for the activation of learning activities. While the activation of educational activity consists in the effective mastery of knowledge and methods of activity, the educational material becomes the product of the active mental movement of each student [1]. To date, a number of developed countries have extensive experience in the use of pedagogical technologies that increase the educational and creative activity of students and ensure the effectiveness of the educational process. Psychological and didactic requirements for the activation of educational activities in informatics include:

- ensuring the unity of educational, educational and developmental tasks in the process of teaching computer science;
- didactic principles of education: scientific, systematic, consistent, conscious, active, differentiated, practical, professional orientation in education, strengthening the connection of scientific, collective and other educational activities;
- the formation of tension and emotional environment in the learning process;

- to establish the use of various methods and means of teaching, focusing on the activation of the educational activity of students, creative activity;
- direct students to systematic independent learning, establish constant, continuous monitoring, control, assessment of knowledge of the educational process;
- to stimulate the educational and creative activity of students;
- to familiarize students with the structure, sequence and content of tasks that activate the learning process, etc.

❖ The main task of the teacher in activating the learning activities of students in the learning process is to create means of activating students. If it is possible to create an activating tool for students, then for this it is necessary to consider the following basic rules:

❖ The choice of activation means that ensure the activity of students at each stage of the learning process within the framework of the learning objectives (educational, pedagogical, developing);

❖ Ensuring the integrity of the education system;

❖ Identify the relationship between the elements of the education system (goal, content, form, method, means and means of managing education) and with each other in the system of means: technical, didactic means, etc.) And activation;

❖ Each component of the education system has a specific role to play in activating students' activities: motivation, fast delivery of content, direction, willpower and assessment;

❖ Taking into account the fact that the content of education as a component of the education system, methods, forms of organization of educational activities are more conducive to enhancing the activities of students, etc.

In conclusion, we can say that the organization of the educational process on the basis of the activation of the learning activity of students solves the problem of personal activity and brings the activity of students closer to the level of the teacher's activity.

Game learning technology**.** A game is a type of human activity used in the educational process to develop skills and abilities by performing various actions with an object in various situations. The game can be divided into computer, simulation, sports, economic, military, business and entrepreneurial and can be used directly in the educational process. The game is the freest, natural form of dedication to real (or imaginary) reality in order to study a person, manifest his "I", creativity, activity, independence, self-realization.

Problem-Based Learning Technology . Problem-based learning is learning that serves to develop students' skills and competencies, such as creative exploration, a little

research, making certain assumptions, substantiating results and drawing certain conclusions.

Communicative learning is a method of teaching students based on communicative communication (oral communication, initiative). These include Brainstorming, Debate, Talk Show and other technologies to develop students' speaking skills. As a result of the analysis of technologies for enhancing the educational activity of students in teaching computer science, we found that when using these technologies, the following requirements must be taken into account:

- Formation of motivational activity among students:
- The formation of cognitive activity of students, the development of individual abilities;
- Ensuring the active participation of each student in the group in the learning process;
- Ensure the active participation of students in the performance of assigned independent work, etc.

Student-centered educational technologies in teaching informatics. When using student-centered learning technologies in teaching computer science, students are no less active than the teacher, and attention is paid to the development of students' personal abilities in mastering the curriculum. In the process of his activity, the educator must take into account the integrity, individuality, uniqueness of the human personality, as well as the emotional, emotional, aesthetic, spiritual, creative potential of the student's personality [2].

The purpose of student-centered learning is to create conditions for students to achieve individual activity and the ability to fully perform the following tasks:

- Formation of the ability to choose (the most optimal of the available);
- To teach students to evaluate their own lives, activities, abilities;
- To teach a student to look for the meaning of his life, to be creative (-who am i? -what can i do? -who will i be in the future? -how will i live? Etc.);
- Autonomy of the student's personality: self-control, self-determination, responsibility for behavior, emotions, the ability to make their own conscious decisions.

In the process of teaching informatics, the teacher should be a "source of information", "supplier of information", "supervisor", diagnostician, and also ".... an assistant in the student's independent work". The technology of student-centered learning should take into account in training, education and development, taking into account the individual characteristics of all students:

- ✓ Taking into account the physiological, psychological, age characteristics of students;

- ✓ Achieve different levels of learning needs, the level of complexity of materials delivered to students;
- ✓ Take into account the knowledge and skills of students when dividing into groups ;
- ✓ Formation of a group of students with the same, close knowledge, characteristics;
- ✓ Achieve the formation of an individual, unique attitude towards each student in the group, etc.
- ➢ Identify the subject-specific characteristics of the student (independence, individuality, curiosity, etc.), the use of various methods and teaching aids;
- ➢ Taking into account not only the final result (correct or incorrect) in the assessment of the student, but also his attempts and actions when completing the task;
- ➢ To achieve the selection of the most convenient for students in the preparation and selection of didactic materials;
- ➢ Allow students to present what they have learned in a variety of ways (orally, practically, in the form of drawings, slides, lectures, notes, projects, etc.);
- ➢ Create a pedagogical situation in the classroom, encourage each student to show independence, initiative, ingenuity when completing a task;
- ➢ Enable students to naturally and sincerely express their opinions, etc.

According to Professor Yu.V. Bondarskaya, when organizing student-centered education, the following requirements must be taken into account: dialogism, creative activity, support for individual development, focus, freedom in making personal decisions, freedom of choice and expression of content, purposefulness. about creative approach, etc. Based on the above requirements, student-centered learning technologies may include:

- ➢ collaborative learning technology;
- ➢ Game technology;
- ➢ Technology of problem learning;
- ➢ technology of human-personality;
- ➢ programmed learning;
- ➢ modular learning technology;
- ➢ technology of self-development.

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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