USE OF INFORMATION-COMMUNICATION TECHNOLOGIES IN MATHEMATICS LESSONS

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Annotation: Mathematics is the most time-consuming subject, and one of the main tasks of a student is to learn mathematics. The use of additional literature and ICT in order to master mathematics will help to raise the level of knowledge faster. If information and communication in classes The article shows what achievements they can achieve if they use technologies .

Key words : student, teacher, lesson, mathematics, geometry, ICT, computer

Today, the popularity and availability of personal computers is characterized by the wide use of telecommunications, which makes it possible to introduce developed information technologies into the educational process, improve and modernize it , improve the quality of knowledge, increase learning motivation, and maximize the principle of individualization. allows to use. Mathematics is the most time-consuming subject and requires students to do constant, demanding and large amounts of independent work. requires. Therefore, one of the main tasks of a mathematics teacher is to form and develop the skills of learning mathematics, the elements of the culture of learning and thinking. The increase in mental load in mathematics lessons forces the teacher to think about how to support students' interest in the subject being studied and their activity during the lesson. To maintain interest in the subject and make the learning process high quality, I information and communication in teachers ' classes I suggest active use of technologies .

The use of ICT in mathematics lessons allows the teacher to reduce the time of studying the material due to the clarity and speed of the work, interactively test the knowledge of students, which increases the effectiveness of learning, develops all the capabilities of a person - cognitive, moral, creative, helps to develop communicative and aesthetic, intelligence of students, information culture.

The use of ICT in the educational process is one of the urgent problems for modern society - education including solving the quality takes

The process of organizing the education of students using ICT allows:

- on the one hand, to make this process interesting for students due to the novelty and unusualness of this form of work, on the other hand, to make it interesting and bright, diverse, using the multimedia capabilities of modern computers;
- effectively solving the problem of educational visualization, expanding the possibilities of visualizing educational material, making it more understandable, free search for educational materials needed by students in remote databases due to the use of telecommunication tools, which allows students to search helps to form the need for actions ;
- individualization of the educational process through the presence of multi-level tasks, assimilation and assimilation of educational material at an individual pace, independently,

using convenient methods of information perception, which creates positive emotions in students causes and forms positive learning motives;

- liberating students when answering questions, because the computer allows you to record the results (incl without grading), correctly answers errors; independently analyze and correct mistakes, adjust their activities due to the presence of feedback, as a result, self-management skills improve;
- implementation of independent educational and research activities (development of modeling, project method, presentations, publications, etc.), thereby developing creative activity in students.

The use of information technologies in teaching is based on human physiology data: 1/4 of the material heard, 1/3 of what is seen, 1/2 of what is seen and heard, if the student actively participates in this process, 3/ of the material Part 4 remains in human memory.

In order to strengthen education, in addition to the classical forms of education that were previously used in the teaching of mathematics in the independent work of students, programs of educational subjects are increasingly used: programs-textbooks, curricula, dictionaries , reference books, encyclopedias, video textbooks, libraries of electronic visual aids, thematic computer games.

Considering the words of KF Gauss, "mathematics is a science for the eyes, not for the ears", I believe that mathematics is one of the subjects where the use of ICT can activate all educational activities: learning new material, preparing homework and inspection, independent work, inspection and control work, extracurricular work, creative work.

According to G.K.Selevko, information technology can be implemented in the following version:

- as "penetrative" (use of the computer in the study of individual subjects, sections to solve individual didactic problems);
- as the main (the most important in the used pedagogical technology);
- monotechnology (if all teaching and educational process management, including all types of diagnostics, control and monitoring, are based on the use of computers).

In the process of teaching mathematics, information technologies can be used in various forms. The directions that I recommend to use can be expressed in the form of the following basic blocks:

- multimedia lesson scenarios;
- test knowledge in class;
- Preparation for DTM ;
- extracurricular activities.

The use of multimedia in lessons implements the following principles:

The principle of visualization . Allows you to use visual materials, audio materials, unique illustration resources in any lesson. The clarity of the material increases its assimilation by students, because all channels of student perception are involved - visual, mechanical, auditory and emotional.

The principle of compatibility with nature . The use of materials will arouse the interest of Internet readers. The use of multimedia presentations is recommended at any stage of learning the subject and at any stage of the lesson. Presentation of educational material in the form of a multimedia presentation reduces study time and frees up child health resources.

Power principle . The use of presentation lessons technically allows you to return to a learned verse or material learned over and over again. The use of study guides allows you to recall the material of previous lessons in one lesson.

Scientific principle: In multimedia education, the modification of this principle will have a more fundamental basis.

The principle of availability : this technology combines with the technology of differentiated education and allows to display multi-level tasks, control and test tasks, complex tasks on the monitor or screen at the same time in the lesson.

The principle of systematicity : the use of ICT - presentation lessons allows to review the system of lessons on one topic, as well as to demonstrate the elements of previous lessons, to explain new ones .

The principle of sequence : as in traditional lessons, the learning material is larger and more firmly remembered.

suggest conducting such classes both to present new material and to repeat the previous ones .

necessary to use "educational electronic publication" for independent work of students . This use enables the following purposes:

- individualization and differentiation of education;
- encouraging various creative activities of students;
- education of self-management skills;
- to increase the share of meaningful work of the student by eliminating technical problems;
- increasing the specific weight of research activities in the educational process;
- an opportunity to increase the amount of information and the student's own practical activity.

During the lesson , students' actions can be controlled by the computer and the teacher, tasks can be sent from the student to the teacher via the network, and self-control with the help of the computer will be possible.

Among the sources of information, the Internet should be highlighted , I recommend to students sites where theoretical materials are collected, as well as sites where students can independently check their level of preparation , online tests i do

The Internet is primarily an important source of information. In connection with the growth of the volume of information, it is necessary to form an information culture. This means knowing the sources of information, ways and means of rationally working with them, applying them in practical activities. Therefore, students use Internet resources together with their mathematics teacher.

One of the most effective ways to prepare for the exam is the method of solving test tasks. The practical use of test technologies to prepare for the exam has shown that students who are familiar with the methods of working on tests are superior in terms of their level of preparation to students who studied according to ordinary textbooks and assignments, of course . they cannot be excluded.

also recommend the use of specially prepared multimedia presentations and tests to monitor knowledge in the classroom .

Thus, ICT allows:

- increase students' motivation to study;

- involving students in the learning process, contributing to the development of their abilities,
- develop the ability to find, select and design material;
- ensure accuracy in organizing class work .

The form and place of using the presentation (or even its individual slide) in the lesson, of course, depends on the content of the lesson, the purpose of teaching. Nevertheless, practice allows you to highlight some general, most effective ways of using such guides:

- When learning new material. It allows to describe with different visual means. The program is especially useful in cases where it is necessary to show the dynamics of the process development.
- During oral exercises. Allows you to quickly present tasks and customize the results of their execution.
- When examining frontal independent work. O provides visual monitoring of results in addition to verbal.
- Checking the housework. The technique is similar to the method used for independent work.
- In solving educational problems. It helps to complete the picture, make a decision plan and control the intermediate and final results of independent work on this plan.

The most successful use of multimedia presentations in geometry lessons. Depicting geometric shapes, building sections using computer mathematics tools will change the nature of teaching this subject. Students prefer the black and white pictures in the textbook, their location can be changed with a simple movement of the mouse, and you can also change the parameters of these numbers , fast , convenient and most importantly, visual and interesting.

Learning geometry can be challenging for students, especially in the early stages. This is due to the introduction of many new concepts and definitions, the need to create logical reasoning when proving theorems, and the external separation of the object from real life. Using a computer greatly facilitates the process by implementing one of the learning principles - visualization . Drawings are built in front of students, it will be possible to repeat the logical chain several times at the same time in proving theorems and highlight all the necessary elements (angles, segments, etc.). Working on a ready -made drawing helps to develop constructive abilities, develop skills of speech culture , logic and sequence of thinking, teaches to make oral plans for solving problems of different complexity.

You can "bring tasks to life" with animation. For example, when used in the " Geometry " tutorial , students observe how solids of rotation (cylinder, cone) are obtained. The rotation of the rectangle around its side produces a cylinder, and the students know this, and therefore they better absorb the new material. they do

of mathematics for DTM , each student can find out his level of knowledge by taking an "online" test, then discuss the results and see the gaps in his knowledge, quickly respond to them, eliminate them. can plan work on

it became possible not only to use electronic training manuals, but also to organize work with Internet resources online , and to use online tests on subjects.

higher educational institutions has many advantages:

- allows for the best perception, assimilation and integration of the material by graduates,
- feedback system allows for quick control and verification of knowledge,

- the use of ready-made electronic products in preparation for the exam, teacher

and student activities allows to strengthen, to increase the quality of teaching the subject. allows me to significantly understand the content and methodology of studying mathematics. Among them:

abut.uz
zyyonet.uz
cict.uz
utube.uz
akt.uzedu.uz and others .

The use of information technologies creates the following favorable opportunities :

- increase educational motivation;
- individual activity;
- focus on the personality of the student ;
- formation of information competence;
- freedom of creativity;
- interactivity of education.

The use of computer products allows solving the following didactic problems:

- mastering basic and deep knowledge on the subject
- systematization of acquired knowledge
- psychological adjustment of students to the exam environment
- teach to answer the most difficult questions
- preparing the student for the exam in the shortest possible time, while forming many useful general education skills.

Computer technologies in the lesson:

- save time;
- since it is possible to check knowledge and skills in a comprehensive and comprehensive manner ;
- increases motivation ;
- increase interest;
- since it is possible to choose the speed of the lesson ;
- presents the material visually and colorfully .

Conclusion:

The use of information technologies in the classroom can make the learning process more effective and attractive for students. Teaching with the help of information technology becomes creative research for the child, which can be satisfied and, as a result, self-affirmation.

believe that it is necessary not only to increase the level of the quality of students' knowledge, but also to form their personal qualities and behavioral methods, to develop creative thinking .

I emphasize the use of CT in practice and the multi-functional nature of computed tomography : teaching, development, communicative, diagnostic, general cultural, reflection.

- The use of new information technologies in traditional education makes it possible to differentiate the learning process of students taking into account their individual characteristics, allows a creative teacher to expand the methods of presenting learning

information, makes the learning process flexible allows management, is socially significant and relevant.

- Implementation of orientation to the development of thinking and imagination as the main knowledge processes necessary for quality learning;
- Ensuring effective organization of knowledge and independent activities of students ;
- Demonstration of the ability to cooperate.

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