APPLICATION OF METHODS BASED ON MODERN TECHNOLOGIES IN MATHEMATICS

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Abstract. *In this article, it is recommended to use modern technologies and methods for teaching mathematics. It was mentioned that it is possible to find solutions to problems by organizing a certain sequence in conducting the lesson.*

Keywords: *information and communication technology (ICT), information, computerization, problem method, search methods, reproductive methods, special teaching methods, algorithm.*

INTRODUCTION

In the national personnel training program, the issue of wide application of informatics and information technologies to the educational process is cross-referenced. It also mentions the urgent issue of personnel training in the field of information technologies and informatics, including the widespread introduction of Internet technologies in all areas.

In Uzbekistan, issues such as further development of information and communication technologies (ICT), implementation in every field, and improvement of computer literacy of specialists are being solved in accordance with the needs of the time.

Attention to education is attention to the future. Adoption of modern information and computer technologies, internet system, modern methods of digital and wide-format telecommunications in the field of education, such advanced achievements that determine the level of today's development are not only for schools, lyceums and colleges, universities, but also for any We need to deeply understand the importance of creating a foundation for the family to penetrate into his life. The word information comes from the Latin word "informatio" which means "to explain, to introduce, to explain". In many cases, the word "information" is used instead of the word "given", which is quite different. Information technologies are a set of methods and tools for collecting, storing, transmitting, changing, and processing information. The new information technology of education means only the latest information technologies that can be applied to the educational process. New information technologies are the provision of services for receiving and processing information based on EHM by different categories of users.

LITERATURE ANALYSIS AND METHODOLOGY

Computerization of mathematics education processes, the use of special software packages in experimental mathematics (Matlab, Mathcad, Maple), the informational environment of mathematics education, the role of cognitive tools in mathematics education, requirements for modern electronic educational literature and their conditions of use, goals and tasks in educational processes have been researched by scientists. Teaching technology may include the following programs: linear program; branched program; adaptive program; generalized program; program-algorithm; modular training program; a program of full mastery of knowledge.

A linear program consists of small blocks of training information with control tasks. In a linear program, the reader moves to the next step (block) when the answer to this step (block) of information is correct, and returns to this step when the answer is incorrect, or must relearn the initial information. In the networked program, when the answer is incorrect, the student is given additional educational information that allows him to complete the control task, give the correct answer, and move to the next step (block) of educational information. The adaptive program allows the student to choose the level of complexity of the new educational material, to change it as he mastered it, to use reference literature, dictionaries, manuals, etc. allows you to refer to The generalized program includes fragments (fragments) of linear, branched and adaptive programs. The program-algorithm determines the sequence order of mental (theoretical) and practical operations. It can be both an independent training program and a part of another training program. Algorithm refers to giving clear and clear instructions to the performer to perform a sequence of actions aimed at achieving the specified goal or solving the problem.

The main methods of mathematical research: observation and experiment; compare; analysis and synthesis; generalization and specialization; abstraction and specification.

Modern methods of teaching mathematics: problem (perspective) method; laboratory method; programmed educational method; heuristic method; method of constructing mathematical models, axiomatic method, etc.

Teaching methods that develop information are divided into two classes:

a) transfer of information in ready form (lecture, explanation, showing educational films and videos, listening to tape recordings, etc.);

b) independent acquisition of knowledge (independent work with books, independent work with curriculum, independent work with information databases - use of information technologies).

Methods of problem-based research include: problematic presentation of educational material (heuristic conversation), educational discussion, laboratory research work (before learning the material), organization of collective mental activity in small groups, organizational and active game; research work.

Reproductive methods: repeating the educational material, performing exercises according to the sample, laboratory work according to the instructions, exercises in simulators.

Creative and reproductive methods: composition, variation exercises, analysis of production situations, business games and other types of imitation of professional activities.

An integral part of teaching methods are methods of teacher's and students' educational activities (M.I. Makhmutov). Methodical methods - actions aimed at solving a specific problem, methods of work. The methods of mental activity (analysis and synthesis, comparison and generalization, proof, abstraction, concretization, identification of the main thing, conclusions, formation of concepts, imagination and memorization methods) are hidden behind educational work methods.

Teaching methods are constantly supplemented with modern teaching methods, mainly teaching activities aimed at independent acquisition of new knowledge, i.e. not ready-made knowledge. cognitive activity.

Special teaching methods - basic knowledge methods adapted for teaching, used in mathematics itself, methods of studying reality specific to mathematics (construction of mathematical models, methods of abstraction used in construction of such models, axiomatic method) .

The creation and introduction of smart devices is also used in our schools, for example, a smart doorbell and various sensors that measure room temperature have been created. In addition, we can create modern education rooms depending on the earthquake detection device, photoelectric converter device, thermoelectric converter device. The use of cloud technologies has become very useful in data storage.

It will be useful for the student to be active in class and not be distracted by other situations, and the quality of education will increase. For this process, we offer the following:

- introduction of modeling technologies into the teaching process due to the lack of imagination of students during the educational process;
- in cases where it is not possible to use technical devices in classes, create the work process virtually and show the result;
- conducting analysis based on modeled objects;
- showing them in the process of working with chemicals;
- in geometry lessons, models created for studying shapes and stereometry can be usefully used.

Teaching mathematics cannot be at the required level, if there is no system of repeating and summarizing lessons in the work of the teacher, the knowledge of students will not be sufficiently complete and solid. It is related to the psychological characteristics of the cognitive process and the characteristics of memory. Only the constant introduction of new knowledge into the system of previous knowledge in a particular system ensures sufficiently high-quality mastering of science.

RESULTS AND DISCUSSION

In the next decade, the use of computers in the teaching of mathematics was carried out in several main directions. These include computer-based knowledge assessment, development and development of various types of educational programs, development of cognitive mathematical games, etc.

Another direction of the convenience of computers in teaching mathematics is the modeling of certain learning situations. The purpose of using modeling programs is to make materials that are difficult to visualize and visualize when using other teaching methods understandable. With the help of modeling, information can be presented to students in the form of computer multimedia in graphic mode. Therefore, they tend to study mathematics in depth and show a significant degree of independence in the learning process.

In order to solve a mathematical problem that arises in many cases quickly and with a given accuracy, a professional mathematician is required to know a certain algorithmic language and programming at the same time as his profession. For this purpose, in the 90s of the 20th century, mathematical systems were created that have many conveniences for mathematicians. With the help of these special systems, it is possible to perform various numerical and analytical mathematical calculations, from simple arithmetic calculations to solving partial differential equations, as well as making graphs.

The script of the lecture session based on multimedia developments. The group will be introduced, and brief information will be given about the topic and purpose of the training, as well as the technologies used during the training. Questions and quick-to-solve tasks are displayed on the screen in the form of an electronic visual aid to repeat, sort and focus on the set goal of the learned mathematical concepts and affirmations needed to introduce new subject concepts. The

teacher evaluates the students' answers and focuses on the active participation of all students in this question and answer.

When moving to a new topic, students should be asked questions aimed at the goal and fill in their answers in order to determine how familiar the set and the operations performed on them are from school mathematics, and to supplement and deepen their knowledge based on the requirements of higher education. possible), new concepts are introduced by sorting. Students are introduced to EulerVenn diagrams using an electronic display and solve several examples together. During the lesson, actions performed on sets, Euler-Venn diagrams are demonstrated with the help of electronic visual aids prepared using the Power Point program using multimedia capabilities.

CONCLUSION

In order to organize and strengthen the knowledge gained by the students during the lecture, each student is given individually structured tasks through the screen. Students complete the tasks for 10 minutes and give them to their partner to check. When the teacher collects the notebooks, he checks the assignments and evaluates each student.

At the end of the lesson, students are given questions and homework on the screen to prepare for the next lesson.

REFERENCES

1. Malakhovsky V. Familiar and unfamiliar numbers. – Kaliningrad: FGUIPP, 2004.
2. Buharkina M., Mosiyeva V. New pedagogical and information technologies in the educational system. - M., 2000.
3. Begimkulov U.Sh. Scientific-theoretical foundations of introducing modern information technologies in pedagogical education. - T.: Science, 2007. - 164 p.
4. Yunusova D. The theory and practice of preparing the future mathematics teacher for innovative activities. - T.: Science, 2009. - 165 p.
5. Okhunov, M., & Minamatov, Y. (2021). Application of Innovative Projects in Information Systems. European Journal of Life Safety and Stability (2660-9630), 11, 167-168.
6. Minamatov, Y. E. U. (2021). APPLICATION OF MODULAR TEACHING TECHNOLOGY IN TECHNOLOGY. Scientific progress, 2(8), 911-913.
7. Minamatov, Yu. (2021). UMNYE USTROYSTVA I PROCESSY V IX PRACTICHESKOY ESKPLUATAtsII. Eurasian Journal of Academic Research, 1(9), 875-879.