

THEORY OF DIDACTIC PRINCIPLES IN MATHEMATICS LESSONS

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Annotation

In this article, the theory of didactic principles in mathematics lessons, the issue of using other subjects in mathematics lessons, clearly showing in the program, some educational situations of aspects of computer convenience in teaching mathematics, the correct choice of didactic games in preparing for the lesson described in detail.

Keywords: didactic principles, didactic games, computer usability, theory of principles, active thinking.

Introduction:

At the current time, when new technical means of teaching mathematics, including computers and other information technologies, are being rapidly introduced, using the achievements of computer science in order to ensure interdisciplinary integration is one of the urgent issues.

The issue of using other subjects in mathematics lessons is difficult to clearly indicate in the program, it is done by the teacher himself, that is, he should take into account when planning the educational material and preparing for the lesson. This article talks about the theory of didactic principles in mathematics lessons.

Literature Analysis and Methodology:

We know that didactic principles form the basis of educational theory. Therefore, the following didactic principles developed by the theory of education should be followed when choosing the methods of explaining the educational material:

1. Scientific principle. The essence of this principle is that each subject material taught in the school mathematics course should be theoretically proven, that is, it should be

explained on the basis of previous mathematical concepts, axioms and theorems. The scientific principle is needed at every step of the math lesson, for example, if the teacher asks the students to solve the equation $x^2 + 1$, this question will not have a full scientific basis, because the students will solve this equation with real numbers. If they solve it with respect to the set of complex numbers, it has no solution, if they solve this equation with respect to the set of complex numbers, it will have two different solutions.

Therefore, the principle of scientificity in mathematics lessons should meet the following requirements:

1) every mathematical concept, definition, axioms and theorems being studied should be clearly and simply stated;

2) to teach students to think critically about the material of each subject studied in mathematics classes and to form their scientific thinking skills from this point of view. From this point of view, the principle of scientificity requires that the facts learned in the school mathematics course should be covered in the same way as they are covered in science.

2. The principle of directiveness. The principle of instructiveness depends on the characteristics of development of students' thinking from concrete to abstract. The main goal of teaching mathematics is to develop logical thinking, but teaching mathematics is inseparable from concrete facts and images, on the contrary, the study of any problem should begin with the examination of these concrete facts and images.

3. The principle of consciousness. The principle of consciousness is to teach students to consciously master the educational material, that is, to be able to understand various facts and to discover the connections and patterns between these facts. The importance of this principle in the teaching of mathematics is that only when the knowledge obtained from mathematics is consciously mastered, students will learn the nature of quantitative relationships, mathematical figures and their mutual arrangement. If the principle of consciousness is violated in the process of mastering the subject material, the knowledge that the students get will be superficial knowledge.

4. The principle of activity. The essence of this principle is that each stage of education in the school mathematics course should be built on the basis of developmental education, which serves to form active thinking activities of students. It is impossible to achieve the conscious assimilation of knowledge by students without active thinking activities in mathematics classes, therefore, the main goal of the modern school mathematics course is to form active thinking activities of students in mathematics classes.

5. The principle of thorough mastering. The principle of thorough mastering is especially important in achieving thorough mastering of mathematical materials. Mathematical concepts are interconnected in such a way that students will not be able to use their knowledge in life even if they do not know only a part of the mandatory

minimum. In mathematics, it is very important to master the skills of calculation, literal exchange of algebraic expressions, and representation of geometric figures. Especially in mathematics, more than in other subjects, it is impossible to move forward successfully without mastering some part of the program and without strengthening skills well.

6. Systematic principle. The principle of systematicity in mathematics lessons is that it is necessary to adapt teaching to the system of this subject.

Results:

Another aspect of computer convenience in teaching mathematics is the modeling of some educational situations. The purpose of using simulation programs is to facilitate the understanding of material that is difficult to imagine using other teaching methods. The introduction of computer technologies in educational institutions opens a wide path to the optimization of the educational process. In the next decade, the use of computers in mathematics education was carried out in several main directions. These include computer-aided assessment of knowledge, development and development of various types of educational programs, development of cognitive mathematical games, etc.

According to experts, a student who has mastered mathematics well has a high analytical and logical thinking ability. It develops the ability to make quick decisions, discuss and negotiate, and do things step by step, not only in solving examples and problems, but also in various situations in life. Mathematical thinking also takes it to the level of predicting what will happen in the future, what will happen in the environment.

Didactic principles encourage students to make the lesson interesting and effective, to easily acquire theoretical knowledge of mathematics. A lot of success can be achieved with principles. Even the most lazy student can be interested in science and taught to be active. Therefore, the knowledge given to the students is organized as a game according to their age characteristics.

From this, in the process of principles, students easily master the materials given in the mathematics textbook, which are difficult to master, and at the same time, they are able to observe the environment, events, compare, think about them, and learn from them. they learn to make valid conclusions and to justify the conclusions. It is desirable to make students interested in mathematics and achieve their correct acquisition of knowledge, skills, and abilities through didactic principles.

Discussion:

The educational function of the issue forms a scientific worldview in students and educates them in the spirit of love for work. We know that the object of study of mathematics is to study the spatial forms of things in matter and the quantitative

relationships between them. The application of formulas to solving elementary problems in our daily life forms a scientific outlook in students. Of course, the teacher should be based on the theory of knowledge here.

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It is important to choose the right didactic principles while preparing for the lesson. Preparation of didactic materials for didactic principles, proper timing and proper control of didactic principle process, completion of didactic principle and objective evaluation should be clearly planned. In this case, the following actions are performed.

- Sufficient preparation of didactic materials;
- Timely monitoring of mistakes made in the process of didactic principle and correcting them along the way;
- It is necessary to pay attention to didactic principles to form and develop intelligence and independence in students.

Conclusion

In conclusion, it should be said that through didactic principles, pupils develop the skills of being present, independent thinking, and they learn to carefully observe the environment, and their interest in the events happening around them increases. This principle can be used in the reinforcement part of the lesson or during a break.

Using modeling, students can present information graphically in the form of computer multimedia. As a result, they tend to be more independent in the deep learning of mathematics and in the learning process. In order to quickly and accurately solve a mathematical problem that arises in many cases, a professional mathematician is required to know a certain algorithmic language and programming along with his profession.

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