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ORGANIZATION OF EDUCATION BASED ON A DIFFERENTIAL APPROACH IN MATHEMATICS LESSONS

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Abstract. This article highlights the pedagogical significance, methodological foundations and effective methods of organizing education based on a differentiated approach in mathematics lessons. It analyzes how a differentiated approach serves to organize the educational process taking into account the individual abilities, level of knowledge, interests and pace of mastery of students. The article shows the possibilities of using individual and group tasks, problem-based learning, interactive methods and modern digital technologies in teaching mathematics. It also scientifically substantiates the importance of developing students' independent thinking, logical thinking and creative approach through differentiated education. It highlights the possibility of creating an educational environment suitable for each student by stratifying mathematical tasks according to the level of complexity. The article draws conclusions about the role of a differentiated approach in increasing the effectiveness of mathematics education.

Keywords: Differential approach, mathematics education, individual education, interactive method, problem-based learning, differentiated tasks, pedagogical technology, student competence, logical thinking, innovative method.

Today, in the process of modernization of the education system, one of the important tasks is to organize education taking into account the individual characteristics of students. In particular, the use of a differentiated approach in teaching mathematics is of great importance in increasing the effectiveness of students' learning. Because mathematics is one of the main subjects that develops logical thinking, analysis and problem-solving skills.

In the traditional education process, the use of the same tasks and methods for all students reduces efficiency in some cases. The reason is that each student has a different level of knowledge, abilities and speed of mastering the subject. Therefore, it is important to give students tasks that match their individual capabilities through a differentiated approach.

Differential education increases students' interest, develops independent thinking and ensures their active participation in the learning process. This approach is implemented by dividing students into strong, average and groups that need additional assistance. As a result, each student receives knowledge based on his or her own capabilities[1].

In today's digital learning environment, there are ample opportunities for implementing a differentiated approach. Electronic platforms, artificial intelligence-based programs, and interactive technologies help analyze the level of knowledge of students and create individual tasks.

A differentiated approach is a method of organizing the educational process based on the individual characteristics of students. The main goal of this approach is to reveal the capabilities of each student and support his or her learning activities.

A differentiated approach in mathematics lessons is implemented in the following areas:

differentiation of tasks according to the level of knowledge;

individual and group work;

giving creative tasks;

organizing independent learning;
using modern technologies[4].

For example, on the same topic, strong students are given complex problems, medium-level students are given standard tasks, and students with difficulty are given simplified examples. This method ensures the development of each student in accordance with their capabilities.

A differentiated approach in mathematics increases students' interest in the subject. Because when a student completes a task that is within their capabilities, they feel a sense of success. This increases their motivation.

Also, through a differentiated approach, the knowledge gap between students is reduced. While strong students develop their potential through complex problems, struggling students consolidate basic knowledge.

The organization of differentiated education in mathematics lessons provides the following advantages:

The individual characteristics of each student are taken into account.
Students' independent work skills are developed.
Logical and critical thinking is formed.
The quality and efficiency of education increases.
Healthy competition arises between students.

The use of differentiated tasks in mathematics lessons is one of the main tools of the differentiated approach. Tasks are divided into several stages depending on the level of complexity.

Interactive methods in mathematics lessons increase the effectiveness of differentiated learning. Methods such as “Brainstorming”, “Cluster”, “INSERT”, “BBB” ensure the active participation of students.

For example, in the “Cluster” method, students express their thoughts about the types of functions in the form of a network diagram. This method helps to understand the topic systematically.

In the “Problem-based learning” method, students are given a mathematical problem based on real-life situations. Students independently analyze the problem and find a solution.

Digital technologies create great opportunities for organizing differentiated learning. Platforms such as GeoGebra, Desmos, Kahoot and Quizizz help organize mathematics lessons interactively[4].

For example, in the GeoGebra program, you can draw graphs of functions and change them dynamically. This facilitates students' visual understanding of the topic.

Artificial intelligence-based platforms automatically analyze the level of knowledge of students and recommend individual tasks.

Assessment based on a differential approach

A differential approach is also important in the assessment process. Assessment criteria are developed taking into account the level of knowledge and individual development of students.

The following forms of assessment are used:
diagnostic assessment;
formative assessment;
summative assessment;
self-assessment;
group assessment.

These methods allow for a fair assessment of students' knowledge and monitoring of their development[3].

Studies show that mathematics lessons organized on the basis of a differential approach significantly improve the quality of students' knowledge. Students' independent work skills, creative thinking, and the ability to solve problem situations develop.

In conclusion, the organization of education in mathematics lessons based on a differentiated approach is one of the important directions of modern pedagogy. Through this approach, the individual characteristics of students are taken into account and a learning environment suitable for each student is created.

Differential tasks, interactive methods and modern technologies increase the effectiveness of mathematics education. As a result, students' logical thinking, independent work skills and creative approach are developed.

In the future, systems based on digital technologies and artificial intelligence are expected to further develop differentiated education. Therefore, teachers need to study modern methods in depth and effectively apply them in practice.

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