

Improving the Quality of Education Based on The Differential Approach in Mathematics Lessons

Shoira Rahimova Adilbekovna

Urgench State Pedagogical Institute, "Theory of Primary Education" Department, PhD, Associate Professor (acting), Uzbekistan

Received: 18 April 2026; **Accepted:** 03 May 2026; **Published:** 29 May 2026

Abstract: This article discusses the pedagogical significance of using a differentiated approach in mathematics lessons and the issues of improving the quality of education by taking into account students' individual abilities. It also analyzes the essence of differentiated education, the methods of applying it in primary education, and its role in developing students' independent thinking and mathematical reasoning. The article presents ideas on the effective organization of mathematics lessons based on modern pedagogical approaches.

Keywords: Differentiated approach, mathematics lessons, quality of education, pedagogical technology, individual approach, primary education, mathematical thinking, student activity.

Introduction: Today, the reforms being implemented in the education system require the improvement of the learning process, enhancement of educational quality, and the widespread introduction of modern pedagogical technologies into practice. In particular, when teaching mathematics, it is important to take into account students' individual characteristics, abilities, and levels of knowledge. This is because not all students assimilate knowledge at the same level. Therefore, the use of a differentiated approach in organizing mathematics lessons is considered one of the key factors in increasing educational effectiveness.

A differentiated approach is the organization of the educational process by considering students' interests, needs, levels of knowledge, and psychological characteristics. Through this approach, opportunities are created to further develop the potential of high-achieving students while providing individual support to students with lower achievement levels. As a result, each student is able to acquire knowledge according to their own abilities.

The application of a differentiated approach in mathematics lessons develops students' logical thinking, forms independent working skills, and

increases their interest in the lesson process. In particular, when forming mathematical concepts among primary school students, differentiating tasks according to their level of complexity is of great importance. This, in turn, requires high pedagogical mastery and creativity from teachers.

To implement a differentiated approach in mathematics education, it is first necessary to determine students' levels of knowledge and organize individual work with them. During the lesson, teachers should use tasks of varying complexity, apply group-working methods, and encourage students to think independently.

According to pedagogue scholar J. Yo'ldoshev, "an individual approach in the educational process is an important means of revealing students' abilities." This idea explains the essence of differentiated education, since an educational process organized according to each student's level of knowledge and ability increases effectiveness. Especially in mathematics lessons, an individual approach plays an important role in developing students' logical thinking and independent working skills [p. 23, 1].

R. Mavlonova notes that "pedagogical technologies serve to increase students' activity." The use of

differentiated tasks in mathematics lessons strengthens students' classroom activity and encourages them to think independently. The application of tasks at different levels increases students' interest in acquiring knowledge [p. 45, 2].

Research related to primary education methodology particularly emphasizes the role of mathematics in the development of thinking skills. N. Bikbayeva writes that "mathematics lessons are one of the main tools for developing students' logical thinking." Lessons organized on the basis of a differentiated approach develop students' skills of analysis, comparison, and drawing conclusions [p. 67, 3].

In lessons organized on the basis of a differentiated approach, students complete tasks appropriate to their level of knowledge. As a result, strong students work on more complex problems, while lower-achieving students master the topic better through simpler tasks. This helps to build students' self-confidence. According to pedagogue scholar S. Nishonova, "the effectiveness of education depends on the teacher's ability to work individually with students." A differentiated approach is considered one of the important factors demonstrating a teacher's pedagogical mastery [p. 38, 4].

Interactive methods also play an important role in effectively organizing differentiated education. M. Ochilov emphasizes that "a modern lesson is significant because it encourages students to think independently." Methods such as "Brainstorming," "Cluster," and "BBB" serve to increase students' activity in mathematics lessons [p. 52, 5].

According to T. G'afforova, "taking into account students' individual abilities in primary education is an important pedagogical requirement." Differentiated education is one of the effective ways of implementing this requirement and serves to improve the quality of education in mathematics lessons [p. 41, 6].

CONCLUSION

In conclusion, organizing education in mathematics lessons on the basis of a differentiated approach is one of the important pedagogical requirements of the modern education system. Through this approach, students' individual characteristics, abilities, knowledge levels, and learning capacities are taken into account. As a result, each student acquires knowledge according to their own abilities and actively participates in the lesson

process. This not only increases the effectiveness of the educational process but also strengthens students' interest in mathematics.

A differentiated approach in teaching mathematics develops students' independent thinking, forms logical reasoning skills, and contributes to revealing their creative abilities. Especially at the primary education stage, the importance of this approach is significant, as it helps students thoroughly master mathematical knowledge, independently solve examples and problems, and develop skills for applying mathematical knowledge in daily life. The use of tasks appropriate to students' knowledge levels increases their confidence in the lesson and strengthens their motivation to learn.

In addition, a differentiated approach helps reduce the knowledge gap among students. While high-achieving students strengthen their knowledge through complex tasks, lower-achieving students gradually master the topic through step-by-step and simpler tasks. This helps involve all students in the educational process and enables them to fully demonstrate their abilities. As a result, student activity in lessons increases, a cooperative learning environment is formed, and the quality of education improves.

The effective organization of a differentiated approach requires teachers to possess high pedagogical skills, creativity, and the ability to effectively use modern pedagogical technologies. Teachers should be able to select tasks appropriately by considering each student's psychological and individual characteristics, use interactive methods effectively, and organize lessons in an engaging manner. In particular, the use of interactive methods such as "Brainstorming," "Cluster," "BBB," and "Insert" develops students' free thinking and independent decision-making skills.

Today, the reforms being carried out in the education system also require the organization of learner-centered education. From this perspective, a differentiated approach is considered one of the important tools for increasing the effectiveness of mathematics education, developing students' knowledge and skills, and educating them as comprehensively developed individuals. Therefore, the widespread use of a differentiated approach in mathematics lessons is one of the pedagogically relevant and practically significant issues.

REFERENCES

1. Yo'ldoshev J. Fundamentals of Pedagogical Technology. – Tashkent: O'qituvchi, 2014. – pp. 23–27.
2. Mavlonova R. Pedagogy. – Tashkent: O'qituvchi, 2012. – pp. 45–49.
3. Bikbayeva N. Methodology of Teaching Mathematics in Primary Grades. – Tashkent: Fan, 2016. – pp. 67–72.
4. Nishonova S. Education of the Perfect Person. – Tashkent: Ma'naviyat, 2010. – pp. 38–42.
5. Ochilov M. New Pedagogical Technologies. – Tashkent: Fan, 2015. – pp. 52–57.
6. G'afforova T. Pedagogy of Primary Education. – Tashkent: Tafakkur, 2018. – pp. 41–46.