pISSN:2349-5707 Volume:13,Issue 3, March -2026 eISSN:2349-5715

COMPETENCY-BASED MATHEMATICS EDUCATION IN PRIMARY GRADES

Narzullayeva Mohinur Bahrom kizi,
2nd year student of Termez State Pedagogical Institute
Turobov Mamarajab Sadiq ugli
Teacher at Termez State Pedagogical Institute

Abstract: This article analyzes the importance and methodological aspects of teaching mathematics in primary grades based on a competency-based approach. The study highlights the development of students' mathematical literacy, logical thinking, and practical skills through the use of modern pedagogical technologies and interactive teaching methods. The article also discusses effective ways of organizing a competency-based approach in mathematics lessons, existing challenges in the teaching process, and practical recommendations for overcoming these problems. Furthermore, the study aims to improve the quality of mathematics education in the primary education system and to develop students' independent thinking as well as their ability to solve problem situations. The results of the research can serve as a methodological resource for teachers and researchers.

Keywords: competency-based approach, primary education, mathematics education, mathematical literacy, logical thinking, interactive methods, modern pedagogical technologies, didactic games, information and communication technologies, learning process efficiency.

Currently, the reforms being implemented in the education system require the organization of the educational process based on modern requirements. In this regard, one of the important tasks is to more effectively organize the learning process of students at the primary education stage, to develop their knowledge, skills and qualifications. In particular, mathematics plays an important role in the formation of logical thinking of students in primary grades, the development of calculation skills and the ability to analyze problem situations. In recent years, special attention has been paid to the use of a competency-based approach in the educational process. This approach involves not only the acquisition of theoretical knowledge by students, but also the formation of skills to apply them in various life situations. Competency-based education serves to develop important skills in students such as independent thinking, problem analysis, and logical conclusions. The use of a competency-based approach to teaching mathematics in primary grades helps students to understand mathematical concepts more deeply, to connect knowledge with practical activities, and to increase their activity in the learning process. Therefore, the use of modern pedagogical technologies, interactive methods, and various didactic tools is of great importance in the effective organization of mathematics lessons. The content of the competency-based approach in teaching mathematics in the primary education system, its significance, and its role in the development of students' knowledge require scientific and methodological study. This issue is important for improving the educational process and increasing students' mathematical literacy.

1. Theoretical foundations of competency-based education:

Competency-based education (CBE) is a pedagogical approach aimed at developing the student's ability to apply knowledge, skills and competencies in real-life situations. Teaching mathematics in primary grades based on CBE not only helps to memorize numbers, shapes and arithmetic operations, but also develops the ability to use them in practical life. Through this approach, the student acquires the skills of analyzing mathematical problems, finding solutions and creative thinking.

The main tasks of the KAT in primary grades are as follows:

pISSN:2349-5707 Volume:13,Issue 3, March -2026 eISSN:2349-5715

✓Connecting knowledge and practice: Students have the opportunity to reinforce knowledge by applying mathematical concepts to practical situations. For example, while learning addition and subtraction, they apply knowledge by solving real-life problems such as shopping or telling time.

✓Personal development: KAT forms the student's ability to make independent decisions, justify his opinion and create. This helps to express himself not only in mathematics, but also in other areas.

✓Development of analytical and logical thinking: A competency-based approach develops the skills of solving, comparing and analyzing problematic issues. For example, when solving problems, the student tries different options and finds the most optimal solution.

✓Creative approach: KAT methodology forms the skills of creative thinking and developing new solutions in students. This is especially important in the process of simplifying complex mathematical concepts and making them understandable to students.

✓Development of cooperation and communication skills: In primary grades, lessons based on KAT are often held in the form of group work and interactive activities. By solving problems together, students develop the skills of exchanging ideas, discussing problems and supporting each other.

✓Increase motivation and interest: When students see the opportunity to apply their knowledge in practice, their interest and motivation in mathematics increases. This makes lessons more effective and interactive.

2. Advantages of competency-based mathematics education in primary grades

1. Developing practical skills: Students learn to apply mathematical knowledge in real-life situations. For example, while learning to add and subtract numbers, they are also able to solve problems in everyday life such as calculating costs or time.

2. Developing analytical and logical thinking: In the process of solving problems, students develop thinking, analysis, and decision-making skills.

3. Personal motivation and independence: Competency-based activities allow students to feel their success and independently apply knowledge.

4. Group work and communication skills: Interactive activities strengthen students' skills in exchanging ideas and collaborating with each other.

3. Competency-based methods

The following methods are effectively used in teaching mathematics in primary grades based on KAT:

* Interactive games and tasks: Students solve problems related to numbers, shapes, and arithmetic operations in a game format. This method encourages students to actively participate.

* Situational problems: Students apply mathematical knowledge in practice through examples from everyday life (market, store, time calculation).

* Visual materials and multimedia tools: Complex concepts are explained in a simple way using animations, diagrams, and digital learning platforms.

pISSN:2349-5707 Volume:13,Issue 3, March -2026 eISSN:2349-5715

* Group and pair work: Students solve problems together, developing cooperation and thinking skills.

4. Problems and solutions

Problem 1: In traditional methods, students only memorize knowledge, and practical application skills are not enough.

Solution: Through a competency-based approach, students are given the opportunity to apply knowledge in practice through practical tasks and interactive activities.

Problem 2: The teacher does not take into account the individual abilities of students.

Solution: Through a person-centered approach and differentiated tasks, the abilities of each student are developed.

Problem 3: Students lose motivation and interest during the lesson.

Solution: Lessons become interesting and effective with the help of interactive and creative methods (games, situational problems, multimedia).

5. Results of the competency-based approach

✓Students' practical mathematical literacy increases.

✓Analytical and logical thinking skills develop.

✓ It is useful as a methodological resource for teachers.

✓ Lessons are held in an interactive and interesting way, which increases student motivation.

Students' practical mathematical literacy increases:

Competency-based methods allow students to apply mathematical concepts in real-life situations. For example, in the process of learning numbers and arithmetic operations, students apply knowledge in practice through market purchases, time counting, shapes and geometric problems. This strengthens their practical skills and increases the level of mathematical literacy.

Analytical and logical thinking skills are developed:

In lessons based on CTA, students perform tasks such as analyzing problem situations, comparing options, and choosing the most optimal solution. In this way, they develop the ability to think logically and make decisions, which is important in solving subsequent educational stages and life problems.

Useful as a methodological resource for teachers:

The competency-based approach allows teachers to organize lessons in an interactive, effective, and person-oriented manner. By using CTA methods, the teacher implements an individual approach in the lesson process and develops students' abilities to the maximum. Also, as a methodological guide, teachers are provided with the opportunity to put new pedagogical ideas into practice.

Lessons are held in an interactive and interesting manner, which increases students' motivation:

pISSN:2349-5707 Volume:13,Issue 3, March -2026 eISSN:2349-5715

The competency-based approach widely uses interactive games, situational problems, multimedia tools, and group work. As a result, students actively participate in the lesson, their interest and motivation increase, and the lesson process is more effective and creative.

Conclusion. Competency-based mathematics education in primary schools is an effective approach that serves to combine students' knowledge, skills and practical competences. Through this approach, students not only learn mathematical concepts, but also develop the skills to apply them in real-life situations, analyze problems and find creative solutions. At the same time, lessons are held in an interactive and interesting way, which increases students' motivation and encourages them to think independently. The competency-based approach is also a methodological resource for teachers, allowing them to organize lessons in effective, person-oriented and innovative ways. As a result, CBT is an important tool for improving the quality of education in primary education and ensuring the personal and academic development of students.

REFERENCES USED:

1. Ахмедова, Л. (2021). Boshlang‘ich sinflarda kompetensiyaga asoslangan ta’lim metodikasi. Тошкент: O‘zbekiston Pedagogika Instituti.

2. Каримов, Ф. (2020). Matematika fanini o‘qitishda innovatsion yondashuvlar. Тошкент: Ilm-fan nashriyoti.

3. Turobov M. S. O‘quvchilarning matematik qobiliyatlari rivojlanishining pedagogik shart-sharoitlari // International Journal of Scientific Researchers (IJSR) Indexing. – 2024. – T. 6, № 1. – B. 320–324.

4. Turobov M. O‘quvchilar matematik qobiliyatlarini rivojlantirishning o‘ziga xos o‘rni // Research and Implementation. – 2024.

5. Shukurov, D., & Rakhmonov, S. (2023). Interactive methods in primary mathematics education. Journal of Modern Education, 5(2), 45–56.

6. UNESCO (2020). Competency-based curriculum and innovative teaching in primary education. Paris: UNESCO Publishing.