EUROPEAN INTERNATIONAL JOURNAL OF PEDAGOGICS

VOLUME04 ISSUE11
**DOI:** https://doi.org/10.55640/eijp-04-11-10 Pages:40-44


# FEATURES OF DEVELOPMENT OF LOGICAL THINKING IN ELEMENTARY MATHEMATICS CLASSES

***Rakhimova Nargiza Mekhriddinovna***
*Teacher of the Primary Education Department of the Bukhara State Pedagogical Institute, Samatova Mohigul Otakulovna 3rd course of student, Uzbekistan*

## ABOUT ARTICLE

**Key words:** Model, modeling, cognitive, problem solving, Modeling logical thinking.

**Received:** 02.11.2024
**Accepted**: 07.11.2024
**Published**: 12.11.2024

**Abstract:** The elementary school mathematics course is an organic part of the school mathematics course. The most basic and age-appropriate elementary concepts of mathematics taught in grades V-XI are given. In higher grades, these concepts are taught in an expanded, deepened and enriched manner. Therefore, the content of primary grade mathematics determines the content of higher-grade mathematics.

## INTRODUCTION

The structure of elementary mathematics has its own characteristics:

1. Arithmetic material is the main content of the course. Arithmetic of natural numbers, basic quantities, introductory courses of elements of algebra and geometry are taught in addition to arithmetic material without being taught in the form of a main section.
2. Primary grade material is structured concentrically. For example, if first the numbering of the first ten is taught, then the numbering within 100 and performing arithmetic operations are taught. After that, performing arithmetic operations in 1000, then numbering in multi-digit numbers, quantities, fractions are taught by adding algebraic and geometrical materials.
3. Theory and practical issues are organically connected.
4. Mathematical concepts, properties, and the discovery of legal connections are interconnected in the course.
5. Each concept is explained in detail. For example, before teaching arithmetic operations, its exact essence is revealed, then the properties of the operation, then the connection between the components, then the result of the operation, and finally the connection between the operations is given.
6. Basic concepts and resulting concepts are given in the interconnection.

For example, multiplication is based on addition. The elementary mathematics course is a whole course that includes three subjects in its structure, in which it is necessary to distinguish parts consisting of arithmetical, algebraic and geometrical material.

## METHODS

Methods used according to the level of activity of students.

1) Explanatory - illustrative method. The essence of this method is that the teacher gives ready-made information using various means, and students receive, understand and remember this information. The teacher provides information orally, in writing, and instructively.

2) Reproductive method. The main feature of this method is to restore the method of activity and repeat according to the teacher's assignments. Competences and skills are formed using this method.

3) Problematic presentation of knowledge. In this case, the teacher not only tells a rule, but also "thinking out loud" poses a problem and manages the process of solving it, and teaches students to think, to conduct cognitive research.

4) Partial search or heuristic method. In this case, the teacher explains the educational material to the students, asking questions during the presentation and requires the students to search and solve a problem of knowledge nature.

5) Research methods of teaching. In this case, after students understand the given problem, they make a work plan, hypothesize, determine the verification method, conduct observations, experiments, compare facts, generalize and draw conclusions. Problem-based learning is carried out using the following three methods.

What is problem-based learning? Currently, there is no single definition of it. But N.M. Skatkin, T.I. Shamova, L.Sh.Levenberg, etc. express the single point of view that problem-based teaching is an important structure of the unified educational system and the structural integration of the reproductive and creative activities of students based on the wide application of methods of creating problematic situations and solving them. . Problem-based teaching means creating problem situations, formulating a problem, helping students to solve it, and leading them. (Polish - B. Okon). Problem-based teaching is based on the educational problem, the essence of this problem is the need for new facts to explain and explain with the knowledge, skills and abilities known to the student. (didactic M.I. Makhmutov). The most important feature of problem-based learning is creating problem situations. A problematic situation is when the teacher asks students a question that they cannot fully answer at once due to their lack of knowledge. The central element of the problem situation is the knowledge required by the students to solve the unknown or posed problem.

During the school period, together with the child's literacy development, his worldview is formed and the scope of his thinking expands. The use of various games is of great importance in the development of children's knowledge. Children strengthen their knowledge through games. they learn them. Didactic games used in the educational process will further increase the quality of education and motivate the successful management of the learning process. Didactic games can stimulate the development of children's knowledge even in the later stages of primary education. These games have an effect on improving the knowledge of students with low mastery in the course of the lesson. In today's rapidly developing world, attention is being paid to the organization of education based on pedagogical technologies. Pedagogical technologies - forms, methods and new methods of education are a set of educational tools. Pedagogical technologies are considered to be one of the most skillful tools for revealing the possibilities and abilities of students, and through them, the acceleration of the educational process increases. Students' independent thinking framework is formed. The feeling of affection, love and interest increases in children.

One of the didactic games used in the course of the lesson is the Zanjir game: In this game, the teacher says a word. Starting from the last letter of this word, children continue the word. All children are

involved in the lesson through the game. "Say it fast" game: in this game, the teacher walks around the class and makes a child stand up and tells him the name of a species. The child must find a word that belongs to this type and say it. Through this, the ability of the child's mind to be attentive to the environment increases. Students who do not answer the game will finish. The game continues until there is one player left. This game can be adapted to the lesson. Teacher: "Animal" Pupil: cat Teacher: "Fruits" Pupil: apple Teacher classroom equipment: Pupil: blackboard By using such games in the course of the lesson, the students are engaged in the learning process. interest increases. Ingenuity, agility, quick movement processes are formed in the child.

When checking knowledge of mathematics, it is necessary to take into account the following, which characterize the quality of this or that knowledge only according to the requirements of the program:

1) correctness, that is, the correspondence of students' judgments and concepts to the object being taught;

2) accuracy, i.e. correctness of details;

3) completeness, i.e. sufficient and complete reasoning and concepts related to objects and processes;

4) depth, i.e. reflecting important signs in objects and processes, concepts and considerations;

5) consciousness, that is, the ability to understand the connection between concepts and to justify judgments;

6) durability, i.e. long retention in the memory of students.

Examination and assessment of students' knowledge is common to all subjects in didactics. The purpose of checking and evaluating knowledge is for the teacher to determine the quality of students' mastery of the educational material, the level of acquisition of knowledge in the program, and the formation of qualifications and skills. In this way, the teacher compares the educational activities of students with the amount of knowledge that students must master in mathematics with the curriculum. constantly monitors whether the knowledge necessary to master this volume and achieve independent problem solving has been formed or not. There are various ways of putting knowledge into practice when solving new problems and checking the knowledge and skills of students in mathematics by the teacher. , is determined by measuring, performing laboratory work, etc.Determining students' knowledge through oral questioning. Another way to test student knowledge is to ask students individually. This request should be accompanied by a small verbal calculation. The teacher usually connects such a request with checking homework. in order to check oral calculation skills, examples and problem solving are used with all students of the class. The teacher gives an example, students solve it orally and write down only their answers according to the relevant number in their notebooks. It is advisable to spend 7-10 minutes on this task in each lesson. Determining students' knowledge through written work In order to fully check knowledge, written works are taken on the completed section of the program.

Types of knowledge control. There are the following types of knowledge control: 1) Current (daily) control. 2) intermediate (thematic) control. 3) Final (periodic) control.

**1. In the current control**, knowledge is carried out according to the textbook and program designed for each class. determines the quality of mastering the subject taught in each lesson. in each lesson, he checks and evaluates the homework in the notebook, mastering the subject. The main method of current control is checking homework and conducting questions and answers with them.

The teacher should plan what and whom to ask in the lesson. The teacher is obliged to use previously learned material in each lesson, because each new concept is explained on the basis of previously learned knowledge. Current control allows to recall the passed material again, creates an organic link between the new material and the previously learned material. When planning each lesson, the teacher

should take into account the following three types of current control: a) asking for the material of the previous lesson; b) request material that has been passed before and is directly related to the current lesson; c) asking in order to strengthen the material explained in the lesson. It is necessary for the teacher to come to the lesson with a set of questions for control.

**2. Intermediate (thematic control)**. After the main concepts in the curriculum have been passed through the system of lessons, or after a chapter in the textbook is finished, an intermediate control is carried out. for mid-term control, a special study, qualification and skills control lesson is held, it must be specified in the teacher's work plan. concepts mastered in each chapter are necessary for successful further study. for this purpose, it is necessary to repeat the main concepts of the previous chapter and correct the shortcomings during the midterm control lesson. In the inquiry plan, the teacher creates a set of questions, the example determines the solution of the problems. as a result, it is determined which questions of the previous educational material were mastered well and which questions were poorly mastered. Badly mastered questions are clarified and repeated. Students are assessed according to their knowledge. For example, in the 2nd grade, after the chapter "Adding and subtracting numbers within 20", a midterm test is conducted.

**3. Final control**. This control is carried out at the end of a quarter, half a year, and at the end of the year, and a special lesson "Checking students' knowledge, skills and abilities" is allocated to it. during this time, questions will be prepared, written work will be conducted and evaluated. It is good for the teacher to keep the following notes in his special notebook when collecting and evaluating the points obtained in the final inspection. Taking into account the main shortcomings of students' knowledge and skills helps the teacher to know the shortcomings he has made and to determine the level of students' knowledge. Examination of students' knowledge, skills, and abilities is always carried out with evaluation. It is most effective when the teacher's assessment is the same as the students' self-assessment. Systematic assessment of students' knowledge, characterization of their achievements and shortcomings leads the teacher to determine the current mastery situation in the classroom. Assessment is also necessary to characterize student learning. Because the more a student is evaluated, the more he tries to prepare, to do his homework, and he is always ready for the lesson. at the moment, the grading norm is 100 points, and it is being implemented by turning it into 5 points. "2" grade up to "55" points. Grade "3" is "60-69" points. Grade "4" is "71-89" points. Grade "5" is given between "90-100" points

**REFERENCES**


1. “O‘zbekiston Respublikasi oliy ta’lim tizimini 2030-yilgacha rivojlantirish konsepsiyasini tasdiqlash to‘g‘risida” Prezident farmoni 2019-yil 8-oktabrdagi PF-5847-son Farmoni
2. “Matematika ta’limi va fanlarini yanada rivojlantirishni davlat tomonidan qo‘llab-quvvatlash, shuningdek, O‘zbekiston Respublikasi fanlar akademiyasining V.I.Romanovskiy nomidagi matematika instituti faoliyatini tubdan takomillashtirish chora-tadbirlari to‘g‘risida”gi qarori 2019-yil 9-iyul
3. N.M.Raximova ,M.T. Temirqulova MAKTABGACHA TA’LIM JARAYONIDA KASR SON TUSHUNCHASINI O‘RGATISH METODIKASI. YANGI O‘ZBEKISTON TARAQQIYOT STRATEGIYASI: MAKTABGACHA TA’LIM TIZIMINING INNOVATSION RIVOJLANISH ISTIQBOLLARI RESPUBLIKA ILMIY-AMALIY ANJUMANI.243-246- BETLAR. O‘QITISH VA TA’LIM OLISH SHAROITLARINI O‘RGANISH XALQARO TADQIQOTI. TALIS TADQIQOTI
4. BOSHLANG‘ICH SINF MATEMATIKA DARSLARIDA ULUSH VA KASR SON TUSHUNCHASINI O‘RGATISHDA ZAMONAVIY YONDASHUVLAR Raximova Nargiza Mexriddinovna, Buxoro davlat

pedagogika instituti Boshlang‘ich ta’lim kafedrasi o’qituvchisi https://orcid.org/my-orcid?orcid=0009-0004-6700-0686 https://doi.org/10.53885/edinres.2024.2.2.038

5. Raximova N. M. Samatova M. O. ZAMONAVIY METODIK YONDASHUVLAR ASOSIDA BOSHLANG'ICH SINFLARDA ULUSH VA KASR SON TUSHUNCHASINI O'RGATISH METODIKASI.649-651-BETLAR
6. TEACHING THE CONCEPT OF FRACTIONS AND FRACTIONS IN ELEMENTARY MATHEMATICS CLASSES AS A METHODOLOGICAL PROBLEM https://doi.org/10.5281/zenodo.10092157 Rakhimova Nargiza Mekhriddinovna. International Multidisciplinary Research in Academic Science (IMRAS) Volume. 6, Issue 06, October(2023)
7. 4-sinf matematika darsligi. I.V Repyova .Novda Toshkent -2023
8. ULUSH VA KASR SON TUSHUNCHASINI ORGATISHDA ZAMONAVIY YONDASHUVLARNI TASHKIL ETISH METODIKASI RN Mexriddinovna - PEDAGOGS jurnali, 2023
9. ULUSH VA KASR SON TUSHUNCHASINI ORGATISHDA ZAMONAVIY YONDASHUVLARNING SAMARADORLIGI N Raximova - Педагогика и психология в современном мире …, 2023
10. BOSHLANG ‘ICH SINF MATEMATIKA DARSLARIDA MULTIMEDIA TEXNOLOGIYALARIDAN FOYDALANISH MAZMUNI N Raximova - … исследования в современном мире: теория и …, 2023
11. ПОНЯТИЕ ДРОБИ И ДРОБИ В НАЧАЛЬНЫХ КЛАССАХ*Н Рахимова - Science and innovation in the education system, 2023
12. TEACHING FRACTIONS: FIVE FAVORITE STRATEGIES FOR MAKING SENSE OF FRACTIONS R Nargiza - 2023
13. ZAMONAVIY METODIK YONDASHUVLAR ASOSIDA BOSHLANG‘ ICH SINFLARDA ULUSH VA KASR SON TUSHUNCHASINI O‘ RGATISH METODIKASI N Raximova - E Conference Zone, 2023
14. Educational System in Economically Developed Foreign Countries RN Mekhriddinovna - EUROPEAN JOURNAL OF INNOVATION IN …, 2024
15. Opportunities to Evaluate Teachers’ Work RN Mekhriddinovna - Excellencia: International Multi-disciplinary Journal of …, 2024
16. MODERN IN TEACHING THE CONCEPT OF PROPORTION AND FRACTION EFFECTIVENESS OF APPROACHES RN Mekhriddinovna, SM Otakulovna - Confrencea, 2023
17. The method of organizing modern approaches to teaching the concept of fractions and fractions TMYRN Mekhriddinovna - Confrencea, 2023
18. TEACHING THE CONCEPT OF FRACTIONS AND FRACTIONS IN ELEMENTARY MATHEMATICS CLASSES AS A METHODOLOGICAL PROBLEM RN Mekhriddinovna - IMRAS, 2023
19. The Modern Approaches to Teaching Portions and Fractions in Primary Schools Mathematics RN Mexriddinovna - 2023
20. ULUSH VA KASR SON TUSHUNCHASINI O`RGATISHDA ZAMONAVIY YONDASHUVLARNING SAMARADORLIGI R Nargiza «Zamonaviy dunyoda innovatsion tadqiqotlar: Nazariya va amaliyot», 45-48
21. BOSHLANG‘ICH SINF MATEMATIKA DARSLARIDA MULTIMEDIA TEXNOLOGIYALARIDAN FOYDALANISH MAZMUNI R Nargiza «Zamonaviy dunyoda innovatsion tadqiqotlar: Nazariya va amaliyot», 40-43