METHODS OF TEACHING THE CONCEPT OF NUMERICAL EXPRESSION IN PRIMARY GRADES

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Abstract:

This article discusses the methodology of teaching the concept of numerical expressions in elementary school mathematics. It highlights the content of numerical expressions, their analysis, and the development of skills in performing operations with simple and complex numerical expressions. The study explores methodological approaches that contribute to the development of students' mathematical thinking, logical reasoning, and independent working skills. At the end of the article, practical recommendations are provided for elementary school teachers to help enhance the effectiveness of the teaching process.

Keywords: Numerical expression, primary grade, mathematics education, methodology, educational process, arithmetic operations, logical thinking, mathematical thinking, independent thinking, teaching methods, complex expressions, practical recommendations, student activity, didactic materials, mathematical skills.

Introduction

In today's era of globalization and innovation, the progress of each society depends primarily on the quality of education. As President Shavkat Mirziyoyev noted: "The creation of a new Uzbekistan begins first of all with the upbringing of the younger generation with new thinking, modern knowledge and profession." Realization of this noble goal is carried out through the formation of a solid knowledge foundation, especially at the primary education stage. Especially in the primary grades, mathematics lessons play an important role in the development of students' logical thinking, mathematical thinking. In this way, the correct and effective teaching of the concept of numerical expression will lay the

foundation for future mathematical knowledge. Working on a number of expressions increases students' mental activity and they learn to think independently.

This article analyzes the methodology of formation of the concept of numerical expression in primary grades, effective teaching methods and practical recommendations.

Teaching the concept of numerical expression in primary grades is one of the most important areas of mathematical literacy. Numerical expression is a mathematical model constructed using numbers and arithmetic operations, which teaches students to think, analyze, work in order. In this regard, one of the leading methodological scientists from Uzbekistan R.A. Ganiev noted that "by working on numerical expressions in the primary grade, students develop practical thinking and logical thinking skills."

Another famous methodologist Sh.S. Tursunov in his research proposes the following step-by-step approach to teaching numerical expressions:

1. Explain the content of a numbered expression – Explain to students what it is, how it is structured, by simple examples.

2. Explain the sequence of actions – Parentheses, teaching to understand the first and second steps.

3. Teaching to analyze and explain – ensure that the student will be able to explain not only the result, but the whole solution process.

4. Work with complex expressions – solve expressions involving several actions and parentheses.

5. Reinforcement through practical exercises – the use of games, tables, comparison methods in the lessons.

These methodological approaches are also consistent with the principle of student-centered education, as defined in the resolution of the Cabinet of Ministers of April 13, 2021 on the "Concept for the development of the public education sector in 2021-2023". Because through such methods, the student participates in the lesson not as a passive but as an active participant. In addition, methodologist R.Kh. Kochkorova believes that when working on a numerical expression, the enrichment of lessons with interactive methods, especially the use of such methods as "herald of thoughts", "cluster", "mathematical relay" will further activate students. Also, exercises such as mathematical dictation, "top number expression", "look for errors" are effective in deepening students'

knowledge through practical assignments. Through such tasks, students develop mathematical literacy, attention span and quick thinking skills.

Teaching pupils to think independently when working on numerical expressions is necessary for them to be able to put their knowledge into practice. To this end, in accordance with the recommendations of the methodologist A.A. Monov, it is necessary to provide students with the opportunity to solve each numbered expression in several ways. For example, by explaining some expressions in an analytical way and others in a graphical or visual way, it is possible to teach students different approaches. Such approaches give students the opportunity to look at an issue from different perspectives, as well as strengthen their logical thinking skills. At the same time, in teaching the concept of numerical expression in the primary class, one should not be limited to practical exercises only. It is also necessary to prepare students theoretically. For example, it is important to give a complete understanding of a numerical expression and its parts (numbers, action characters, parentheses, etc.), to connect them with each other, to put them into practice. As R.T. Rakhimov notes in his work, "in the educational process, it is valued not only knowledge, but also understanding the relationship between concepts." It is also necessary to pay attention to the social and emotional development of students through numerical expressions. For young children, the educational process is not only the acquisition of knowledge, but also the development of a person. In the learning process, students learn to help each other by working in groups, collaborating in solving problems, and this increases their interest in teamwork.

In primary grade mathematics textbooks (for grades 1-4), the topic of numerical expression is covered gradually and systematically. In particular, in the 2nd grade textbook "Mathematics" there are exercises for solving a number of actions, the main goal of which is for the student to understand the sequence of actions. In grades 3 and 4, students' independent working skills are formed through more complex number of expressions, parentheses and tasks to simplify them.

Also, the exercises in the textbooks are linked to real-life situations, for example: "Aziza bought 3 notebooks worth 2,500 soums and 2 pens worth 1,500 soums. How much paid in total?" students develop skills for composing a numerical expression, reading and performing actions. Through assignments like these, students learn to apply mathematics to real-life problems. According to the methodist scientist Z. Yuldosheva, "when mathematics lessons are connected with

real-life situations, the student's interest in the topic increases, and he considers his knowledge useful." It is also desirable that teachers enrich the textbooks and adapt tasks based on a differential approach, not limited to the materials in the textbooks. For example, by complicating or, conversely, simplifying a simple expression in a textbook, it is possible to work according to the individual level of mastery of each student.

In teaching the concept of numerical expression in elementary grades, a cross-grade approach is important. The choice of methodological tools based on the age characteristics, level of cognition and psychological perception capabilities of each grade student requires an individual approach from the teacher. Therefore, the content of the lesson from grade 1 to grade 4 should be logically linked and formed in accordance with the level of thinking and knowledge of the student, following the principle of step-by-step in explaining the numbered expression. With this approach, students will gain skills of correctly reading and composing the sequence of actions of numerical expressions.

1st Grade

At this stage, it is necessary to explain to readers the simplest forms of numerical expression. For example, expressions such as "2+3" or "4–1" can be interpreted as "examples written using numbers and actions."

Oson usullar:

Work with colored cards (insert numbers and validity symbols separately).

Through action games (for example, "numbered train" - each wagon is a number or action symbol).

Draw up a finite expression based on figures (for example: "2 apples + 3 apples = ?").

Grade 2

This class begins an introduction to the number of expressions involved in several actions, but brackets are not yet used.

Oson usullar:

Explain the action sequence in a graph (Step 1, Step 2).

Encourage the reader to think with the question, "Which one do we do first?"

Constructing examples into oral narratives (for example: "Sanjar took 2 books, and 3 more. Find the collection.")

Grade 3

At this stage, work with parentheses begins. It is important for students to understand the priority of actions.

Oson usullar:

Simplified explanation of the priority of actions: Show the "Let's solve the parentheses first" rule with different colors.

Color expressions: write the actions in parentheses in red, the rest in blue.

"Step by step" schedule method: each action is solved separately.

Grade 4

More complex numerical expressions are used in conjunction with multiple parentheses, multiplication, and division.

Oson usullar:

"Map" method: Express each action step in the form of a diagram or grid.

Engage students in composing an expression: Write a text-based expression.

The game of "simplify expression": identify and reduce unnecessary or unnecessary steps.

These approaches are tailored to the age and psychological characteristics of the students, and allow the teacher to organize the lesson effectively. The step-by-step teaching of the concept of numerical expression in the cross-section of grades serves to form students' knowledge in a consistent and systematic way. In each classroom, through an age-appropriate, understandable and practical approach, students develop not only the skills of solving examples, but also the ability to think independently, analyze and form expressions. At each stage of the primary grade, students are prepared to work with mathematical expressions, following the principle of growth from simple to complex. This approach provides a solid foundation for mastering mathematics in subsequent grades, ensuring that the learning process makes sense.

Teaching the concept of numerical expression in primary grades plays an important role in the formation of students' mathematical literacy, logical thinking, consistent reasoning and independent decision-making skills. Through mastering this topic, students will gain an understanding of numbers, action signs and their interrelationship, will understand the sequence of actions and the rules of priority. This serves to develop their mathematical thinking gradually.

In the process of teaching numerical expression based on the cross-grade approach, it is necessary to take into account the psychological and cognitive

characteristics of each age stage. Students can be encouraged to be active by using textbooks assignments effectively, connecting them to real-life situations, using playful methods, visual aids, problem situations and group work. The teacher's individual approach, creativity and thorough preparation play an important role in this process. In addition, the use of methodological literature, best practices and modern approaches in the teaching of this topic will increase students' interest in the lesson and ensure the effectiveness of their learning. A learner who has mastered numerical expression deeply and consciously will have a solid foundation in consolidating further mathematical knowledge. In this regard, it is important to improve the teaching methodology, to meet the requirements of modern education.

Teaching the concept of numerical expression in primary grades is an important foundation for the formation of students' mathematical thinking, understanding the sequence of actions, and the development of independent thinking skills. Through numerical expression, the reader not only performs actions, but also realizes the logical connection behind each action, which increases mathematical literacy.

The article analyzes on the basis of scientific foundations, advanced methodological views, recommendations of Uzbek methodologists and modern teaching approaches for effective teaching. In particular, the connection between the content of the textbook and real-life examples, the simplicity and clarity of methodological approaches encourage students to actively participate.

Step-by-step teaching in the context of grades allows for a consistent and logical development of the topic. Through the use of methods and tools appropriate for each grade level, students consciously master the ability to work with numerical expressions based on the principle of the transition from simple to complex. Of great importance in this process is the teacher's approach to the lesson, the correct choice of didactic tools, creativity and individual approach. In general, effective teaching of the concept of numerical expression for elementary school students has a direct impact on their future mathematical knowledge, level of logical reasoning, and ability to solve life problems independently. That is why all the research and updates carried out in this direction remain relevant.

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