

METHODOLOGY OF TEACHING MATHEMATICS IN PRIMARY GRADES AS A SCIENCE, INTERDISCIPLINARY RELATIONSHIP

Sholpan Pirniyazova

Teacher of the Department of Primary Education

Nukus State Pedagogical Institute

Maftuna Sagdatdinova

2nd year student, Faculty of Primary Education,

Nukus State Pedagogical Institute

Abstract: The article discusses the possibilities and advantages of using interactive methods in elementary school mathematics lessons.

Keywords: school, education, interactive, teacher, student, moral education lesson, method.

INTRODUCTION

The lessons of the mother tongue, mathematics, reading, etiquette, and natural science taught in primary grades occupy a special place in the education system due to their essence, goals, and objectives. Because they are based on the foundations of literacy and moral and educational education. That is why special attention should be paid to increasing the interest of students in primary education lessons. Because children should not get tired of the sacred word "lesson" from the primary grades. Today, experienced teachers use various didactic games to increase students' interest in the lesson. Interactive method - by increasing the activity between the teacher and students in the educational process, it serves to ensure the assimilation of knowledge under the influence of their interaction, and to develop personal qualities. The use of these methods helps to increase the quality and effectiveness of the lesson. Its main criteria are informal discussions, free presentation of educational material, independent reading, study, seminars, creating opportunities for students to take the initiative, giving assignments, tasks for working in a small group, large group, class team, completing written work, etc. Interactivity is the activity of two people, that is, the learning process takes place in the form of a dialogue (computer communication) or on the basis of teacher-student interaction. Interactivity is mutual activity, action, influence, which occurs in student-teacher, student-student conversations. The main goal of interactive methods is to create an environment for active, free, creative thinking of the student, using his needs, interests, and internal capabilities by creating the most favorable environment and situation for the learning process. Such lessons are held in such a way that no student is left out in this process, and they have the opportunity to openly express their thoughts and opinions about what they have heard, read, seen, and known. A process of mutual exchange of ideas is created. Children's desire and interest in learning increases, and friendly relations are formed. Interactive education, by its nature, includes methods of implementation using information and communication technologies based on creativity - through heuristic (thinking, searching, finding) conversation - didactic games, through the design of the lesson process, through the creation and solution of a problem situation.

MAIN PART

Mathematics occupies a unique and foundational position in the primary school curriculum. It is not

only a tool for counting or calculating but also a structured science that develops logical reasoning, abstract thinking, and problem-solving abilities. The methodology of teaching mathematics at the primary level must therefore go beyond rote learning and emphasize conceptual understanding, exploration, and mental structuring of numerical and spatial relationships. At the same time, given the developmental characteristics of young learners, mathematics instruction must be connected to their lived experiences and integrated with other areas of study to make learning more meaningful and contextually relevant.

Interdisciplinary education, which fosters connections between subjects, is increasingly recognized as a powerful strategy in modern pedagogy. Mathematics, when taught in coordination with disciplines such as environmental science, language, music, and art, can enhance student engagement, reinforce core concepts, and develop broader cognitive and creative capacities. Thus, understanding the methodology of teaching mathematics as both a science and a cross-curricular foundation is essential for preparing students for integrated and lifelong learning.

The ability of teachers to organize the process of oriented lessons in teaching mathematics in non-traditional forms, to design the educational process based on an excellent model, can be a guarantee of thorough, in-depth mastery of theoretical knowledge by students, and the formation of practical skills and competencies in them.

The educational process allows for the expression of a set of theoretical and practical knowledge on a specific topic that serves to illuminate the content of the educational material. The content of education should also reflect the scope of concepts, skills and competencies that students should master. After all, the ideological perfection of the content of education is determined by the level of mastery of certain knowledge, skills and competencies by students. The effect of this is manifested in the development of conditions that ensure the mastery of certain concepts by students, the formation of skills and competencies. It is the form, methods and means of the lesson that lead to the successful implementation of the educational process. Today, extensive experience has been accumulated in the use of pedagogical technologies that increase the learning and creative activity of students and guarantee the effectiveness of the educational process, and the methods that form the basis of this experience are called interactive methods. Let's consider the essence of several interactive methods used in mathematics lessons and the methods of their use.

The "Intellectual Attack" method. This method serves to ensure the activity of students in the lesson process, encourage them to think freely and free them from the inertia of the same thinking, collect a variety of ideas on a specific topic, as well as learn to overcome thoughts that arise at the initial stage of the process of solving creative tasks. The "6x6x6" method. The "6x6x6" method allows you to simultaneously involve 36 students in a specific activity to solve a specific task or problem, as well as to determine the capabilities of each member of the groups and find out their views. In a session organized based on this method, 6 groups of 6 participants each discuss the problem posed by the teacher. When the allotted time is up, the teacher re-forms the 6 groups. Each of the re-formed groups has one representative from the previous 6 groups. Members of the newly formed group present to their teammates the conclusion presented by their group as a solution to the problem and discuss these solutions together. "Cluster" method. The cluster method is a specific form of pedagogical and didactic strategy that helps students create conditions for free, open thinking and free expression of personal opinions on arbitrary problems. This method requires the identification of a structure that allows them to think about the connections between different ideas. The "cluster" method is considered a form of thinking that is not directed at a specific object.

Teaching mathematics effectively requires an understanding of the cognitive development of primary-aged children. According to Piaget's stages of cognitive development, children in this age group are transitioning from pre-operational to concrete operational thinking. This means they are increasingly

capable of logical thought but still require concrete experiences to understand abstract concepts. Consequently, the methodology must be grounded in visual, tactile, and kinesthetic experiences—number lines, counting games, drawing shapes, and using objects to demonstrate operations.

Furthermore, didactic principles such as the spiral curriculum (reintroducing concepts at deeper levels), active learning, scaffolding, and feedback are critical in developing strong mathematical foundations. Methodological tools such as diagnostic assessments, manipulatives, collaborative learning, and formative evaluation allow for better alignment between instruction and student understanding. Teachers must also be aware of common misconceptions and cognitive errors that students may exhibit and be equipped with strategies to address them constructively.

CONCLUSION

The method is manifested in the form of group-based exercises and a set of ideas expressed by students. This creates an opportunity to generalize the ideas put forward and find connections between them. The “Intelligent” method. In order to thoroughly master existing knowledge, students' ability to think and reflect is important. The “Intelligent” method helps to form quick thinking skills in students, as well as determine their speed of thinking. The method creates a convenient opportunity for students who want to test their knowledge. They must be able to answer the questions asked by the teacher correctly and accurately in a short time. Points are assigned for each correct answer to each question, depending on the level of complexity of the questions. The method can be used with students individually, in groups, and in mass work. The “Carkhpalak” method. The "Carousel" technology can be used in all types of training sessions, at the beginning and end of the lesson, after completing a section, to assess the level of mastery of the topics covered, to repeat, consolidate, conduct intermediate and final checks. Training sessions can be organized individually and in groups. In addition, it is useful for studying topics of different content and nature, including oral and written forms of work.

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