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DEVELOPMENT OF LOGICAL THINKING IN MATHEMATICS LESSONS AMONG JUNIOR SCHOOLCHILDREN

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Abstract:

The article reveals the role of mathematics in the formation and development of a child as an individual, as well as its significance in practical life. The main task of teaching mathematics in primary school, methodological principles of teaching, the content of the primary mathematics course within the National Curriculum, as well as an analysis of the features of modern teaching are presented.

Keywords: school mathematics education, content of mathematics education, mathematical activities.

Аннотация:
В статье раскрывается роль математики в становлении и развитии ребенка как личности, а также ее значение в практической жизни. Представлены основная задача преподавания математики в начальных классах, методические принципы преподавания, содержание курса начальной математики в рамках Национальной учебной программы, а также анализ особенностей современного обучения.

Ключевые слова: школьное математическое образование, содержание математического образования, математическая деятельность.

Logic is the science of the laws and forms of correct thinking. She studies forms of reasoning, abstracting from specific content, establishes what follows from what, and seeks an answer to the question: how do we reason? The founder of logic as a science is the ancient Greek philosopher and scientist Aristotle. He first developed the theory of logical inference.
The term “logic” comes from the Greek word “lotus”, which means “to think”, “reason”.
No one will argue that every teacher should develop the logical thinking of students. This is stated in the methodological literature, in explanatory notes to educational programs. However, the teacher does not always know how to do this. This often leads to the fact that the development of logical thinking is largely spontaneous, so the majority of students, even high

school students, do not master the initial techniques of logical thinking (analysis, comparison, synthesis, abstraction, etc.)

The role of mathematics in the development of logical thinking is exceptionally great. The reason for such an exceptional role of mathematics is that it is the most theoretical science of all studied in school. It has a high level of abstraction and the most natural way of presenting knowledge is the way of ascending from the abstract to the concrete.

The most famous Russian teacher V. Sukhomlinsky devoted significant attention to the issue of developing logical thinking among younger schoolchildren in his works. The essence of his thoughts boils down to the study and analysis of the process of solving logical problems by children, while he empirically identified the peculiarities of children's thinking. He writes about work in this direction in his book “I Give My Heart to Children”: “There are thousands of problems in the world around us. People invented them, they live in folk art like riddle stories.” Sukhomlinsky observed the progress of children’s thinking, and observations confirmed that “first of all, it is necessary to teach children to cover with their mind’s eye a number of objects, phenomena, events, to comprehend the connections between them... Studying the thinking of slow-witted people, I became more and more convinced that the inability to comprehend, for example, a task - a consequence of the inability to abstract, to be distracted from the concrete. We need to teach children to think in abstract concepts.”

The new generation educational standard sets new goals for primary education. Now in primary school a child must be taught not only to read, count and write, which is still being taught quite successfully. He must be taught two groups of new skills. We are talking, firstly, about universal learning activities that make up the ability to learn: the skills of solving creative problems and the skill of searching, analyzing and interpreting information. Secondly, we are talking about developing children’s motivation for learning, self-development, and self-knowledge. The teacher, who previously taught the children simply mathematics as such, will now have to solve new non-standard problems using material familiar to him. It follows that already in elementary school, children must master the elements of logical actions (comparison, classification, generalization, analysis, etc.). Therefore, one of the most important tasks facing a primary school teacher is the development of independent logic of thinking, which would allow children to build conclusions, provide evidence, statements that are logically related to each other, draw conclusions, justifying their judgments, and, ultimately, independently acquire knowledge. Mathematics is precisely the subject where this can be realized to a large extent.

By developing our logical thinking, we contribute to the work of the intellect, and intellect is a guarantee of a person’s personal freedom and the self-sufficiency of his individual destiny. The more a person uses his intellect in analyzing and assessing what is happening, the less susceptible he is to any attempts to manipulate him from the outside.

Today, the secondary school acts as the public institution that is most directly responsible for the quality of human history. It is not surprising that in societies oriented towards a progressive development scenario, government investment in education is quite significant. For it is already clear that those countries that are able to create the most advanced education system,

guaranteeing extensive and intensive development of the intellectual abilities of the younger generation, are winning and will benefit economically and culturally.

Each generation of people makes its own demands on school. Previously, the primary task was to equip students with deep knowledge, skills and abilities. Today, the tasks of a comprehensive school are different. Studying at school does not so much equip you with knowledge, skills, and abilities. The formation of universal educational activities that provide schoolchildren with the ability to learn, the ability to select what they need from a mass of information, self-development and self-improvement comes to the fore. New National educational standards for general education have appeared, which stipulate that the main goal of the educational process is the formation of universal educational activities, such as: personal, regulatory, cognitive, communicative. In accordance with the standards, cognitive universal actions include: general educational, logical, as well as posing and solving problems.

Logical universal actions include:

— analysis of objects in order to identify features (essential, non-essential);

- synthesis - composing a whole from parts, including independent completion with the completion of missing components;

— selection of bases and criteria for comparison, seriation, classification of objects;

— summing up the concept, deriving consequences;

— establishing cause-and-effect relationships;

— building a logical chain of reasoning;

— proof;

— putting forward hypotheses and their substantiation.

From the above it follows that already in elementary school children must master the elements of logical actions (comparisons, classifications, generalizations, etc.). Therefore, one of the most important tasks facing a primary school teacher is the development of all qualities and types of thinking that would allow children to build inferences, draw conclusions, justify their judgments, and, ultimately, independently acquire knowledge and solve emerging problems.

References

1. O‘zbekiston Respublikasi Prezidentining Farmoni, 11.05.2022 yildagi PF-134-son. 2022 - 2026-yillarda xalq ta’limini rivojlantirish bo‘yicha milliy dasturni tasdiqlash to‘g‘risida (https://lex.uz/docs/-008663?ONDATE=11.05.2022%2000)
2. 2022 - 2026-yillarda maktab ta’limini rivojlantirish bo‘yicha MILLIY DASTUR. O‘zbekiston Respublikasi Prezidentining 2022-yil 11-maydagi PF-134-son Farmoniga ilova.
3. Ўринбоева Л.Ў. Математикани ўқитишнинг амалий хусусиятлари. UzACADEMIA. 2021, 10-сон. (VOL I, ISSUE 10, FEBURARY 2021, PART - 1). 167-бет.
4. Djumayev M.E., Urinbayeva L.U. Use of Computer Software in Education of Students in Primary School and Preschool. Open Access Journal of Biogeneric Science and Research 7(1)-2021. (DOI: 10.46718/JBGSR.2021. 07.000183).

5. Уринбаева Л.У. Механизм модернизации образовательных инновационных программ начальной школы. Профессиональное образование и общество. 2021 №1(37). стр.137-145.
6. Саитов Ё., Саитова И. Математика ва математиклар ҳақида. Тошкент: “Ўқитувчи”, 1998.