

Activation of Cognitive Activity of Primary School Students in Mathematics Lessons

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ABSTRACT

Students' learning is an important task in the educational process. This article talks about methods of increasing cognitive activity in the process of education and the effectiveness of these methods.

KEYWORDS: arithmetic operations, assignment, arithmetic assignment micol, expression, equality, inequality, comparison, commutative property, comparison assignment, associativity property

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I. INTRODUCTION

The priority of modern education, which guarantees its high quality and effectiveness, should be training focused on self-improvement and self-realization of the individual. Therefore, the “education-teaching” model has been replaced by “education-interaction”, when the student's personality becomes the focus of the teacher's attention. Helping students to fully demonstrate their abilities, develop initiative, independence, and creativity is one of the main tasks of a modern school. And the successful implementation of this task largely depends on the formation of students' cognitive interests. This, in my opinion, determines the activity of the student in the knowledge of himself and the world around him.

One of the important aspects of learning is the active cognitive activity of students, the manifestation or need for knowledge and the desire to master it.

II. MATERIALS AND METHODS

To activate means to purposefully enhance cognitive processes (perception, memory, thinking,

imagination) in the brain of students, encourage them to expend energy, make strong-willed efforts to master knowledge and skills, overcoming difficulties. There are various ways to enhance learning activities:

- problematic presentation of the material
- commented exercises
- independent work of students
- creative work of children,
- formation of incentives for learning.

But there are other ways to activate:

- game methods
- modeling
- amusement
- conducting non-traditional lessons.

In recent years, the problem of developing the cognitive activity of students has become one of the main problems of pedagogy and psychology. Another German democrat teacher A. Disterverg wrote: “Development and education cannot be given or communicated to any person. Anyone who wants to

join them must achieve this by their own activity, their own strength, their own effort ... "A necessary component of the development of cognitive activity of primary school students is the education of persistent cognitive interest, which should ensure the systematic activity of students in mastering the leading methods of activity.

Cognitive interest has a tremendous motivating force: it makes one actively strive for knowledge, actively seek ways and means to satisfy the thirst for knowledge that arises in him. It acts as a powerful stimulus to the activity of the individual, under the influence of which all mental processes proceed especially intensively and intensely, and the activity becomes exciting and productive.

Currently, the problem of cognitive interest is actively studied by pedagogy. The study of the problem showed that under the influence of cognitive interest, learning proceeds more fruitfully, faster and with greater results.

For the successful formation of cognitive interest, it is necessary to create the necessary conditions. The very first need that arises for a teacher who wants to instill a cognitive interest in students is the creation of material conditions for successful learning. This is the caring equipment of the lesson, without which full-fledged learning cannot be carried out. This is an environment conducive to classes, the organization of class life, the orderliness of work - the absence of haste and at the same time the loss of precious time, the density of the lesson, the intensity of work, excessive fatigue. Along with the material conditions, the "mental soil" is being prepared. The most important circumstance that ensures the education of cognitive interest is carefully thought out and methodically correct lessons in accordance with the training program, taking into account the individual characteristics of each student.

To form a cognitive interest, you need to acquire some knowledge, and to acquire full knowledge, you need a cognitive interest. But if children have no interest even in basic knowledge, how can they acquire this knowledge? This is where entertainment is needed, i.e. the forerunner of interest. It will help at first introduce children to learning and create an initial stock of knowledge in them. It is important not only to reveal the knowledge of children, but also to supplement, clarify, make the necessary adjustments, then you can already rely on them. An experienced teacher relies on the interests of children that have arisen in them earlier in order to use them in educational activities and involve children in learning. At the same time, it is important to take into account the level of knowledge and mental skills of

each student class, taking into account its individual characteristics.

The most effective means of inclusion in the learning process in the classroom is gaming activity. One of those types of children's activities that is used by adults in order to educate preschoolers, primary school students, teaching them various actions with objects, methods and means of communication is a game. In the game, the child develops as a person, he forms those aspects of the psyche, from which will depend on the success of his educational and work activities, his relationship with people.

S.L. Rubinstein wrote: "A person's game is a product of activity through which a person transforms reality and changes the world. The essence of human play is in the ability, by reflecting, to transform reality ... In play, for the first time, the child's need to influence the world is formed and manifested - this is the main, central and most general meaning of the game.

The game acquires the most developed form in school translation. Scientists of various fields - philosophers, sociologists, biologists, art historians, ethnographers, and especially teachers and psychologists are interested in this very activity of the child.

In this case, we consider the types of gaming activities for the development of cognitive activity of primary school students in mathematics lessons.

One of the central places in the general education system is occupied by mathematics. Its role is determined by the richness of mathematical ideas and results accumulated by mankind over thousands of years of development and which are an important part of its cultural heritage, by the continuously expanding range of contact between mathematics and the most diverse aspects of human life and activity, by the undoubted influence of mathematics on the education of the most important personal qualities, and by its educational potential.

For primary school age, teaching is a new and unusual thing. Therefore, when getting acquainted with school life, the game helps to remove the barrier between the "outer world of knowledge" and the child's psyche. The game action allows you to master what in advance causes the younger student to fear the unknown, constantly inspired respect for the intricacies of school life, which interferes with the free development of knowledge.

The main type of didactic games used in the initial stages are games that form a steady interest in learning and relieve tension that occurs during the child's adaptation to the school regime.

The game reveals the characteristics of the character of the child, reveals the level of his development. Therefore, the game requires an individual approach to children. The teacher must take into account the individual characteristics of each child when choosing a task, posing a question: it is easier for one to give a task, for another it is more difficult, one should ask a leading question, and the other should be required to make a completely independent decision. Timid, shy children require special attention: sometimes such a child knows the correct answer, but because of timidity he does not dare to answer, he is embarrassedly silent. The teacher helps him overcome his shyness, approves him, praises him for the slightest success, tries to call him more often in order to teach him to speak in front of the class (collective).

Didactic games are especially necessary in the upbringing and education of children of six years of age. They manage to concentrate outwardly even the most inert children. At the beginning, children show interest only in the game, and then in that educational material, without which participation in the game is impossible. As observations of children of six years of age show, those teachers who allocate a third of the lesson to the game achieve the greatest success. Underestimation or overestimation of the game has a negative impact on the educational process. With insufficient use of the game, the activity of students in the lesson decreases, interest in learning is weakened, with excessive use of the game, students hardly switch to learning in non-game conditions.

Features of the use of didactic games when explaining new material

The game is valuable only when it contributes to a better understanding of the mathematical essence of the issue, clarification and formation of students' mathematical knowledge. Didactic games and game exercises stimulate communication between students and the teacher, individual students, because in the process of conducting these games, the relationship between children begins to be more relaxed and emotional.

Practice shows that entertaining material is used at different stages of learning: at the stages of explaining new material, consolidating it, repeating it, and controlling it. The use of didactic games is justified only when they are closely related to the topic of the lesson, organically combined with educational material that corresponds to the didactic goals of the lesson.

In the practice of primary classes, there is experience in using games at the stage of repetition and

consolidation of the studied material, and games are rarely used to gain new knowledge.

When explaining new material, it is necessary to use such games that contain the essential features of the topic being studied. It should also include the practical actions of children with groups of objects or drawings.

Based on the use of the game "Make a train", students are asked to count the number of cars from left to right and right to left and lead them to the conclusion: you can count the numbers in one direction, but it is important not to skip a single item and not to count it twice.

Also, when introducing children to the method of forming numbers, you can use the game "Hive Corner".

Didactic goal: to familiarize children with the method of forming numbers while consolidating spatial orientation, the concepts of "more", "less".

When studying numbering within ten, it is necessary to bring to the understanding of children that the last number called when counting indicates the total number of the entire group of objects. For this purpose, the games "Best counter", "Claps" should be held. With the help of these games, children establish a correspondence between a number and a figure.

"Best Counter"

The content of the game: the teacher places from 1 to 10 drawings on a magnetic modeler by sectors, respectively. Opening each sector in turn, the teacher invites the children to count the number of drawings and show the desired number. The one who counts first is called the best counter. Then the teacher shows the numbers in a row, and the students show the corresponding number of drawings in the sectors of the circle. As a result of the game, the teacher opens 2 sectors, offers to compare the number of drawings in them and determine where there are fewer objects and by how many.

"Claps"

The content of the game: the teacher places from 1 to 10 drawings in sectors on a magnetic modeler. Opening sector after sector in turn, he offers to count the number of drawings and, at his signal, clap as many times as there are open drawings, and show the desired number. (teacher sets the rhythm of clapping).

When studying the numbers of the first ten, it is important to compare each previous number with the next one and vice versa. For this purpose, the games "The best counter", "I know the number and number" are intended.

The content of the game: the teacher on the magnetic modeler opens sector by sector in turn, the children count the number of digits in each of them and show the teacher the corresponding card with the number, and then compare the number of digits in two adjacent sectors of the magnetic modeler.

Work on the composition of the number begins in the section "Numbering the Numbers of the First Ten". The composition of numbers from one to five, children during this period should know by heart, the composition of numbers 6-10 can be considered on a visual basis, at the next stage, children get acquainted with the composition of numbers based on addition from memory. At the third stage, children reproduce the composition of numbers based on the identified pattern: numbers in the same places (left and right) in a number row add up to the last number in this row.

During this period, the game "Numbers running towards each other" will be of great help to students in studying the composition of numbers:

Didactic goal: acquaintance with the composition of the number 10.

The content of the game: the teacher invites the children to write down the numbers from 1 to 10 in order in a notebook and show two numbers that run towards each other with arcs, forming the number 10 in total. Then he asks to write examples for addition with these numbers. For example:

0 1 2 3 4 5 6 7 8 9 10

$0 + 10 = 10$, $10 + 0 = 10$

$1 + 9 = 10$, $9 + 1 = 10$

The teacher asks: "What interesting things did you notice while making up the examples? Children answer that the numbers in the same places on the right and left in the number row add up to the number 10.

When studying the numbering of numbers within 20, 4 stages can be distinguished:

1. Formation of numbers by adding one to the previous number and subtracting one from the next number. The game "Let's make a train."
2. Formation of numbers from tens and units. Here you can suggest a game "Mathematical Race".
3. Analysis of the composition of numbers within 20. You can use the game "Find out how many sticks are in the other hand"
4. Written numbering of numbers within 20. At this stage, you can offer the game "Knock-knock"

"Math Relay Race"

Didactic goal: familiarization with the formation of numbers from ten and units.

Teaching aids: 10 circles and 10 triangles from the preparatory class mathematics textbook.

Content of the game: the teacher divides the class into 3 teams in rows and conducts a competition game. The first student from the first team illustrates the number using circles and triangles, the second from the same team calls the number indicated by the number, the third - its composition, the fourth shows the number on the cards.

Similar exercises are performed from the second and third teams. The team that does not make a single mistake or makes a smaller number of them will win.

Given the increased motor activity of primary school students, I give an outlet for their energy in physical education sessions that have a motor-speech character, for example:

We all know how to count

One, two, three, four, five,

We all know how to count. (Bending and unbending arms up.)

We all count to five

We lift the kettlebell with force.

How many times will I hit the tambourine

We cut wood so many times. (Tilts forward, hands in the "lock", sharply down.)

How many dots will be in the circle

Let's raise our hands so many times. (Relaxed raising and lowering hands.)

Bend over so many times

How many vents do we have. (Tilts to the sides, hands on the belt.)

How many cells to the line

Jump so many times. (Jumping in place.)

We are tightrope walkers now

How long can we stay. (Walking in place, arms to the sides. Feet on the same line, one in front of the other, arms to the sides.)

One, two, three, four, five.

Well, if we weigh the forces,

Six, seven, eight

Nine ten.

Well we counted

And not at all tired

Raise your head higher (Stand - legs apart, arms up - to the sides (inhale).)

And easy, easy to breathe. Relax your hands down (exhale).

Activation of cognitive activity through the game in any of its manifestations is carried out through the selective focus of the child's personality on objects and phenomena surrounding reality. This orientation is characterized by a constant desire for knowledge, for new, more complete and deeper knowledge, that is, there is a cognitive interest. Systematically strengthening and developing cognitive interest becomes the basis of a positive attitude to learning, increasing the level of academic performance.

III. CONCLUSION

Cognitive interest is exploratory in nature. Under his influence, a primary school student constantly has questions, the answers to which he himself is constantly and actively looking for. At the same time, the student's search activity is carried out with enthusiasm, he experiences an emotional upsurge, joy from good luck. Cognitive interest has a positive effect not only on the process and result of activity, but also on the course of mental processes - thinking, imagination, memory, attention, which, under the influence of cognitive interest, acquire special activity and direction. Activation of cognitive activity is an important condition for the educational activity of primary school students, which positively affects the success of education.

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