



The Correctional Significance Of Using Didactic Games In Forming Mathematical Concepts In Primary School Pupils With Intellectual Disabilities

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Abstract: This article discusses the correctional-pedagogical significance of using didactic games in forming mathematical concepts in primary school pupils with intellectual disabilities. The article analyzes the role of didactic games in developing pupils' concepts of number, counting, quantity, geometric shapes, space, and time. It also substantiates the possibilities of developing children's cognitive activity, attention, memory, perception, speech, fine motor skills, and logical thinking in the process of game-based learning. Didactic games are considered an effective method that helps children with intellectual disabilities master educational material in an interesting, understandable, and practical way.

Keywords: child with intellectual disability, mathematical concept, didactic game, correctional education, primary school, special pedagogy, number and counting, quantitative concept, spatial concept, game-based learning.

In the system of special education, the process of teaching children with intellectual disabilities is not limited only to providing knowledge. This process serves to develop the child's cognitive activity, correct existing developmental difficulties, prepare the child for practical life, and ensure social adaptation. The formation of mathematical concepts at the primary school level occupies an important place in the education of children with intellectual disabilities. This is because mathematics helps children understand concepts that are constantly encountered in everyday life, such as number, quantity, shape, time, distance, measurement, order, and comparison.



The process of mastering mathematical knowledge in pupils with intellectual disabilities is slower and more complex than in pupils of general education schools. This is due to the underdevelopment of their perceptual processes, the concrete-practical nature of their thinking, limited memory capacity, unstable attention, speech development difficulties, and insufficiently developed ability to generalize. Therefore, abstract explanations, long oral instructions, or only written exercises do not produce sufficient results in teaching mathematical concepts. Such children need to learn more through seeing, touching, moving, comparing, grouping, counting, and playing.

Didactic games are one of the most effective tools for children with intellectual disabilities in acquiring mathematical knowledge. Play is a natural type of activity for a child, through which the pupil performs tasks without strain and with interest. In the process of play, the child remembers numbers, counts objects, distinguishes shapes, identifies colors and sizes, and masters concepts such as many-few, big-small, before-after, right-left through practical actions. From this point of view, didactic games expand not only the teaching function of mathematics lessons, but also their correctional and developmental opportunities.

A didactic game is a type of activity organized on the basis of certain rules and directed toward an educational goal, serving to form pupils' knowledge, skills, and abilities. In working with children with intellectual disabilities, the importance of didactic games lies in the fact that they transform an educational task into a form that is interesting, understandable, and actively performed by the child. In the process of play, the child does not feel as if they are in a compulsory learning situation, but rather in a natural and emotionally comfortable activity. This increases the child's interest in the lesson, ensures active participation, and helps them master mathematical concepts more effectively.

In forming mathematical concepts in primary school pupils with intellectual disabilities, it is first necessary to develop concepts of number and counting. For this purpose, games such as "Count and Find," "How Many?",



“Choose the Object Matching the Number,” “Find the Missing Number,” and “Who Has How Many?” may be used. For example, the teacher places cubes, pencils, or toys in different quantities on the table. Pupils count them, match them with number cards, and determine which group has more or fewer objects. In this process, the pupil understands a number not merely as a symbol, but as a concept expressing the quantity of real objects.

Games such as “Many-Few,” “Big-Small,” “Long-Short,” “Heavy-Light,” and “Make Them Equal” are effective in forming quantitative concepts. For example, in the game “Which Basket Has More?”, different numbers of fruits are placed in two baskets. Pupils determine which basket has more fruit and which has fewer. Then the teacher gives the task: “What should be done so that both baskets have an equal number of fruits?” Such games develop children’s skills of comparison, differentiation, equalization, and preparation for addition and subtraction.

Didactic games are especially effective in forming geometric concepts. Through games such as “Find the Shape,” “Which Object Looks Like a Circle?”, “Put the Shapes in Their Houses,” “Find the Square,” and “Make a Picture from Shapes,” pupils learn to distinguish shapes such as circles, squares, triangles, and rectangles. For example, in the game “Put the Shapes in Their Houses,” a separate “house” is assigned for each geometric shape. The child places mixed shapes into the appropriate houses. This game develops visual perception, classification skills, attention, and coordination of hand movements.

Movement-based didactic games are of great importance in developing spatial concepts. Children with intellectual disabilities often have difficulty distinguishing concepts such as “on,” “under,” “next to,” “in front of,” “behind,” “inside,” “outside,” “on the left,” and “on the right.” Therefore, these concepts should be taught not only through verbal explanation, but also through practical actions. For example, in the game “Put the Object in Its Place,” the teacher gives instructions such as “Put the cube on the table,” “Place the pencil next to the notebook,” “Put the ball inside the box,” and “Put the book outside the bag.” By performing these tasks, the child understands spatial relations in practice.



A game-based approach is also important in forming temporal concepts. Through games such as “Make a Daily Routine,” “What Happens First?,” “What Do We Do Next?,” “Find the Season,” and “Put the Days of the Week in Order,” children master concepts such as morning, noon, evening, yesterday, today, tomorrow, before, after, days of the week, months, and seasons. For example, in the game “Make a Daily Routine,” children are given different pictures: waking up, washing, having breakfast, going to school, studying, returning home, and sleeping. Pupils arrange the pictures in the correct sequence. This game develops the ability to understand time, maintain sequence, and think logically.

The correctional significance of didactic games is that they perform several developmental functions at the same time. For example, counting games develop the child’s memory, attention, speech, and logical thinking. Games aimed at distinguishing shapes strengthen visual perception, analysis, comparison, and classification skills. Games involving grouping by color and size contribute to sensory development. Movement-based games develop spatial orientation, coordination of hand and finger movements, general motor skills, and active participation.

When organizing game-based learning with children with intellectual disabilities, the teacher must take into account the individual abilities of each child. Each pupil has different levels of perception, memory capacity, speech development, attention stability, speed of task completion, and interests. Therefore, didactic games should correspond to the child’s level of development, have clear rules, be short, understandable, and visually supported. If the game is too difficult, the child may not be able to complete the task and may lose interest. If it is too simple, its developmental effect decreases. Thus, the content of the game should correspond to the child’s zone of proximal development.

Visual aids are of particular importance in using didactic games. Number cards, colored shapes, counting sticks, cubes, toys, fruit models, geometric figures, picture cards, tables, and diagrams attract the child’s attention and help clearly demonstrate mathematical concepts. For example, in the game “Place



the Objects Matching the Number,” the child places 4 cubes next to a card with the number 4 on it. Through this activity, the child strengthens the relationship between the numeral, the number, and the quantity.

Didactic games can be used at different stages of a mathematics lesson. At the beginning of the lesson, they are used to concentrate pupils’ attention and arouse interest in the topic. When explaining a new topic, games help present knowledge through concrete objects and practical actions. At the consolidation stage, pupils’ acquired knowledge is checked and repeated through game-based tasks. At the final stage, short games serve to evaluate the pupil’s activity during the lesson, encourage them, and create a positive emotional atmosphere.

The use of didactic games in mathematics lessons also helps increase pupils’ motivation. Y.Y. Pumputis paid special attention to the development of interest in mathematics among pupils of special schools. According to him, when mathematical knowledge is connected with the pupil’s life and the child sees the possibility of applying it in everyday life and practical activity, interest in mathematics increases. Didactic games perform exactly this function: they present mathematical knowledge in a life-related, interesting form that is close to the child’s personal experience.

For example, through the game “Shopping at the Store,” children acquire skills in counting, understanding the amount of money, choosing objects, comparing, and performing simple calculations. In the game “Setting the Table,” concepts of quantity, equality, and order are formed by distributing plates, spoons, cups, and bread equally. In the game “Put the Fruits in the Basket,” children count fruits, group them by color or type, and determine which are more or fewer. Such games connect mathematical knowledge with real-life situations and strengthen the pupil’s readiness for independent life.

Another important aspect of didactic games is that they develop children’s speech. During the game, the pupil learns to make sentences such as “I have three pencils,” “This is a circle,” “The red cube is big,” “The book is on the table,” and “There are many apples and few pears.” Expressing



mathematical concepts in words contributes to the development of the child's thinking. Therefore, during each game, the teacher should require pupils to explain their answers orally, encourage them to speak in complete sentences, and teach them to name object features accurately.

Encouragement is also of great importance in the process of game-based learning. Children with intellectual disabilities often show uncertainty, slowness, or fear of making mistakes when completing tasks. During the game, the teacher should recognize every small achievement of the child, support them, and express a positive attitude. Encouraging phrases such as "You counted very well," "You found it correctly," "Let's try again," and "You can do it" help develop the child's self-confidence and strengthen a positive attitude toward mathematics lessons.

Cooperation with parents is also important in organizing didactic games. When the child repeats mathematical concepts learned at school in the home environment, their practical meaning becomes stronger. Parents are advised to give children simple game-based tasks at home, such as counting fruits, sorting clothes by color, distributing dishes equally, arranging toys according to size, talking about the clock and time, and explaining the amount of money during shopping. This strengthens cooperation between school and family and ensures the continuity of education.

The use of didactic games in forming mathematical concepts in primary school pupils with intellectual disabilities is an effective correctional-pedagogical tool. Didactic games present mathematical knowledge to children in an understandable, interesting, and practical form. They help children master mathematical concepts such as number and counting, quantity, shape, space, time, comparison, and grouping.

In the process of game-based learning, children's cognitive activity, attention, memory, perception, speech, thinking, fine motor skills, logical reasoning, and socio-practical skills develop. Didactic games serve not only to consolidate educational material, but also to increase the self-confidence of



children with intellectual disabilities, strengthen their interest in lessons, and prepare them for independent activity.

Thus, the purposeful, systematic, and individually oriented use of didactic games in mathematics lessons is an important factor in forming mathematical concepts in pupils with intellectual disabilities. Such lessons develop not only pupils' mathematical knowledge, but also their general mental development, social adaptation, and practical skills necessary for everyday life.

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