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FORMATION OF GEOMETRIC CONCEPTS IN STUDENTS WITH INTELLECTUAL DISABILITIES SPECIFIC FEATURES OF KNOWLEDGE OF GEOMETRIC SHAPES

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Abstract

This article highlights the specific pedagogical and psychological characteristics of teaching geometric concepts to students with intellectual disabilities. Statistics show that students with such learning difficulties have a high level of formation of images of geometric shapes, creating the possibility of confusing the shape with secondary features (color, size) when creating flat and volumetric geometric shapes. The cases of naming are stable, with the forms of dismissal or mispronunciation problems being associated with everyday subject names. This process is based on the fact that motor processes, visual-practical and visual-figurative thinking are poorly developed, and verbal-logical thinking is not formed. The importance of real objects, visual aids, practical aids (drawing, constructing, coloring, shaping), and play activities in developing geometric skills is demonstrated. , the cognitive processes, emotional-volitional sphere, and specific features of activity organization of students with intellectual disabilities are typologically described.

Keywords: geometric concepts, students with intellectual harm, a special school,an exercise System, competition for activities, visual and sensory methods, step-by-step thinking, life congratulations, educational activities, practical skills, zone of close development, geometric shapes, thought development, concept formation.

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Introduction

The formation of geometric concepts in students with intellectual disabilities is a specific feature of their knowledge of geometric shapes, in particular, the difficulty in distinguishing between flat and volumetric geometric shapes.In students with intellectual disabilities, visual representations of geometric shapes are poorly formed when forming geometric concepts. Hesitation in correlating visual images of geometric shapes with verbal statement, tends to choose geometric shapes that resemble (shape) and secondary features (color, size) in the formation of geometric concepts in students with defects in intelligence, ignorance of the names of geometric shapes, difficulties in pronunciation are manifested in the difficulties of being able to correctly name Independent geometric shapes and Students replace the names of geometric shapes with familiar object names: circle – “apple”, “ball”, “tomato”, “watermelon”. This condition is characterized by motor disorders, underdeveloped visual-practical and visual-figurative thinking, and the absence of verbal-logical thinking in children with limited abilities. When forming knowledge about geometric shapes, it is necessary to have an idea of the characteristics of objective and subjective objects in life. At this stage, due to the poor formation of play and practical activities as a leading activity in preschool children with disabilities, this process is carried out at a low level. The task of accumulating a stock of concepts based on emotional assimilation during good activities is assigned to the study of elements of geometry in the lower grades of a special school. In the upper grades, they master geometric knowledge based on the generalization of knowledge formed in the lower grades.At this stage, mental activity takes a visual-practical form, and the development of visual-figurative and verbal-logical thinking is of great importance. This helps develop logical thinking and distinguish between shapes.Therefore, it is important to use real objects as visual aids that carry the geometric shapes being studied when teaching geometry to children with disabilities.Clear geometric concepts are perceived using the first signal system and lie on the basis of the development of the second. The connection of the second signal system increases the level of generalization of knowledge due to the generalizing role of the word. The verbal description of a geometric shape's visual representation develops a child's figurative-logical and visual-logical thinking. As a prerequisite, it is considered to perform various practical work with

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the studied material: drawing boundaries, making shapes, coloring, hatching, mastering the technique of drawing geometric shapes - graphic, measurement and constructive activities.The mental activity of students depends on the fact that it occurs in the form of establishing links between experience and certain actions, and the initial acquaintance of students with geometric concepts should be with the material that students can get acquainted with with their own hands. Analysis of the characteristics of the formation of geometric concepts in students with intellectual disabilities allows us to talk about the presence of disorders in all aspects of their personality. Thus, the following features can be distinguished: features that relate to cognitive processes (disorders of perception, attention, thinking, memory, speech, etc.); features that relate to the emotional-volitional and personal sphere (low differentiation of emotions, lack of emotions, weakness of stimuli, etc.); characteristics related to the organization of activity (immaturity of activity motives and goals, low organization of activity, weak self-control, etc.). The above can serve as the basis for the following typology of the characteristics of the formation of geometric concepts in students with intellectual disabilities. Typology of the characteristics of the formation of geometric concepts in students with intellectual disabilities in a special school

I. **Features of Cognitive Processes**

1. Poor development of perception (slowness, narrowness, fragmentation, insufficient differentiation, low efficiency).
2. Lack of spatial perception.
3. Poor development of attention (instability, predominance of involuntary attention, lack of sufficient purposefulness and organization, lack of concentration of attention).
4. Insufficient development of thinking (lack of formation of thought processes, dominance of visual-practical thinking, superiority of reproductive thinking over productive thinking, sluggish mobility of thought processes and lack of sufficient activity, stereotyping, fragmentation).
5. Sluggish development of speech (late stay in the formation of all stages of speech activity, limited vocabulary, poverty of the active vocabulary, insufficient differentiation of the meaning of words, insufficient development of all functions of speech).

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6. Low levels of memory development (small recall information volume, low recall accuracy and robustness, incorrect repetition of memorized material, lack of learning material recall skills).

II. **Characteristics of the Emotional-Volitional and Personal Sphere**

1. Delayed emotional development.
2. Low differentiation and weak regulation of emotions.
3. Lack of volitional actions, weakness of intentions and motivations.
4. Lack of critical attitude towards actions and deeds.
5. Lack of independence and purposefulness.
6. Psychic barrier.
7. Hyperactivity.
8. Rapid fatigue and low work efficiency.

III. Features of activity organization

1. Inadequate activity motives and goals.
2. Lack of interest in the subject of activity.
3. Low self-control.
4. Lack of critical attitude to the results of activity.
5. Poor organization of activities.
6. Lack of planning skills. It should be noted that the above-mentioned disorders in the cognitive, emotional-volitional, and personal spheres are amenable to correction. This is confirmed by research by leading defectologists, who noted the presence of positive dynamics and great potential in the development of geometric concepts in students with intellectual disabilities in special schools. This special upbringing and education develop in children of this category the ability to master not only elementary mental functions, but also higher mental functions such as meaning extraction, voluntary attention, comparison, generalization, and abstraction. The geometry elements teaching methodology emphasizes special requirements such as the mandatory change of the main and insignificant properties of the geometric objects under consideration in order to implement the formation of a clear image.

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