

PEDAGOGICAL-PSYCHOLOGICAL POSSIBILITIES OF THE FORMATION OF GEOMETRIC CONCEPTS IN STUDENTS WITH A DEFECT IN THEIR INTELLECT**Shadiyeva Navbahor Khabibullayevna**

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Annotation: This article will help readers with a defect in their intellect learn geometric processes. In the assimilation of geometric knowledge in special schools, a software system plays an important role, since in the speakers geometric shapes, figures and file quality teach differentiation. Attention is paid to the development of spatial thinking of students using geometric processes in the process, exhibited processes, visual and sensory methods, as well as tools connected with life experience. This helps students develop physical geometric features not only in their own right, but also practical vision methodology. To give students exercises based on life experience and to participate in their practical activities, the support of the methodology is explained.

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, L.S. Vigotsky, zone of close development, geometric shapes, thought development, concept formation.

Modern psychology treats knowledge as an activity evaluated from the point of view of its outcome. In the concept of such knowledge, their assimilation implies, first of all, the acquisition of actions corresponding to knowledge. The carrier of these steps is exercises. The acquisition of actions lies in the basis of the formation of knowledge in the formation of geometric concepts in students with defects in intelligence. So, in students with a defect in Special School intelligence, mastering geometric concepts should be carried out through an exercise system. Taking into account such aspects as the activity characteristics of the formation of geometric concepts in students with a defect in their intellect, that is, the immaturity of activity motives and goals, the lack of interest in the topic of activity, the formation of geometric concepts in them should begin with the motivation to introduce the concept. Through a special system of exercises, it is possible to create a situation that will help students with a defect in their intellect understand the need for geometric knowledge in the formation of geometric concepts. The formation of need promotes increased cognition and learning activity, which has a positive effect on the effectiveness of training. One of the most important conditions for the formation of interest in the study of the concepts under consideration is the involvement and reliance on the life experience of the formation of geometric concepts in students with a defect in their intellect. The actualization of such an experiment makes it possible to systematize the fragmentary representations present in the formation of geometric concepts in students with a defect in the intellect, which provides the basis for the formation of solid geometric concepts. The formation of interest in the material under study is extremely important, since interest allows you to partially compensate for shortcomings in intellectual activity. The motivation for introducing many geometric concepts is through the consideration of models of figures (Triangle, Square, Circle, Circle, cylinder, etc.), objects in the environment (classroom, study equipment, railway rails, etc.), through which a visual-emotional basis is used, which provides a wide and comprehensive introduction to the



formation of geometric concepts in readers with a defect in their intellect. It provides the basis for enriching the emotional experience of the formation of geometric concepts in students with a defect in such a direct cognitive intelligence, which is carried out in a particular situation, with images of geometric figures in a different form, in a spatial state. Quantitative and qualitative enrichment of the emotional experience of the formation of geometric concepts in students with a defect in their intellect provides favorable conditions for the formation of generalized representations and concepts. In students with disabilities, the process of forming geometric concepts is organized taking into account their cognitive and psychological characteristics. For students in grades 6-7, this process aims to make students think independently, visualize, and develop practical skills. The methodology for the formation of geometric concepts based on exercises relied on the following theoretical approaches: special pedagogical principles – individual capabilities of students and the pace of development are taken into account. L.S. Vigotsky” zone of close development ” – the range of knowledge that a student can achieve with the current level of knowledge is determined. An activity – based approach-emphasis is placed on the formation of concepts through practical exercises. Visual and sensory methods-used in the development of students ' perception and spatial thinking. The formation of geometric concepts based on exercises for students with disabilities performs the following tasks: 1. Familiar and differentiated geometric shapes and figures. 2. To form representations of geometric symbols (side, angle, radius, diameter). 3. Development of spatial thinking and memory skills. 4. Teaching the application of geometric knowledge in practical exercises. 5. Oratory and strengthen logical thinking. Stages of the methodology: the formation of geometric concepts based on exercises is carried out in three stages: exercises for the separation of shape, color and size; familiarization of geometric shapes through Real objects or paintings; grouping and comparison of simple objects; at this stage, visual aids, constructive materials and drawings are widely used. Formation of geometric concepts based on exercises for students with limited opportunities stage: identification of a shape based on a sample; drawing and making geometric figures; naming shapes and classifying them; performing simple geometric issues. Exercises are given in sequence with the principle of” from easy to complex ” and are adapted to the individual capabilities of each student. The stage of strengthening and evaluating exercises for the formation of geometric concepts based on exercises for students with disabilities: independent identification of the studied forms. Linking geometric concepts with everyday life. Assessment of knowledge through tests and practical tasks. In the assessment, not only the result is taken into account, but also the activities of the student and the process of performing the exercise. Exercise System: Exercises for students in grades 6-7 are classified into the following types: • Visual exercises-familiar to forms through pictures and objects. • Practical exercises-drawing shapes, making figures. • Verbal exercises-naming, comparing forms and signs. * Exercises based on gaming technologies – encourage students to participate in an active and fun way. The results of the experiment showed that the methodology, organized on the basis of exercises, increases the level of assimilation of geometric concepts in students with disabilities of grade 6-7: develops spatial thinking and attention; increases interest in educational activities. Various exercises and problem situations help to motivate the introduction of concepts. Below are examples: Before studying an equilateral triangle, the following exercise can be suggested: "Draw a square. Draw an incision inside the square so that two triangles are formed. What about the sides of the resulting triangles?». By performing this exercise, we pay attention to the fact that in each resulting triangle, two sides are equal, which allows us to introduce the concept of an isosceles triangle. Before introducing the concept of adjacent angles, the following exercise can be proposed: "draw a circle with a center O and draw a diameter AB in it. Draw Radius OS such that $AB \perp OS$. What about the angles formed?». Solving this issue, it is found that the resulting angles have one common side, the other two sides form a straight line, and the sum of their degree dimensions is 180° , which makes it possible to introduce the concept of adjacent angles.



Performing such exercises not only contributes to the motivation to introduce the concept, but also makes it possible to repeat and systematize the previously studied material, in which it is carried out not in the traditional form of "question and answer", but in the process of practical activity of forming geometric concepts in students with a defect in their intellect, which leads to In addition, the formation of geometric concepts in students with a defect in their intellect when solving issues makes various drawings, creates drawings, distinguishes drawing elements, combines and revises them from the point of view of different figures, switches from concrete actions to working with images, which helps to develop visual-practical and visual-figurative thinking of the formation of geometric concepts in students with An important step in the study of geometric concepts is to identify the important properties of this concept that make up the definition. This should take into account the characteristic inherent in the formation of geometric concepts in students with a defect in their intellect, that is, the inability to choose important and fundamental properties from many signs of an object. Therefore, in students with a defect in their intellect, it is necessary to focus on the formation of geometric concepts, indicating the important features of the concept under study. This is achieved through a system of exercises, when the important character system of the concept becomes the object of various actions in the formation of geometric concepts in students with a defect in their intellect. This includes exercises of a practical nature, the construction of objects that meet the indicated characteristics, the use of geometric figure models, exercises on the application of previously studied concepts. Below we give examples: Acquaintance with the important features of the concept of adjacent angles in Grade 7 can be carried out by performing the following exercise: "draw an angle, let it be smaller than an arc angle. Extend one side of it beyond the tip of the angle. What about the angles formed?». The result is adjacent angles, with their important properties familiar to students with defects in intelligence, the formation of geometric concepts. In addition, the concept of the arc angle and its graded size are repeated. In the introduction of the concept of an equilateral triangle (Grade 7), the focus of forming geometric concepts in students with a defect in intelligence should be on the equality of all sides. To do this, it is necessary to draw several triangles, measure their sides, highlight triangles with equal sides. It is then reported that such triangles are called equilateral. The introduction of the concept of the axis of symmetry (Class 7) can be done through the exercise of folding in half the models of geometric figures (square, circle, rectangle, etc.) made of paper. In this case, students with a defect in their intellect can independently distinguish the important features of the concept under which the formation of geometric concepts is being introduced. By performing active actions in distinguishing important features of concepts, the formation of geometric concepts in students with disabilities in their intellect is involved in explaining the new material, they become equal participants in the pedagogical process, do not remain ordinary passive listeners. This is especially important in teaching the formation of geometric concepts in students with a defect in their intellect, since active activity in learning, interest in them, the application of previously studied concepts in relation to new ones helps to remember and systematize geometric material well and firmly. The experimental process, precisely the instability of geometric knowledge, their rapid forgetfulness, the systematics of knowledge are characteristic of many of the formation of geometric concepts in students with defects in Special School intelligence. At the next stage, important features are synthesized, which are distinguished in the formation of the concept, and the definition of the concept is formed. A distinctive feature of the formation of geometric concepts in students with a defect in their intellect is that they have difficulty forming definitions, rules and conclusions. Therefore, it is important for students with a defect in their intellect to formulate geometric concepts that the meaning of each word used in the definition of the concept is understandable, since the lack of understanding of the meaning of individual words makes it difficult to master the definition and prevents complete recall. Mastering the definition of the concept is facilitated by exercises on the recognition of objects belonging to the concept, drawing conclusions arising



from the definition of the concept. In students with a defect in their intellect, it is convenient to use ready-made drawings or drawings for exercises on the recognition of relevant objects in the formation of geometric concepts. In this, when forming geometric concepts in students with a defect in their intellect, actions such as distinguishing objects belonging to the concept in drawings, considering objects from the point of view of other concepts are formed. Observation of geometric processes in students with intellectual errors are special system tools for effective learning in schools. The installation of the world, visual and sensory methods, which can be applied to the realization of geometric individuals, helps to develop the spatial thinking and perception of students, relying on the life experiences of students. The exercises are imbued with the emergence of "from easy to complex" and are adapted in an individual way by the students, to ensure that the appropriation of geometric properties in the students in conscious clarity. The process of Ush helps students to develop practical support, independence and vision, as a result of which geometric knowledge increases at the level of production. Geometric elements have practical activity, systematization of imagination and significant security of the materials studied.

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