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CHARACTERISTICS OF THE DEVELOPMENT OF GEOMETRIC CONCEPTS OF MENTALLY DISABLED STUDENTS

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ANNOTATION

This in the article The uniqueness of mental activity, deficiencies in the verbal and logical form of thinking lead to the emergence of difficulties in the process of forming abstract mathematical concepts and laws in students with mental retardation. reason to be cause passed . Depending on the bright qualitative characteristics (size, shape, name) of quantitative representations and the spatial location of geometric shapes given .

Keywords: Mind weakness, memory, thinking, perception, geometric concepts, speech apparatus , motors.

The uniqueness of mental activity, deficiencies in the verbal and logical form of thinking cause difficulties in the formation of abstract mathematical concepts and laws in students with mental retardation.

Weakness of perception, mind weak students familiar they don't even recognize figures , objects from within, from the environment to find they suffer . Difficulties in mental operations lead to the dominance of direct, concrete perception, which prevents the mastery of elementary mathematical concepts.

It depends on the bright qualitative features (size, shape, name) and spatial arrangement of geometrical forms of quantitative representations. Underdevelopment of fine motor skills of students with mental retardation (motor deficiency, stiffness of movements or, on the contrary, impulsivity) causes significant difficulties in counting objects : the student names one geometric shape, but several geometric shapes at the same time takes or pushes, ie The number of geometric shapes obtained with the given numbers do not correspond to each other.

It is known that mentally retarded students adapt to new conditions with great difficulty. Weak dedifferentiation often leads to difficulties in acquiring knowledge. Students quickly lose the features that allow them to distinguish numbers, actions, rules, etc. One of the reasons for the assimilation of knowledge is the incomplete storage of the acquired knowledge, incorrect storage, the difficulty of integrating knowledge into systems, the insufficient division of this knowledge system.

The difficulties of students with mental retardation arise from the underdevelopment of thinking processes associated with the inertia of nervous processes. The lack of development of thinking processes is observed in difficulty in performing examples, problems, practical actions, transition from one mental operation to another. Given the basis, they cannot change this knowledge according to new conditions (for example, 5cm+3mm=8cm (or 8mm)). Their ability to generalize is also poorly developed.

This is manifested in difficulties in the formation of mathematical concepts, assimilation of laws and rules. With difficulty, the concepts of number and counting are formed, the laws of the decimal system are mastered.

Students often have difficulty counting unusual or differently placed objects. Mentally retarded students connect concepts with great difficulty due to their underdeveloped thinking ability, and after mastering one of them, the other has an idea of the opposite (more - less, above - below, etc.). they may not. When studying the segments of the series of natural numbers, it is difficult to connect them in pairs, to perceive them, to compare numbers, to establish equivalence relations.

Space - time is characterized by non-formation of images . In mental users, the complexity of the development of the user's spatial imagination is manifested in the first place. Their lack of verbal cues for the spatial location of body parts, while visually managing their body schema, prevents the formation of other types of spatial orientation.

Disruption of subsequent processes is manifested in the execution of instructions and sequences of actions, placing elements on given lines, placing mosaics, geometric shapes, remembering their rows, playing series of numbers. is observed in the establishment of mutual relations in the series of numbers. Students with mental retardation face great difficulties in mastering mathematical concepts due to the lack of cognitive development. Due to the optimal level of the program requirements, they cannot master the new material immediately after the first explanation by the teacher - a lot of explanation by the teacher is required.

To consolidate a new method of calculation or to solve a new type of problem, such students must complete a large number of practical exercises, and the speed of such students' work usually slows down. With long-term, purposeful, specially organized corrective work, the formation of mathematical ideas is very slow, with great difficulty.

The process of formation of elementary mathematical concepts in students with mental retardation is inextricably linked with solving the most important correctional task - adaptation to social and household life. In this regard, the teaching of basic mathematical concepts should first of all be clearly applied.

For students with mental retardation, learning geometrical material presents great difficulties. The reasons for these difficulties arise, first of all, from the specific characteristics of cognitive and emotional-volitional activity of mentally retarded children. This indicates the underdevelopment of attention, imagination, imperfection of analysis, synthesis, generalization and abstraction. Mentally retarded students have limited observation reserves, little life experience , and undeveloped emotional and motor skills . Observation and study of students in the educational process, analysis of student work in drawing, drawing, modeling, special psychological and pedagogical studies show that students have great difficulties in spatial orientation .

Pupils distinguish geometric shapes, especially polygons he wishes he could not . They better recognize and distinguish a circle, a triangle, a ball, a cube. They make fewer mistakes when choosing figures according to the pattern.

However, due to the one-sidedness of their imagination, mentally retarded students only choose the same figures of the same size and color in the sample. Significantly more errors occur when asked to select geometric figures by name.

Students with mental retardation have a hard time remembering the names of geometric shapes and cannot always correctly associate them with the corresponding figures. Students have great difficulty learning angles and classifying triangles according to angle types. Mix right angle, right triangle and rectangle. Incorrect terminology appears: right angle, obtuse angle or acute angle, acute.

Such errors in the answers of students with mental retardation can be explained not only by the difficulty of distinguishing these figures, but also by the imperfection of phonemic hearing. It is especially difficult for them to remember and correctly pronounce the names of figures such as triangle, rectangle, parallelogram, parallelepiped. This is related to difficulties in pronunciation, because the majority of students with mental retardation have defects in pronunciation, because in most students with mental retardation, it is related to the imperfection of the movement of the speech apparatus.

Weakness of thinking processes, difficulties in distinguishing the important signs of the studied concept, some students do not have a clear idea about geometric shapes, even when they move to a higher class.

For geometric figures, students include, for example, quantities - length of area, volume; educational equipment - pencil, paper; measuring and drawing tools - ruler, circle, protractor. Students with mental retardation often do not have a clear idea about the important signs of figures.

When defining a figure, even high school students show only one important sign, not paying attention to the fact that it is not enough for this number: "This is a square, all sides are equal", "This is a rectangle, its opposite sides are equal."

Such answers indicate that students' geometric imagination is weak and geometric concepts are not formed. Students with mental retardation have special difficulties in comparing geometric figures. They cannot compare geometric figures and often cannot compare geometric shapes and objects even if they have knowledge. Psychological studies show that students with mental disabilities perceive an object given in an unusual situation as another object.

These features of the perception of mentally retarded children are confirmed when they recognize a geometric figure whose location is shown in different positions. Considering these difficulties, the teacher should change the position of the figures in the plane and in three-dimensional space to correct the deficiencies in the students' imagination. It is easier for a mentally retarded student to draw a figure than to name it, to talk about its features than to show (find) a figure, that is, to replace judgment with demonstrative action

Students with mental retardation have little idea about quantities, do not see a significant difference between them, do not clearly indicate the units of measurement of each quantity. Often replaced by some linear measurements. others, area units with length or volume units, length measures or area measures with area measures. The reason for this is to separate the specific image of the units of measurement from their names.

The name of the unit of measurement, for example, centimeter, square centimeter, cubic centimeter, does not have an actual representation of the unit of measurement. As a rule, having weak motor skills, weakness of the small muscles of the hand, stiffness of movements, students almost do not master the skills of working with a ruler, square ruler, circle, protractor.

They often measure with a ruler from the end of the meter, or from the unit, rather than starting from zero. When comparing angles, students master the skill of correctly combining the upper part of the measured angle and the drawn triangle over a long period of time. When using a protractor, they make mistakes in measuring and constructing angles: the top of the angle does not coincide with the center of the protractor, but with the start of the protractor, they have difficulty determining the degree value.

Students' visual perception is not well developed, so they make big mistakes in approximate distance estimation when comparing the sides of individual geometric figures. Students with mental retardation have difficulties in using geometrical knowledge in practical activities.

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