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FEATURES OF THE FORMATION OF NATURAL-SCIENTIFIC PICTURES OF THE WORLD IN YOUNGER SCHOOLCHILDREN

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Abstract:

The article describes the features of the development of mental processes in primary school students and how they manifest themselves in the process of cognition and understanding of nature. He also details the strengthening and development of key characteristics of cognitive processes, such as cognition, attention, memory, imagination, thinking and speech, in the early school years

Keywords: environment, perception, imagination, ideal, trust, belief, science, imagination, memory, thinking

The development of a child's motivational-value, motivational-need aspect is very important for the younger student's understanding of reality and the development of his personality, focusing on the emergence of stable values and moral norms in the child and the implementation of his duties, which are necessary, which allows him to educate the elements of ecological culture and promotes self-development of the individual. In particular, there are three main components: the doctrine of the search for meaning; the doctrine of the meaning of life; doctrine of free will. The doctrine of the meaning of life states that there are more general ways of finding meaning, such as creativity, experience, and relationships. Freedom is an incentive to independently search for the necessary meaning of life as responsibility for one's own destiny.

An analysis of the psychological and pedagogical literature showed that in the process of learning about the world around it is necessary to take into account the possibilities of nature, the child's abilities, age, and create conditions for personal development and independent growth. In particular, in the field of psychological and pedagogical science, it is emphasized that education is subjective: "as an element of the subject's life"; as a way of predicting, coding and copying the steps of an activity; understood as a conscious activity related to goal setting, planning, problem solving and control.

Research in the world of science has shown that mental processes underlie the human psyche, consciousness and personality. In science, mental processes are a dynamic representation of reality: emotions, perception, memory, thinking, imagination, emotions, which provide a reflection of the surrounding world, the formation of knowledge and skills, life experience and activity. Let us consider the features of the development of mental processes in younger students and how they manifest themselves in the process of cognition and understanding of nature. By the time they graduate from school, children will have a certain level of vision, a stock of specific knowledge, rational ways of studying the external properties of objects. It is easy for a preschooler to understand the general connections, principles and laws underlying scientific knowledge, but the highest forms of figurative thinking are the culmination of their intellectual development ([L.A. Wenger [3; p. 35], necessary for a child to grow up). It is necessary to know the world around you, as well as to understand yourself. Psychologists say that the stages of development do not change, but intersect in ontogeny, are significantly intertwined. The process of intellectual development of children proceeds more rapidly and ends earlier than the process of personal growth. The periods of cognitive development are somewhat shorter than the periods of personality development.

At an early age, the main characteristics of cognitive processes, such as cognition, attention, memory, imagination, thinking, speech, are strengthened and continue to develop. As they enter the school, their need increases, and these descriptions determine the level of understanding and knowledge of students. At the emotional stage of learning the world by a child, like any person, there is a gradual learning process from the perception of primary, specific things to things general, abstract, general, important with a limited description at the first opportunity. . However, since the emotional form of reflection is unique, it is difficult to distinguish between primary, accidental, and general. This creates in the child's mind an objective condition for recording abstract understanding in general, that is, a more complex form of cognition—abstract thinking. Scientists point out that the emotional-visual form of reflection of objective reality is not a mechanical, mirror copy of reality, but the result of an active, purposeful development of objective reality. Science has shown that the main form of emotional reflection of the world around us is emotions that allow a person to perceive signals and display the properties and characteristics of objects and states of the outside world. Perceptions connect the child with the outside world and are the main source of formation of the image of the world with the help of natural science and the main condition for the spiritual development of the child

in the transition from emotions to thinking. That is why it is so important to understand the world from an early age and systematically enrich children's senses as they master the basics of scientific abstraction.

"Cognition is now a more complex and active process, based on the child's ability to rethink the individual details of the object, highlighting the most informative moments." Perception is an image of the present, but as a component it includes not only the present, but also the past and partly the future. In perception, along with emotional images of real objects and natural phenomena, the child has a basis for thinking, not only reflecting an object or phenomenon, but also the relationship of their properties and qualities. Without emotional distraction and generalization, children would not be able to think. The processes of generalization in cognition are the identification of interrelated features of objects, the identification of typical aspects based on multiple perceptions as a result of various activities, which is also an important condition for the emergence of imagination as a step towards thinking. Primary school students use various analyzers to understand the world around them: sight, hearing, touch, smell and much more. Unfortunately, in the traditional form of education, students often use visual analyzers when observing natural objects and phenomena, and the development of other analyzers is not the task of the teacher and parents, although all analyzers in cognition are the Great Enlightener Yu.A. Comenius noted the importance of this in his "golden rule". Natural science concepts, unlike others, are richer in content and at the same time more prone to the formation of ideas, since children can spend more time directly in the arms of nature. Thus, the ideas of younger schoolchildren should be taken into account when studying nature, and the effective, systematic formation of these ideas should become one of the most important tasks in each child's knowledge of the real world.

The process of thinking, the dialectics of the transition from an emotional image to abstraction is extremely complex: consistent, interconnected and at the same time continuous. As a rule, imaginations consolidate and preserve the typical external features of previously perceived natural objects and phenomena or their models. From the point of view of the science of the physiology of higher nervous activity, the totality of neural connections or systems formed in the cerebral cortex with the direct impact of objects on the sense organs is the neurodynamic basis of imagination. The faster the effects of external objects are repeated, the easier it is for nerve connections to move, a set of specific "traces" in the brain, which is a necessary condition for the formation of perceptions in a person. Imaginations are closely related to intuition and perception, but reflect some general, descriptive features, and not all features found in an object or event. Thus, the imagination is a visual image of an object or event, which is formed on the basis of past experience, that is, these feelings and perceptions, by recreating the image in memory or imagination. Accordingly, in the field of science, two types of imagination are distinguished: the imagination of memory and the imagination of imagination.

At the age of 7-8 years, the perception of the environment gradually changes in children: along with the reproductive images characteristic of preschoolers, productive images develop. Productive images of the imagination are the product of new combinations of some elements of reality. Reproductive images of the imagination are images of certain objects and natural phenomena that are not perceived simultaneously.

The ideas of younger schoolchildren about objects and natural phenomena differ significantly in their primary and general ideas from preschoolers, although this specificity can only be explained by age. In general, the initial assumptions are more individual and clear than the general assumptions from a visual point of view, but have a certain generalization.

In the process of formation by primary school students of the natural-science landscape of the world, it is especially important to form in children adequate initial ideas that are distinguished by brightness, clarity, completeness, and general outlines. The totality of natural concepts about real objects and phenomena, as well as models that reflect them, is the most important foundation for the education of each child. It is like a transition from perception to abstract-logical thinking. Primary school students, on the contrary, differ from abstract concepts in that they are visual and do not distinguish between internal, hidden regular connections and relations of the surrounding world. However, it is important to understand that perceptions, especially spatial ones, play an important role in the process of arbitrary development of children's memory, imagination, and thinking. Researchers say that such assimilation of ideas can be achieved by regulating the human speech system. It is spatial images that allow younger students to understand and explore nature, allow them to understand the "structure" of the world around them and visualize natural science as a system of model images. It is also important to distinguish between the degree of generalization and schematization of the spatial image of reality. This image is formed when the child learns both individual aspects of the world around him and the whole state. The generalization of these images depends on various conditions: descriptions of the spatial properties of reflected objects, tasks in the child's activity, the student recreates the spatial properties of natural objects and phenomena in the form of various graphic models: pictures, diagrams, small drawings, skills in acquiring special symbols. The ability to depict the world in the form of various graphical models of general spatial relationships between both primary objects and real objects requires special training for both preschoolers and primary school students. The goal is to enable students to effectively explore nature and develop a way of thinking based on the natural sciences, working with imagination, speech and other psycho-physiological processes. In addition, science has proven that the ability to develop and assimilate spatial imagination well is the basis that allows primary school students to engage in creative activities to understand and comprehend reality. Compared to preschoolers, the attention span of primary school students is becoming more and more arbitrary, but involuntary concentration in primary school remains much stronger. When studying nature, it is

important to keep in mind that voluntary attention is more often manifested in elementary school students only if the object or event that attracts the most attention is very interesting and important for the child.
Logical, mediated memory develops more slowly, and this type of memory development requires solving specific mnemonic tasks when reading and teaching children to master mnemonic operations, that is, memorizing operations and using them in various situations. Imagination - as a universal human ability to build new holistic images of reality by processing the content of the formed practical, emotional, intellectual and emotional-spiritual experience - is the personification of the natural-scientific image of the universe in primary school students. is irreversible in the formation of an image that is important for. It is shown that primary school students use figurative constructions to build a concept of a natural object or phenomenon until the concept itself is formed. Students will also be able to create in their minds an excellent clear scheme of this concept of nature, forms of behavior before creating a table.
Thus, in the process of imagination, the child's knowledge may not yet pass into the category of logical ones, but in his mind there is already a comparison of general and primary knowledge at the level of intuition. This relationship occurs by distinguishing between general and specific features of objects and phenomena in images, both involuntarily and under the influence of voluntary activity in the analysis and synthesis of thought, thanks to the interaction of images that reflect consciousness about objects and natural phenomena.

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