Features of the Formation of A Natural Science Worldview About 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 the motivational-value, motivational-need front of the child is extremely important for the younger student to understand the reality and the maturation of his personality, it is necessary to focus on the emergence of stable values and ethical criteria in the child and the fulfillment of his task, which allows the child to educate elements of ecological culture and promotes independent self-development of personality. In particular, three main components are distinguished: the doctrine of striving for meaning; the doctrine of the meaning of life; the doctrine of free will. In the teaching about the meaning of life, much more general ways of searching for meaning are noted, such as creativity, experiences and relationships. Freedom as responsibility for one's destiny is a stimulator of independent search for the right meaning of life.

The analysis of psychological and pedagogical literature has shown that in the process of students' cognition of the surrounding world, it is necessary to take into account the possibilities of nature, the child's abilities, age characteristics and create conditions for the maturation and independent growth of his personality. In particular, in the field of psychological and pedagogical science, the subjectivity of education is emphasized: as an "element of the subject of one's own life activity"; as the implementation of forecasting, coding and transfer of stages in the activity; it is understood as a conscious activity related to setting goals, planning, solving and controlling an educational task.

In research papers devoted to scientific knowledge of the world, it is noted that mental processes form the core of the human psyche, consciousness, personality. In science, mental processes are understood as dynamic reflection of reality: feelings, perception, memory, thinking, imagination, emotions that provide a reflection of the surrounding world, the formation of knowledge and skills, life experience, and the implementation of activities. Let's consider what features of the development of mental processes are characteristic of younger schoolchildren and how they manifest themselves in the process of cognition and perception of nature. Upon reaching graduation age, children acquire a certain level-a view, a specific stock of knowledge, acquire some rational ways to check the external properties of objects. It is easy for a preschooler to understand the general connections, principles and patterns underlying

scientific knowledge, but the highest forms of visual-imaginative thinking are the completion of their intellectual development, a necessary condition for a child's growing up is his self-awareness along with knowledge of the surrounding world. As soon as a child enters school, under the influence of education, all his processes related to the acquisition of knowledge, the development of abilities and personality qualities begin to be rebuilt. It is the periods of development as a person and in terms of acquiring knowledge, according to psychologists, that do not alternate, but overlap each other in ontogenesis, significantly overlap. The process of intellectual maturation of children proceeds somewhat more intensively and ends earlier than the process of personal maturation. In addition, the periods of acquiring knowledge last somewhat shorter than the periods of personality development.

At primary school age, such basic characteristics of the processes associated with obtaining knowledge as perception, attention, memory, imagination, thinking and speech are fixed and continue to develop. As they enter school, their need increases, and these descriptions determine the level of perception and cognition of nature by students. At the sensory stage of the child's cognition of the surrounding world, as with any person, there is a gradual learning process from the perception of primary, concrete things to the general, abstract, reflection of general, essential things with a limited description in the initial possibilities. However, the sensory form of reflection is specific, fragmented, which makes it difficult to distinguish from the primary, random general, essential.

This creates objective conditions in the child's mind for recording the general, abstract in his mind, i.e. a more complex form of cognition arises – abstract thinking. Scientists note that the sensory-visual form of reflection of objective reality is not considered a mechanical, mirror copy of reality, it is the result of an active, purposeful assimilation of objective reality. It is known in science that the main form of sensory reflection of the surrounding world are feelings that allow a person to perceive signals and reflect individual properties and signs of objects and states of the organism of the external world. Sensations connect the child with the outside world and are the main source of the formation of the image of the world with natural science, as well as the main condition for the spiritual maturation of the child during the transition from feelings to thoughts. It is for this reason that it is extremely important to comprehend the world around us from an early age and systematically enrich children's feelings when mastering elementary scientific abstraction. ”Perception is now considered to be a more complex active process based on the child's consistent rethinking of individual details of the object with the allocation of the most informative points." Perception is an image of the present, but it includes as components not only the present, but also the past, and partly the future. In perception, along with sensory images of real objects and natural phenomena, the child has a basis for thinking, there is not only a reflection of the object or phenomenon, but also the relationship of their properties and qualities. Without emotional distraction and generalization, the transition of children to thinking would be impossible. The processes of generalization over time of perception are the identification of interrelated signs–signs of subjects, the identification of typical aspects based on repeated perception as a result of various types of activity, which is also an important condition to give way to imagination as a stage of shift towards thinking. In the process of perception of the surrounding world by younger schoolchildren, various analyzers are involved: visual, auditory, tactile, olfactory, etc.. Unfortunately, in the traditional form of education, students often use visual analyzers when observing objects and natural phenomena, while the question of the development of other analyzers is not among the tasks of the teacher and parents, although the great teacher Yu.A. speaks about the importance of all analyzers in cognition.This is what Komensky noted in his "golden rule". Naturalistic visions, unlike other content, however, since children can spend a lot of time directly in the embrace of nature, these visions are considered much richer in their ability to form. Thus, the imagination of younger

schoolchildren should be taken into account when studying nature, and the effective, systematic formation of these ideas when each child comprehends the real world should become one of the most important tasks.

The process of thinking, the dialectic of the transition from sensory image to abstraction is extremely complex: consistent, interconnected and at the same time continuous. Typically, typical external signs of previously perceived objects and phenomena of nature or their models are fixed and preserved in representations. From the point of view of the science of physiology of higher nervous activity, the neurodynamic basis of representations is a set or system of neural connections that arise in the cerebral cortex when objects directly affect the senses. The faster the action of external objects repeats, the easier neural connections move, that is, a set of specific "traces" in the brain, which is considered a necessary condition for the formation of ideas in humans. Perceptions are closely related to sensations and perception, but they are somewhat general, descriptive signs, and not all the signs that manifest in an object or phenomenon. Thus, imagination is a visual image of an object or phenomenon, and this image is created on the basis of past experience, that is, feelings and perceptions, by recreating the imagination in memory or imagination. Depending on this, two types of imagination are distinguished in the field of science: memory imagination and imagination imagination.

In children aged 7-8, the perception of the surrounding world is consistently changing: along with the reproductive imaginative representations characteristic of preschoolers, productive imaginative ones appear. Productive images of imagination are the product of new combinations of certain elements of reality. Reproductive images of the imagination are images of certain objects and phenomena of nature that are also not perceived at a given time.

In the ideas of younger schoolchildren about objects and phenomena of nature, there is a big difference in primary and general ideas than in preschoolers, although this specificity is explained not only by age. In general, the primary representations are more individual and specific in terms of clarity than the general ones, but they will embody a certain generalization.

In the process of forming a natural science picture of the surrounding world by younger schoolchildren, it is especially important for children to form adequate initial ideas that differ in brightness, clarity, completeness, as well as general ideas embedded in the scheme. The totality of naturalistic ideas about real objects and phenomena, as well as models that reflect them, is the most important foundation of every child associated with obtaining knowledge. This is like a step in the transition from perception to abstract logical thinking. The imagination of younger schoolchildren, in turn, differs from abstract ones, i.e. abstract concepts by their visibility and the fact that internal, hidden natural connections and relationships of the surrounding world are not distinguished. However, it is necessary to understand that imagination, especially spatial, acquires great importance in children's memory, imagination, thinking in the process of their arbitrary assimilation. Researchers say that this absorption of images makes them possible due to the regulation of the human speech system. Perception and study of nature by primary school students, it is spatial perception that allows them to understand the "structure" of the surrounding world, to present a natural-scientific image of the Universe in the form of a system of image models. It is also necessary to distinguish the degree of generality and schematicity of the spatial image of reality. This image is formed in the child in the process of cognition of both individual aspects of the surrounding world and its integral state. How generalized these images are depends on various conditions: descriptions of the spatial properties of the reflected objects, tasks in the lesson in the child's activity, the student's ability to recreate the spatial properties of objects and natural phenomena in the form of various graphic models: drawings, diagrams, small drawings, special symbols. The ability to represent the surrounding world in the form of various graphic models of both primary objects

and general spatial connections between real objects requires special training for both preschoolers and younger schoolchildren. The purpose of this is so that the student can effectively study nature and develop a way of thinking based on natural sciences, while imagination is mediated by thinking, speech and other psychophysiological processes. In addition, science has proved that the ability to develop spatial representations well and assimilate them is such a base that allows younger schoolchildren to carry out creative activities in understanding and comprehending real reality. Compared with preschoolers, the attention of younger schoolchildren is becoming more arbitrary, but in the lower grades, involuntary attention remains much stronger. When learning about nature, it is necessary to take into account that arbitrary attention in younger schoolchildren manifests itself quickly enough only if the object or phenomenon that directly attracts attention is of exceptional interest and significance for the child.

Logical, and mediated memory develops more slowly, the development of this type of memory requires solving special mnemic tasks in the process of reading and teaching children mnemic actions, that is, mastering memorization operations and applying them in various situations. Imagination - as a universal human ability to construct new holistic images of reality by processing the content of the formed practical, sensual, intellectual and emotional – spiritual experience -has an enduring significance in the formation of a significant image of the natural-scientific image of the world in younger schoolchildren. It is proved that elementary school students with the help of imagination figuratively construct the content of the concept of an object or phenomenon of nature up to the formation of the concept itself. Also, students can create in their imagination behavioral models related to this concept of nature, up to the creation of a perfectly clear diagram, table.

Thus, in the process of dreaming, the child's cognition may not yet pass into a logical category, but in his consciousness there is already a correlation of gross and primary cognition at the level of intuition. This correlation occurs due to the interaction of images reflected in consciousness about objects and phenomena of nature, both involuntary and under the influence of volitional activity during mental analysis and synthesis, with the allocation of common and inherent properties of objects and phenomena in images.

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