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IJEMR Transactions, online available on 12th Jan 2021. Link

[:http://www.ijiemr.org/downloads.php?vol=Volume-10&issue=ISSUE-01](http://www.ijiemr.org/downloads.php?vol=Volume-10&issue=ISSUE-01)

DOI: 10.48047/IJEMR/V10/I01/11

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Volume 10, Issue 01, Pages: 64-67

Paper Authors

Kosimova Gavkhar Islomovna



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SYSTEMATIC MODEL OF FORMATION OF THE IMAGES OF NATURAL SCIENCE AND ITS EFFECTIVE IMPLEMENTATION DIDACTIC STATE

Kosimova Gavkhar Islomovna

Kashkadarya region X̣THKTMOX̣M preschool, primary and lecturer at the Department of Special Education

Resume: The article examines the features of the development of mental processes in primary schoolchildren and how they manifest themselves in the knowledge and understanding of nature, thereby allowing their minds to be filled with information about the world or look at it differently and anticipate it.

Key words: science, universe, thought, perception, understanding, nature, natural, imagination.

In the process of mastering the environment, the formation of young students' ideas about natural science is embodied as a multifaceted process. It is much more difficult to consider this process on an abstract scale. This situation prompts to turn to such a method of psychological and pedagogical research, which is called modeling. A model is a system of objects or symbols that reproduces some important properties of the original system. In science, there are several definitions of the concept "model". For example, in the philosophical encyclopedic dictionary "model" is interpreted as "a specific fragment of nature or social reality (scheme, structure, a certain sequence), an analogue of the product of human culture, conceptual and theoretical education." The newest dictionary of foreign words and phrases defines one of the meanings of the concept "model" as "an image, expression, scheme, plan, map of any object, process or event; any image (analogue) used by the original as a "replacement" or "representative" of the original when modeling it. Accordingly,

modeling is the "design and study" of "real-life objects and phenomena ... and the construction of objects, processes or models that are created to improve or describe them, rationalize the methods of their construction, management, etc." Pedagogical dictionary B.M. Beam-Bad defines "modeling" as "making copies, models of teaching materials, events and processes."

The model is much simpler in structure than the original, and is an easy-to-learn object. The information obtained by applying the model can be copied from the original (prototype) by analogy.

Modeling helps to identify many causes, conditions, factors and patterns of events and processes. By modeling, we mean the creation of a generalized abstract analogue (model) of existing objects or processes. This analogy adequately reflects the important properties of these objects and processes and is compared with the researcher from the point of view of continuing further study in accordance with the tasks set. The model appears as a result of simulation. The model is able to reflect

and reproduce the original, its properties, laws and structure. The model not only corresponds to an object that must be known in a certain sense, but is also considered a carrier of information for the subject trying to learn it. Based on this interpretation of the concept of "model", we adopt the following definition: a model is a system in which an idea is imagined or realized in such a way that it can replace the object of research to such an extent that its study gives us a new understanding of the object. provides information.

In educational science, modeling is defined as the study of internal processes and situations between people and individuals using their real (physical) or ideal models. In this study, the model is considered real, so students of technical universities participate in it.

The purpose of the modeling is "a schematic representation of the studied pedagogical systems." The method of modeling and researching objects and processes is successfully used to solve pedagogical scientific and practical problems. We understand this model as a kind of ideal that can be achieved by communicating in another language in the context of professional training at a technical university. At the same time, the model should meet the requirements of professional activity (in our case, the activity of a primary school teacher), reflect the formation of students' natural science and personal qualities. It is seen that the model must, first, be realistic, i.e. to ensure the maximum correspondence between the attitude of the young student to the emerging problem and practical activity, and secondly, the model should be dynamic. The last sentence is understood as a periodic rethinking of the model, allowing to achieve

a continuous reflection of the changes taking place in society. The quality of the model, such as conservatism, should ensure the accumulation and assimilation of the knowledge that society possesses.

Modeling as a stage of psychological and pedagogical research presupposes reliance on systematic analysis, that is, the model must be revised and described in terms of systematic approaches. The system consists of many interconnected elements that are considered as a whole. An element, that is, an element, is an integral part of complex objects, events, processes. Researchers focus on two important properties of systems: their integrity as a whole and their structure as having a specific structure. Integrity means the impossibility of breaking the system into independent parts, the impossibility of removing any element. it also emphasizes that the system is independent of the environment and other systems. Structural ownership is a relatively stable relationship between the components of a system.

Studying the patterns of personality improvement in the pedagogical process, Yu.K. Babansky pointed out to him that the problem of organizing, managing and improving the quality of this process can be solved only by knowing what and how he relates to the pedagogical process. If the internal unity of the design is characterized by mutual absorption of elements obeying a common goal, efficiency, description of process conditions and reflection of the dynamics of the process during the experiment, then this is also a model. Therefore, in the structure of the model it is necessary to highlight several components - blocks. Each of the blocks carries a certain spiritual and functional load, and at the same time is considered additional,

complementing other blocks. Separation of model blocks A.A. At the same time, the multidimensional model of Verbitsky's pedagogical system was taken into account: if the model takes into account the structural (direct generators of the model) and functional (providing a stable connection between individual blocks) elements, then the model is as detailed as possible. reflects. The first elements include goals, educational information, communication tools and subjects of the educational process. Connections between blocks are provided by gnostic, projected, constructive, communicative, organizational and evaluative elements. According to Verbitsky, the gnostic element is, first of all, an analysis of the pedagogical situation, on the basis of which a clear statement of the tasks facing them, further analysis of the process of solving these problems and the final comparison of the expected result with the actual achievement. The projection element is designed to predict the possible consequences of the task. The constructive element covers all the actions of the participants in the educational process necessary to solve educational problems. The communicative element is the establishment, identification of the interaction of the subjects of the educational process in accordance with the solution of the task. The organizational element is associated with the organization of educational information, the activities of students and teachers in the process of solving educational problems. The evaluation element determines the degree of the result achieved and the degree to which each of the above elements is implemented in practice.

A systematic approach to the analysis of any event or process means that when

studying it, it is necessary to take into account and coordinate all the efforts and factors that seriously affect it, build and organize them in a certain way in accordance with the ultimate goal. This approach to the formation of young students' natural science concepts allows us to highlight important features of this process and to consider subjects as a complex multi-level pedagogical system that forms the external and internal environment. The existence of the system is explained by the presence of a goal. The goal is revealed through the tasks that are posed to the participants in the organized process. The activities of the participants are based on a number of approaches, principles and conditions that establish certain requirements for the organization of the process. Based on these components, the content of the lesson is selected. The content tells you which tools, techniques, forms and technologies to choose. The system can operate in several interrelated stages, each stage is characterized by the presence of a certain set of elements. Diagnostic tools act as one of the components of the process, which also allows us to judge the effectiveness of the performed activity, which is the end result.

The individual characteristics of students as individuals (they are an aggregate subject of activity) and relationships within the framework of the model act as important system-forming units of activity in the formation of the natural science competencies of young students. In turn, the components are in a relationship of interaction and reciprocity. The transition between the elements becomes sequential, which is explained by their strict hierarchy.

N.N. According to Nikitina, the logical organization of the educational

process has two levels: vertical and horizontal. Research work at the vertical level ensures the continuity, structure and integrity of the process of formation of natural science concepts in primary school through a single logic, a specific structure of the process and a hierarchy of interrelated stages; horizontal level means structural organization at each stage.

In order to visualize a holistic picture of the process under study, as well as to delve deeper into the essence of the object of research, taking into account the isolated components and their interrelationships, we proposed a systemic model for the formation of natural science ideas about the environment in primary school. The formation of schoolchildren's ideas about the natural world is described as a complex, dynamic process, expressed in the form of the interaction of many elements combined into a single whole. Therefore, we can consider this process as an integral system with a certain structure. The accuracy and completeness of its disclosure largely depends on:- во-первых, ОПТИМИЗАЦИЯ ВЗАИМОДЕЙСТВИЯ ОТДЕЛЬНЫХ КОМПОНЕНТОВ СИСТЕМЫ, ВЛИЯЮЩИХ НА ЭФФЕКТИВНОСТЬ ИССЛЕДУЕМОГО ПРОЦЕССА;

- secondly, to ensure the unity and consistency of actions in achieving the set goals;

- third, a unified understanding of the content and methods of implementing the main functions of the subjects of activity;

- Fourth, the rational choice and application of forms and methods of pedagogical interaction. The systemic model of forming an understanding of the world around in elementary school includes interrelated methodological approaches and functions, didactic principles, goals and objectives of learning, components of the

content of learning, basic tools, methods, organizational forms, methods and recommendations, description of criteria and age. expresses the system of results, reflecting the level of motivation and interest of students in studying the environment, natural science, the level of activity in learning, assimilation of educational activities.

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