
MODELING AS A METHOD OF TRAINING AND EDUCATION

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Abstract: Training and education are developing processes that through absolute pedagogical intervention, through the introduction of behavioral modeling, would contribute positively to school education, socialization in school, education as a social gift, training as a practical form, school training, education, and even development and progress and overall evolution.

The aim is to reveal the regularities of modeling as a method of teaching and education and to prove the interdependent connection between the modeling method and the educational process.

Modeling is closely related to visualization, demonstration and observation. It significantly supports and develops the cognitive development of students, stimulates their abstract thinking based on sensory knowledge.

By introducing the method of modeling in the learning process, which can be used both for the perception of new learning material, for discovering new knowledge, and for exercising, making sense and consolidating already accepted ones, the strength and speed of mental thinking is stimulated, increased. process. A special place in learning is occupied by learning models, which are a necessary factor for the assimilation of learning material by students, supporting their activities, which suggests that modeling is a means of mastering specific actions and a way to absorb certain information. Modeling is a formative activity in the learning process and in training. It affects and influences the child's psyche and mental activity through cognitive models.

The experience of many theoretical teachers and practicing teachers proves that the method of modeling is needed in modern didactics and pedagogy. It is necessary to master the technique of modeling, because it is closely related to the general method of scientific knowledge, as well as to psychological and pedagogical sciences. The method of modeling is diverse because it is applied in many scientific fields. It is inexhaustible because it cannot be classified in any strict phasing and its role in scientific research is constantly evolving.

In the study of many pedagogical, sociological, psychological, biological and other sciences, modeling as a general scientific method must be necessary because it is efficient and effective.

Keywords: model, modeling, training, education

School pedagogical processes, based on the interaction between teachers and students, students and groups, have interdependent relationships, certain pre-determined goals, deliberate and purposeful evolution, which are expected to have pedagogical results achieved over a period of time. These pedagogical processes include education as a social given, school education, socialization in school, education as a practical form, school education, education.

Education as a social form is a process in which personal qualities, forms and norms of behavior, perception and attitude to the world are formed. In the development of adolescents, the educational process continues through constant development, growth, evolution. The upbringing and the educational process run in parallel and have an interdependent connection. Here it is important for the teacher to introduce behavioral modeling in order to help the child become an adult, or in other words to grow up and have responsibilities. Through the system of behavioral modeling, the child is stimulated to perform their duties at school willingly.

In modern times, the study of many pedagogical, psychological, sociological, biological and other sciences require modeling as an efficient, effective general scientific method. Its application and use in almost all areas proves this.

Modeling is closely related to visualization, demonstration and observation, because the models themselves are created, displayed and explored. Modeling significantly supports and develops the cognitive development of students, stimulates their abstract thinking based on sensory knowledge. According to Andreev, "Modeled objects support both the rise from the concrete to the abstract and the rise from the abstract to the concrete, develop various mental operations" (Andreev, 1987, p230).

The reproduction of elements (mentally or objectively represented) by various processes, phenomena and objects is called a model. Models differ in shape, content, material, purpose - depending on their purpose and depending on what they should reflect. The models also differ in the types of tools used to make them. These are the artificially created objects in the form of graphic, material and sign models - schemes, drawings, castings, physical constructions of devices, machines, logical-mathematical formulas, diagrams, graphs, etc. The property that is common to all models is to reflect reality, to reflect one or all sides, parameters, properties, elements, relationships of the studied object.

In each subject area, in order to understand the role and functions of the model, its capabilities must be characterized. For this purpose, the questions are asked what is the purpose of the model, how it is used, how it is

applied, what results can be achieved with it, which automatically makes the model a visual tool in the learning process. According to Tsankov "in the learning process the principle of visualization is realized as visualization with the help of visual methods and visual aids" (Tsankov, 2010, p51).

School education is an integral part of education in order to have a meaningful and fruitful process. School education by modeling the desired behavior is the main factor for the development of children, adolescents, adolescents and school-age girls (Alexandrova, 2008). In the process of interaction and relationship between teacher - student is educated by showing the desired behavior individual qualities, usefulness, aimed and focused on creating, consolidating, improving, affirming individual, personally desired qualities and values of the student's personality, through discreetly controlled, purposeful manipulations by the teacher.

School socialization is a secondary, institutionalized process. In the first place, the child socializes in the family and its environment, and with its development, socialization continues to other communities. The assimilation and mastering by the student of norms and values, certain rules, language and way of communication, model of behavior, provide the student with the opportunities to exist in different human communities. "The most intense manifestation of this process is in the periods of childhood and adolescence, as the influence of" social modeling "is strongest. Socialization is the only obligatory means that helps to accustom the individual from an early age to what will serve him in life "(Bankova, 1992, pp. 33-42).

Education as a practical form introduces cultural values in the child through social and other forms of experience in practice, based on the learning processes and purposeful activities of the educational content. The training has a continuous, continuous, permanent character, based on the individual and social interaction. Training is a means of education because it has an educational character.

"J. Dewey argues that nothing should be imposed on the child, because he is a self-developing, spontaneous being" (Velikov and Nedyalkov, 1970, p. 9). To discover heuristic possibilities, develop abilities and great thoughts in which to present their knowledge, from early childhood, the child uses models. They are an effective tool for experimentation.

In teaching, the main role is played by the teacher, who has to model the development of a topic, control the communication between him and the students during the lesson, monitor the learning process and claim feedback. The teacher is the facilitator, who through training implements in students the thought and speech models, making them work and act with them, modeling their psyche and mental activity. Modeling can be used both for the perception of new learning material, for discovering new knowledge, and for exercising, making sense of and consolidating already accepted ones. In this way the teacher stimulates, increases the power and speed of the thought process. As shown in Fig.1

Figure 1



School education is an institutional factor and condition for children's development, based on the activity of teachers (teaching) and the activity of students (learning). The purpose of school education is to achieve as the ultimate goal of the selected and regulated educational content and as a culmination - the educational goals. According to Stoimenova, "The learning activity, considered from the standpoint of developmental learning, has a specific character in its focus - it provides the mastery of knowledge, skills and habits in a particular system. The most

important source of learning activity is the cognitive interest, oriented to the social significance of learning (Stoimenova, 2010,p.14).

A special place in the education is occupied by the learning models, which are a necessary factor for the assimilation of the learning material by the students, supporting their activity. It follows that modeling is a means of mastering specific actions and a way to absorb certain information.

A very important part of the learning process, and especially when using models in teaching, is for the teacher to know exactly what he will model, why he will use this method, what significance this method has on the students' activity, how it affects them, whether it provides them, the necessary cognitive resource.

Modeling is a formative activity in the learning process and in training. Modeling affects and influences the child's psyche and mental activity through cognitive models; computer modeling - video lessons, tests; simulation modeling (action modeling) - description of the researched problem; use of communication models and way of communication; modeling the stimulation, explanation, argumentation, evidence as part of the learning process used by the teacher.

The models are a simpler presentation of the original, so they make it easier to study. The model reflects, corresponds, resembles, is analogous to the studied object, but is not the same, accurate, homogeneous with it. The models illustrate the elements of the studied object in a reduced form - the construction, structure, properties, relationships and interrelations, which eliminates the difficulties of its study, facilitates the process of obtaining information.

Education is a single purposeful process for the growth of man from a natural to a cultural being. Through education, upbringing, training, the acquisition of collective knowledge, skills, values and social habits, the mind and character of a person are formed. The adaptive potential and physical abilities of the person increase, which ensures the transmission of cultural knowledge accumulated over generations to continue and expand their rise in the next generations for their social development. (Andreev, 1987).

According to Radev, "the difference between education and training is that education gives shape, image to the personality, and training is a simple teaching and learning. Education is an internal spiritual formation, and training is a simple expansion, an increase of knowledge." (Radev, 2001, p.25).

"Modeling, as a method of scientific knowledge, is the imitation, imitation of real existing systems by creating specially constructed analogues (models), which reproduce the principles of organization and functioning of these systems, internal properties and interactions, as well as their relationship with reality" (Marev et al., 1980, pp.160-170). The method of modeling is diverse because it is applied in many scientific fields. The method of modeling is inexhaustible because it cannot be classified into any strict stages and its role in scientific research is constantly evolving. In the most general sense, modeling is the creation and use of models.

For the purposes of students' thinking and skills in the complex process in the study of various abstract concepts, the great importance of the applicability of the models used in education, in order to predict its prediction for future actions and operations (Bankova P., 1992).

According to Baranov, the methods for studying the original identify a certain idea in it, characterize the connections, properties, characteristics that will be studied in the subject, but in no case are limited to a sensory image. According to him, the method of teaching is based on a model of specifically synthesized knowledge, and not on a system of unrealistic, imaginary discussions. The educational process is realized through the connection between the original (model) and the abstraction (object), which emphasizes that each object is diverse, comprehensive and cannot be exhausted. The original in the student's mind must interpret ideas, give birth to thoughts that are related to the learning process (Baranov, 1981).

According to Andreev, "Modeling is closely connected with experiment, with abstraction, idealization, analysis, synthesis and concretization. It is an important element in the formulation of hypotheses" (Andreev, 1987,p.32).

"Modern pedagogy and didactics cannot do without the method modeling, which is proven by the experience of both theoretical teachers and practicing teachers. The need to master the modeling technique is related to the general method of scientific knowledge, as well as to psychological and pedagogical considerations. When students build different models of the studied phenomena, modeling acts both as a means of teaching and as a way to summarize the educational material" (Delimova, 2010,p.2).

Learning, mastering, upgrading are positive, interconnected characteristics of learning - cognitive activity, because the construction and improvement of personality, through complex approaches to learning, invariably leads to active cognitive evolution. "The learning process, in turn, has a certain cognitive value, because the acquisition of logical connections and relationships during a lesson, lecture or individual work always has an active cognitive nature" (Velikov and Nedyalkov, 1970,p.28).

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