METHODOLOGY OF FORMING THE TARGET BASIS OF ACTIONS IN TEACHING MATHEMATICAL ANALYSIS

Koshnazarov Rasul Atabekovich
senior teacher of Tashkent State Pedagogical University named after Nizami
Rizaev Rustam Kobilovich
teacher of Tashkent State Pedagogical University named after Nizami
Ibragimova Dilnoza Karimbekovna
teacher of Tashkent State Pedagogical University named after Nizami
https://doi.org/10.5281/zenodo.11549094

Abstract: in this article, the method of forming the target basis of actions in teaching mathematical analysis is analyzed, it is considered that students should acquire knowledge about the subject of mathematics, but also about the actions of a methodical nature, and the skills of ordering these actions, etc. It also includes knowledge that assesses the purposeful basis of actions, that is, knowing why the action is being performed.

Key words: mathematics, purposeful basis of actions, education, upbringing.

Nowadays, in psychology and pedagogy, many people have adopted the active approach as the basis for studying and explaining the phenomena of education and upbringing. From this perspective, knowledge and skills cannot exist separately.

By receiving and processing information describing the methods and styles of activity, object properties, symptoms, mechanisms of events, a person acquires appropriate types of activity.

The fact of mastering is manifested in the ability to perform activities. This activity exists in different forms - in the form of speech, material (objective) or mental-existing, but it remains as a single activity consisting of planning and executing parts. The target basis of activity is knowledge that exists in the form of mental actions, and skills are the executive part of activity that is manifested in speech or material form. Thus, knowledge and skills are exactly one activity, but existing in different forms.

According to the theory of gradual formation of mental actions and concepts [Talyzina N.F. Upravlenie protsessom usvoeniya znaniy (psychological basics). - M.: Izd-vo MGU, 1984. - 344 p.] in the system of organizing the planned formation of knowledge and skills, the schemes of the purposeful basis of actions occupy a central place. The target basis of actions includes: A clear understanding of the purpose of the 1st activity (what should be produced); 2- obtaining initial (given) material knowledge (object of analysis, given mathematical fact); Study 3, mastering the methods of working with instrumentation; Forming a concrete plan of task 4 and the sequence of its implementation; 5- mastering control tasks that help to think about whether the actions are right or wrong. As a whole, these allow the student to perform three mutually conditioned parts of educational and professional activity - planning, implementation, control - based on a conscious and planned plan.

Based on these theoretical foundations, a target basis of activities for learning the basic concepts of mathematical analysis was developed and approved.

An experimental study showed advantages in students who used objective basis of actions compared to students who were trained in the usual educational method.

The creation of schemes of the target basis of actions for the realization of the goals set in the educational process is an independent scientific methodical issue. The use of schemes

of the target basis of movements is a mandatory condition for the systematic and controlled formation of the necessary methods of professional activity.

According to the theory of the gradual formation of the process of mental actions developed by P.Ya. Galperin and continued by N.F. Talyzina and his students, reading means mastering activities, goals and mental actions for planning and implementing activities (Galperin P.Ya ., Talyzina N.F. Sovremennoe sostoyanie teorii poetapnogo formirovania umstvennyx deystviy.-M.: Vestnik MGU. 14.-№4.-S.

As a result of the study of the process of mental actions, the following sequence of stages that students should go through in order to form knowledge and skills was proposed:

1. Creating the necessary motivation in the student. In this case, internal motivation is more reliable than external.

According to a large number of modern psychologists, pedagogues and methodologists (T.G. Bogdanova, K.V. Volkov, Z.I. Slepkan, E.D. Telegina, L.M. Friedman), the motivation of reading is the formation of a system of knowledge and skills. determines the effectiveness.

The motivation of reading is a complex framework for determining the behavior of students, and the main source of changing the scope of motivation of students is the complexity of their expanding connections with the world (N.A. Menchinskaya, G.S. Kostyuk, V.V. Davydov).

Thus, the creation of skill motivation is the purposeful work of the student's educational activity in the unity of all components from the teacher, and the main way to develop the motivation to study means to cultivate an active attitude in the student to his educational activity, as a result, to create a basis for successfully managing it.

2. Explain or distinguish the drawing of the basis of the movement in the target. The objective basis of action is "the system of conditions on which a person relies on the truth when performing an action" [Galperin P.Ya. Umstvennye deystviya kak osnova formirovaniya mysli i truda // Voprosy psychologii, 1957.-№6.-S.58-69.].

At this stage, students are shown how and in what order the purposeful, executive and control operations, which are part of the movement, are performed. The teacher externalizes his mental actions and presents them to the students in a tangible or materialized form. The learner constructs a target framework for Action using previously formulated actions.

P. Ya. Galperin distinguished three types of target bases and three types of training according to the completeness and method of mastering the target basis of movements by students [Galperin P. Ya. Umstvennye deystviya kak osnova formirovaniya mysli i truda // Voprosy psychologii, 1957.-№6.-S.58-69.].

The first type is characterized by the incompleteness of the purposeful basis of actions and is presented in the form of an example of the action and its product. the incompleteness of the target basis of movements leads to trial and error. Because the method of performing the action is not shown, the student looks for it himself. "Movement is very unstable in relation to changes in the conditions of the situation and the state of the subject and ... is very limited in transition to new tasks" [Galperin P.Ya. Umstvennye deystviya kak osnova formirovaniya mysli i truda // Voprosy psychologii, 1957.-№6.-S.58-69.].

The latter is distinguished by the performance of the action based on the purposeful basis of all actions. That is, the target basis of actions consists not only of examples of the action and its products, but also a detailed instruction on how to perform the action correctly. As with the first type, trial and error will occur, but now they are random and non-specific.

Transitioning to new tasks is more important, but in different ways.

The third type is teaching to analyze the task and not the method of action in a specific situation. The presence of a target framework of complete movements ensures that new movements and concepts are expressed without trial and error. "From the beginning of the movement, a complete transition to all the events of the intended field is observed" [Galperin P.Ya. Umstvennye deystviya kak osnova formirovaniya mysli i truda // Voprosy psychologii, 1957.-№6.-S.58-69.].

V.V. Davydov performed a comparative analysis of the second and third types of the purposeful basis of actions and showed that the second type of the purposeful basis is at the level of the event, it is the purposeful acquisition, ignoring the essence. This type of targeting shapes empirical thinking. The third type of purposeful basis of actions is the way to aim at the essence, to form theoretical thinking. [Davydov V.V. O dvukh osnovnykh putyakh razvitiya myshleniya shkolnikov // Materily 4 Vsesoyuznogo s'ezda Obshchestva psikologov. - Tbilisi, 1971.-S. 686-687.].

3. Formation of movement in material or materialized form.

Pupils perform actions with a comprehensive performance of all operations included in it in an external material or materialized form. In this case, the material form of the activity should be combined with speech, and students should interpret the action being performed.

In order to generalize actions at this stage, it is recommended to solve problems with students that reflect exemplary cases of using this action, but not to allow a large number of the same problems, because in this case the action can be shortened and automated. Pupils master the action as a material, comprehensive, generalized within the main types of material and performed consciously according to the whole composition of operations.

4. Forming the movement aloud or in writing without relying on material (or materialized) means. All operations in the movement should be mastered in the form of speech (out loud in elementary grades, written notes in middle and high grades). The action will then be generalized, but not yet automated and reduced. The following sequence is performed: first, the action is told in "its own words", then it gradually switches to scientific language, which is the final result of this stage.

5. Forming the movement with some elements mentioned in it. In this and the previous two steps, the student observes the execution of each step of the program based on the HMA diagram known to him. The difference between these stages is that in the material (or materialized) stage, the student uses this drawing in practice and the drawing is in front of his eyes, and in the next stages, the drawing is removed and the student goes through the individual steps of the program aloud or by heart. But, if necessary, he can see the drawing.

6. Formation of movement as internal, mental. "At this stage, the movement quickly becomes automatic, it becomes uncomfortable to observe itself. Now this is an act of thinking, the process is invisible, and only the product of this process is open to the mind" [Talyzina N.F. Upravlenie protsessom usvoeniya znaniy (psychological basics). - M.: Izd-vo MGU, 1984. - 344 p.].

Therefore, the above sequence of stages determines the requirements for the organization of the process of formation of mental actions that ensure the high efficiency of teaching mathematical skills and skills.

In the implementation of the active approach, the system of goals is a mandatory component of the educational content, which helps to increase the quality of professional

training. (V.V. Davydov, N.F. Talyzina, S.I. Arkhangelsky, V.P. Bespalko, I.Ya. Lerner, M.N. Skatkin, V.V. Kraevsky, etc.)

In order to understand the nature and essence of landmarks and to create an approximate scheme for teaching mathematical analysis, it is necessary to look at the target (orienting) basis of actions. The objective basis of actions includes knowledge, without which the action cannot be successfully performed. In other words, it is necessary to know what actions the subject should perform, what and in what order. In addition, the subject must have an idea about the action.

The learner should acquire knowledge not only about the subject of mathematics, but also about the actions of a methodical nature and the skills of ordering these actions, etc. It also includes knowledge that assesses the purposeful basis of actions, that is, knowing why the action is being performed.

The creation and implementation of the purposeful basis of the third type of actions in the educational process of mathematics is a very complex issue that has not yet been solved. It can be solved by creating methodical tasks for each subject, each subject, each activity.

A methodical task is a task that directs the student to perform methodical actions. The fact that the student independently creates a purposeful basis of actions is his professionally important result and indicates a high level of the student's methodical preparation.

Therefore, one of the main goals of the activity of a mathematics teacher is to teach the future teacher of mathematics to create a scheme full of purposeful basis of actions. In this case, it is a methodical task for the student to create a complete scheme of actions. Such a system of methodical assignments will be an effective means of forming the professionalism of a future mathematics teacher. The following question arises: How to teach a student to independently create a scheme full of purposeful basis of actions in the teaching of mathematical analysis?

For this, it is necessary to see the structure of methodological tasks that meet the following requirements:

1. Systematicity, that is, each methodical task on creating a purposeful basis of actions should be aimed at the resulting goal - the formation of a teacher;

2. Step-by-step transition from a simple task to a complex one;

3. Integrity (unity), by which we mean the development of schemes of the purposeful basis of actions in all mathematical sciences. Therefore, the cooperation of all departments is necessary;

Use of the method of the programmatic-targeted approach to the construction of the system of target basis schemes of actions. From this requirement, each training should be directed not only to information transfer (reproduction), but also to the formation of the student's culture of mental activity, methodical skills (qualifications) of independent work. This last result is possible in the step-by-step formation of mental actions.

Thus, creating a scheme of the target basis of actions in the study of mathematical analysis allows to implement the selected topic of mathematical analysis, the subject organizer of the contextual approach to teaching.

References:

1. Verbitsky A.A. Kontekstnoe obuchenie v kompetentnostnom podkhode//Vysshee obrazovanie v Rossii. No. 11, 2006. p. 39-45
2. Erdniev P.M., Erdniev B.P. Ukrupnenie didakticheskikh edinits v obuchenii mathatike. - M.: Prosveshchenie, 1986. - 255 p.
3. Erdniev P.M. UDE kak technology education. - M.: Prosveshchenie, 1992. - 287 p.
4. Yastrebov A.V. Nauchnoe mishlenie i uchebnyy process - paralleli i vzaimosvyazii. - Yaroslavl: Izd-vo YaGPU im. K.D. Ushinskogo, 1997. – 137 p.