

Promoting the Development of Productive Thinking of Younger Students

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Abstract - Questions about mental abilities are judged not because a person can imitate by imitation, but by what he can achieve independently when solving new problems, which is accomplished by productive thinking.

Keywords - Psychology, development, thinking, science and technology, learning, junior schoolchildren, way, process.

The goal of Uzbekistan's strategy, designed for 2017–2021, is to fundamentally improve the effectiveness of the reforms, create conditions for the comprehensive and accelerated development of the state and society, implement priority directions for modernizing the country and liberalizing all spheres of life. As noted in the document, a comprehensive analysis of the stage of independent development passed by Uzbekistan, as well as the changing conjuncture of the world economy in the context of globalization, require the development and implementation of "radically new ideas and principles for further sustainable and advanced development of the country." The strategy of actions will be implemented in five stages, each of which provides for the approval of a separate annual State program for its implementation in accordance with the announced name of the year. The development of the social sphere, aimed at consistently increasing employment

and implementing targeted programs for the development of education, culture, science, literature, art and sports, and improving the state youth policy. [2, 49].

The second half of the 20th century is characterized by a high rate of development of science and technology, the creation of "thinking machines" to which more and more complex functions of liberation of a person for creative activity, amenable to formalization, are shifted. In connection with the development of science and technology, the requirements for productive thinking increase dramatically, which allows a person to pose new problems, find new solutions in the face of uncertainty in a variety of choices, and make discoveries that do not follow directly from existing knowledge. This aspect of mental activity has its specific features, without the knowledge of which it is impossible to increase its effectiveness.

Productive thinking is inherent not only to adults, but also to children who make subjective discoveries in solving new problems, although, of course, the level of this thinking is lower in the second case, because it takes place in an educational situation in which students have an initial minimum of knowledge, visual supports, in particular modeling, which facilitate the search for a solution.

Thinking is an active, purposeful activity, in the process of which the available and newly received information is processed, its external, random secondary elements are separated from the main, internal, reflecting the essence of the situations studied, and natural relationships between them are revealed. This is a generalized and mediated knowledge of reality, in the process of which the thought of man infinitely deepens into the essence of the surrounding reality, revealing its laws. Thinking cannot be productive without relying on past experience, and at the same time it involves going beyond its limits, discovering new knowledge, thereby expanding their fund and thereby increasing the possibility of solving more and more new and more complex tasks. In thinking, as a process of generalized and mediated cognition of reality in a dynamically contradictory unity, its productive and reproductive components are woven, and their specific weight in a specific mental activity may be different. Under the influence of the ever-increasing demands of life for its creative component, it became necessary to identify specific types of thinking — productive and reproductive. Productive thinking is characterized by the degree of novelty of the product obtained on its basis, its originality. This thinking appears when a person who has attempted to solve a problem on the basis of its formal logical analysis using direct methods known to him, becomes convinced of the futility of such attempts, he has a need for new knowledge that will solve the problem of the subject. Awareness of the need itself indicates that a person has a problem situation.

Finding the desired involves the discovery of signs unknown to the subject; essential for solving the problem of the relationship, the natural links between

these signs, the ways in which they can be found. A person is forced to act in conditions of uncertainty, to plan and check a number of possible solutions, to make a choice between them, sometimes without having sufficient grounds for that. He is looking for the key to the solution based on the hypothesis and their testing, that is, the samples rely on the well-known predictions of what can be obtained as a result of transformations. A significant role in this is played by generalizations, which allow to reduce the amount of information on the basis of the analysis of which a person comes to discover new knowledge, reduce the number of operations carried out by him, “steps” to achieve the goal.

Productive thinking involves not only the wide use of learned knowledge, but also overcoming the barrier of past experience, moving away from the usual way of thinking, resolving contradictions between actualized knowledge and the requirements of a problem situation, originality of decisions, their originality.

For productive problem solving, it is important not only to highlight the essential features required by the situation, but also those held in accordance with them, without succumbing to the provoking influence of external, random signs, analyzed situations.

The sustainability of the manifestations of younger schoolchildren of certain features of productive thinking (its depth, flexibility, etc.), provided knowledge of various subjects indicates that these features have become personal qualities, mental qualities of these students. At this level, they determine the specifics of the general ability of pupils to learn, general learning ability.

The peculiarities of the productive thinking of schoolchildren are formed and developed in the activity, primarily educational. By improving the content and teaching methods, it is possible to significantly increase their influence on the development of the productive thinking of schoolchildren, on their ability to independently acquire new knowledge.

With age, the productivity of mental activity increases, which is associated with the beginning of the formation in schoolchildren of such positive qualities of their mental activity as its independence, depth (expressed in ease of abstraction and a high level of generalization of signs that are essential for solving the problem), awareness, stability; increases the flexibility of thinking.

In accordance with the requirements of the modern school, training in it is focused on the development of productive, creative thinking, providing the opportunity to independently acquire new knowledge, to apply it in the diverse conditions of the surrounding reality. As a result of productive thinking, new formations arise, new systems of relations, new properties, qualities of the mind (flexibility, depth, awareness, etc.) are formed, marking a shift in mental development. That is why the impact of learning is directed to this side of the psyche. In order to increase its developmental effect, it is necessary to take into account the specifics of productive thinking, the ratio of age and individually mental features among schoolchildren.

The principle of problematization, responding to the specifics of productive thinking - its focus on the discovery of new knowledge, is the main, leading principle of developmental education.

Problem is called such training, in which the mastering of knowledge and the initial stage of the formation of intellectual skills occur in the process of relatively independent solution of the system of tasks-problems, proceeding under the general guidance of a teacher.

Such training has a significant impact on the mental development of schoolchildren, as it corresponds to the very nature of thinking as a process aimed at discovering new patterns for people, ways to solve cognitive and practical problems.

Problem are only those tasks whose solution involves, although managed by the teacher, but an independent search for patterns, actions and rules that are still unknown to the student. Such tasks excite active mental activity supported by interest, and the

"discovery" made by students brings them emotional satisfaction and is much more firmly fixed in memory than the knowledge presented in a "ready" form. In the process of solving a problem, students overcome difficulties, resolve the contradictions that have arisen between existing knowledge and the requirements of the task, reveal new elements of knowledge, new ways of operating with them, master methods of learning, which expands their ability to solve new, even more complex problems. This active independent mental activity leads to the formation of new connections, new personality traits, positive qualities of the mind, and thus a shift in mental development. The choice of tasks for problem-based learning primarily depends on the specifics of their content, the presence in students of the initial minimum of knowledge, the level of independence in the formulation and solution of problems.

The most effective means for students to create problem situations is to use contradictions, conflict between existing knowledge, familiar ways to solve a certain class of problems, and the requirements that a new task presents.

The developmental effect is provided only by such tasks-problems that correspond to the level of mental development of students, the knowledge they have and the ability to acquire new knowledge necessary for solving them.

The basic principle of recruiting students in school is taking into account their age characteristics. However, numerous psychological studies have shown that the differences in mental development between students of the same age often turn out to be much larger than among schoolchildren of close ages (with an interval of 1-3 years). These differences clearly appear when comparing students of the same age for each component that is part of the mental development structure - in terms of mastering knowledge, mastering generalized techniques and methods of operating with them, and finally, in learning level as a general ability to acquire new knowledge.

The specificity of creative tasks involves the use of auxiliary methods of analysis - "heuristic". These techniques include the technique of concretization,

when the decision maker gives abstract data a more concrete form. The most common method of variation, facilitating the identification of functional relationships between data. This technique is that the decision maker arbitrarily discards or changes the value of one of the data (and sometimes several) and, on the basis of logical reasoning, finds out what consequences follow from such a transformation, how the change of one of the data affected the others.

The formation of algorithmic thinking techniques, oriented towards a formally logical analysis of tasks, naturally leading to the choice of a corresponding specific solution, is a necessary but not sufficient condition for the development of thinking. Such techniques are necessary, firstly, because they contribute to the improvement of reproductive thinking as an important component of creative activity. Secondly, these techniques are the foundation of knowledge from which the decisive one can draw "building material" to create ways to solve new problems for him. The insufficiency of such methods lies in the fact that, not meeting the specifics of productive thinking, they do not stimulate the intensive development of precisely this aspect of mental activity.

The formation of solid knowledge, ready to use in various situations, when solving new problems, is promoted both by a direct attitude to memorizing knowledge and special education, which form the basis of the subject, and special education to rational methods of mnemonic activity. These are the basic principles of education aimed at the development of productive thinking.

There are some age features of the development of productive thinking of schoolchildren. Therefore, the development of productive thinking can be divided into main levels, stages.

The development of actually productive thinking begins with its intuitive-practical component.

Thus, in the genetic plan of development, productive thinking goes from the predominance of its intuitive-practical components to the dominance of verbal and logical, providing not only the solution of a higher class of problems, but also a considerable

breadth of application of newly acquired knowledge, greater freedom to use them in solving new problems.

Personally, i.e. in the aspect of individual differences, productive thinking acts in the form of intellectual abilities to learn or learn. Only learning can be developing, corresponding to the individual experience of children and their potential in acquiring new knowledge, their learning.

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