Methods of Teaching Younger Schoolchildren the Ability to Solve Cognitive Tasks of Ecological Content

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A B S T R A C T

This article provides information about the methodology of teaching younger schoolchildren the ability to solve cognitive tasks of ecological content.

A R T I C L E I N F O

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Among the various teaching methods, cognitive tasks occupy an increasing place, as they are a means of activating the activities of students, developing their creative abilities. Due to the increasing role of theoretical knowledge in all types of people's activities, the increasing requirements for the ability to apply them promptly, the school, preparing students for an active creative life, should form the necessary skills for this. Cognitive tasks are a means of enhancing the effectiveness of the theoretical knowledge obtained a means of forming independence - a quality necessary for constant self-education, acquisition of new knowledge, orientation in the fast-growing flow of new information. In this regard, cognitive tasks and their use in the educational process can be considered one of the main conditions for the success of the entire educational and cognitive process.

For the environmental education of younger schoolchildren, the solution of cognitive tasks in the educational process is of particular importance. This is due to the fact that the main task of environmental education of primary school students is not so much just awareness of nature protection issues, as the broad and direct use of environmental knowledge in life practice. And for this, it is necessary to educate on the basis of ecological knowledge, ecological thinking, the formation of conscious, correct behavior in nature and environmental skills. All this requires constant exercise in the application of theoretical environmental knowledge already in the course of academic work. One of the most effective means for this is problem solving.

Conditions for the effective use of cognitive tasks in the educational process

The first and main condition for the effectiveness of the use of cognitive tasks is the systematic use of them in the study of the entire course of natural science. But it is equally important to use cognitive tasks in other subjects of primary education to develop a general educational ability to solve cognitive tasks.

The second condition is the correctness of determining the place of use and the quantities of cognitive environmental tasks, their relationship with other methods and methods of educational work.

The third condition is the rationality of teaching ways to solve cognitive environmental problems: the ability to analyze environmental factors, analyze conditions that need to be taken into account when developing environmental solutions.

The fourth condition is the sequence of complication of cognitive tasks:

A) According to the content of environmental material,

B) According to the level of complexity of students' mental activity,

C) According to the degree of independence of students in the process of solving problems.

The fifth condition is a variety of forms and types of cognitive tasks.

The sixth condition is a differentiated approach in the use of cognitive tasks for different groups of students.

The principles of constructing cognitive tasks and their classification are primarily related to the functions they perform in the educational process.

The complexity of cognitive tasks is determined depending on

a) the structure of the problem: the number of data in the condition and degree of determination of the solution; the number of actions and intermediate judgments in the process of solving it; the number of conclusions, answers to be obtained as a result of its solution;

b) The method of mental activity that is necessary in the process of solving it: analysis, synthesis, comparison, establishment of cause-and-effect relationships, generalization;

c) The nature of students' activities: reproductive, heuristic, research.

Other classifications are also used:

- On didactic tasks (for the formation of knowledge, skills, attitudes, beliefs),
- on the form of organization of educational activity of students (obsolescence, group, individual),
- on the form of organization of the educational process (in the classroom, on field trips, during observation and practical work in nature, in the process of homework),
- The material, I work with students in the problem-solving process (through training or additional literature, cards, teaching materials, visual AIDS, data, own observations).

Any task performs a set of functions, but one of them is the leading one. The allocation of the task function is very conditional, and in practice the implementation of a particular function depends on which of them the teacher will focus on. The leading function of the task is determined by the main purpose of its formulation and is implemented in the first place. To implement each function, you need your own tasks, their internal defined system, your own method of teaching them to solve.

We will show on individual concrete examples how the principles of building this internal system are determined.

Cognitive tasks are constructed in such a way as to cover the entire structure of the content of environmental knowledge.

1. Tasks to substantiate the multifaceted significance of nature for man (economic, aesthetic, hygienic, scientific-cognitive, humanistic, etc.). An example of such a task may be the following: One of the goals of greening a city is to decorate its territory. Does the landscaping of the district, the school meets this goal? What can and should be improved? What else do the green spaces of your area matter? (Air purification from dust, noise reduction, oxygen enrichment, heat reduction in summer).
2. Tasks to understand the anthropogenic impact on nature as an important factor of change in nature. Tasks of this type include examples of direct and indirect, negative and positive human influence on

nature.

3. Tasks for assessing the state of natural objects under the influence of human activity. For example: assess the condition of the soil in the school district. Determine the causes and measures to improve their condition of plants, reservoirs and other objects).
4. Tasks for understanding the interdependencies between the main structural components of environmental knowledge (objects, causes, motives and nature protection measures):

a) The relationship of the security measures of the object with the reasons for the need for its protection, the peculiarities of the state of the object at the present time;

b) The connection of the security measures of the object with the motives for which it is protected and restored;

c) The relationship of measures with the features of the object itself, its relationship with other components of nature,

d) The connection of the motives of protection with the peculiarities of the nature of the object;

e) The connection of the reasons for the protection of the object with the peculiarities of its nature.

5. Tasks for understanding the principles of nature protection and ways to solve environmental problems:

a) Nature protection in the process of its use,

b) Comprehensive consideration of the importance of each natural object for a person,

c) Assessment of the long-term positive and negative consequences of human impact on nature and ensuring the qualitative and quantitative restoration of natural wealth.

Thus, cognitive tasks form the ability of a younger student to navigate in a new environment, to assess new facts of the relationship of a person with nature, establishing the causes of the negative consequences of the influence of people's economic activities on nature. All these skills are necessary not only to replenish ecological knowledge independently, but also to develop the right environmental position in any life situations.

All of the above allows us to conclude that cognitive tasks are an important means of improving the quality of teaching natural science in general and environmental education and upbringing in particular.

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