

THE NEWEST METHODS USED IN TEACHING BIOLOGY AT SCHOOL

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Annotation

In this article, studies and researches are conducted about the newest methods used in teaching biology at school. The article analyzes data on the most intensive methods of teaching biology.

Keywords: Biology, Theory And Practice, Method Of Teaching Education, Teaching Tecnology.

INTRODUCTION

In recent years, in the theory and practice of education, "teaching technology" is increasingly used instead of the phrase "method of teaching a subject". We leave out of the scope of this article the discussion of the legality of using the term "technology "in relation to educational processes and want to focus on the problem of implementing educational" approaches", whatever they are called.

This is due to the fact that in any case, both in the teaching methodology and in the teaching technology, the goals of education are achieved using certain teaching methods, and the problem of methods in theoretical terms, despite the abundance of scientific publications, the existence of two large-scale discussions that took place in the press in the 60s and 80s, is very far from However, it is deeply mythologized [Tyunikov 2004].

There is not even a single definition of the concept of "teaching method". Each author tries to give his own formulation and explains the absence of a generally accepted version by the complexity and versatility of the object being defined. On the one hand, this is a correct judgment – teaching methods are really a complex object, but on the other hand, this state of affairs also shows that it is impossible to give a comprehensive definition of the concept until its essence is revealed.

ANALYSIS

The analysis of works on the problem of teaching methods shows that there are three options: some authors define the teaching method as a path, others – as a method, and still others-as a set of techniques, the implementation of which allows achieving educational goals. The search for truth forces us to turn to the functions of methods in the learning process. The works of B. V. Vsesvyatsky, I. D. Zverev, G. I. Shchukina, I. F. Kharlamov and V. A. Onishchuk generally provide an exhaustive list of functions that are attributed to teaching methods: informational-cognitive, emotional-educational, controlling, organizational-managing [Vsesvyatsky 1971], educational, educating and developing [Zverev 1980], encouraging, teaching, developing, educating [Shchukina 1980], stimulating (to the development of personality), educational,

organizational (organization of communication and benevolent relationships), developing value judgments and self-esteem, developing students' abilities and creative inclinations [Kharlamov 1980], educational, educational, developmental, incentive (motivational) and control-correctional [Onishchuk 1987]. A simple generalization operation leads us to the statement that training methods perform in the educational process, educational, developmental, educational, incentive, organizational and control and correctional functions. However, this statement is not entirely obvious.

When we deal with a system of a whole made up of parts, we know that there are functions that are implemented by the system as a whole, and there are functions that are specific to each element of the system. The learning process as a system includes the following components: subjects of learning (teacher and student, initial state), goals, content, methods, means, forms, joint activity of the teacher and student, the result of learning (the changed state of both subjects). Educates, develops and educates not only the method, but also the content of education, the organizational function is performed by forms, motivational activity, etc. and control and correction – are assigned to the joint activities of the teacher and student. It turns out that within the framework of the theory and practice existing in modern pedagogy, methods do not have enough functions allocated, and this is nonsense. There are methods, we know them and apply them, they work, but the results obtained are ambiguous.

To illustrate this point, let us turn to the methods of cognition: it is not the method of spectral analysis as such that develops our ideas about the world, but the information about the object under study that can be obtained with its help and then only if the received materials are appropriately processed, understood, interpreted and integrated into the existing picture of the world. The learning method serves the transmission of social experience to the next generation and ensures its assignment. Thus, the main specific functions of teaching methods are two-effective transmission of content education and ensuring its interiorization by the student.

METHODOLOGY

The method of learning, as well as the method of cognition, has two sides – objective and subjective. The objective side is represented by the object of the method, and the subjective side is represented by the actors.

The object of the training method is a part of the total experience of humanity, which is to be passed on to the next generation. Moreover, it is an experience that is understood quite broadly: it is not only specific scientific knowledge, but also values, moral, ethical and aesthetic norms, models of relations, and ways of doing things that society wants to see in the arsenal of the generation that is replacing the current one. In a generalized form, the objective side of the method is represented by educational information circulating in the educational process – this is the content of education.

The method of teaching should be described both as a way and as a way of knowing the truth: knowing the shortest path and using the most effective method, a person is guaranteed to achieve the goal of knowledge.

Tarining sessions – This is a way for students to master the part of their social experience that they need in life and that is determined by the content of each subject. Private subject methods are used to determine the ways that provide the shortest learning paths. In the teaching of such subjects of the natural science cycle as biology, ecology, geography and chemistry, the theory of development of the basic concepts of the discipline should be responsible for this. It defines the range of concepts that are to be passed on to the next generation, the sequence and conditions of their formation. For example, in teaching biology has traditionally developed an inductive way of forming educational concepts, from the particular to the general, from studying specific facts to deducing general laws, which reflects the logic of biological research. In history teaching, the methodical way is to study events and facts in their historical sequence, while teaching the native language, an analytical and synthetic way of teaching literacy is currently defined, and so on.

Tarining sessions – it is a way of transmitting and assimilating educational information. In order for information to be assimilated, it must be presented in a certain way, recorded, transmitted and perceived without loss. Since the family of hominids (Hominidae) was separated and people began to teach their own kind, the methods of teaching in their objective aspect have not changed much. From time immemorial, the teacher demanded: "Look what I show you! Listen to what I say! Do as I do!"the students saw, listened, did, and as a result, more or less learned what was required of them.

So historically and objectively there are four types of teaching methods: 1) information was transmitted orally and perceived by ear-auditory; 2) information was presented visually and perceived with the help of vision – visual; 3) information was recorded and perceived through muscle effort – kinesthetic; 4) information went through several sensory channels simultaneously – polymodal (mixed). Such sensory organs as touch, smell and taste are rarely used in the learning process, the only exception in this regard is, perhaps, the approach developed within the framework of the M. Montessori School. Methods of transmitting and perceiving information passing through these three channels also belong to kinesthetic learning methods.

This situation is in a sense fatal – until a person has new sensory organs with which he can perceive, process, store and communicate information, until then there are no new methods of learning in objective terms.

It is well known that classifications made on more than one basis are incorrect. Moreover, the proposed description of the essence of teaching methods from their objective side allows us to identify the only possible basis for their classification – the method of recording, transmitting and perceiving information.

At first glance, the classification of teaching methods based on the source of knowledge, which owes its existence to N. M. Verzilin [2], E. Ya.Golant [3], D. O. Lordkipanidze [7] and others, is the closest to our approach. Within the framework of this classification, verbal, visual and practical teaching methods are distinguished. It would seem that replace the terms "auditory" with "verbal", "visual" with "visual", and divide "practical" between "kinesthetic" and

"polymodal", and you will get the same classification by sources of knowledge, but this is an erroneous impression. The differences start with the selection itself grounds for classification. It is not obvious, but nevertheless objectively there is only one source of knowledge in the learning process – the cumulative experience of humanity. There are also different ways of recording, translating and perceiving this experience.

There is no doubt that the sounding word, image and something indistinctly designated by the term "practical" form the basis of teaching, but the "inherited" terms (word, visibility) denoting the content of methods, on the one hand, cause rejection, as they entail a load of extraneous meanings and introduce terminological confusion, on the other hand, they don't allow you to draw a clear line between groups of methods. In particular, the word can be heard in the learning process and can be depicted on paper or a blackboard. It turns out that verbal methods should also include: oral presentation of the material by the teacher, and work with written texts.

ANALYSIS AND RESULTS

Thus, the proposed classification of teaching methods cannot be reduced to a "source" classification, it is original and reflects the informational nature of the teaching method.

Tarining metodesfixation methods, broadcasts

1. Auditory settings training methods. Information is presented in sounds. In their pure form, these methods provide translation and perception of information via an audio channel.
2. Visual features training methods. The information is presented as an image. In its pure form, the methods are designed to capture and present information in visual form.
3. Kinesthetic features training methods. The transmission and perception of information is organized through muscle effort and other body sensations. For general education schools and universities, they are not described in their pure form, but the training of deafblind children is possible only through kinesthetic methods.
4. Polymodal services training methods. Information moves through several channels of perception.
5. Audio-visual systems are designed for simultaneous visual and auditory recording of information.
6. Visually-kinesthetic features designed for simultaneous visual and kinesthetic fixation of information. This group includes the main methods of teaching deaf children.
7. Audibly-kinesthetic methods are designed for simultaneous auditory and kinesthetic fixation of information. They are rare in general education schools, but they are leading in teaching blind children.
8. Audiovisual-kinesthetic – conducting experiments and experiments. When using these methods, information is recorded through all channels, and the teacher should provide for its "uniform representation" for visuals, audials, and kinesthetes.

The nomenclature of the proposed teaching methods requires a detailed theoretical study. These methods allow us to take into account the individual characteristics of subjects in the perception of educational information.

With properly organized training, social experience should be transmitted and perceived through all information channels. Currently, there is no doubt that training should be polymodal, and this was also pointed out by the great methodologists of the past V. A. Lai [5], V. Mrochek, and F. A. Kropotkin. Filippovich [8], F. Froebel [12], F. A. Ern [15] and many others. Obviously, when choosing a basic teaching method, the teacher must organize the process of transmitting information in such a way as to use the maximum possible channels of perception. In other words, among the methodological techniques in the composition of a group of teaching methods should be identified, which we propose to designate as "techniques for transmitting educational material" or "techniques for optimizing information perception to improve the effectiveness of teaching methods".

The subjective side of the teaching method regulates the joint activity of teaching and learning and is represented by two actors – the teacher and the student. Despite the fact that in the works of didactics of the last century (see, for example, the works of I. Ya. Lerner [6]), the student is positioned both as an object and as a subject of the teaching method, in the framework of the modern humanitarian paradigm of education, the student can in no way be considered as an object of learning (without taking into account the fact that the student is object of self-knowledge). In the method of cognition, there is one subject – a researcher or a team united by a common goal, and in the method of teaching subjects, there are two – a teacher and a student. Moreover, the teacher and the student have different goals: the first – to organize the transfer of social experience in a regulated volume, the second – to assimilate the social experience of previous generations in an amount sufficient for successful "integration" into society. It is obvious that these volumes, and most importantly, the modalities of perception and processing of information, do not always coincide.

Therefore, it is possible to create a classification of teaching methods taking into account the subjective features of information processing, but the basis for classification should be a leading representative system of subjects. In this case, we are talking about the method training sessions a set of methods, the implementation of which can lead to optimization of the achievement of educational goals by stimulating and maintaining the motivation of learning; formation of value orientations; development of mental processes (attention, perception, memory, thinking, imagination); formation of educational skills, skills and methods of action; organization of feedback; correction of the strategy for processing educational information; development of visualization skills; activation of educational activities, etc.

In other words, from a subjective point of view, it is advisable to treat the teaching method as a construct consisting of techniques that organize students' activities, and each time collect / design the method in accordance with the goals, remembering that information must pass through all channels of perception and all aspects of educational activity must be included in the pedagogical impact.

CONCLUSION

Thus, all this allows us to formulate the following definition: methods training sessions – this constructive unit ways and methods effective transmission a certain part of the social experience of learners that ensures the successful self-realization of learners in *educational activities*.

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