

METHODOLOGY FOR USING CASE ASSIGNMENTS IN TEACHING BIOLOGY (MAN AND HIS HEALTH)

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ANNOTATION: This article provides information on ways to improve the methodology of teaching biology (Man and his health) on the basis of activating the cognitive activity of students, drawing up and solving key tasks in the process of mastering the content of science.

KEY WORDS: biology, cognitive activity, innovative approach, key assignments, hemoglobin, integration, blood groups, helmentosis.

INTRODUCTION

In the world, education is recognized as the main factor in economic development, the main focus is on human capital - gifted students, who are able to make creative decisions in non-standard situations, whose motivation for the search for new knowledge and their acquisition is strongly developed, which is considered the most important value of the nation. Accordingly, with the intellectual potential and future growth of talented students as a mature specialist, it is important to look at the economy of the country, the competitiveness of science at the international level, to support them, to enable them to carry out scientific and practical and innovative activities.

Education based on a competency approach in our republic, that is, to be able to independently apply the knowledge, skills and qualifications acquired in students in order to solve the problems that arise in their personal, professional and social activities, to consciously choose a profession, to receive independent education using information communication technologies and to consistently gain knowledge, with a deep understanding of its rights and obligations, much attention has been paid in recent years to the establishment of education aimed at the formation of its capabilities, such as taking responsibility for the future of the country.

The purpose of the science of biology (Man and his health) is considered to be to inform students about the structure of the human organism, the nervous and humoral control of the functions and work of the organ system, the human organism and the external environment, reproduction and development.

Biology plays an important role in bringing to life the measures for the implementation of the state program "for the healthy generation" adopted in our society. In explaining the importance of physical education and sports in the development and growth of an organism in the formation of healthy lifestyle skills in young people, members of our society, including students, the possibility of Biology, in particular, of topics studied from a person and his health, is incomparable. Preserving human health, giving young people knowledge about reproductive health, valeological concepts, preserving their own and human health in emergency situations is considered one of the main tasks of biology.

In the teaching of Man and his health, it is advisable to widely use the innovations of the science of Biology in the process of generalization in the direction of human organism – the biological system, the impact of the ecological environment on the human body, human evolution.

Class VIII has a 68-hour period for teaching biology (Man and his health), and the program includes chapters on the general description of the human organism, musculoskeletal system, circulatory system, respiration, digestion, metabolism and energy, subtraction, skin, internal secretion glands, nervous system, higher nervous activity, sensory organs, reproduction and development. For the study of topics that are included in the program of Biology (man and his health) in a general way – 59 hours, 1 hour of a generalizing lesson, for control work – 8 hours, a total of 68 hours are planned. At the end of the study, students are provided for the formation of a system of morphological, anatomical, physiological, hygienic, environmental, embryological and evolutionary concepts in the structure and function of each organ.

There are a number of requirements for teaching the subject of a person and his health, which should not deviate from the attention of the teacher:

- features of the structure of the cell and the main processes of life activity;
- features and functions of the structure of the system of tissues, organs, organs, nervous and humoral control of the system of organs;
- the tiench in the human body refers to the specific aspects of the system of movement;

- similarities and differences in the structure and functions of the human and animal organism;
- features of the human organism associated with labor activity, upright walking and social lifestyle;
- the relative constancy of the internal environment of the body, immunity, other-ration of heat, the exchange of substances, the interdependence of plastic and energy metabolism, rational nutrition;
- methods of artificial respiration, first aid in case of injury, methods of determining human grief, development of the human organism;
- the effect of exercise on the body; issue and exercise performance depending on the health care provider and the factors that negatively affect it;
- subtraction bodies and its structure, functions; the structure of the nervous system and sensory analyzers, the tasks they perform.

During the teaching of the educational science of biology (Man and his health), it is established that students have the following qualifications:

- the system of organs in the human body and the ability to recognize organs;
- to be able to explain the interrelationships of the structure and functions of organs of the moment;
- knowledge of the positive effects of physical education, sports and labor on the human body;
- change of heart, be able to explain the reasons for the development of flat footedness;
- knowledge of the rules of personal hygiene, compliance with the regime of Labor and rest, rational nutrition;
- the fact that a person can explain the harm of smoking, drinking alcohol and using drugs;
- be able to use a microscope; determination of the effect of various loads on the work of muscles, counting the pulse, conducting independent observations on its own organism;
- be able to provide first aid in bleeding and other injuries;
- be able to draw up a paragraph plan; he must be able to work with the text and pictures of the textbook, master the qualification of being able to distinguish the main content of the topic, prepare brief information.

It is advisable to use interactive educational technologies in the activation of students ' cognitive activity and careful acquisition of the content of science. In the teaching of biology, it is recommended to use pedagogical technologies at the local level: “Keys”, “Insert”, “cluster”, Venn diagram, “mental attack”, “work in small groups”, “chain of terms”, “sheet of Terms”, fast games and various forms of gaming exercises.

The use of “Keys” assignments in the teaching of problematic issues in the content of the biology(Man and his health) course is of high effect. "Keys" - kase stadies is derived from English, meaning a problematic process or situation. Initially, this technology was used in the training of businesses and entrepreneurs, based on the content of the currently taught science, problem situations are created on the external and internal, objective and subjective factors of the processes that go in living organisms and educational discussions are organized to solve them.

Biology teaching was led by evolutionary concepts in the content of the program, as well as controversial topics such as “the emergence and development of plants”, “the emergence and development of the animal world” can be used in teaching.

Teacher to use keys in the educational process:

Identify problem topics in the program's content, draw up problematic questions and tasks for teaching these topics;

Problem question during the lesson-determination of the organization of independent work individually or in small groups of students according to the degree of difficulty of assignments;

Planning ways to bring students ' cognitive activity into communication through these problems, educational discussions;

It is necessary to create a final thought in educational discussions organized on the basis of problematic questions and tasks.

Distinctive features of Keys assignments: the availability of research activities; training in teams and groups; integration of individual, group and teamwork forms; development of various educational projects; promotion of educational and cognitive activities of learners to achieve success. Keys ' actions include activities on questions such as: who? (who?), when? (when?), where? (where?), why? (why?), how?/ how much? (how?), what? (result) (what?). Below we will talk about the methodology for the implementation of keys assignments on topics related to the subject of study of the person and his health:

Case 1. Medical personnel approach the blood transfusion process responsibly. It is necessary that

each person knows his blood type based on blood analysis. Keys questions:

1. What occupation uniform is inscribed with their blood group and why?
2. Why are people with blood group I a universal donor, but cannot be a universal recipient?

Teacher's solution. In the uniform of a serviceman, fireman, rescuers, their blood groups are inscribed in the form of special signs, the reason is that they act in situations that are directly life-threatening.

Agglutinogenic is a protein that when a foreign protein enters the body, it is recognized and dissolved by the immune system as an antigen. Agglutinogens (A and B) are not found in the erythrocytes of people with blood group I, their blood does not undergo any resistance of the resistant immune system when poured into people with Group II (agglutinogenic A), Group III (agglutinogenic V) and Group IV (agglutinogenic A and B).

Case 2. A blood Group II and IV parent gave birth to a blood group I Child. Does his father have the right to go on different suspicions in such a case? Did I replace the child in the Maternity Hospital? Case assignment. Explain the solution to this situation.

Teacher's solution. According to allele gene interactions (codominance), parents with blood Group II and IV are born with blood group III and IV. It is possible to fully understand the essence of the issue if it is taken into account that the genotype is not a mechanical sum of genes. In this, recessive epistasis (the Bombay phenomenon) occurs.

People with the Bombay phenomenon do not develop an H-antigen in the blood in a homozygous state (hh). Agglutinogens A and B are synthesized from the H-antigen. In this situation, a child with blood group I was born in the family due to the fact that the parents were heterozygous on the H-antigen.

Case 3.

Comment on the image below.

Case question:

1. How does a person's skull change in relation to age?
2. What is the significance of such a structure of the skull?

Source: a textbook for a person and his health 8th graders.

Instructions for performing keys:

1. Find answers to questions by reading the source.
2. Compare your answer with your partner's answer.
3. Come to a stop with your comrade over the answer of keys and state the answer.

Case 4. 75% of the world's population is infected with helminthiasis. 90% of people who lose their lives from heart disease suffer from such a disease. Case assignment. Why is helminthiasis so common? Study measures not to get infected with helminthiasis. Case assignment. Comment on the image below. Why is helminthiasis so common? Study measures to avoid helminths. Develop practical recommendations on protection against the damage of vomiting.

From the above keys assignments, it is recommended to use the technologies in question in a systematic manner in the description of most topics in the process of teaching the educational science of Biology (Man and his health).

To some extent, the use of keys is established by creating problematic and practical situations in training and directing students to solve them. A number of difficulties in applying Keys are: making keys before starting each session i.e. in generating a problematic practical situation; in ensuring full-fledged participation of students in a debate dedicated to solving case assignments; manifested in the fact that students are able to independently and freely state their feedback on each practical problem.

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