



METHODOLOGY AND ROLE OF BIOLOGY AS A SCIENCE

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Abstract

"Methods of teaching biological sciences" in the article the interaction between specialty disciplines, the combination of advanced ideas in the national and world education systems, integration of education and production, the development of modern science, technology, technology, the latest achievements of modern biological science and many years of work

Based on the experience of scientific observation and teaching this subject, the scientific and methodological foundations of this subject are considered.

Keywords: Skill, Method of Using Exercises, Purpose, Praise, Method, Ideology, Conceptual, Rationalization, Educational Program, Skill, Principle, Motivation, Methodology, Cluster, Perception.

Introduction

Independence of the Republic of Uzbekistan is a reality of enormous historical significance. Independence that is, relying on the historical and cultural traditions of the state itself. Based on specific conditions of development, it is possible to determine the direction of the development of the future. That's one of those ways to reform all aspects of the education sector. This is the reforms were reflected in the Education Act.

During the years of independence in our country, comprehensive Work is underway. Based on the principle of "Action Strategy - Development



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Strategy", it is intended for 2022 - 2026, consisting of the following seven priority areas.

In the fourth priority direction of the development strategy - the development of the social sphere, special attention is paid to education and science, the organization of forms of education in accordance with world standards, the further improvement of the use of priority methods of knowledge delivery. In the fourth paragraph of this direction, special attention is paid to education and science and is aimed at further improving the organization of forms of education

in accordance with world standards, the use of priority methods of knowledge. In this area, the system of higher education is taking measures aimed at a number of practical works, including radical improvement of the material and technical basis. One of them is the preparation of lecture text courses on all subjects taught in the higher education system

In this article, students and pupils will not only become familiar with the currently known laws and legislation, rules and results of research on the methodology of teaching Biology, but also with the problems that have not yet been solved and need to be solved, which in turn will pave the way for new, young talents to enter the field. Our future, the well-being of our people and state, and the future lies in the hands of our youth.

Key Part:

Biology teaching methodology is the science of teaching, processes, principles, and laws related to the fundamentals of biology. Knowledge of these principles and laws allows the teacher to organize and manage educational processes related to the school biology course in accordance with modern requirements. The methodology of teaching biology aims to introduce the content of biology educational disciplines, its teaching forms, methods, and tools in an interrelated manner. The main task of the methodology of teaching biology is to provide students with comprehensive knowledge of biological educational subjects, to



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develop the content, forms, tools and methods of teaching subjects that contribute to their development as a fully developed individual.

Any science is related to the research activity of a person and is aimed at the accumulation of knowledge about things and events, and the research is aimed at obtaining a complete and complete knowledge about the facts. The main function of science is research. The methodology of teaching biology as a science aims to theoretically and practically improve the knowledge, upbringing and development of students related to this subject. The main sign of science is the animosity of the goal, the subject of learning, methods and forms of knowledge knowledge. At the same time, it is important to make the history of the development of science and the discoveries that contributed to its enrichment.

Categories: Therefore, the goals and objectives before it also derive from the general goals and objectives. The methodology of teaching biology is aimed at the introduction of pedagogical concepts related to all academic disciplines into biological teaching material. At the same time, the methodology of teaching biology combines natural, scientific, biological, psychological, pedagogical knowledge.

The methodology of teaching biology defines the purpose, content of teaching biology, the selection principle of biological knowledge. The effectiveness of biology teaching in the modern era is determined by the acquisition of biological knowledge, skills, qualifications necessary for students to participate in education, work and social activities. They, in turn, manifest themselves as a result of students' upbringing, worldview, beliefs, attitude to nature, society and the individual. It is expressed by the level of development, abilities, need for improvement of students both physically and practically. The purpose of teaching biology stems from the factors noted above. Knowing the goals of teaching biology gives the teacher the ability to control the teaching process.

1. To determine the role of academic discipline in teaching and educating students;



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2. Development of recommendations for improving school curricula and textbooks and their implementation in school practice;
 3. Determining the content of academic subjects in accordance with the age of students, the consistency of learning of its topics;
 4. Development of teaching methods, organizational forms, taking into account the specifics of biological educational disciplines;
 5. Identifying the necessary equipment for training in the training process. Biology room living corner, organization of experimental land space, designation of natural, pictorial, dynamic, audio, video means.
- Biology is the object of teaching methods and is the educational process associated with this educational subject
- Biology is the subject of teaching methods and is the purpose, content, methods and forms of teaching, education and development of students.

Method part:

1. Monitoring the work experience of school teachers and identifying the positives and negatives in their activities;
2. Analyze and summarize the data collected in this area and identify unsolved problems and forward the necessary working hypotheses for their solution;
3. Conducting pedagogical experiments in schools and comparing the data obtained from experimental, controlled classes in order to determine the relevance of the proposed hypotheses;
4. Analysis, generalization and conclusion of data obtained from observation and pedagogical experiments;
5. Creation of methodological articles, manuals based on the data obtained, and to receive verification and approval of the developed opinions in public schools.

Results:

At present, as a result of pedagogical experiments in the methodology of teaching biology, "Development of biological concepts", "System of forms of teaching in biology", "Methods of teaching biology", Development of ecological concepts in



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biology", "Material base system of teaching biology", "System of methodological preparation of student biologists of pedagogical universities for work in school" Such theories have been developed and put into practice.

Biology taught in schools divides the discipline " Methodology of teaching biology" into such disciplines as "General methodology of teaching biology", "Methods of teaching botany", "Zoology teaching methods", "Methods of teaching man and his health" and finally "Teaching methods of general biology". The general methodology of teaching biology covers such issues as the purpose, task, content, principles, methods, tools, forms, history and stages of teaching biology related to all biological teaching subjects. Private methodologies, on the other hand, focus on the content of this or that academic discipline, such as lessons, extracurricular activities, extracurricular activities, excursions, practical and laboratory classes, etc., depending on the age of the students.

The relationship of biology teaching methodology with other disciplines. The methodology of teaching biology is very closely related to didactic, which is part of pedagogy. If didactics studies the laws of mastering knowledge, skills and qualifications by students and develops theories and principles of teaching for all academic subjects in the school, then the methodology of teaching biology develops theoretical and practical issues related to the content, forms, and methods and tools of teaching and education related to biology.

The methodology of teaching biology is inextricably linked with psychology. Because, teaching biology is effective only if it is appropriate for the age characteristics of the students. For example, in adolescents, that is, in grades 5-6, because the diat is unstable, the biology teacher uses several methods in the course of the lesson, alternating the activities of the students, taking into account the fact that their thinking is concrete, and makes more use of visual aids In the upper grades, it is enough to conduct lessons in the form of lectures and use one or two methods, since the students' attention is stabilized and abstract thinking develops in them.



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Discussion:

The methodology of teaching biology is inextricably linked with biological science. It embodies the foundations of almost all fields of biological sciences: botany, zoology, human anatomy and physiology, stitology, biochemistry, embryology, systematics, ecology, evolution, anthropology, molecular biology. Correct explanation of the external, internal structure of representatives of living nature, the interaction of life activities with the external environment requires good theoretical knowledge and practical training from the teacher. But the teacher should be well aware that there are important differences between the subject of school biology and the science of biology.

While the main purpose of biological science is to conduct research on the nature of living and dead, the purpose of school biology instructional science is to provide students with biological knowledge, i.e. biological concepts, laws, theories and to explain it. The school biology course contains not science, but the basics of science – the basic information necessary for students

At the same time, the school biology course is not a "minor science", but a basic concept system that contributes to the development and upbringing of students.

Methodology of teaching biology as an educational subject. General secondary and secondary special, vocational education biology In teacher training, the methodology of teaching biology plays an incredibly important role. In the process of teaching this academic discipline, the necessary professional knowledge, skills and abilities for teaching biology students are formed. Naturally, in the subject of education, not all the knowledge that science accumulates is given, but its foundations. They consist of teaching tasks, a research article for knowledge, specially selected taking into account the age of the students, the level of training. In contrast to science, the main task of educational science is to impart knowledge and information. Educational science is not a copy of science, and in the creation of an educational subject, the priority is to give students the system of knowledge and experience accumulated by science. It consists not only of the procedure of collecting scientific information,



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but also of generalizing concepts, clarification, organization of scientific facts and opinions.

Conclusion:

Educational discipline is structured in a certain order based on its basic knowledge and informational function. The textbook of the methodology of teaching biology of the Graduate School is closer to science in its structure and content. In addition to scientific information, it expresses different views aimed at solving controversial issues in science, successful or unsuccessful research. He also creates methodologies and methods of scientific research. The methodology of teaching biology in the process of theoretical and practical preparation of students not only describes the structure of the school biology course, but also introduces the peculiarities of the organization of biology teaching in general secondary and secondary specialized vocational institutions, the formation of skills and qualifications in the use of biological teaching methods and tools and allows students to master the requirements for the minimum knowledge that they need to master. At the same time, they develop the skills of innovative approach to the use of modern pedagogical and information technology, biology teaching.

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