

Zoology In The School Education System

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Abstract

The article highlights the relevance of research, its role in student development and the application of pedagogical and innovative learning models to the learning process.

Key words: *education system, innovative models, learning and teaching process, functions of zoology, pedagogical technologies, pedagogical innovation*

1. Introduction

The current stage of development of society poses a whole series of fundamentally new problems for the education system, due to political, socio-economic, ideological and other factors, among which the need to improve the quality and accessibility of education should be highlighted. Increasing academic mobility, integration into the global scientific and educational space, creating economically optimal educational systems, increasing the level of university corporatism and strengthening ties between different levels of education.

Education today is undergoing a crucial stage in its development. In the new millennium, another attempt has been made to reform general education through updating the structure and content. The key to success in this matter is a deep, conceptual, normative and methodological study of the issues of modernization of general education, involvement of a wide circle of scientists, methodologists, specialists of the education management system, teachers, as well as students and their parents.

During the years of independence, interest in environmental protection, environmental safety, development and achievements of biological science and, accordingly, biological special and general education has significantly increased.

The socio-cultural function of zoology as part of biology helps students learn about wildlife, forms a scientific picture of the world in their minds as an element of universal human culture, provides hygienic education and a focus on a healthy lifestyle, and equips with the basics of environmental literacy.

The emergence of new technologies, the integration of sciences, the achievements of genetics, biotechnology, bionics, on the one hand, and the deterioration of public health, environmental problems, on the other hand, put the graduate's biological, zoological and environmental competence in one of the first places in the system of personal representations and beliefs. Therefore, the development of the competence of schoolchildren in the field of biology and zoology, especially those who are ready to continue biological education, able to solve problems both personal and social, is one of the priorities of the modern school.

At the same time, on a global scale, ideas about the meanings and goals of education, its content and organization are changing in accordance with the new paradigms of the 21st century.

A fundamental change in the paradigms of education from traditional (socially-oriented, active) to innovative global (individually-oriented, competent) determines the specifics of the functioning of the student's personality, and in the future, the future specialist in modern conditions of the global information and educational space, which requires the development of an innovative model and appropriate training technologies.

The role of zoology in the system of school education is determined by its importance in the formation of the general culture of the younger generation, the upbringing of a creative personality, and the awareness

of one's responsibility to society for the preservation of life on Earth.

Considering at present an educational institution at any level as a social institution for the enrichment and reproduction of culture also requires innovative changes aimed at developing students' ability and willingness to act in new, constantly changing conditions [1, 2, 3, 4].

The fundamental paradigm of modern teaching and upbringing - humanistic and personality-oriented - involves the implementation of innovations in the educational activities of students aimed at enhancing the role of the subject in the design of personal educational trajectory. Innovations make it possible to overcome the alienation of the student and his personal educational senses from knowledge and the components of the educational process that are externally asked for in the traditional learning process.

However, the results of a study of modern practice in teaching biology and zoology show that in the educational process of the school, approaches that generate formal knowledge in students in the process of mastering zoology continue to dominate. Weaknesses such as insufficient use of information and communication technologies, a low level of motivation, poor attention to the organization and formation of creative activity, critical thinking, pedagogical reflection, and the imperfection of the methodological support of the educational process are observed.

An analysis of the state of the problem of training schoolchildren in zoology in the light of the requirements of the educational standard revealed the following contradictions:

- between the need to implement strategic systemic changes in the field of general secondary education and the undeveloped technological foundations of an innovative model for studying zoology;
- between the widespread introduction of innovative forms and methods of training in order to increase the effectiveness of training and the predominant orientation of teaching staff on traditional educational technologies;
- between the need to develop the theoretical foundations of educational and methodological support for teaching zoology and the lack of a scientifically based innovative educational and methodological system for teaching this subject.

The degree of knowledge of the problem. The main features of innovative development, options for innovative development, as well as (directly or indirectly) the relevant requirements for the education system are considered in a number of foreign publications E. Giddens, P. Drucker, M. Castells,

E. Toffler, F. Sutton, M. Fullan, J. Schumpeter [5,6,7,8,9,10,11,12].

The conceptual foundations of structuring and application of pedagogical technologies are highlighted in the works, V.P. Bepalko, S.S. Kashleva, D.G. Levites, A.V. Khutorsky [13,14, 15, 16, 17].

Works on pedagogical innovation belong to M.S. Burgin, V.I. Zagvyazinsky, S.D. Polyakov, V.M. Polonsky, M.M. Potashniku, N.R. Yusufbekova [18,19,20,21,22].

However, in the aforementioned works, there is no development of a comprehensive integrated innovation system for teaching zoology.

The relevance of this study is caused by the need to systematize innovative pedagogical models and technologies, to determine their role in the development of the student's personality, to show options and ways of applying innovative technologies and educational models in the learning process.

Over the years, the problems of innovations have been developed mainly in the framework of economic research on scientific and technological progress, where the term "innovation" itself begins to be used. Gradually, a wider view of innovation, as a concept that is not limited to the field of economics and material production, but more and more actively includes the problems of sociology, general management theory, and other disciplines, including education, is spreading. However, a generally accepted classification of innovations in education does not yet exist.

The current contradictions in the pedagogical theory and practice of school teaching of the subject made it possible to single out the scientific problem of research: "What should be the innovative teaching and methodological system (model) of teaching zoology?"

The relevance of the problem, its insufficient development in the theory and methodology of teaching biology, allowed us to determine the topic of this study.

To solve this goal, we need:

- 1) substantiate the need to develop an innovative model for the integrated application of forms and technologies of instruction in zoological lessons in the context of modern reforms in the educational system of Uzbekistan;
- 2) to reveal the methodological and conceptual foundations of innovation as a pedagogical phenomenon; to synthesize the leading methodological, organizational and technological ideas for the development of innovative activities of students in the modernization of higher education;
- 4) determine the structure, content, functions, principles, stages, criteria and mechanisms of action of the innovation system and place it in an innovative model for optimizing the education of schoolchildren in zoology lessons;
- 5) carry out an experimental verification of the developed model and fix the pedagogical conditions necessary for its successful implementation.

Practical Results Received:

- in the process of experimental research, a voluminous array of facts was obtained about problems in teaching zoology, about innovative ideas of individual teachers who did not receive practical implementation due to material, administrative, legal and organizational problems; the lack of knowledge and skills of a number of teachers for introducing innovations; on the reaction of students to the introduction of innovative teaching methods; the need for a scientific approach to assessing the effectiveness of various pedagogical innovations. This information gives a picture of problems and unexplored areas that impede the process of pedagogical search and innovation and require their solution in the near future;

- the introduction of an innovative integrated model helps to deepen and enrich the knowledge and practical (research) skills of schoolchildren, which allows us to define it as pedagogically appropriate and effective, consistent with the goals and objectives of modern zoological education;

- the developed model is an aid to the activities of the teacher of zoology, ready for changes in the education system, capable of innovative thinking and the application of innovations in the pedagogical sphere.

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