

RESEARCH ARTICLE

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FEATURES OF USING NON-STANDARD TASKS IN TEACHING SUBJECTS OF THE CLASS OF MAMMALS

Ishanov Almat Adilkhanovich

Independent Researcher of the Karakalpak State University of named after Berdaq, Uzbekistan

Abstract

This article describes some of the features of using non-standard tasks for future biology teachers when teaching topics from the mammals class, as well as a methodology for preparing students for innovative professional activities based on non-standard tasks.

Keywords Quality of education, innovative activity, standard and non-standard tasks, zoology, mammals, taxonomy, species.

INTRODUCTION

In the process of preparing future teachers for innovative professional activities in world educational and research institutions, scientific and practical pedagogical projects are being systematically implemented to introduce interactive educational technologies, develop 21st century competencies such as communication, creativity, collaboration, critical thinking, digital literacy, lifelong learning, and involve students in scientific research based on innovative approaches. Knowledge, skills, qualifications, and competencies that are part of the educational content, as well as the harmonious use of innovative and information and communication technologies by students in biology, as in all disciplines, as well as the effective use of non-standard tasks, are considered important in the process of preparing future biology teachers for innovative professional activities. Non-standard tasks can be widely used in the process of teaching

topics from the content of all types and classes of zoology.

Our research in this process shows that students' scientific concepts in science are formed, their interest in science increases, they understand biological phenomena and processes in their content, logical and creative thinking is formed, the competence of working with textbooks and additional literature is developed, skills of applying previously acquired knowledge in new situations emerge, the opportunity to form interdisciplinary integration is created, and the ground is prepared for consolidating the knowledge gained in lessons.

Zoology is an important fundamental science in the process of training future biology teachers. The use of non-standard tasks in teaching topics from the mammalian class of zoology is the basis for the creative thinking process. Creative thinking is a

complex of mental activities that consist of a person creatively solving the problem set before him, based on his knowledge and life experience, with the help of various methodological approaches, at the level of his intellectual capabilities, having set clear goals and objectives. The development of this activity in students in the field of teaching the topics of the class of mammals of zoology places a great responsibility on the shoulders of professors and teachers working in higher educational institutions.

A non-standard task is a broad concept. Non-standard tasks should be distinguished from standard tasks. These tasks include their own characteristics. In particular, the main distinguishing feature of non-standard tasks is their close connection with creative activity. In addition, it is necessary to emphasize the independent search of students for ways and options for solving the educational problem; unusual working conditions; active repetition of previously acquired knowledge in unfamiliar conditions, and other aspects. Non-standard tasks

can be presented in the form of problem situations, biological problems aimed at representing biological events and phenomena.

Non-standard tasks are distinguished from ordinary exercises and tasks by their special features, in the process of completing them, the learned material is not only consolidated, but also new knowledge can be discovered. Also, these exercises and tasks are designed for an interactive approach and have a rich resource in innovative educational conditions, among which we can distinguish the following: 1. Non-standard task. 2. Work with small groups. 3. Social projects and educational methods provided outside the classroom 4. Studying and consolidating new material (interactive lecture, work with visual aids, video and audio materials), 5. Problem-solving (“family tree”, “brainstorming”) 6. Non-standard tests (open, closed, pictorial, process), etc.

Below we found it necessary to give examples of non-standard tasks related to representatives of the animal world and their specific features.

Task 1. In the non-standard task below, pair the numbers corresponding to the structure and nutrition of the slipper with the appropriate answers?

	Answers	Parts of the structure of the shoe	Numbers						
	A	Contraction vacuole	1						
	B	Cytoplasm	2						
	C	Large nucleus	3						
	D	Ciliates	4						
	E	Digestible food	5						
	F	Mouth	6						
	G	Digestive vacuoles	7						
	H	Small nucleus	8						
	I	Ejection bodies	9						
Answers:	A-	B-	C-	D-	E-	F-	G-	H-	I-

The use of morphological and anatomical jokes in zoology lessons paves the way for the formation of students' cognitive independence and creative thinking.



Task 2. Zoological joke. This amazing animal shown in this picture is made up of separate parts of various insects.

Find out which insects this animal is made up of and justify your opinion.

This type of non-standard tasks is important for students to recognize, clarify, and develop differences and similarities between biological objects [BMMYE2024]

Giving students non-standard tasks on the protection of the animal world in the process of teaching zoology will positively affect the attitude of future teachers towards the animal world. When using non-standard tasks on the protection of the

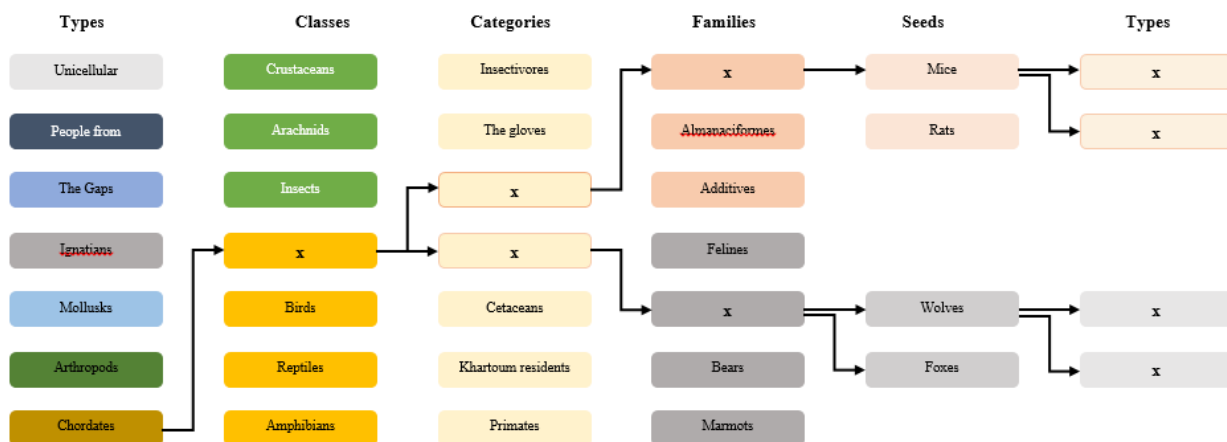
animal world, it is important to provide students with information about the International Red Book and the Red Book of Uzbekistan. Because, it allows you to give the animals included in the Red Book and their exact numbers, compare them with previous numbers. Also, it is important for the teacher to study the opinions of students with their own thoughts on preventing a sharp decrease in their numbers. Because students can use their thoughts and views on the protection of the animal world in their subsequent practical activities.

Task 3 Complete this non-standard task based on your theoretical knowledge. Write the names of five endangered animals belonging to the class Mammalia and complete the task in the appropriate order.

Nº	Animal species	Reason for disappearance	preservation methods
1.			
2.			
3.			
4.			
5.			

The following non-standard tasks were considered important in the formation of systematic concepts of types and classes of the animal world. In this case, students develop practical skills in determining the systematic position of the class of mammals.

Task 4. Based on your systematic knowledge, put the names of the families and species that correspond to the cells marked with an x and complete the exercise.



The use of non-standard tasks of this type in teaching topics about the types of animals has important practical significance in consolidating the knowledge gained in the lesson, assessing the topics covered, activating students' cognitive activity, forming object recognition skills, developing systematic concepts, and thoroughly studying the foundations of science.

In teaching zoology, which is included in the curriculum of the 60110900-biology educational direction of pedagogical higher educational institutions, professors and teachers should widely use non-standard tasks in all forms of teaching, i.e. in lessons, extracurricular and extracurricular activities, as well as in field practices (excursions), in solving existing problems in the educational process, as well as in the process of finding positive solutions to problems of a creative nature. The practical significance of using these non-standard tasks is that they pave the way for an individual and differentiated approach to students in the teaching process. It is advisable for professors and teachers working in higher education institutions to know the components of educational content and the methodological foundations of their assimilation by students in order to achieve the

effectiveness of biological education and properly organize and manage students' cognitive activity..

Conclusion. In the process of developing creative activity in students and non-standard assignments, teachers should pay special attention to the following:

- It is necessary not to give students ready-made knowledge during the lesson, but to direct them to master methods of independent knowledge acquisition, to solve practical and cognitive problems using previously acquired knowledge and skills;
- Explain the importance of mastering communication skills and competencies, the need to have the ability to perform various social roles and work in small groups;
- Explain the need to approach a problem from different perspectives to find a solution;
- The importance of students' ability to effectively use scientific research methods, to collect important information, facts, data, and to draw conclusions and conclusions as a result of their analysis and synthesis.

If future biology teachers systematically develop the skills and competencies mentioned above, they

will be able to adapt to today's changing life as quickly as possible, analyze various problematic situations they encounter throughout their lives and find alternative solutions, take the right path in various unexpected and unusual situations, and most importantly, work seamlessly in different teams.

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