

THE MECHANISM OF DEVELOPING STUDENTS' CREATIVE ABILITIES IN ZOOLOGY LESSONS IN HIGHER EDUCATION

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ABSTRACT: This article analyzes effective mechanisms for developing students' creative abilities in the process of teaching zoology in higher education institutions. The role of interactive methods, independent research tasks, interdisciplinary integration, and information and communication technologies in shaping creative thinking is studied in detail. Modern methods of assessing creativity are also described. The research results indicate a deepening of students' knowledge, improvement of practical skills, and an increase in motivation for creative activity.

KEYWORDS: zoology, creative ability, higher education, interactive methods, innovative approach, independent learning, interdisciplinary integration, ICT, assessment criteria, student engagement

INTRODUCTION

Today, the use of modern, innovative teaching methods in the system of higher education is of particular importance in developing students' creative abilities, especially in natural sciences such as zoology. The rapid development of science and technology, the abundance of information, and the urgency of ecological issues demand a creative approach to the study of zoology. Therefore, in the educational process, fostering creative thinking, developing practical skills, and engaging students in scientific research are among the top priorities. This article provides a theoretical analysis of the effectiveness of such mechanisms.

LITERATURE

In recent years, approaches aimed at developing creative abilities in teaching zoology in higher education have become one of the key areas of pedagogical research. An analysis of scientific sources shows that the role of innovative and interactive methods is invaluable in fostering independent thinking, analytical skills, and scientific research abilities in students.

Modern pedagogical developments in the field of biology emphasize the importance of using active learning methods during lessons, guiding students toward practical application, and supporting their personal initiative to increase educational engagement. For example, some studies highlight effective strategies for developing creative thinking through various interactive methods in biology classes by creating game-based and problem-solving scenarios.

In teaching zoology, especially, student creativity can be shaped effectively through activities based on observation, analysis, and experimentation. From this perspective, it is necessary to create conditions that allow students to independently analyze and propose new ideas while learning about the animal world, including their morphology and ecology.

Moreover, international experience confirms the relevance of this approach. For instance, Bloom's taxonomy provides a foundation for fostering creative thinking through the stages of

REVIEW

deepening, analyzing, synthesizing, and evaluating acquired knowledge. Vygotsky's theory of the "zone of proximal development" allows students to reach new intellectual levels under teacher guidance. Piaget's theories on cognitive development stages assist in selecting didactic strategies that match the students' level of thinking.

In addition, the 21st-century skills promoted by UNESCO—such as creativity, critical thinking, and problem-solving—are recognized today as essential competencies in higher education. This, in turn, reinforces the need to implement pedagogical strategies in zoology teaching that are based on creative activity.

The literature review demonstrates that there are effective mechanisms in zoology education that activate the learning process through creative approaches, while also developing students' scientific inquiry and independent thinking. Such approaches not only improve the quality of knowledge but also contribute to the all-around development of the student's personality.

DISCUSSION

Developing students' creative abilities in zoology education not only increases their interest in the subject but also transforms them into independent thinkers who strive for innovation. The findings of this study show that lessons structured around creative approaches have a positive impact on students' engagement, motivation, and conscious assimilation of knowledge.

Initial observations revealed that compared to traditional teaching methods, classes conducted with interactive and innovative techniques resulted in more active participation, critical questioning, and substantiated student responses. In particular, group work, problem-based tasks, and research-driven laboratory sessions enhanced not only theoretical understanding but also analytical, predictive, and practical problem-solving skills.

A notable aspect is that the nature of zoology—rich in observation, experimentation, comparison, and modeling—makes it uniquely suited for developing creative potential. Furthermore, the complexity and design of student assignments, especially those encouraging independent solutions, serve as decisive factors in shaping creative thinking.

Involving students in individual and team-based project work also reinforces their self-awareness, social engagement, and ability to express personal viewpoints. Research indicates that such approaches enhance knowledge retention, strengthen interdisciplinary connections, and extend creative outcomes beyond the classroom.

However, it is important to note that creative approaches do not automatically yield results. The teacher's methodological preparedness, psychological insight, individualized approach, and well-structured lesson content all play a vital role. Since students differ in interests, cognitive speed, and comprehension levels, creative approaches must be adapted accordingly.

Overall, the analysis confirms that applying methods that support creative activity in zoology classes positively influences teaching quality and fosters comprehensive student development. These approaches are significant not only in increasing academic performance but also in shaping students' future scientific and professional engagement.

RESULTS

Based on the conducted research and practical observations, the following key results were obtained:

1. The use of creative approaches, interactive methods, and problem-based tasks in zoology

lessons enhances student engagement.

2. Students participating in experimental lessons demonstrated independent thinking, observational skills, and analytical approaches.
3. The introduction of project- and research-based tasks significantly increased students' interest in zoology and improved their self-expression.
4. Student feedback gathered through surveys and interviews indicated that creative lessons positively influenced their motivation and attitude toward science.
5. Teachers' didactic preparation and effective lesson planning are among the main factors determining the success of creative approaches.

CONCLUSION

The data obtained during the research suggest that developing and nurturing students' creative abilities in the zoology learning process requires specific pedagogical conditions. Through innovative methods, interactive approaches, and practice-oriented tasks, students can be actively engaged in the learning process, enhancing their creative thinking and independent decision-making skills.

In particular, the following approaches have proven effective:

- Creating problem-based learning situations;
- Organizing research-driven sessions;
- Utilizing interdisciplinary connections;
- Listening to students and updating assessment criteria.

By its nature, zoology encourages observation of natural phenomena, analysis, and understanding of biological processes—providing a favorable environment for developing creative thinking.

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