



PEDAGOGICAL FOUNDATIONS OF TEACHING “DIVERSITY OF INVERTEBRATE ANIMALS” USING COLLABORATIVE LEARNING TECHNOLOGY

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***Abstract.** This article discusses the theoretical and practical aspects of teaching the topic “Diversity of Invertebrate Animals,” which is one of the important sections of biology, in general education schools and higher education institutions using collaborative learning technology. The study analyzes the essence of collaborative learning technology, its didactic potential, its role in biological education, and methods of applying it when teaching the topic of invertebrate animals. Furthermore, the effectiveness of this technology in forming students' knowledge, skills, and competencies is justified.*

***Keywords:** invertebrate animals, biological diversity, collaborative learning technology, interactive methods, group learning, biology teaching methodology, competency-based approach.*

INTRODUCTION

In the modern education system, the introduction of innovative pedagogical technologies in teaching is one of the key tasks. Particularly in biology, mastering complex scientific concepts and a large volume of theoretical material requires active student engagement. From this perspective, collaborative learning technology is recognized as an effective pedagogical approach that transforms students into active participants in the learning process.



The topic “Diversity of Invertebrate Animals” occupies a significant place in the biology curriculum, as it helps explain the evolutionary development of the animal kingdom and biological diversity. Teaching this topic through traditional methods often presents difficulties for students. Therefore, teaching it using collaborative learning technology is a relevant issue.

Biological Content of the Topic “Diversity of Invertebrate Animals”

Invertebrate animals are organisms that lack a vertebral column and exhibit remarkable diversity in structure and life activity. They constitute the majority of animal species on Earth. Invertebrates include sponges, cnidarians, flatworms, roundworms, annelids, mollusks, and arthropods.

This topic helps students develop knowledge about the structure, symmetry, habitat, and ecological significance of animals. It also illustrates concepts of evolution, adaptation, and ecological balance.

The Essence of Collaborative Learning Technology

Collaborative learning technology is a pedagogical approach based on students working together in small groups, acquiring knowledge through mutual interaction and exchange of ideas. In this approach, the teacher acts as a facilitator or guide, while students become active learners.

The main principles of collaborative learning include:

- Interdependence and collective responsibility;
- Ensuring the active participation of each student;
- Creating a cooperative and interactive environment;
- Aligning individual and group assessment.

Methodology for Teaching the Topic Using Collaborative Learning

The following methods can be effectively applied when teaching “Diversity of Invertebrate Animals” using collaborative learning technology:

Working in Small Groups:



Students are divided into groups of 4–5, and each group is assigned a specific type of invertebrate animal. Group members collaboratively analyze the animal's structure, habitat, and significance.

Problem-Based Questions and Discussions:

Problematic questions encourage logical and critical thinking in students.

Use of Visual and Digital Tools:

Images, diagrams, videos, and presentations enhance the effectiveness of group discussions.

Assessment and Analysis of Results:

In collaborative learning, assessment focuses not only on final results but also on the learning process. Assessment criteria include:

- Level of understanding of biological concepts;
- Group activity;
- Communication and presentation skills;
- Independent and creative thinking.

Practical experience shows that topics taught using collaborative learning are understood more deeply and retained more effectively by students.

CONCLUSION

In conclusion, teaching the topic “Diversity of Invertebrate Animals” using collaborative learning technology contributes to effective mastery of biology. This approach increases student engagement, facilitates systematic and conscious acquisition of knowledge, and meets modern educational requirements. Therefore, the widespread implementation of collaborative learning technology in biology lessons is an important pedagogical task.

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