EXTRACURRICULAR ACTIVITIES IN BIOLOGY AS A TOOL FOR DEVELOPING ENVIRONMENTAL AWARENESS IN STUDENTS

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ВНЕКЛАССНЫЕ ЗАНЯТИЯ ПО БИОЛОГИИ КАК ИНСТРУМЕНТ РАЗВИТИЯ ЭКОЛОГИЧЕСКОГО СОЗНАНИЯ УЧАЩИХСЯ

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Abstract. The aim of this study is to explore the impact of extracurricular biology activities on the development of environmental awareness in students. Methods included theoretical analysis of literature and a review of best practices. Results indicated that hands-on activities and involvement in ecological projects significantly enhance environmental literacy. The conclusion emphasizes the need to integrate such activities into educational systems to foster students' active citizenship.

Аннотация. Цель данной работы заключается в изучении влияния внеклассных мероприятий по биологии на формирование экологического сознания у студентов. Использовались теоретический анализ литературы и обзор успешных практик. Результаты показали, что практическая деятельность и вовлечение в экологические проекты значительно повышают уровень экологической грамотности. Сделан вывод о необходимости интеграции таких мероприятий в образовательный процесс для развития активной гражданской позиции студентов.

Keywords: extracurricular activities; biology; environmental awareness; educational technologies; ecology.

Ключевые слова: внеклассные мероприятия; биология; экологическое сознание;

образовательные технологии; экология.

The formation of environmental awareness in students through extracurricular activities in biology represents a critical aspect of contemporary education. These activities help students better understand global environmental challenges, foster a respectful attitude toward the environment, and develop analytical skills, critical thinking, and active engagement in addressing ecological issues. The aim of this article is to demonstrate how extracurricular activities in biology contribute to the development of environmental awareness and how they can be effectively integrated into the educational process.

In the context of escalating global environmental challenges, such as climate change, biodiversity loss, and environmental pollution, educational systems worldwide are compelled to reconsider their approaches. Contemporary research highlights that education plays a pivotal role in shaping environmentally responsible behavior. Extracurricular activities, particularly those related to biology, offer unique opportunities for hands-on exploration of nature, instill ecological values, and enhance students' interest in environmental preservation [1].

Extracurricular activities are organized forms of engagement conducted outside the framework of standard classroom lessons. These include excursions, projects, ecological campaigns, competitions, and academic olympiads. Their objectives encompass deepening knowledge, developing practical skills, and fostering values related to biology and ecology in students.

Environmental awareness refers to a set of knowledge, attitudes, values, and behaviors directed toward preserving and improving the environment. It involves understanding the interconnectedness between humans and nature, recognizing global environmental issues, and being willing to take proactive measures to address them [2, p. 721].

Educational activities, particularly those conducted within the framework of extracurricular programs, help cultivate qualities such as responsibility, empathy, analytical thinking, and initiative among students. Psychologists emphasize that experiential learning—through experiments and field studies—has a more profound impact compared to purely theoretical instruction.

Biology, as a science, is intrinsically linked to the study of living systems, their interactions, and habitats. It is through biology that students begin to appreciate the importance of biodiversity conservation, sustainable development, and the human impact on nature. Environmental aspects integrated into extracurricular biology activities help students understand their role within ecosystems and foster an ecologically oriented worldview [3].

Table 1.

Types of extracurricular activities in biology and their role in developing environmental awareness

Aspect	Examples	Goals and Objectives	Outcomes	
Practical Work	Laboratory experiments, projects on water and air quality monitoring	Developing practical skills, understanding ecological processes	Ecological literacy, awareness of the importance of research	**Pra**
Excursions and Field Studies	Nature observations, trips to reserves, ecosystem research	Building emotional connection with nature, understanding ecosystems	Gaining experience in nature observation, fostering a love for ecology	**Excurs**

Extracurricular activities significantly enhance students' interest in biology by demonstrating its practical applications and relevance to real-world issues. They help students develop critical skills such as data analysis and synthesis, which are essential for understanding complex ecological and biological concepts. Additionally, these activities foster active citizenship by encouraging students

to take responsibility for environmental conservation and engage in community-based problem-solving.

Implementing such activities often faces organizational barriers, such as the need for detailed planning and administrative coordination. Moreover, a lack of resources, including funding, time, and access to necessary tools, can hinder the successful execution of these programs [4, p. 117].

The integration of innovative technologies, such as virtual reality (VR) for virtual excursions, represents a promising trend. These technologies make environmental education more immersive and accessible. Another significant trend is adopting international best practices, which enhance the quality and scope of extracurricular biology programs.

Schools and universities should create integrative programs that combine biology and ecology to provide students with comprehensive environmental education. Collaboration with environmental organizations, investment in teacher training, and allocating dedicated funding for such activities are essential steps to ensure their success.

Extracurricular activities in biology play a crucial role in developing students' environmental awareness, critical thinking, and active citizenship. Their practical and interdisciplinary nature makes them an essential tool for modern education. Given the pressing global environmental challenges, the importance of fostering ecological awareness through education cannot be overstated. Further research and development of innovative approaches are necessary to maximize their impact.

Educational institutions, teachers, and community organizations must prioritize the integration of extracurricular activities into their curricula, ensuring that students are equipped with the knowledge and skills needed to address environmental challenges effectively.

References:

1. Yildiz, Y., Budur, T. Introducing environmental awareness to college students with curricular and extracurricular activities [Электронный ресурс] // International Journal of Academic Research in Business and Social Sciences. – 2019. – URL: https://www.academia.edu/download/90516513/Introducing_Environmental_Awareness_to_College_Students_with_Curricular_and_Extracurricular_Activities.pdf (дата обращения: 13.12.2024).

2. Krasilnikova, E.V., Kuznetsova, S.N. On the formation of environmental consciousness among students of an agricultural university [Электронный ресурс] // IOP Conference Series: Earth and Environmental Science. – 2021. – Т. 723. № 4. – URL: https://iopscience.iop.org/article/10.1088/1755-1315/723/4/042006/pdf (дата обращения: 13.12.2024).

3. El-Batri, B., Alami, A., Nafidi, Y. Extracurricular environmental activities in Moroccan middle schools: Opportunities and challenges to promoting effective environmental education // European Journal of Educational Research. – 2019.

4. Şeker, F., Aydinli, B. A trial patch to sustainable development: Perspectives from extracurricular activities of elementary schools in Turkey [Электронный ресурс] // Science & Education. – 2023. – Т. 32. № 1. – URL: https://link.springer.com/article/10.1007/s11191-021-00315-x (дата обращения: 13.12.2024).