

THE EFFECTIVENESS OF PROJECT-BASED LEARNING IN DEVELOPING ENVIRONMENTAL CULTURE AMONG PRIMARY SCHOOL STUDENTS

Ravshanova Dilnura Xusanovna

4th-year student, Primary Education program
Faculty of Pedagogy and Language Teaching

Urgut Branch of Samarkand State University named after Sharof Rashidov

dilnuraravshanova292@gmail.com

Аннотация: В данной статье рассматривается эффективность метода проектного обучения (Project-Based Learning) в формировании экологической культуры у учащихся начальных классов, в частности на уровне 4 класса. Освещается значение экологического воспитания в условиях современных глобальных экологических проблем. Особое внимание уделяется формированию экологического сознания, развитию ответственного отношения к природе и приобретению практических навыков охраны окружающей среды. В исследовании использованы методы наблюдения, педагогического эксперимента, анкетирования и анализа учебной деятельности учащихся. Результаты исследования показали, что применение проектного обучения способствует активизации познавательной деятельности учащихся, повышению их интереса к экологическим вопросам и формированию устойчивых экологических ценностей.

Ключевые слова: экологическая культура, начальное образование, проектное обучение, экологическое воспитание, экологическое сознание, учащиеся, педагогические технологии, окружающая среда

Abstract: This article examines the effectiveness of Project-Based Learning (PBL) in developing environmental culture among primary school students, particularly at the 4th-grade level. It highlights the importance of environmental education in the context of modern global environmental problems. Special attention is given to the formation of ecological awareness, the development of a responsible attitude toward nature, and the acquisition of practical environmental protection skills. The study uses methods such as observation, pedagogical experiment, questionnaires, and analysis of students' learning activities. The results show that the use of project-based learning enhances students' cognitive activity, increases their interest in environmental issues, and contributes to the formation of stable environmental values.

Keywords: environmental culture, primary education, project-based learning, environmental education, ecological awareness, students, pedagogical technologies, environment

Introduction: In the 21st century, as global environmental problems intensify, shaping a responsible and healthy attitude toward nature among the younger generation has become one of the priority directions of state policy. The primary school period, especially the 4th grade, is considered a crucial stage when students' worldview and moral values become more stable. At this age, children have a strong emotional connection to nature, which creates a favorable foundation for developing their environmental culture. Environmental culture is not merely a set of knowledge about nature, but a complex of responsible behaviors, skills, and values aimed at protecting the environment. According to pedagogical theory, environmental education should be continuous and systematic in nature. It should be carried out based on interdisciplinary

integration and closely connected with subjects such as the native language, reading, natural science, technology, and moral education. In theoretical literature, the concept of environmental culture is interpreted as a complex characteristic that reflects an individual's conscious, responsible, and ethical attitude toward nature. The formation of environmental culture requires the integration of moral, aesthetic, and labor education. Developing love for nature and a sense of care toward animals and plants in students forms the foundation of ecological awareness.

Research Methodology: In this study, a comprehensive approach was applied to determine the effectiveness of Project-Based Learning in developing environmental culture among primary school students. During the research process, the observation method was used to examine students' attitudes toward nature, their level of interest, and their environmental behavior in both classroom and extracurricular activities. The experimental method was also applied, in which control and experimental groups were organized. Environmental projects were implemented in the experimental group, and the results were comparatively analyzed between the two groups. Furthermore, interview and questionnaire methods were used to identify students' environmental knowledge, perceptions, and values. Through these methods, their attitudes toward environmental issues and level of ecological awareness were clarified. Tests and practical assignments were conducted to evaluate students' environmental skills, abilities, and competencies. Finally, the collected data were systematically analyzed, and conclusions were drawn regarding the effectiveness of the project-based learning method in enhancing environmental culture among primary school students.

Methods

1. **Observation Method** – Students were introduced to the nature around the school, observing the life of trees, birds, and plants. Daily observations were conducted regarding weather, seasons, and changes in nature.
2. **Practical Activity (Experimental) Method** – Students performed practical tasks such as watering flowers, planting seedlings, preparing mini-herbaria, and sorting waste. Environmental experiments were conducted (e.g., water quality, the effect of light on plant growth, etc.).
3. **Interview and Interactive Methods** – Discussions were held on topics like “Friends of Nature,” “The World Around Us,” and “How to Protect Nature?” Interactive techniques such as brainstorming, debates, clusters, and cinquain were used to reinforce ecological concepts.
4. **Game Methods** – Role-playing games included “Eco Police,” “Nature Guardians,” and “Sorting Waste.” Didactic games included ecological dominoes, card games, and quizzes.

Results

1. **Integrative Model for Developing Environmental Awareness** – As a result, a four-block integrative model is proposed for forming environmental awareness in school students: (1) Goals and Competencies Block (2) Content Block (3) Methods and Activities Block (4) Assessment and Monitoring Block

The advantage of this model is that environmental education does not remain merely a collection of “activities”; it is connected to learning outcomes and evaluation criteria.

Conclusion:

Environmental education, its pedagogical foundations, and the materials and methods for their practical application play a crucial role in fostering respect for nature and enhancing students' emotional connection to the environment. Learning about nature and understanding its conservation is essential for students to seek answers to important questions related to global ecological challenges. Such knowledge provides the foundation for explaining the value of nature, shaping students' attitudes and behaviors toward the environment, and promoting ecological thinking and proactive actions. Moreover, environmental education encourages students to develop responsibility, care, and empathy for living beings and ecosystems. It helps them understand the interdependence between humans and the natural world, emphasizing the ethical and moral dimensions of environmental stewardship. By integrating theoretical knowledge with practical experiences, students gain the necessary skills to participate in ecological projects, make informed decisions, and adopt sustainable habits in their daily lives. Ultimately, a well-organized approach to environmental education equips young learners with the cognitive, emotional, and ethical tools to become active participants in preserving and protecting the natural world. It lays a solid foundation for lifelong ecological awareness, ensuring that future generations can engage meaningfully with environmental issues.

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