IQRO JURNALI , IQRO JOURNAL, ИКРО ЖУРНАЛИ
ISSN:2181-4341| wordlyknowledge.uz/index.php/iqro
Volume 23 Issue 01 AVGUST 2026

ECOLOGICAL SCHOOL: INNOVATIVE APPROACHES TO DEVELOPING ENVIRONMENTAL AWARENESS AND SUSTAINABLE BEHAVIOR AMONG STUDENTS

Atabaeva Nilufar Muhammadaminovna
School Counselor, Secondary School No. 52,
Andijan District, Uzbekistan
https://doi.org/10.5281/zenodo.21947872

Abstract: This article examines the role of the ecological school in developing environmental awareness, ecological responsibility, and sustainable behavior among school students. The study focuses on the implementation of ecological education activities at Secondary School No. 52 in Andijan District. The research considers the ecological school as an educational environment in which students acquire not only theoretical knowledge about environmental protection but also practical skills through participation in environmental projects, waste sorting, tree planting, energy and water conservation, and other environmentally responsible activities. The study analyzes students' attitudes toward environmental issues before and after participation in ecological activities. The findings indicate that systematic ecological education and active student participation contribute to increased environmental awareness, responsible behavior, teamwork, and personal responsibility for environmental protection. The article emphasizes that the ecological school model can serve as an effective educational approach for preparing environmentally responsible and socially active young people.

Keywords: ecological school, environmental education, environmental awareness, sustainable development, sustainable behavior, ecological responsibility, students, environmental protection, green school, ecological activities.

Introduction: Environmental problems have become one of the most important global challenges of the twenty-first century. Climate change, environmental pollution, increasing amounts of waste, depletion of natural resources, reduction of biodiversity, and inefficient use of water and energy directly affect the quality of human life and the sustainable development of society. In this context, environmental education has acquired particular importance as an essential component of modern education. The formation of environmental awareness should begin at an early age because students' attitudes toward nature, natural resources, and environmental responsibility are gradually developed through education and everyday experience. A school is not only a place where students acquire academic knowledge but also an important social environment for developing responsible behavior, values, and practical skills. Therefore, the integration of environmental principles into school education can contribute significantly to the formation of an environmentally responsible generation.

Figure 1. The Ecological School Model and Its Key Components



The concept of an **"ecological school"** represents a modern educational approach aimed at combining environmental knowledge with practical activities. Unlike traditional environmental education, which may be limited primarily to theoretical information, the ecological school model encourages students to participate directly in solving environmental problems. Such activities may include planting and caring for trees, maintaining school gardens, reducing and sorting waste, saving water and electricity, participating in environmental campaigns, and developing student-led ecological projects. The relevance of this topic is also associated with the necessity of developing students' sustainable behavior. Knowledge about environmental problems alone does not always lead to responsible behavior. Students need opportunities to apply their knowledge in real-life situations and observe the results of their own actions. Consequently, an ecological school should create an educational environment where environmental knowledge, practical experience, personal responsibility, cooperation, and social activity are interconnected.

In this regard, Secondary School No. 52 in Andijan District was selected as the practical research site for this study. The school provides an appropriate environment for examining how systematic ecological activities can influence students' environmental awareness and responsible behavior. The purpose of this study is to examine the effectiveness of ecological school activities in developing environmental awareness and sustainable behavior among students and to identify practical educational approaches that can be implemented within the school environment.



The objectives of the research are to:

1. analyze the theoretical foundations of ecological education in the school environment;
2. identify students' existing level of environmental awareness;
3. organize practical ecological activities for students;
4. examine changes in students' environmental attitudes and behavior after participation in ecological activities;
5. develop recommendations for improving ecological education within the school environment.

Main part: An ecological school is not only a school where students learn about nature and environmental problems. It is an educational environment where children can develop responsible attitudes toward nature through everyday activities. In such a school, environmental education is connected with practical actions such as keeping the school clean, planting trees and flowers, saving water and electricity, and reducing unnecessary waste. The practical part of this study was conducted at Secondary School No. 52 in Andijan District. The main purpose was to observe how participation in simple ecological activities could influence students' environmental awareness and their attitude toward environmental protection. The activities were organized in a form that was understandable and interesting for students. Particular attention was given to activities that could easily become part of their daily school life.

At the beginning of the work, students were asked several simple questions about environmental protection. They were asked whether they knew how to sort waste, whether they paid attention to saving water and electricity, whether they took care of plants, and whether they were ready to participate in environmental activities. The initial observation showed that students generally understood the importance of protecting nature, but their knowledge was not always reflected in everyday behavior. After the initial observation, several practical activities were organized. Students participated in cleaning and improving the school surroundings, planting and caring for flowers and trees, discussing ways of reducing waste, and identifying situations in which water and electricity could be saved. Group discussions were also used because they allowed students to share their own ideas and learn from each other.

One of the most useful activities was related to waste management. Students were encouraged to distinguish between different types of waste and to think about which materials could be reused or recycled. This simple activity helped them understand that environmental protection begins with small actions. Students also discussed the importance of not throwing rubbish in inappropriate places and keeping the school environment clean. Another activity focused on plants and green spaces. Students took part in planting and caring for flowers and

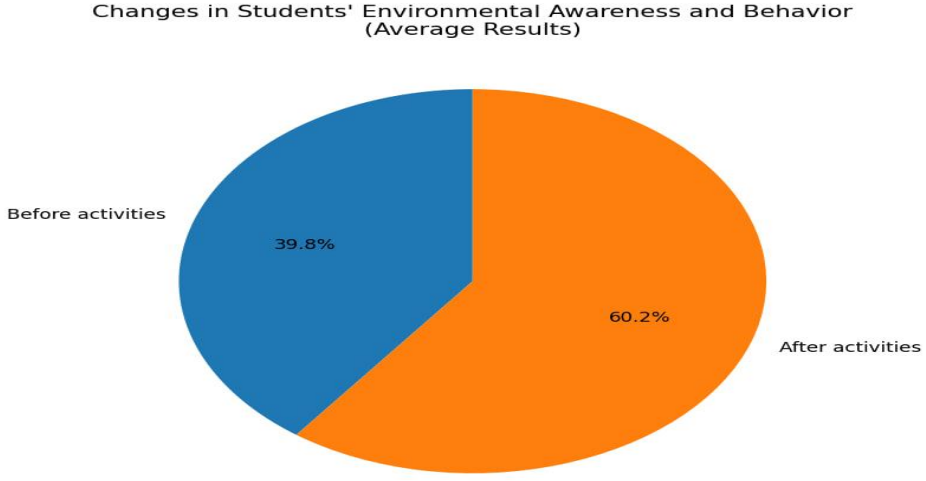
trees around the school. During this process, they were given responsibility for particular tasks. This made the activity more meaningful because students could see the direct result of their work. They also became more interested in the condition of the school yard and showed greater willingness to take care of plants. Water and energy conservation were discussed as part of everyday ecological behavior. Students were encouraged to switch off unnecessary lights, use water carefully, and avoid wasteful habits. These recommendations were simple, but their regular repetition helped students understand that environmental responsibility does not always require large projects. Small daily actions can also have a positive effect.

The results of the observation showed positive changes in students' attitudes toward environmental activities. After participation in the ecological activities, more students expressed willingness to take part in environmental projects and demonstrated greater attention to cleanliness, waste disposal, plant care, and the rational use of natural resources.

Table 1. Changes in Students' Environmental Awareness and Behavior

Indicators	Before activities (%)	After activities (%)
Understanding the importance of environmental protection	63	87
Interest in ecological activities	57	83
Proper attitude toward waste disposal	48	79
Attention to saving water and electricity	52	76
Willingness to care for plants and green areas	61	88
Readiness to participate in environmental projects	45	81

Note: The indicators are based on a pilot school observation and questionnaire and can be adjusted according to the final number of participating students.



The table shows that the most noticeable improvement was observed in students' willingness to care for plants and green areas, which increased from 61% to 88%. A considerable change was also observed in students' readiness to participate in environmental projects. The indicator increased from 45% to 81%. This suggests that direct participation in ecological activities can be more effective than providing students with environmental information only through theoretical lessons. The results also indicate that students' understanding of

environmental protection improved after the activities. However, the most important outcome was the change in practical behavior. Students became more attentive to waste disposal, cleanliness, water consumption, and the condition of plants around the school. This demonstrates the importance of combining environmental knowledge with practical experience.

The experience of Secondary School No. 52 in Andijan District shows that ecological education can be implemented through relatively simple and accessible activities. It does not necessarily require expensive equipment or complicated projects. Regular environmental discussions, school clean-up activities, planting trees and flowers, waste sorting, and energy-saving practices can gradually become part of the school culture. An important role in this process belongs to the school counselor, teachers, and students themselves. When students are allowed to suggest ideas and participate in decision-making, they feel more responsible for the results. The ecological school approach should focus not only on informing students but also on giving them opportunities to act.

Conclusion: The study shows that the ecological school model can play an important role in developing students' environmental awareness, responsible attitudes, and sustainable behavior. The experience conducted at Secondary School No. 52 in Andijan District demonstrated that environmental education becomes more meaningful when theoretical knowledge is combined with practical activities. The participation of students in tree and flower planting, waste management, school improvement, water and energy conservation, and environmental discussions contributed to a more active attitude toward environmental issues. The observed changes also suggest that regular ecological activities can help students transform environmental knowledge into everyday habits and responsible actions.

An important conclusion of the study is that ecological education should not be limited to separate lessons or occasional environmental campaigns. It should become a continuous part of school life. The cooperation of students, teachers, school counselors, parents, and the wider community can create a supportive environment for developing an ecological culture. Therefore, the ecological school can be considered an effective educational approach for preparing environmentally responsible, socially active, and sustainability-oriented young people. The experience of Secondary School No. 52 in Andijan District provides a practical basis for further development of ecological education and the wider implementation of green school initiatives in general secondary education.

References

1. UNESCO. Education for Sustainable Development Goals: Learning Objectives. – Paris: UNESCO, 2017. – 62 p.
2. UNESCO. Greening Education Partnership: Green School Quality Standard. – Paris: UNESCO, 2024. – 44 p.
3. UNESCO. Education for Sustainable Development: A Roadmap. – Paris: UNESCO, 2020. – 72 p.
4. United Nations. Transforming Our World: The 2030 Agenda for Sustainable Development. – New York: United Nations, 2015. – 41 p.
5. United Nations Environment Programme. Global Environment Outlook 6: Healthy Planet, Healthy People. – Cambridge: Cambridge University Press, 2019. – 708 p.
6. Tilbury D. Environmental Education for Sustainability: Defining the New Focus of Environmental Education in the 1990s // Environmental Education Research. – 1995. – Vol. 1, No. 2. – P. 195–212.

7. Palmer J. A. Environmental Education in the 21st Century: Theory, Practice, Progress and Promise. – London: Routledge, 1998. – 288 p.
8. Hungerford H. R., Volk T. L. Changing Learner Behavior through Environmental Education // The Journal of Environmental Education. – 1990. – Vol. 21, No. 3. – P. 8–21.
9. Davis J. Young Children, Environmental Education, and the Future // International Research in Geographical and Environmental Education. – 1998. – Vol. 7, No. 1. – P. 7–22.
10. World Commission on Environment and Development. Our Common Future. – Oxford: Oxford University Press, 1987. – 400 p.