

**FORMATION OF ECOLOGICAL CULTURE IN SCHOOLCHILDREN:
FOSTERING A SENSE OF RESPONSIBILITY FOR NATURE**

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Annotation: This article examines the importance of forming ecological culture in schoolchildren and developing their sense of responsibility toward nature. The study analyzes theoretical approaches to environmental education, the role of schools and teachers, and effective pedagogical methods used in ecological upbringing. Special attention is given to interdisciplinary teaching, practical environmental activities, and the influence of ecological awareness on students' behavior. The research highlights that ecological education contributes to sustainable development and the formation of environmentally responsible citizens in modern society.

Keywords: ecological culture, environmental education, schoolchildren, ecological awareness, sustainable development.

Introduction

In the modern world, environmental problems such as climate change, air and water pollution, deforestation, loss of biodiversity, and the irrational use of natural resources have become global challenges affecting all spheres of human life. These ecological issues not only threaten the stability of ecosystems but also endanger the future development of humanity. Therefore, the formation of ecological consciousness and environmental responsibility among younger generations has become one of the priority tasks of contemporary education systems. In this regard, schools play a decisive role in shaping students' attitudes toward nature and developing environmentally responsible behavior from an early age.

Ecological culture is considered an integral part of general human culture and reflects individuals' knowledge, values, ethical attitudes, and practical behavior related to environmental protection and sustainable living. The development of ecological culture in schoolchildren contributes to the formation of responsible citizens who understand the importance of preserving natural resources and maintaining ecological balance. Educational institutions are expected not only to provide theoretical knowledge about environmental issues but also to cultivate emotional attachment to nature, ecological thinking, and active participation in environmental activities. In recent years, many countries have introduced environmental education into school curricula as part of sustainable development strategies. International organizations such as UNESCO and United Nations emphasize that environmental education should encourage learners to develop ecological awareness, critical thinking, and practical skills for solving environmental problems. Through various educational approaches, including project-based learning, outdoor activities, eco-clubs, and community participation, students can acquire not only environmental knowledge but also a strong sense of personal responsibility toward nature.

Literature Review

The issue of ecological culture formation among schoolchildren has been widely studied in modern pedagogy, psychology, and environmental education research. Many scholars emphasize that environmental education should not be limited to theoretical knowledge but must also develop ecological values, responsible behavior, and practical environmental skills in students. According to UNESCO, environmental education is an essential component of sustainable development and should encourage learners to actively participate in solving ecological problems¹⁹.

Researchers such as Hungerford and Volk argue that ecological responsibility is formed through environmentally oriented experiences and active participation in nature protection activities rather than through passive learning alone²⁰. Their studies demonstrate that project-based learning, outdoor education, and ecological campaigns significantly influence students' environmental awareness and behavior. Similarly, Palmer highlights that emotional connection with nature during childhood plays a crucial role in shaping long-term ecological attitudes²¹. In the context of school education, Tilbury notes that effective environmental education requires interdisciplinary integration and cooperation between teachers, families, and communities²². Modern studies also underline the importance of integrating ecological topics into everyday educational practice in order to develop environmentally conscious citizens capable of making sustainable decisions in the future.

Methodology

This study is based on qualitative and theoretical research methods, including the analysis of scientific literature, pedagogical approaches, and environmental education concepts related to ecological culture formation in schoolchildren. Comparative, descriptive, and content analysis methods were used to examine effective ways of developing environmental responsibility and ecological awareness in the educational process.

Results And Discussion

The problem of forming ecological culture in schoolchildren has been extensively discussed in modern pedagogical and environmental studies. Researchers emphasize that ecological culture includes not only environmental knowledge but also values, ethical attitudes, and environmentally responsible behavior. According to UNESCO, environmental education should help learners "understand the interdependence between humans and nature" and encourage active participation in solving ecological problems²³. This idea demonstrates that ecological education is viewed internationally as an essential component of sustainable development. In his work *Environmental Education in the XIX Century*, Joy A. Palmer argues that children's emotional experiences in nature strongly influence their future ecological attitudes²⁴. Palmer explains that students who regularly communicate with the natural environment during childhood are more likely to develop long-term ecological

¹⁹ UNESCO. Education for Sustainable Development Goals: Learning Objectives. – Paris: UNESCO Publishing, 2017. – 62 p.

²⁰ Hungerford H. R., Volk T. L. Changing Learner Behavior through Environmental Education // *Journal of Environmental Education*. – 1990. – Vol. 21, № 3. – P. 8–21.

²¹ Palmer J. A. *Environmental Education in the 21st Century: Theory, Practice, Progress and Promise*. – London: Routledge, 1998. – 272 p.

²² Tilbury D. Environmental Education for Sustainability: Defining the New Focus of Environmental Education in the 1990s // *Environmental Education Research*. – 1995. – Vol. 1, № 2. – P. 195–212.

²³ UNESCO. Education for Sustainable Development Goals: Learning Objectives. – Paris: UNESCO Publishing, 2017. – 62 p.

²⁴ Palmer J. A. *Environmental Education in the 21st Century: Theory, Practice, Progress and Promise*. – London: Routledge, 1998. – 272 p.

responsibility. For example, participation in school excursions, ecological camps, and outdoor observations strengthens emotional attachment to nature and increases ecological awareness. Palmer's theory proves that environmental education should include practical interaction with nature rather than only classroom instruction.

A significant contribution to environmental pedagogy was made by Harold R. Hungerford and Trudi L. Volk. In their article "Changing Learner Behavior through Environmental Education," the scholars state that ecological knowledge alone does not guarantee environmentally responsible behavior²⁵. They argue that students become environmentally responsible mainly through direct participation in ecological activities. According to their research, school recycling programs, tree planting campaigns, and environmental problem-solving projects positively influence students' ecological behavior because learners begin to see themselves as active protectors of nature. Similarly, Daniella Tilbury emphasizes that ecological culture should be integrated into all educational subjects instead of being taught separately²⁶. Tilbury notes that environmental education becomes more effective when ecological themes are connected with geography, biology, literature, and social sciences. For instance, literature lessons discussing human relationships with nature can develop students' ethical understanding, while geography classes help learners analyze climate change and environmental crises scientifically. This interdisciplinary approach broadens ecological thinking and forms a holistic environmental worldview.

The importance of ecological ethics is also highlighted by David W. Orr, who argues that modern education often produces technologically skilled individuals without ecological responsibility²⁷. Orr states that education should teach students how to live sustainably and responsibly within natural systems. His theory is especially important in the context of modern ecological crises because it links education directly with environmental survival and sustainable development. Another important theoretical perspective belongs to Richard Louv, who introduced the concept of "nature-deficit disorder" in children²⁸. Louv explains that excessive dependence on digital technologies and limited interaction with natural environments negatively affect children's psychological and ecological development. He argues that direct communication with nature improves children's emotional well-being and strengthens ecological consciousness. This idea supports the importance of outdoor environmental education in schools.

The role of teachers in forming ecological culture is examined by William B. Stapp, who considers educators the key agents of environmental awareness²⁹. According to Stapp, teachers should encourage students to analyze ecological problems critically and participate in solving local environmental issues. His pedagogical approach focuses on active learning, discussion, and environmental action rather than passive memorization of theoretical information. Modern studies also underline the importance of sustainable education policies. Researchers such as Stephen Sterling argue that ecological education should transform

²⁵ Hungerford H. R., Volk T. L. Changing Learner Behavior through Environmental Education // Journal of Environmental Education. – 1990. – Vol. 21, № 3. – P. 8–21.

²⁶ Tilbury D. Environmental Education for Sustainability: Defining the New Focus of Environmental Education in the 1990s // Environmental Education Research. – 1995. – Vol. 1, № 2. – P. 195–212.

²⁷ Orr D. W. Ecological Literacy: Education and the Transition to a Postmodern World. – Albany: State University of New York Press, 1992. – 210 p.

²⁸ Louv R. Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder. – Chapel Hill: Algonquin Books, 2005. – 336 p.

²⁹ Stapp W. B. The Concept of Environmental Education // Environmental Education. – 1969. – Vol. 1, № 1. – P. 30–31.

students' worldview and develop ecological thinking at all levels of education³⁰. Sterling emphasizes that sustainability education encourages responsible decision-making, critical thinking, and understanding of the long-term consequences of human activities on the environment.

Conclusion

The formation of ecological culture in schoolchildren is an essential component of modern education aimed at developing environmentally responsible and socially conscious individuals. The analysis of scientific literature shows that effective environmental education should combine theoretical knowledge with practical activities, emotional connection with nature, and interdisciplinary teaching approaches. Schools, teachers, families, and society collectively play an important role in fostering ecological awareness and sustainable behavior in younger generations. Therefore, strengthening ecological education in schools contributes not only to environmental protection but also to the development of responsible citizens capable of supporting sustainable development in the future.

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