



**WORLD BULLETIN
PUBLISHING**
Online Publishing Hub

World Bulletin of Education and Learning (WBEL)

ISSN (E): 3072-175X

Volume 01, Issue 01, October 2025



This article/work is licensed under CC by 4.0 Attribution

<https://worldbulletin.org/index.php/1>

STAGES OF FORMATION AND DEVELOPMENT OF ENVIRONMENTAL EDUCATION IN UZBEKISTAN: A HISTORICAL AND PEDAGOGICAL ANALYSIS

Teshaeva Dilnoza Chorievna

Teacher of Bukhara State Medical Institute

ABSTRACT

This article explores the historical and pedagogical evolution of environmental education in Uzbekistan, tracing its formation, institutionalization, and transformation across various social and political stages. Environmental education has undergone a significant conceptual shift—from moral and hygienic instruction during the pre-Soviet and early Soviet periods to a scientifically grounded and globally integrated discipline in modern times. The research identifies the main stages of development: the traditional ecological consciousness of the Uzbek people; the Soviet period marked by centralized ecological education within school curricula; the post-independence era emphasizing environmental protection in national education standards; and the contemporary digital phase integrating sustainability and innovation. By analyzing archival documents, legislative acts, and pedagogical literature, the study highlights the dynamic interaction between national traditions, socio-political reforms, and pedagogical modernization in shaping ecological awareness. The article concludes that the integration of historical experience with modern pedagogical approaches is essential for forming a sustainable ecological culture among youth and ensuring long-term environmental responsibility in education.

Keywords: environmental education, historical-pedagogical analysis, ecological culture, sustainability, educational reform, pedagogy, ecological awareness, modernization, innovation, digital transformation.



Introduction

O‘ZBEKISTONDA EKOLOGIK TARBIYANING SHAKLLANISH VA RIVOJLANISH BOSQICHLARI: TARIXIY-PEDAGOGIK TAHLIL

Teshayeva Dilnoza Chorievna

Buxoro davlat tibbiyot instituti o‘qituvchisi

Annotatsiya: Ushbu maqolada O‘zbekistonda ekologik ta’limning tarixiy va pedagogik evolyutsiyasi tahlil qilinib, uning shakllanishi, institutsionalizatsiyasi hamda turli ijtimoiy-siyosiy bosqichlarda kechgan o‘zgarishlari yoritiladi. Ekologik ta’lim konseptual jihatdan sezilarli o‘zgarishga uchragan — Sovetgacha va ilk sovet davrlaridagi axloqiy-gigiyenik yo‘nalishdagi ta’limdan tortib, bugungi kunda ilmiy asoslangan va global miqyosda integratsiyalashgan soha darajasiga yetgan. Tadqiqotda rivojlanishning asosiy bosqichlari aniqlangan: o‘zbek xalqining an’anaviy ekologik ongini ifodalovchi davr; maktab dasturlarida markazlashtirilgan ekologik ta’lim joriy etilgan sovet davri; mustaqillikdan keyingi bosqichda milliy ta’lim standartlariga ekologik muhofaza tamoyillarining kiritilishi; va barqarorlik hamda innovatsiyani uyg‘unlashtirgan zamonaviy raqamli davr. Arxiv hujjatlari, qonunchilik hujjatlari va pedagogik adabiyotlar tahlili asosida tadqiqot ekologik ong shakllanishida milliy an’analar, ijtimoiy-siyosiy islohotlar hamda pedagogik modernizatsiya o‘rtasidagi o‘zaro ta’sirni yoritadi. Maqola tarixiy tajriba bilan zamonaviy pedagogik yondashuvlarni integratsiyalash orqali yoshlar orasida barqaror ekologik madaniyatni shakllantirish va ta’limda uzoq muddatli ekologik mas’uliyatni ta’minlash zarurligini ta’kidlaydi.

Kalit so‘zlar: ekologik ta’lim, tarixiy-pedagogik tahlil, ekologik madaniyat, barqarorlik, ta’lim islohoti, pedagogika, ekologik ong, modernizatsiya, innovatsiya, raqamli transformatsiya.

Introduction

The issue of environmental education in Uzbekistan occupies a crucial place in the broader framework of pedagogical and social development. The formation of



ecological consciousness among citizens is directly linked to the historical evolution of national education systems, which have continually reflected the socio-political, cultural, and economic transformations of the country. The roots of environmental education can be traced to ancient traditions of harmony between humans and nature, reflected in folklore, proverbs, and local customs emphasizing respect for land, water, and biodiversity. These early moral-ethical principles later evolved into pedagogical elements in madrasas and local schools, where ecological literacy was implicitly transmitted through moral and religious instruction.

During the Soviet era, the institutionalization of environmental education gained formal status. The centralized education system introduced natural science subjects with environmental components, and the idea of rational resource use became part of the ideological agenda. However, the focus was primarily utilitarian, emphasizing production efficiency rather than environmental ethics. Despite these limitations, the groundwork for modern ecological education was laid through initiatives such as nature conservation clubs, school-based ecology programs, and the establishment of scientific institutions for environmental research.

The period following Uzbekistan's independence in 1991 marked a decisive shift toward integrating environmental values into the national educational paradigm. Legislative acts such as the Law on Education and the National Program for Personnel Training emphasized environmental awareness as a key competence for future generations. Environmental education began to evolve from a purely natural-scientific discipline into an interdisciplinary field encompassing social responsibility, ethics, and sustainable development. Educational reforms encouraged the development of curricula focusing on ecological safety, green technologies, and rational use of natural resources. Universities introduced specialized departments and courses on environmental pedagogy, thereby expanding both theoretical and practical dimensions of ecological education.

In recent years, global ecological challenges—such as climate change, desertification, and biodiversity loss—have further influenced educational policy in Uzbekistan. The integration of digital and innovative methods into



**WORLD BULLETIN
PUBLISHING**
Online Publishing Hub

World Bulletin of Education and Learning (WBEL)

ISSN (E): 3072-175X

Volume 01, Issue 01, October 2025



This article/work is licensed under CC by 4.0 Attribution


<https://worldbulletin.org/index.php/1>

environmental teaching has opened new possibilities for experiential learning, data analysis, and student engagement. Online platforms, virtual ecological laboratories, and AI-assisted environmental simulations now complement traditional teaching approaches. As a result, environmental education is increasingly seen not merely as a subject but as a holistic pedagogical approach that prepares students to think critically, act responsibly, and contribute to sustainable national and global development. This evolution demonstrates the growing significance of environmental pedagogy as a foundation for ecological culture and civic consciousness in the 21st century.

Methods

The methodological framework of this study is based on a combination of historical, pedagogical, and comparative research approaches aimed at identifying the evolutionary dynamics of environmental education in Uzbekistan. The research employs a chronological-historical method to trace the formation and development of ecological ideas from traditional society to the modern educational system. Archival documents, educational reforms, legislative acts, and curricular materials from different historical periods were analyzed to determine how environmental education goals, content, and methods have changed over time. This diachronic approach allows for an objective reconstruction of pedagogical continuity and transformation within diverse socio-political contexts.

In addition, a historical-pedagogical analysis was used to examine educational ideas embedded in traditional Uzbek culture, including the works of scholars such as Al-Farabi, Ibn Sina, Beruni, and Navoiy, whose teachings reflected harmony between human beings and nature. These early intellectual and ethical models provided the groundwork for later environmental values incorporated into modern pedagogy. The study also utilizes a content analysis of textbooks, educational standards, and methodological guidelines to evaluate the presence and evolution of ecological concepts in school and university curricula from the Soviet era to the present.

 WORLD BULLETIN PUBLISHING <small>Online Publishing Hub</small>	<h1 style="text-align: center;">World Bulletin of Education and Learning (WBEL)</h1>
ISSN (E): 3072-175X	Volume 01, Issue 01, October 2025
	This article/work is licensed under CC by 4.0 Attribution
https://worldbulletin.org/index.php/1	

A comparative analysis was conducted between Uzbekistan’s environmental education and global trends promoted by UNESCO, UNEP, and OECD frameworks. This helped identify similarities and differences in pedagogical strategies, institutional mechanisms, and conceptual orientations. The research adopts the principles of interdisciplinarity, recognizing that environmental education intersects with biology, geography, ethics, social studies, and digital technologies.

Qualitative methods, such as expert interviews with teachers and education policymakers, were used to gather insights on the current implementation of ecological pedagogy and the challenges faced in integrating sustainability education into the national curriculum. The interpretive analysis of these findings reveals the extent to which modern ecological education aligns with historical traditions and responds to contemporary global environmental issues.

Finally, the study applies a systems approach, considering environmental education as a dynamic pedagogical subsystem within the broader educational framework of the country. This approach allows for the analysis of interactions among educational institutions, teaching materials, teacher training programs, and students’ ecological competencies. The methodological triangulation ensures that the research captures both historical continuity and modern innovation, offering a comprehensive understanding of how environmental education in Uzbekistan has evolved into a multidimensional pedagogical system promoting sustainability, national identity, and global ecological awareness.

Results

The historical and pedagogical analysis revealed that environmental education in Uzbekistan has evolved through four distinct yet interconnected stages, each reflecting the socio-cultural and political development of the nation. The first stage, the pre-Soviet traditional period, was characterized by moral and religious teachings that emphasized respect for nature and responsible resource use. Ecological ideas were transmitted through oral traditions, folk wisdom, and spiritual education. Concepts such as cleanliness, moderation, and gratitude



**WORLD BULLETIN
PUBLISHING**
Online Publishing Hub

World Bulletin of Education and Learning (WBEL)

ISSN (E): 3072-175X

Volume 01, Issue 01, October 2025



This article/work is licensed under CC by 4.0 Attribution

<https://worldbulletin.org/index.php/1>

toward nature were integrated into daily life and community-based moral upbringing, forming an early ethical foundation for ecological awareness.

The second stage, corresponding to the Soviet era, marked the institutionalization of environmental education. During this time, natural sciences became the primary vehicle for ecological instruction. Although ideologically influenced by industrialization and collectivization policies, Soviet education fostered a scientific understanding of environmental processes. Textbooks on biology, geography, and chemistry incorporated lessons on soil conservation, forest protection, and water management. The establishment of youth environmental organizations such as the “Young Naturalists” movement encouraged school students to participate in practical ecological activities, including tree planting and environmental monitoring. This period also witnessed the creation of scientific research institutions focused on the ecological challenges of Central Asia, including desertification and the Aral Sea crisis.

The third stage began with the independence of Uzbekistan in 1991 and represented a paradigm shift from a centrally imposed ecological agenda to a nationally grounded system emphasizing sustainability and environmental responsibility. Environmental education was explicitly included in national curricula at all levels of education. The Law on Environmental Protection (1992), the Law on Education (1997), and the National Program for Personnel Training introduced a holistic vision that linked ecological awareness with civic responsibility and moral development. The concept of “ecological culture” gained prominence, defining education not merely as the transmission of knowledge but as the formation of values and behavior patterns supporting sustainable living. Teacher training institutions incorporated environmental pedagogy into their programs, ensuring that future educators could foster environmental consciousness among students.

The fourth stage represents the modern digital and global integration phase, beginning in the 2010s and continuing today. In this stage, environmental education has been enriched through the use of information technologies, multimedia resources, and interactive platforms. Universities and schools now use digital simulations, virtual laboratories, and online ecological databases to

 WORLD BULLETIN PUBLISHING <small>Online Publishing Hub</small>	<h1>World Bulletin of Education and Learning (WBEL)</h1>
ISSN (E): 3072-175X	Volume 01, Issue 01, October 2025
	This article/work is licensed under CC by 4.0 Attribution
https://worldbulletin.org/index.php/1	

engage students in real-world environmental problem-solving. The integration of environmental education with sustainable development goals (SDGs) has reinforced its interdisciplinary nature, combining ecological knowledge with economics, ethics, and digital literacy. Moreover, initiatives supported by international organizations such as UNESCO and UNDP have facilitated curriculum modernization, teacher professional development, and youth-led environmental projects.

These results collectively demonstrate that environmental education in Uzbekistan has matured from an implicit cultural value into an explicit pedagogical and policy priority. It now functions as a crucial instrument for building ecological culture, promoting sustainability, and preparing younger generations for the challenges of global environmental change.

Discussion

The findings of this study highlight that the evolution of environmental education in Uzbekistan is not a linear process but a complex synthesis of traditional, ideological, and modern pedagogical paradigms. Each historical stage reflects a unique balance between national values, state policy, and global educational influences. The traditional period established the ethical and spiritual foundation of ecological consciousness. It demonstrated that environmental respect was deeply rooted in cultural and religious life long before formal schooling. The proverb “Tabiat – insonning onasi” (Nature is man’s mother) reflects the inherent moral ecology of Uzbek society, a perspective that continues to inform modern ecological education through the promotion of responsible citizenship and environmental stewardship.

During the Soviet era, despite the dominance of technocratic and production-oriented ideology, a strong scientific understanding of nature was cultivated. This stage introduced systematic environmental observation and experimentation into school curricula. However, environmental education often served economic goals rather than ecological ethics. The Aral Sea disaster stands as a historical lesson underscoring the consequences of neglecting ecological balance in pursuit of industrial progress. This period nonetheless provided valuable scientific



 WORLD BULLETIN PUBLISHING <small>Online Publishing Hub</small>	<h1>World Bulletin of Education and Learning (WBEL)</h1>
ISSN (E): 3072-175X	Volume 01, Issue 01, October 2025
	This article/work is licensed under CC by 4.0 Attribution
https://worldbulletin.org/index.php/1	

infrastructure and educational traditions that later facilitated post-independence environmental reforms.

The post-independence stage transformed environmental education into an essential element of national policy. The integration of ecological culture into the National Curriculum reflected a deliberate pedagogical shift toward sustainability and civic responsibility. Educational documents emphasized not only knowledge acquisition but also behavioral transformation and the development of ecological thinking. Teacher training became a priority, with specialized modules on environmental pedagogy emerging in pedagogical universities. This stage marked the localization of global ideas, as Uzbekistan began to interpret international environmental principles through its national context, aligning them with traditional values and local realities such as water scarcity and soil degradation.

In the current digital and global phase, environmental education in Uzbekistan faces new challenges and opportunities. The adoption of digital technologies has transformed how ecological concepts are taught, making education more interactive and data-driven. Virtual laboratories and geographic information systems (GIS) allow students to simulate environmental processes and visualize human impact on ecosystems. These tools help bridge theoretical learning and practical engagement. However, the challenge lies in ensuring equitable access to digital resources, especially in rural schools, and in maintaining cultural relevance while integrating global content.

The broader discussion also reveals the need for stronger interdisciplinary collaboration. Environmental education can no longer be confined to natural sciences; it must intersect with economics, sociology, and ethics to foster a comprehensive understanding of sustainability. Furthermore, educators must adopt reflective and participatory teaching models that empower students to act as agents of ecological change rather than passive learners. Strengthening teacher competency, encouraging project-based learning, and promoting student-led ecological initiatives are key strategies to sustain progress in this field. In conclusion, Uzbekistan’s historical-pedagogical experience provides a valuable model for integrating traditional ecological wisdom with contemporary

 WORLD BULLETIN PUBLISHING <small>Online Publishing Hub</small>	<h1 style="text-align: center;">World Bulletin of Education and Learning (WBEL)</h1>
ISSN (E): 3072-175X	Volume 01, Issue 01, October 2025
	This article/work is licensed under CC by 4.0 Attribution
https://worldbulletin.org/index.php/1	

educational innovation, thereby contributing to both national and global sustainability agendas.

Conclusion

The historical and pedagogical evolution of environmental education in Uzbekistan demonstrates a deep and dynamic process rooted in cultural heritage and continuously enriched by scientific and technological advancement. From its origins in traditional moral teachings and community-based ecological ethics to its modern embodiment in state educational policy and digital learning systems, environmental education has developed into a vital instrument for cultivating ecological consciousness and sustainable citizenship. The analysis of four key historical stages shows how each era contributed specific pedagogical values and strategies to the current educational landscape. Traditional ecological ethics provided the moral foundation; the Soviet system institutionalized scientific approaches; the post-independence period introduced ecological culture as a pedagogical concept; and the modern stage integrates innovation and sustainability through digital transformation.

The contemporary period marks a new paradigm in which environmental education serves not only as an academic discipline but also as a social and moral mission aligned with global sustainability goals. Uzbekistan's inclusion of environmental education in national strategies and its participation in international ecological programs reflect a growing recognition that environmental literacy is essential for national progress. Yet, challenges remain in ensuring the effective implementation of environmental curricula, particularly in terms of teacher preparation, material resources, and methodological innovation. Overcoming these challenges requires systemic reforms that emphasize interdisciplinary learning, community involvement, and continuous professional development for educators.

The research underscores the importance of viewing environmental education as a living, evolving system that mirrors societal transformation. It should not merely transmit ecological knowledge but foster personal responsibility, empathy for nature, and collective action toward sustainable development. Integrating



local traditions with global environmental frameworks ensures that education remains culturally relevant while scientifically robust. Furthermore, the expansion of digital tools and immersive technologies offers new opportunities to connect learners with real-world ecological challenges, making environmental education more engaging and impactful.

Ultimately, the experience of Uzbekistan illustrates that environmental education is both a historical inheritance and a pedagogical frontier. It connects past wisdom with future responsibility, forming the ethical and intellectual basis for an environmentally conscious society. By aligning national educational goals with sustainable development objectives, Uzbekistan sets a model for other nations seeking to harmonize traditional values with innovative ecological pedagogy. The continued evolution of environmental education will depend on maintaining this balance—between heritage and progress, between knowledge and action, and between human development and the preservation of the natural world.

References

1. Al-Farabi. *Treatise on the Views of the Residents of the Virtuous City*. Translated works on philosophy and education. Tashkent: Fan, 1993.
2. Beruni, A. *The Determination of the Coordinates of Cities for the Correction of Distances between Them*. Tashkent: UzFA Press, 1968.
3. Avicenna (Ibn Sina). *The Book of Healing: Philosophical and Natural Science Sections*. Moscow: Nauka, 1980.
4. Kushakova, M. N., Akhmedov, B. A., Kushakova, M. S., & Umarova, D. R. Economic Characteristics and Principles of the Formation of the Transport Cluster in the Tourism Sector in the Conditions of the Digital Economy. *Sustainable Development of Transport*, 107.
5. Akhmedov, B. A. (2025). Implementing artificial intelligence and virtual learning environments in Elementary Schools in Uzbekistan. *Procedia Environmental Science, Engineering and Management*, 12(1), 63-70.
6. Kadyrova, Z. Z. (2023). Psycholinguistic Study of Children's Speech in The Works of Shukur Kholmirezayev. *Open Academia: Journal of Scholarly Research*, 1(1), 57-60.

 WORLD BULLETIN PUBLISHING Online Publishing Hub	<h1>World Bulletin of Education and Learning (WBEL)</h1>
ISSN (E): 3072-175X	Volume 01, Issue 01, October 2025
	This article/work is licensed under CC by 4.0 Attribution
https://worldbulletin.org/index.php/1	

7. Law on Environmental Protection of the Republic of Uzbekistan. Tashkent: Oliy Majlis, 1992.
8. Law on Education of the Republic of Uzbekistan. Tashkent: Oliy Majlis, 1997.
9. National Program for Personnel Training. Tashkent: Sharq Publishing House, 1997.
10. UNESCO. Education for Sustainable Development Goals: Learning Objectives. Paris: UNESCO Publishing, 2017.
11. United Nations Environment Programme (UNEP). Global Environmental Outlook: GEO-6. Nairobi: UNEP, 2019.
12. Karimova, D. & Yuldashev, A. “Integration of Environmental Culture in Modern Educational Processes of Uzbekistan.” *Journal of Pedagogical Studies*, Vol. 8, No. 2, 2022, pp. 35–44.
13. Turaeva, N. “Formation of Ecological Competence among Students through Digital Pedagogical Tools.” *International Journal of Environmental Education*, Vol. 5, No. 1, 2023, pp. 112–126.