

# Towards a More Sustainable Future: The Importance of Environmental Education in Developing Attitudes towards Environmental Protection

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**Abstract.** This article discusses the importance of environmental education in promoting sustainable development and forming attitudes toward environmental protection. The reviewed literature identifies environmental education as a process that provides opportunities for people to engage with environmental issues and take action to improve the environment. The goal of environmental education is to create environmental literacy and develop a greater respect for nature that will lead to informed and responsible decisions. Incorporating environmental education into the curriculum is essential, seeking to change public opinion and instill social responsibility. The hallmarks of environmental education are its relevance to sustainable development, interdisciplinary approach, and emphasis on real-world and practical activities. Understanding environmental education and its role in shaping attitudes towards environmental protection is essential to tracking its practical implications in education.

## 1 Introduction

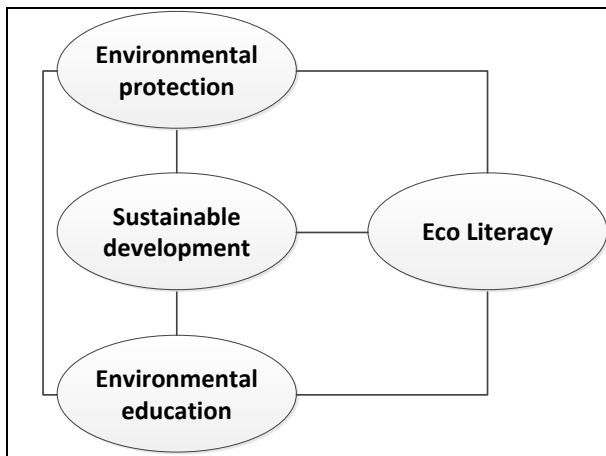
Environmental protection and the need for sustainable development are more important and more pressing issues today than ever before. To achieve a more sustainable future, it is essential to educate and make young people aware of the importance of protecting the environment; to foster attitudes and behaviors in this regard. This is what environmental education is all about. The concept of sustainable development is directly relevant to it. It has gained considerable popularity recently as the world faces environmental challenges such as climate change, pollution, and depletion of natural resources.

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protection, sustainable development, environmental education, and environmental literacy are interlinked.



**Fig. 1.** Relation between the terms.

Environmental education is an important tool for promoting environmental literacy, environmental awareness, and sustainable development.

The United Nations has recognized the importance of these interconnections. The organization declared the period 2005-2014 as the "Decade of Education for Sustainable Development".

## 2 Methodology

Based on a literature review, we aim to examine environmental education strategies and their potential for promoting sustainable development.

We aim to report on the importance of environmental literacy in promoting sustainable development and offer recommendations for incorporating environmental education into the classroom. By reviewing and analyzing the existing relevant literature on this topic, we aim to contribute to the ongoing discussion on sustainable development and its practical implications for education.

## 3 Environmental education and its role in shaping environmental attitudes

The concept of sustainable development has gained considerable popularity recently as the world faces environmental challenges such as climate change, pollution, and the depletion of natural resources. One of the key aspects of sustainable development is environmental education, which focuses on instilling environmental literacy in individuals and communities. Environmental protection and the need for a sustainable development are more important and pressing issues than ever. To achieve a more sustainable future, it is essential to educate young people, who need to be made aware of the importance of environmental protection and cultivate attitudes and relationships in this regard. This is precisely what environmental education is all about.

### 3.1 What is Environmental Education?

Environmental education is a process that empowers people to engage in problem-solving, explore environmental issues and take action to improve the environment. The essence of environmental education lies in the fundamental values of education for sustainable development by allowing people to make informed and responsible decisions.

Environmental education as a concept emerged in the middle of the last century. Even then, in 1965, it was considered necessary to make environmental education an essential part of the education of all citizens. It has enormous educational potential to help foster scientifically literate people. To this end, there is a need for greater involvement in academic research and initiatives by teachers who need to be equipped to teach and prepare young people. It was also at this time (1969) that a definition of environmental education was first formulated by William Stapp (1929-2001), the father of environmental education in the United States. According to him, it is the process of creating a population knowledgeable about the biophysical environment and related concerns, knowing how to help solve these problems, and being motivated to work towards their solution. The aim is to educate environmentally knowledgeable citizens interested in environmental issues and proactive in solving these problems. For this reason, teachers need to change mindsets and attitudes about the environment, natural resources, and conservation and to form environmentally friendly behaviors [1].

There is also a need to change public opinion on environmental issues. The process of Environmental Education is interdisciplinary - environmental, social, and economic issues are addressed, and the curriculum content is linked to the real world. Due to its interdisciplinary nature, knowledge about the environment and its protection can be taught. There are such practices during teaching biology, geography, physics, and chemistry [2].

While environmental factors need to be considered in formulating socio-economic policies, environmental education aims to raise awareness of the negative impacts of human activities and environmental decision-making, inspire students' social responsibility, and cultivate environmental literacy [3]. Environmental education is linked to the values of sustainable development, and this should be embedded in the curriculum, making it an essential part of all stages of education [1, 3]. The goal of environmental education is to achieve environmental awareness, develop respect for nature, and take actions that help protect the environment [1, 4].

Teachers should select and apply the most effective teaching methods according to their students' specific characteristics and peculiarities - age and level of intellectual development, social characteristics - family and circle of friends, including socio-economic status of the family; additional interests, etc. According to Piscová et al. 2023, the effect often depends on teachers' efforts and enthusiasm [2].

Environmental education can be implemented:

- at school (school-based environmental education, school-based environmental education, in the field and through the implementation of learning projects);
- in environmental centers, including natural history museums, zoos, etc. It can be Outdoor education, classroom education, and nature-centered education. A well-designed curriculum aims to increase environmental awareness and sensitivity, environmental knowledge, environmental ethics, and education for sustainable development [1]. During out-of-school field studies, students form positive attitudes toward nature and conservation [4].

Environmental school projects can address various environmental topics: biodiversity conservation, endangered species conservation, local/regional sustainable community development, social media activities for community education and awareness, proper waste management, etc. [4].

Direct contact with the natural world is necessary for students to understand basic ecological principles and their role in the ecosystem. This experiential learning is important

for the development of environmental literacy in the classroom. Learning in nature, even if short-term, has been found to help individuals become informed about natural processes and increase their knowledge of nature. It forms mindsets, sensitivity, critical attitudes, and thinking toward nature [5, 6]. Environmental literacy has great importance in promoting sustainable development. Its formation in the 'classroom' is essential to ensure that we provide future generations with the knowledge and skills needed to address environmental challenges. Environmental literacy can be developed through various hands-on activities, discussions, and participation in interdisciplinary projects in which learners prepare to tackle complex environmental challenges. The implementation of environmental education and the formation of environmental literacy is realized through the inclusion in the educational process of various tools for developing critical thinking and the formation of skills for conducting meaningful dialogue on environmental issues.

Environmental education is a broad concept that involves educating people about the environment, natural resources, and ways to protect them. It is important for the formation of environmental awareness. Environmental education addresses various aspects of the environment, and informed and responsible decisions are made regarding its conservation [7, 8].

### **3.2 Environmental education and its role in shaping environmental attitudes**

The aim of environmental education and the pedagogical influences implemented is the formation and development of attitudes, relations, and behavior toward the protection of the natural environment. The tasks to be addressed are:

- To inform young people about the issues of ecology and conservation of natural resources, and especially why this is important.
- To inform young people about ways of saving energy and energy efficiency; about the possibilities of recycling and its benefits; about the benefits of forests and the harm of their indiscriminate felling; about the harm of carbon emissions; about the problems we face regarding the deterioration of nature and ways of protecting it, etc.

To address the goal and objectives of environmental education, various initiatives can be implemented - both short-term, but with high educational potential, and long-term, permanent. These initiatives can be large-scale and global, as well as on a 'local' but permanent level.

One short-term global initiative is the organization and celebration of Earth Day. It has been designated to promote an appreciation of the natural environment and an awareness of the issues that stand to be addressed regarding protecting planet Earth. Earth Day is celebrated on and around 21 March (the first day of spring, which is also the vernal equinox) or 22 April. The second date was proposed in 1970 by US Senator Gaylord Nelson. The symbol of Earth Day is the green Greek letter  $\Theta$  (theta) on a white background [9].

The end result of educational impacts, training, and the implementation of various initiatives is precisely the formation of attitudes towards environmental protection from the school age.

### **3.3 Why is environmental education important in developing attitudes toward environmental protection?**

Environmental education is crucial in developing mindsets and attitudes towards environmental protection as it provides awareness, understanding, and action in individuals' lives. College students, for instance, should take courses in environmental studies to help them appreciate the advantages of conserving the environment and develop new abilities to solve problems that affect their environment. Environmental education also includes skills

development, encouraging environmental conservation [10]. It instills values of the environment in a way that is easy to understand, emphasizing knowledge that empowers individuals to take beneficial actions toward environmental protection [11]. This comprehensive educational system increases students' consciousness, ethical guidelines, and understanding of environmental issues, promoting green consumption and increasing environmental awareness of residents or consumers [12]. Therefore, it is clear that environmental education plays an important role in developing attitudes toward environmental protection.

Additionally, outdoor classes in natural surroundings provide an effective way to study and change. At the same time, a visual and creative learning approach can be highly effective for children to understand the basic concepts of the environment. Promoting environmental education is essential for ensuring a sustainable and healthy environment as it promotes the conservation of the natural environment, encourages participation in environmental activities, and develops strategies that sustain and enhance the environmental quality and protect it [10, 11].

### **3.4 What are the key components of effective environmental education?**

Effective environmental education is critical for shaping attitudes and appropriate behaviors and, as a long-term outcome, mitigating the adverse effects of environmental degradation and promoting sustainable development. For environmental education to be effective, it must incorporate guiding principles that address environmental issues. UNESCO has developed a set of principles that include various components such as knowledge, skills, attitudes, motivation, and commitment to finding solutions to current and future environmental problems. Effective environmental education should also make students understand the importance of a healthy environment and a cleaner world. To achieve this, developing and implementing instruction that incorporates high-quality educational foundations and practical problem-solving approaches is necessary. It should also include education about environmental protection, promotion of actions beneficial to overall environmental health, and clarification of the impact of human progress on the environment. To minimize the potentially harmful effects of modern technological developments on the environment, effective environmental education should offer ways to prevent environmental degradation. Furthermore, for environmental education to be more effective, it should include first-hand experience and hands-on activities [13, 14].

## **4 Environmental Education and Its Role in countries' economic growth**

Today's environmental problems are the result of complex macro- and micro-factors. The industrial revolution, the observed "population explosion", the consumer society, and the lack of knowledge and awareness, respectively, of proper education are worsening the state of nature and its resources [15]. Some countries' increasing economic dependence on resources also negatively affects sustainable development. Improper planning of extraction leads to a number of disappointments in its aftermath. In a 2012 report by the International Monetary Fund (IMF), this phenomenon was called the "paradox of plenty" [16]. From an economic perspective, natural resources are seen as both a blessing and a curse [17]. According to classical economic theorists, the availability of natural resources positively impacts economic growth, gross domestic product (GDP), as well as the technological development of countries. Countries with more natural resources are technologically more advanced than countries with limited natural resources. In contradiction to these findings is the theory or

hypothesis of the Resource Curse and "Dutch Disease" - natural resource wealth is a curse to economic development [18, 19]. Natural resources, in turn, are "under pressure" - at risk of depletion due to the increasing consumer demands of human civilization [20] and the population boom. Human capital and natural resources collectively have a positive impact on economic growth. Rahim et al. (2021) refute the resource curse theory by finding that investment in human capital development helps mitigate its impact [19]. This is why education (including environmental education) is needed to use natural resources wisely for countries' economic growth. This should be realized through their sustainable use to improve economic development, especially of developing economies on the one hand and to protect the natural environment on the other hand [21]. For this reason, it is essential to introduce environmental education into both formal and non-formal education systems. This interdisciplinary process and its objectives of mastering knowledge and skills, forming attitudes, and motivating learners to solve environmental problems, have a long-term impact and are important for countries' economic growth. Rubin & Silva (2003) state that there is a relationship between the process of environmental education and students' learning of the set curriculum material and the environmental responsiveness of the authorities - or the better the students' learning, the more responsive and responsible the institutions [22].

A characteristic of this process is that no particular opinion, procedure, or practice is propagated [23]. It is a way of thinking and behaving that has a direct link to ethics [1, 2, 24], and behavior, in turn, is linked to the ability to live in harmony with nature [2, 25].

## 5 Conclusion

In conclusion, the importance of environmental education in shaping attitudes toward environmental protection can be acknowledged. The different forms of its implementation are identified: school-based environmental education, school-based environmental education, place-based education, and learning projects.

The essence of environmental education lies in the fundamental values of education for sustainable development, empowering people to make informed and responsible decisions. It emphasizes that environmental education is a process that empowers people to participate in problem-solving, explore environmental issues, and take action to improve the environment. There is a need to include social and economic issues to be addressed in curricula and programs in addition to environmental issues. This means that environmental education is interdisciplinary. It also goes beyond providing tools and technology by inspiring social responsibility in students and cultivating environmental literacy. For these reasons, it is important to mainstream this issue into the curricula and programs of all students at all stages of education.

All of this will, in turn, encourage young people to develop and apply the proper behavior based on positive attitudes towards environmental protection and a sustainable future. Responsible and sustainable environmental behavior of students and young adults is expected to be passed on to their parents (who have not been through environmental education programs) and from there to local and state authorities who are in one way or another committed to environmental protection.

## References

1. W. T. Fang, A. Hassan, B. A. LePage, *Introduction to environmental education*, in Book "The living, environmental education", Sustainable Development Goals Series (Springer, Singapore, 2023)
2. V. Piscová, J. Lehotayová, J. Hreško. *Eur J Sci Math Ed* **11**, 4, 650-671 (2023)

3. S. J. Hudson, *BioScience* **51**, 4, 283–288 (2001)
4. C. Becker, G. Lauterbach, S. Spengler, U. Dettweiler, F. Mess, *Int. J. Environ. Res. Public Health* **14**, 5, 485 (2017)
5. A. Bayindir, F. Ercan, A. Soykan, *Ecology training practices in Turkey: Tubitak summer science (Canakkale Sample)*, in Proceedings of 4th International Symposium on Environment, 21 - 24 May 2009, Athens, Greece (2009)
6. A. Soykan, E. Atasoy, Z. Kostova, *Journal of Environmental Biology* **33**, 2, 499-508 (2012)
7. J. W. Jenkins, *Front Ecol Environ* **1**, 8, 437-443 (2003)
8. N. M. McGuire, *IJESE* **10**, 5, 695-715 (2015)
9. A. Helmenstine, All About Earth Day. Earth Day Facts, (2019), [Online] <https://www.thoughtco.com/all-about-earth-day-606790> [Accessed: 12 May 2022]
10. B.B. Valeriia, The Importance of Environmental Education As An Outdoor Classroom, (2022), [Online] <https://forestnation.com/blog/the-importance-of-environmental-education-as-an-outdoor-classroom/> [Accessed: 2 June 2023]
11. F. Benciu, D.-M. Vilcu, E. Bogan, L. Bujor, D. M. Constantin (Oprea), *The IJAREG* **8**, 1, 1–10 (2020)
12. Y Wu, J Wan, W. Yu, *Front. Public Health* **11**, 1128791 (2023)
13. Guiding Principles of Environmental Education, Earth Reminder. (n.d.), [Online] <https://www.earthreminder.com/principles-of-environmental-education/> [Accessed: 2 June 2023]
14. National Extension Water Outreach Education. (n.d.), [Online] <https://fyi.extension.wisc.edu/wateroutreach/water-outreach-education/> [Accessed: 2 June 2023]
15. S.K. Yadav, A. Banerjee, M.K. Jhariya, R. S. Meena, A. Raj, N. Khan, S. Kumar, S. Sheoran, *Chapter 19 - Environmental education for sustainable development*, in Book: ed. M.K. Jhariya, R. S. Meena, A. Banerjee, S.N. Meena, *Natural Resources Conservation and Advances for Sustainability* (Imprint: Elsevier, 2022)
16. Z. Zhang, X. Xu, *Resources Policy* **83**, 103559 (2023)
17. M. Li, K. Zhang, A. M. Alamri, M. M. Ageli, N. Khan, *Resour. Policy* **81**, 103283 (2023)
18. A. Naseer, C.-W Su, N. Mirza, J.-P. Li, *Resour. Policy* **68**, 2011-4, 101702 (2020)
19. S. Rahim, M. Murshed, S. Umarbeyli, D. Kirikkaleli, M. Ahmad, M. Tufail, S. Wahab, *Resour. Environ. Sustain.* **4**, 100018 (2021)
20. A.D. Barnosky, E.A. Hadly, *Tipping Point for Planet Earth: How Close Are we to the Edge?*, Thomas Dunne Books, New York (2016)
21. Y. Wang, F. Li, J. Dou, *Resour. Policy* **82**, 7, 103434 (2023)
22. B. Rubin, E. Silva, *Critical Voices in School Reform: Students Living through Change*, *Journal of Educational Sciences* **2**, 27-33 (2003)
23. K. Başar, *European Psychiatry* **65**, S1, S10 (2022)
24. A. Begum, J. Liu, H. Qayum, A. Mamdouh, *Int. J. Environ. Res. Public Health* **19**, 23, 15549 (2022)
25. G. H. Erol, K. Gezer, *IJESE* **1**, 1, 65-77 (2006)