



Research Article

Using Environmental Education as a Blueprint for Environmental Sustainability

Obiajulu-Anyia E. Uche

Department of Social Studies, Delta State College of Education, Mosogar, Nigeria.

*Correspondence: esther.obiajulu-anyia@descoem.edu.ng

Article History

Received: April 10, 2025

Accepted: June 18, 2025

Published: June 29, 2025

Abstract

The study examined how environmental education can serve as a blueprint for achieving environmental sustainability. To provide a framework for the study, five research questions were formulated and answered. The research design adopted was the descriptive survey. The population consisted of twenty-five thousand four hundred and seventy-eight thousand (25,478) junior secondary school students across the entire Delta State. This research design was employed to collect data from a total sample size of 880 junior secondary school students in grade 3 from 22 schools. Data collection was done with the aid of a 25-item questionnaire diligently constructed by the author; the instrument was titled "Environmental Education and Environmental Sustainability Questionnaire. The instrument was validated correctly and reported a reliability index of 0.68 using the test-retest reliability method on 20 students in a school outside those used as the sample. The instrument administration was carefully carried out by the researcher, with the assistance of the subject teachers in the 22 schools used for the study. After collecting the data, the results were analyzed using descriptive statistics, including the mean, with a value of 2.50 as the metric. The study's results and findings demonstrated that environmental education can promote environmental sustainability across all spheres of the environment, including the economy, health, and food security. As well as climatic and physical environments. Hence, the study recommends that environmental education be harnessed as an approach to achieving environmental sustainability.

Keywords: Environmental education, environmental sustainability, environment, and social studies.

Introduction

In most developing nations, a lack of innovation and improvement in environmental education and awareness among the people has been observed, which may have had a contradictory impact on environmental sustainability. Achieving environmental sustainability requires educating and raising awareness among the people about environmental issues. This could have immense benefits for the sustainability of the environment and society at large (Ezeudu, 2013).

In Nigeria, the environmental education curriculum has not been tailored to tackle environmental problems with a strong emphasis on environmental education (Obiajulu-Anyia, et al., 2023). This calls for the use of appropriate environmental education tailored towards addressing environmental problems and promoting environmental sustainability. According to Atubi (2020), the knowledge, values, skills, and attitudes to be acquired through environmental education have to be tailored to specific and achievable goals such as the sustainable



Copyright: © 2025 by the authors.
Licensee Roots Press, Islamabad
Pakistan.

This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

development of the environment. However, this is not the present day scenario as it relates to environmental education and environmental sustainability.

Davis (2020) stated that consciousness is a structure of conception that corresponds to the structure of objects and is associated through thought. This explains why the nature of information is one of the contributing factors that help to disseminate education. One of the essential requirements for proper conduct is awareness, and one of the prerequisites for this is understanding ecological concerns, as well as the appropriate actions to remedy them. The human perception of the oneness of territory, objects, capacity, and circumstance, as well as the interconnection of creatures, including the individual and its actions that influence other organisms' ability to survive and thrive, is also referred to as environmental awareness (Bakurin, 2016).

Environmental education can be learned through real-world experience, the school curriculum, or by reading related research or publications. Conventional environmental education may include the latter, which adheres to a specific and methodical technique. To help ameliorate the problem of environmental neglect, Akosile (2015) proposed six acts of environmental education at the proficiency level. These acts involve recognizing, comprehending, implementing, analyzing, synthesizing, and assessing. These acts should be integrated into the school curriculum through environmental education. The notions, techniques, statistics, doctrines, cultural practices, legal standards, religious norms, moral frameworks, human dispositions, and natural occurrences related to environmental sustainability are not being instilled in the consciousness of young people. The togetherness of the Earth's orbit with living and non-living beings, and the circumstances within it, are all components of environmental education that need to be explored. Environmental education, as a substance resulting from evidence-based and interplay procedures involving these components, hasn't been brought to reality (Awan, 2013).

According to Agbor (2016), behavior does not shape itself on its own; the process of learning has a significant impact on it. Therefore, to be aware of environmental sustainability, humans must demonstrate a responsible relationship with the environment. Hence, an alliance that recognizes the fact that all its inhabitants share planet Earth, promotes the exploration and usage of natural resources in harmony with nature, and galvanizes ethically oriented environmental behavior for future generations is an environmental education. Consequently, significant advice on essentials for environmental education consciousness should be a component of the curricula and syllabi of schools at all levels for attaining environmental sustainability and development. Therefore, this study focuses on how environmental education can be effectively applied in schools to promote environmental sustainability.

Conceptual Review

Environmental Education

Environmental education is education that equips with the awareness, knowledge, skills, and consciousness to improve the environment and gives the necessary knowledge and preventive measures that can enhance environmental protection (Bakurin, 2016). Therefore, adopting environmental education for environmental sustainability can become a strategy to prevent pollution, global warming, and the destruction of biological diversity. According to Davis (2020), environmental education is important not only for understanding environmental problems but also for knowing their causal factors. Thus, environmental education can stimulate pro-environmental practices that could make a greater percentage of people around the world.

Environmental Sustainability

Environmental sustainability is a concept that at its foundation is radical in nature, but regrettably very difficult to give a practical definition. The historical narration behind environmental sustainability is not far-fetched but can be observed every day in the physical environment. Boeve et al. (2015) explained the strain behind the concept as clumsy and

ambiguous. Not only has the failure to reach an appropriate and acceptable definition of environmental sustainability contributed to the failure to achieve environmental sustainability. It has also led to the lack of an operational framework to guide its implementation. The greatest challenge to environmental sustainability today is the lack of an effective educational policy. This has led to a lack of understanding and awareness among people, and consequently, their attitude towards environmental concerns and sustainability.

Ezeudu (2013) observed that the concept of environmental sustainability is one that, without argument, is multifaceted and interdisciplinary; it is also systematic and complex. However, defining it is an excellent task. Since it can impact the economy, health, food security, climate, and physical environments (Obiajulu-Anyia, et al., 2023). The term “environmental sustainability” was first used in 1980, with its primary motive behind it. The world used it as a strategy for environmental preservation and conservation, especially among three prominent international environmental non-governmental organizations/institutions. The “International Union for Conservation of Nature” (IUCN), World Wide Fund for Nature (WWF), and United Nations Environmental Program (UNEP) organizations took the meaning of environmental sustainability to another level, such as “conserving the earth’s natural resources. The organizations realized that without environmental sustainability, the world’s economic growth in the future may be hampered by too much exploitation of the world’s environmental resources (Olawuyi, 2020).

In 1987, the policy document named “Our Common Future” was presented by the World Commission on Environment and Development (WCED). This policy paper laid the ground for environmental sustainability. The document provided a more widely accepted definition, defining environmental sustainability as “protecting the environment to meet the needs of today’s generations without endangering the environment from meeting the needs of future generations.” Environmental sustainability is linked to sustainable development (Galyilon, 2017). In 1992, the United Nations Conference on Environment and Development began a program with the theme “Agenda 21,” which allegedly “is the blueprint for sustainability in the 21st century.” It is a model that countries and their governments can strictly adhere to. Countries that agreed to adopt “Agenda 21” were monitored by the United Nations Commission on Sustainable Development (UNCSD), which is responsible for reviewing progress in the implementation of Agenda 21 in the 21st century.

The discourse implies that “environmental sustainability” refers to the sustainability of the environment in meeting the needs of people worldwide today, without endangering or compromising the ability of future generations to enjoy the same benefits from the environment. An interesting way of looking at the issue of environmental sustainability before us is to examine the following quote, which states, “A combination of uncertainty about what to do and a feeling of guilt about what is not being done means that many people seem afraid to expose what they feel is their lack of understanding of sustainable development of the environment.” Therefore, it is often easier to pretend that it does not need to be addressed.” It is now clear that, due to a lack of a proper framework for environmental education, countries, people, and governments seem to be failing to act on issues of environmental abuse or degradation. Yet, for those who have worked on developing a blue paper policy, there exists the problem of how to implement the policy on environmental sustainability (Robinson, 2013).

Countries that have made pragmatic efforts to understand the meaning of environmental sustainability and have made deliberate efforts to sustain the environment, are the ones that have made reasonable progress in implementing environmental sustainability policies. These countries have also made similar progress with “Agenda 21,” the document that provides a framework for countries to achieve sustainable environmental development. However, there appears to be no global agency or organization responsible for enforcing the document. This suggests that many countries may claim to understand environmental sustainability and agree to implement changes in their environmental policies, but may not actually do so. The inability to implement and control environmental ecological sustainability policies could hinder the world’s

common interest in the sustainable development of the environment. As its non-implementation has often resulted in the relative neglect of environmental components, this has caused economic and social injustice. This sheds light on yet another paramount issue in the sustainable development of the environment, which extends beyond environmental sustainability to impact the economy, health, food security, climate, and physical environments (Atubi, 2019).

The difficulty associated with implementing environmental sustainability policies by countries is that those experiencing the devastating effects of environmental problems, and are supposed to adopt the policy, are not doing so. In addition, a clear dichotomy exists between developed and developing countries regarding environmental sustainability policies. The developed countries are essentially telling the less developed ones the proper way to environmental sustainability, but they are not concerned. This condescending body language not only contributes to environmental disasters in less developed countries but also hinders the implementation of environmental sustainability in many parts of the world. As mentioned in an Organization for Economic Co-operation and Development (OECD) (2019) report,

“At the institutional level, the interdependent goals of economic growth, social development, and environmental protection are managed today by institutions that tend to be independent and fragmented and that respond to narrow mandates with closed decision-making bodies. Sustainable development stresses the importance of institutions that are willing to integrate economic, social, and environmental objectives at each level of policy development and decision-making.”

Unfortunately, environmental abuse by individuals of young age is still strongly observed in the world today. This abuse negates the basis of environmental sustainability; therefore, in order to attain sustainable development in the environment, there must be a blueprint, such as the implementation of environmental education. Implementing environmental education has become necessary in achieving environmental sustainability. This study, therefore, is timely and significant, as environmental education has the potential to become a groundbreaking strategy that could revolutionize the approach to environmental sustainability among nations. This can help solve environmental problems at all levels.

In the application of environmental education and sustainability to the Sustainable Development Goals (SDGs), Sauve (2016) suggests that, although the SDGs are interdisciplinary in nature, environmentally oriented in their goals, and adaptable in their explanations, a concise strategy for implementing the SDGs has yet to be established. Hence, environmental education for environmental sustainability can be harnessed.

Countries should be prepared to take the necessary steps to develop their own environmental education policies, which could promote environmental sustainability. What environmental sustainability essentially calls for is transparency as well as cooperation of nations that are willing to work together for the betterment of the world's environment. It is perhaps for this reason that environmental sustainability is quite challenging to define, as every nation might have a different view of what environmental sustainability entails. Therefore, the general objective of this research is to investigate the role of environmental education in achieving environmental sustainability. Specific objectives are;

1. Ascertain how environmental education can promote environmental sustainability of the economy.
2. Examine how environmental education can promote environmental sustainability in health and wellbeing.

3. Investigate how environmental education can promote environmental sustainability in food security.
4. Determine how environmental education can promote environmental sustainability of the climatic environment.
5. Find out how environmental education can promote environmental sustainability of land/physical environment.

Research Questions

To guide the study, the following research questions were posed and answered

1. How can environmental education stimulate environmental sustainability in the economy?
2. How can environmental education stimulate environmental sustainability in health and wellbeing?
3. How can environmental education stimulate environmental sustainability in food security?
4. How can environmental education stimulate environmental sustainability of the climatic environment?
5. How can environmental education stimulate environmental sustainability of land/physical environment?

Methodology

The research design employed was a descriptive survey, which was used to collect data from a total sample size of 880 junior secondary school grade 3 students, representing 3.5% of the population of 25,478 junior secondary school grade 3 students in the entire Delta State. Forty (40) students were randomly selected from 22 junior secondary schools using the purposive sampling technique to represent eight schools from the Delta North and Delta Central senatorial districts of the state. In contrast, six schools were selected from the Delta South senatorial district, totaling 22 junior secondary schools. Six schools were chosen from the Delta South senatorial district because the district has a limited number of secondary schools. The instrument of data collection was a 25-item instrument titled "Environmental Education and Environmental Sustainability Questionnaire" (EESQ). The instrument was duly validated, and a reliability index of 0.68 was obtained using the test-retest reliability method on 20 students in a school outside those used in the sample. The administration of the instrument was conducted by the researcher, with the assistance of the social studies teachers from the 22 schools used in the study. After collecting the data, the results were analyzed using descriptive statistics, including the mean, which was 2.50. The results and findings are presented below.

Results

The results presented in Table 1 reveal that the aggregate mean of 3.36 is higher than the criterion mean of 2.50; this indicates that all items scored a mean above 2.50, meaning they were accepted as agreed. This signified that the respondents' environmental education and consciousness can contribute to environmental sustainability.

Table 1. Environmental Education and Environmental Sustainability in the Economy

Sr.	Items: I am aware that;	SA	A	D	SD	\bar{x}	Decision
1	Environmental education can promote creation of wealth through boosting agricultural productivity.	506	374	0	0	3.58	Agreed.
2	Environmental education could boost wealth through protection of the environment.	330	528	22	0	3.35	Agreed.
3	Environmental education made me know that a dirty environment is synonymous with poverty.	396	374	88	22	3.30	Agreed.
4	Environmental education from my schools can help me conserve environmental wealth.	308	396	132	44	3.10	Agreed.
5	An unhealthy environment is a problem and could hinder economic growth.	462	374	22	22	3.45	Agreed.
	Aggregate mean					3.36	

Metric mean: 2.50

Table 2. Environmental Education and Environmental Sustainability in Health and Wellbeing

Sr.	Items: I am aware that	SA	A	D	SD	\bar{x}	Decision
1	Environmental education can help mitigate the spread of diseases among the population.	308	528	22	22	3.28	Agreed.
2	Environmental education promotes hygienic environments.	506	374	0	0	3.28	Agreed.
3	Environmental education can prevent ill health.	418	440	22	0	3.57	Agreed.
4	Environmental education promotes physical wellbeing.	396	440	44	0	3.45	Agreed.
5	Diseases such as asthma, cough, chronic bronchitis, etc., can be prevented through environmental education.	418	374	88	0	3.40	Agreed.
	Aggregate mean					3.40	

Metric mean: 2.50

In Table 2, the findings show that the aggregate mean of 3.40 is higher than the criterion mean of 2.50, implying that all the items stated scored a mean above 2.50, indicating that they were all accepted as agreed. This signified that the respondents' environmental education and consciousness can promote a good, healthy, and sustainable environment.

Table 3. Environmental Education and Environmental Sustainability in Food Security.

Sr.	Items: I am aware that	SA	A	D	SD	\bar{x}	Decision
1	A poorly handled environment could spell doom for agricultural activities.	594	286	0	0	3.25	Agreed.
2	Environmental education could boost food production and nutrition.	396	330	132	22	3.45	Agreed.
3	Environmental education can influence our tilling the soil for food security.	462	352	66	0	3.28	Agreed.
4	Environmental education may help maintain soil minerals.	374	374	132	0	3.05	Agreed.
5	Environmental education could help achieve food security.	396	264	88	132	3.50	Agreed.
	Aggregate mean					3.31	

Metric mean: 2.50

Results presented in Table 3 showed an aggregate mean of 3.31. This mean is higher than the criterion mean of 2.50, which implies that all items in this table scored a mean above 2.50, indicating that they were accepted as impacts for environmental sustainability. This signified that the respondent's consciousness of environmental education can boost food production in the environment, and this may drastically reduce hunger and famine.

Table 4. Environmental Education and Environmental Sustainability in Climatic Environment.

Sr.	Items: I am aware that	SA	A	D	SD	\bar{x}	Decision
1	Environmental education can help prevent uncontrolled bush burning.	440	396	44	0	3.23	Agreed.
2	Environmental education may cause a reduction in carbon dioxide emission.	308	484	88	0	3.48	Agreed.
3	Environmental education can promote the consumption of clean energy, which is healthy for our climate.	220	638	22	0	3.48	Agreed.
4	Climatic problems are increasing due to a lack of environmental education.	462	374	44	0	3.28	Agreed.
5	Oil exploration has contributed to climate change due to lack of environmental education.	220	638	22	0	3.63	Agreed.
	Aggregate mean					3.42	

Metric mean: 2.50

In Table 4, an aggregate mean of 3.42 was obtained. This mean score is far higher than the criterion mean of 2.50, which presupposes that all items in this section of the questionnaire also scored a mean above 2.50, meaning that they were accepted. This signified that the respondents believe that environmental education consciousness can have a positive impact on the climatic environment and conditions.

Table 5. Environmental Education and Environmental Sustainability in Land/Physical Environment.

Sr.	Items: I am aware that	SA	A	D	SD	\bar{x}	Decision
1	Mining of minerals affects the land environment by polluting it.	484	330	66	0	3.50	Agreed.
2	Recycling of waste can help promote life on land.	462	396	22	0	3.48	Agreed.
3	Dumping refuse anywhere can be detrimental to life on land.	506	286	88	0	3.40	Agreed.
4	Uncontrolled gas flaring pollutes the land environment with crude oil.	506	220	154	0	3.53	Agreed.
5	The environmental education service of Environmental Sanitation Day can improve the land environment.	506	352	22	0	3.40	Agreed.
	Aggregate mean					3.46	

Metric mean: 2.50

The results in Table 5, as presented, indicate an aggregate mean of 3.46. This means that it is also higher than the criterion mean of 2.50; this indicates that all items scored a mean above 2.50, suggesting that students' environmental education consciousness is necessary. This signified that the respondents with environmental education level can lead to environmental sustainability of the land/physical environment.

Discussions

The results and findings from all five research questions raised in this study indicate that environmental education and consciousness can be a valuable and vital strategy for achieving sustainable environmental development, as all mean scores for every item reported a mean above

2.50, which was the metric mean. The implications of these results suggest that a properly implemented environmental education policy could contribute to the achievement of sustainable development in the economic, health, food security, climatic, and physical environments. These implications are not limited to Delta State alone, the study area, but extend beyond Nigeria and the world, as the concept of the environment is universal. Environmental sustainability can benefit the sustainable development of all environmental spheres, including the economy, health, agriculture, climate, and physical environment sectors. This will no doubt have direct positive consequences for the political, educational, and every other aspect of the environment as a whole. Secondly, the results of this study may also have direct and indirect implications for the sustainable development of the environment, in line with Sauve (2016) and Atubi (2019). The findings of this study have a direct link with other studies in this direction, such as those by Davis (2013), Bakurin (2016), Galiyon (2017), Olawuyi (2020), Atubi (2019), Atubi (2020), and Obiajulu-Anyia et al. (2023). These studies discovered similar findings on the importance and significance of environmental education and environmental sustainability. Therefore, environmental education should be utilized as an effective tool for empowering young people to adopt more environmentally responsible practices and behaviors that contribute to achieving environmental sustainability. This can be achieved by incorporating topics and content on the awareness of the consequences of indiscriminate environmental practices, such as gas flaring, bush burning, and indiscriminate waste disposal habits, into school subjects and teaching them at the elementary and secondary school levels.

Conclusion

The study thus concluded that environmental education can be a practical approach to achieving environmental sustainability, particularly in terms of the economy, health, food security, and the climatic/physical environments. Without proper environmental education and awareness among the people, the economies and health of nations may be negatively affected. Similarly, food security will drop, and climate life will be chaotic. Therefore, environmental education and awareness can be used as an urgent intervention to combat the effects of unsustainable habits, which are already becoming a catastrophe for the environment on Earth. The conclusion also suggests that environmental education can lead to changes in lifestyle behavior that can sustain the land environment, such as reducing illegal mining, land pollution, gas flaring, and bush burning. Therefore, implementing environmental education is a strategy for achieving environmental sustainability.

The concept of environmental education and consciousness can be inculcated through a well-planned curriculum at different educational levels. Environmental education should be utilized as a learning tool to promote the sustainable development of the environment. Educational curriculum programs should be tailored to help young people acquire the skills, attitudes, and knowledge necessary for environmental sustainability.

Acknowledgement

The author would like to express her sincere gratitude to the students who agreed to participate as respondents in this study. The author also appreciated the teachers who assisted in administering the instrument. The data analyst, Miss Lilian Ekwona, and all authors whose research was consulted and cited are also very much appreciated.

References

- Agbor, C. (2016). Importance of Incorporating Environmental Education (EE) into teacher education programmes in Nigeria. *International Journal of Scientific Research in Education*, 9(4), 248-263.
- Akosile, A. (2015). Nigeria has attained HIV, maternal mortality MDG targets ahead of deadline, the FG asserts. <http://www.thisdaylive.com/articles/nigeria-has-attained-hiv-maternalmortality-mdgs-targets-ahead-of-deadline-fg-asserts/216974/>
- Atubi .O. F. (2019). Sustainable Development Goals: Why Quality Education Should Top the Agenda. *Journal of Social and Management Sciences*, 14(2): 68-77.
- Atubi O.F. (2020). Social Studies Education for Sustainable Growth and Development: The use of Multicultural Education. *Benue State University, Journal of Education*, 20(1): 139-145.
- Awan, A. (2013). Relationship between environment and sustainable economic development: A theoretical approach to environmental problems. *International Journal of Asian Social Science*, 3(3): 741-761.
- Bakurin, N. (2016). *Environmental education is paramount to socio-economic development*. www.thepoint.gm
- Boeve-de Pauw, J., Gericke, N., Olsson, D., and Berglund, T. (2015). The Effectiveness of Education for Sustainable Development. *Sustainability*, 7(11), 15693–15717. Doi: 10.3390u71115693.
- Davis, J. (2020). Creating Change for People and Planet: Education for Sustainability Approaches and Strategies. In *Encyclopedia of the World's Biomes*; Elsevier: Amsterdam. *The Netherlands*, pp. 438–446.
- Ezeudu, S. A. (2013). *Environmental Education for Sustainable Development: A Nigerian perspective*. Onitsha: BELS Books publishers.
- Galyilon, I. (2017). African Education and the Sustainable Development Goals (2030): Where is the Critical Nexus? *World Education Forum Journal* 9 (1), 1 – 9.
- Obiajulu-Anyia, E. Atubi, O.F, Dania, P.O. and Ogheneakoke, E. C. (2023). Students' consciousness of environmental education in social studies: A strategy for achieving the sustainable development goals. *Innovations*, 73(3); 430-437.
- Olawuyi, D. (2020). Sustainable Development and Water-Energy-Food Nexus: Legal Challenges and Emerging Solutions. *Environmental Science Policy*, 103, 1–9.
- Robinson, J. (2013). Environmental Education and Sustainable Development in Nigeria: Breaking the Missing Link. *International Journal of Education and Research*, 1(5):1-6.
- Sauve, L. (2016). Environmental education and sustainable development: A further appraisal. *Canadian Journal of Environmental Education*.