



TEACHERS' AWARENESS AND RESPONSIVENESS TO ENVIRONMENTAL CHALLENGES IN NIGERIA

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Cite this article:

Onuoha, C. A., Ngobiri, N. C., Ochekwu, E. B., Onuoha, P., Nwakuya, M. T. (2025), Teachers' Awareness and Responsiveness to Environmental Challenges in Nigeria. African Journal of Environment and Natural Science Research 8(2), 23-35. DOI: 10.52589/AJENSR-5PHHGWFQ

Manuscript History

Received: 29 Mar 2025

Accepted: 7 May 2025

Published: 26 May 2025

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ABSTRACT: *This study was carried out to unearth teachers' awareness and responsiveness to environmental challenges in Nigeria. The supply of food, water, air, and shelter are among the most important ecological services on which humans rely. The survival of organic life and human advancement depend on the natural environment, which is an ecosystem. Nigerians depend on a variety of essential ecological services. Climate change, pollution, flooding, erosion, greenhouse gases, extreme weather, oil spills, natural disasters, and man-made disasters like poaching, the use of fossil fuels, careless waste disposal, bush clearing and burning, uncontrolled agricultural practices, deforestation, oil theft, and vandalism of oil pipes all pose threats to Nigeria's ecosystem. The general state of the environment is negatively impacted by educators' lack of awareness and pro-environmental activities, especially with regard to environmental issues. It is pertinent to ascertain the level of Nigerian teachers' awareness and responsiveness to environmental problems in Nigeria. To unearth the research issues, a descriptive quantitative study was employed. Proportionate stratified sampling technique was used to sample 900 teachers across the 6 geopolitical zones in Nigeria. Results from the data collected revealed the following, among others: Nigeria has serious environmental challenges; Nigerian students need to be taught Environmental Education; and improper disposal of wastes is a major problem in Nigeria. It was recommended, among others, that Nigerians should be educated on how to manage and dispose of waste properly. Another recommendation is that Environmental Education should be taught at schools in Nigeria.*

KEYWORDS: Environmental awareness, Environmental challenges, Environmental education, Pollution.



INTRODUCTION

The environment encompasses all facets of nature, both living and nonliving. Environment is the physical and biotic habitat in which plants and animals reside and function (Anderson, 2019; Lauwrens, 2021; Pona *et al.*, 2021). By offering oxygen, water, food, shelter, raw materials, a place to dispose of waste, and other necessities for civilization and technological advancement, the environment sustains human life and survival. Since there is interplay between human activity and natural processes, changes in environmental features and capacities always take place (Bankole & Surajudeen, 2008). Some of the changes may negatively affect the proper functioning of the environment; hence, the need to have a sustainable environment.

There have been reports of natural and human activities that are jeopardizing a sustainable environment around the world, activities such as improper waste disposal, oil spills, deforestation, bush burning, illegal hunting, erosion, flooding, extreme heat conditions, hurricanes, pollution, and global warming (Anderson & Faulkner, 2022; Rice, 2022; Dale & Stylianou, 2021; BioExplorer, 2021; Okwuche, 2021). Greenhouse gas emission has led to global warming (Dale & Stylianou, 2021). A healthy environment is critical to maintaining a high standard of living and long-term development. The Environmental Protection Agency (EPA) projects that the events of global warming, such as heat waves and changes in seasonal temperature, will linger for several decades since greenhouse gases are anticipated to linger in the atmosphere for many years (Bradford & Pappas, 2022). Therefore, due to the increasing concerns about the environment, entities such as the United Nations and Earth.Org are encouraging nations and communities to raise awareness about environmental issues and engage in conservation efforts to preserve the environment (Lauwrens, 2021). It is therefore paramount to ascertain teachers' level of awareness of environmental problems and how they are responding to the several environmental challenges plaguing the globe.

It was underlined that two major issues impacting the environment for developing nations like Nigeria are public ignorance of environmental issues and low participation in pro-environmental initiatives (Pona *et al.*, 2021). Nigeria's environmental quality is severely declining, and this calls for immediate action (Industry Today, 2020). In addition, Ahmad (2022) and UNDP (2016) pointed out that a lack of knowledge about environmental issues and a lack of evidence-based data about environmental challenges exacerbate environmental problems. Additionally, Pona *et al.* (2021) argued that Nigeria faces a serious problem with its inability to respond appropriately to environmental issues. A significant portion of the existing economic paradigm depends on the unsustainable exploitation of natural resources. According to United Nations' research, the exploitation and processing of natural resources are to blame for 80% to 90% of the loss of biodiversity and 50% of global greenhouse gas emissions (Lundberg, 2019). The current national development strategy for Nigeria, Vision 2020, recognizes that there is a threat of climate change to the nation's economic health and continued development. The Federal Government of Nigeria published a national climate change policy in 2015 to guide the implementation of climate change policies. To lessen the effects of climate change, the policy developed broad national objectives, targets, and strategies (Sodipo *et al.*, 2020). Nigeria faces a variety of environmental issues, such as poor sanitation, flooding, pollution, extreme weather events, oil spills, improper waste disposal, erosion, desertification, bushfires, and deforestation (Pona *et al.*, 2021; Okwoche, 2021). Section 20 of the 1999 Nigerian Constitution states that the state of Nigeria must safeguard the country's air, water, land, forest, and wildlife while also protecting the environment



(Center for Environment, Human Rights and Development, 2020); and one of the ways to protect the environment is by creating environmental issues awareness and responsiveness at schools.

School is a place where a majority of the population can be reached for several years. Most of a country's populations between the ages of five to twenty-five years spend most of their time at school, and these students interact with teachers almost daily within these years (Onuoha *et al.*, 2016). Hence, teachers are in a better place to educate students on the need for positive environmental actions, although this could be achieved if teachers themselves are aware of environmental issues and respond to them appropriately. This goes to say that teachers are essential to the success of any program that promotes environmental awareness, and they should also be environmentally conscious (Khan, 2013; Earth Reminder, 2022; Fletcher, 2023). Hence, the need to understand the extent to which Nigerian teachers are aware of Nigeria's environmental issues and how they are acting to address them. Understanding environmental issues is viewed as a first step toward empowerment and decision-making in the face of some of the most urgent environmental issues and challenges facing Nigeria and the world today. Teachers are essential educational stakeholders in creating environmental problem awareness, as well as responding appropriately to environmental problems ravaging the Nigerian environment. Eze *et al.* (2023) and Onuoha *et al.* (2023) opined that for Nigerian teachers to be in a better place to create environmental issues awareness among students and instill in students skills to protect and care for the environment, they should as well be environmentally conscious. The need to ascertain the extent Nigerian teachers are aware of environmental issues and their responsiveness to environmental issues in Nigeria cannot be overemphasized.

LITERATURE REVIEW

According to environmental educationists, the educational system at all levels must be deeply integrated with environmental knowledge, awareness, and ways to respond to environmental menace (Mondal, 2021; Lauwrens, 2021); Therefore, teachers, as educational stakeholders, are critical in creating environmental challenges awareness and responding appropriately to environmental problems in Nigeria.

There have been reported incidents of flooding in various states in Nigeria in the past few years. Flooding that has destroyed lives and properties, displaced people, and even exacerbated erosion problems in Nigeria (Ahmadu, 2022; Davies, 2022; Channels TV, 2021). As a result of these environmental problems in Nigeria, some citizens have called on the government to find ways to mitigate the environmental challenges. Mohammed (2018) asserted the need to include Environmental Education in the Nigerian curriculum to equip students with the needed environmental skills to care for, protect, and preserve the environment for sustainable development. Teachers are major stakeholders in Nigeria, and so their input to the curriculum can never be underestimated (Onuoha *et al.*, 2017). School is a place that can reach a greater part of a population at a time (Page and Page, 2011); hence, school is the proper place to educate children on matters relating to the environment. Ahmadu (2022) and Mohammed *et al.* (2018) espoused that the lack of awareness, particularly on environmental problems among educationalists, has a negative impact on the general state of the environment, resulting in widespread pollution, flooding, erosion,



deforestation, degradation, and issues of inappropriate waste disposal in communities in Nigeria. It is pertinent to ascertain teachers' views on the current environmental menace in Nigeria.

Studies that investigated the issue of pollution in Nigeria, as well as the causes and effects of pollution on public health and the environment, discovered that poor waste disposal practices are observed in Nigeria, which ultimately results in land and water pollution. The study found that pollution has a detrimental effect on citizens' quality of life (Dharwal *et al.*, 2022; Ileanwa *et al.*, 2020). Davies (2022) found that environmental issues, a lack of understanding of environmental issues, and a lack of concern for the environment among students and teachers may be the result of a curriculum gap; this finding was in a study conducted in primary, secondary, and university schools in Nigeria with 600 participants. The participants in the study were chosen by a random sample methodology, an open-ended structured interview, and arithmetic means. Environmental Education (EE) is essential for developing a thorough understanding of the environment, as well as its products and services, which are particularly necessary for maintaining a higher standard of living. The maintenance of a sustainable and healthy ecosystem as well as economic success depends on increasing knowledge among resource users of the importance of sustainable use of the environment and environmental protection; EE instills in students the skills needed to preserve and protect the environment (Anderson, 2019; Hastuti *et al.*, 2019; Khan, 2016). Shah (2021) argued that EE curricula should not just talk about environmental issues but rather should make them more practical and reflective by giving teachers the necessary resources and environmental pedagogy training, working with the community, and valuing the opinions of students. By doing so, EE curricula will help to create an educational system that fights more than just climate change.

Masud *et al.* (2016) opined that according to Azjen and Fishbein's 1975 Theory of Reasoned Actions (TRA) and 1980 Theory of Planned Behavior (TPB), human conduct is determined by attitudes, subjective norms, and perceived behavioral control. A person's attitude, subjective norms, and sense of control over a behavior all increase with their level of determination to engage in that behavior (Silverman *et al.*, 2016). Additionally, the likelihood that a behavior will be carried out increases with an individual's resources and abilities (Expert Program Management, 2019). If individuals have a positive attitude toward the environment (attitude), think that other people expect them to carry out a positive action (subjective norm), and have the means and abilities (perceived behavioral controls) to act responsibly toward the environment, their likelihood to act responsibly toward the environment will increase. Some research that used TRA, like the one by Kumar *et al.* (2019), showed a substantial correlation between eco-friendly behaviors and positive attitudes and beliefs about the environment. However, research by Lavrador and Arminda (2017) revealed a different picture, showing a negative correlation between environmental knowledge and attitude, environmental knowledge and behavior, and environmental attitude and behavior. In a study conducted in the Malaysian state of Selangor, TPB was used to investigate the relationship between attitudes regarding climate change, arbitrary norms, perceived behavioral control, and the desire to act in a way that is environmentally friendly. The main conclusions of the study demonstrated that attitudes, subjective norms, and perceptions of behavioral control all had a favorable influence on behavior's intention to adapt to and mitigate climate change. Consequently, behavioral intention was revealed to be a



mediator of attitudes, subjective norms, perceived behavioral control, and pro-environmental behavior (Masud *et al.*, 2016).

In a study conducted in Malaysia, it was found that teachers' environmental issues awareness contributed to knowledge and positive attitudes towards environmental issues, as well as a high level of environmental problems awareness among students. It was noted that in Malaysia, Environmental Education subjects are taught separately (Salleh *et al.*, 2016).

A convenience sampling technique was used in a 2016 study in Grenada to find out householders' knowledge, attitudes, and practices on climate change. The majority of respondents believed that the most crucial step in helping people deal with climate-related issues was for the government to spread more information to raise public awareness of these issues (United Nations Development Programme, 2016). This goes to say that awareness of environmental issues is crucial in fighting against environmental challenges.

METHODOLOGY

The study was a quantitative study. The research problem was investigated using a quantitative method and a descriptive survey design. Data was collected from nine hundred teachers across the six geopolitical zones in Nigeria using proportionate sampling rooted in stratified sampling technique. The teachers were sampled to get their views on the environmental challenges in Nigeria. At the 0.05 level of significance, descriptive statistics, weighted Mean, and chi-square test were utilized to analyze the data.

The sample size was determined by employing Scott's (2016) sample size determination formula.

$$n = \frac{n_0 N}{n_0 + (N - 1)} \quad (3.1)$$

where N the population Size, n_0 is the finite population needed for the study. Also,

$$n_z = \frac{Z^2 P(1 - P)}{e^2} \quad (3.2)$$

where Z is the Z-score (1.96 for 95% confidence), P is the probability standard deviation (0.5), e is the margin of error (0.05).

In determining the teachers sample size for this study, a sample size of 900 Teachers was needed.

$$n_z = \frac{Z^2 P(1 - P)}{e^2} = \frac{(1.96)^2 (0.5)^1}{(0.05)^2} = 384.16$$

Then, Population Size $N = 384.16 \times 900 = 345,744$; therefore,



$$n = \frac{n_0 N}{n_0 + (N - 1)} = \frac{2000 \times 345744}{2000 + (345744 - 1)} = 899.995$$

Hence, the sample size for this research is a sample size of 900 (rounded up from 899.995).

Table 1: Proportionate Sample Table

Stratum	GZ	Teachers
1	NC	142
2	NE	128
3	NW	201
4	SE	112
5	SS	141
6	SW	176
Total		900

The teachers' population was stratified into six strata based on the characteristic of belonging to any of these six geopolitical zones in Nigeria: North-Central (NC), North-East (NE), North-West (NC), South-East (SE), South-South (SS), and South-West (SW), as shown in Table 1 above.

RESULTS

A total of 900 responses were received for the teachers. A total of 899 were valid, and 1 was void.

Table 2: Teachers' Responses on Environmental Issues in Nigeria

Statement	Strongly Agree	Agree	No not know	Disagree	Strongly Disagree	Weighted Score
There are environmental problems in Nigeria	2515	1484	0	0	0	4.4
There is pollution problem in Nigeria	2520	1420	42	2	25	4.5
There are extreme weather conditions in Nigeria	1025	2128	75	232	21	3.9
Wastes are properly disposed of in Nigeria.	540	848	33	688	224	2.6
There are erosion problems in Nigeria	2360	1588	3	24	17	4.4
Humans' activities on the environment are negatively affecting the environment.	1885	1860	0	90	12	4.3
Animals and Plants have as much right as humans	1245	1764	57	250	65	3.8



to exist.

If the environment continues to degrade, we will experience environmental catastrophe.

2080 1796 33 18 14

4.4

Environment Education should be seen as important as other subjects and should be taught in Schools.

2315 1620 69 12 2

4.5

There are a lot I could do to help protect the environment

1555 2220 18 30 12

4.3

Footnote: Strongly Agree = 5, Agree = 4, Do not Disagree = 2, and Strongly Significant Responses are 3.0 and above (the bolded values).

Table 3: Results of Teachers' Responses on Responsiveness to Environmental Issues

STATEMENT	Yes	No	Total	Weighted Score
Properly dispose wastes	600	599	1199	1.3
Recycle and Reuse Products such as plastic bottles and bags.	748	525	1273	1.4
Written an article on environmental problems	500	649	1149	1.3
Made a call to a public officer regarding environmental issues	438	680	1118	1.2
Made a complaint to a person or organization causing harm to the environment.	658	570	1228	1.4
Participated in a protest to protect the environment.	390	704	1094	1.2
A member of environmental action group	468	665	1133	1.3
Have contributed for an environmental cause	734	532	1266	1.4
Signed a petition for protection for an environmental issue.	390	704	1094	1.2
Speak to family/classmate/colleague/friend about eco-friendly actions.	1054	372	1426	1.6
School is the best place to teach environmental issues.	1562	118	1680	1.9
Schooling contributes to my knowledge of environmental Issues	1714	42	1756	2.0



Every school should have an Environmental Education Teacher	1730	34	1764	2.0
Not having resources and enough information on the environmental issues prevents me from taking positive actions towards the environment.	1444	177	1621	1.8
I will do my best to protect the environment if I have resources and enough information on environmental issues.	1770	14	1784	2.0

Footnote: Yes = 2, No = 1. Significant Responses are 1.5 and above (the bolded values)

DISCUSSION

Table 2 demonstrates that, except for the question pertaining to proper waste disposal, all the teachers' responses to the questions regarding their understanding of environmental matters were significant. Table 3 shows teachers response to the following questions- Speak to family/classmate/colleague/friend about eco-friendly actions, School is the best place to teach environmental issues, Schooling contributes to my knowledge of environmental Issues, Every school should have an Environmental Education Teacher, Not having resources and enough information on the environment issues prevents me from taking positive actions towards the environment and I will do my best to the protect the environment if I have enough resources and information on environmental issues were significant. On the other hand, it was not significant to questions on properly disposing of waste, recycling and reusing items like plastic bottles and bags, writing an article about environmental issues, calling a public official about environmental issues, filing a complaint against an individual or group that is harming the environment, taking part in an environmental protest, being a member of an environmental action group, donating to an environmental cause, and signing a petition for the protection of an environmental issue. From the result in table 3, it seems that questions bordering on teachers' attitude on environmental issues responsiveness are more significant when compared to teachers' actions on environmental issues in Nigeria. This goes to say that although teachers have a positive attitude towards environmental issues and responsiveness, they do not display eco-friendly behaviors. This result is not in tandem with the Theory of Reasoned Actions, which proposed that when individuals have a positive attitude towards caring about a particular action, they are more likely to perform the action.

Most of Nigeria's environmental challenges are known to the teachers, as shown in table 2. Hence, it seems Nigerian teachers are aware of the different environmental problems such as pollution, improper waste disposal, improper management of wastes, erosion, extreme weather conditions, and flooding. Being aware of these environmental problems, one could say, is a step closer to mitigating Nigeria's environmental problems. Pachamama Alliance (2021) alluded to the fact that environmental issues awareness is crucial in preserving the ecosystem. One of the responses from teachers in table 3 showed that educators believe that they do not properly dispose of waste in Nigeria. This result is consistent with research showing that Nigerian waste disposal is insufficient and poorly managed, leading to infections, pollution, and flooding (Dharwal, 2022; Chude *et al.*, 2020; Ileanwa *et al.*, 2021). One of the causes of Nigeria's numerous flooding and pollution issues may be due to



improper waste disposal in the country. Even though there is a high level of environmental issues awareness among teachers, as shown from the result, wastes are not properly disposed of in Nigeria, also among Nigerian teachers, as shown in table 3. Theory of planned behavior proposes that skills and resources help an individual to take positive actions. It could be said that Nigerian teachers lack the information, skills, and resources to respond positively to numerous environmental issues in Nigeria; hence, results from questions on positive responses to environmental challenges in Nigeria were not significant. Also, the teachers are of the view that environmental education is an essential subject and should be taught at all the schools in Nigeria. Students learn the skills necessary to maintain and protect the environment through EE. By providing instructors with the appropriate tools and instruction in environmental pedagogy, EE curricula make environmental issues more practical and reflective (Anderson, 2019; Khan, 2016; Shah, 2021; Onuoha *et al.*, 2023). This finding has an implication for EE curriculum development and implementation at all primary and secondary schools in Nigeria. Moreover, literature and studies have revealed that EE enhances students' skills to act appropriately toward the environment.

Anthropogenic activities, aside from natural occurrences, add to environmental challenges. Akpanfun *et al.* (2020) made the same assertion, stating that human activities and natural disasters are among the causes of environmental problems in Nigeria. Hence, humans need to be educated on how to safeguard the environment. Awareness of environmental issues has a vital role to play in fighting against environmental menace. Sadat *et al.* (2019), in their study, found that EE programs help to create environmental problem awareness and enhance the ability for students and teachers to act in eco-friendly manners. Although a high level of environmental issues awareness is not sufficient to combat environmental problems in Nigeria, Nigerian teachers need to be given the skills and resources to fight the many environmental problems, and one of the ways to do it is to educate them on how to properly dispose of waste, reduce, recycle, and reuse items such as plastic bottles, and reduce their carbon footprint. As Nazir (2021) indicated, awareness of environmental issues among students and teachers is not adequate to mitigate environmental problems, but EE with cultural and socio-political content is needed to combat environmental problems.

Another finding is that wastes are not adequately disposed of in Nigeria. Improper waste disposal is a significant problem in Nigeria (Dharwal, 2022; Ileanwa *et al.*, 2021; Chude *et al.*, 2020). It is no wonder that Nigeria has been experiencing frequent flooding incidents for some time now; flooding sometimes leads to erosion. In addition, improper waste disposal leads to health issues and pollution.

Nigeria needs to develop and implement a comprehensive EE curriculum at all primary and secondary schools in Nigeria; this will equip the students with the needed knowledge and skills to respond positively to environmental problems in Nigeria.

Implication to Research and Practice

One of the reasons for collecting data was to unearth Nigerian teachers' level of environmental issues awareness and responsiveness. This study has identified the level of teachers' awareness of environmental issues in Nigeria, which is that teachers are generally aware of most of the environmental issues in Nigeria. According to this study, teachers in Nigeria are not appropriately responding to environmental challenges, despite their awareness of them, as seen by their actions toward the environment. Environmental Education with



culture-based content is required to be taught at primary and secondary schools in Nigeria. Teachers are to be equipped with resources and skills for them to be able to respond appropriately to environmental problems in Nigeria.

Evidence-based information about the awareness and responsiveness of teachers to environmental issues in Nigeria has been made available by this study. Policymakers and administrators could use the study's findings to develop programs to help avoid and mitigate environmental issues as well as to create environmental laws, policies, and regulations, especially in the area of waste disposal. Additionally, this study has supplied baseline data for upcoming environmental research projects.

CONCLUSION

There are environmental challenges facing Nigeria and the globe at large. Nigeria experiences various environmental problems. Some of these environmental challenges are pollution, deforestation, erosion, oil spills, improper waste disposal, flooding, and health problems. Environmental issues have a spiral effect on the ecosystem. Finding out how aware Nigerian teachers are of the country's environmental issues, as well as how much they participate in eco-friendly activities, is crucial to addressing the environmental issues.

Teachers, being one of the most important educational stakeholders, indicated that one of the ways to mitigate these environmental challenges is to teach EE across all schools in Nigeria, as this will help enhance students' environmental skills. There is a need to educate Nigerians on how best to protect the environment. Hence, it is recommended that EE should be made a compulsory subject across all schools in Nigeria. In addition to that, there should be public education for the citizens on how best to manage and dispose of waste.

Since the beginning of the 21st century, there has been a considerable rise in environmental issues that require urgent intervention. Human interference in atmospheric processes has caused significant harm to natural resources. For Nigeria to achieve the sustainable development goals, environmental literacy in the form of Environmental Education is crucial. There is a need to equip Nigerian teachers with information, skills, and resources to care for and preserve the environment, as high levels of environmental issues awareness are not sufficient to mitigate against the vast environmental problems in Nigeria.

FUTURE RESEARCH

For future research, a study on the impact of Environmental Education on environmental issues could be carried out.



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