



Level of Environmental Knowledge, Attitude and Friendliness among Secondary School Students in Edo State, Nigeria

AGNES ANUOLUWAPO ODIA, LUCKY OMOEDE AIMIYEKAGBON
University of Benin, Benin-City, Nigeria

Abstract. Environmental sustainability has become a global priority, placing increased emphasis on environmental education, especially among students. This paper explored the levels of environmental knowledge, attitudes, and friendliness among secondary school students. It also identifies the sources of environmental information among senior secondary school students in Edo State, Nigeria. Four research questions guided the study. The study adopted survey research design. The population of the study was 21,222 while the sample size comprised 1,202 students drawn from both public and government-approved private senior secondary schools. The multi-stage sampling procedure was used in drawing the sample. An achievement test and a questionnaire were used for data collection. Descriptive statistics such as frequency counts, mean, percentages and ranking were used for data analysis. Findings showed that senior secondary school students in Edo State have high level of environmental knowledge, positive environmental attitude and display a high level of environmental friendliness; and environmental information is mostly gotten from the school followed by the home. It was therefore recommended among others that the school should put more efforts into ensuring that students continue to get environmental information by integrating environmental education related contents across various subjects to further enhance students' environmental variables.

Keywords: Environmental knowledge, Attitude, Friendliness, Environmental information, Edo State

1. Introduction

Environmental degradation, including climate change, pollution, and biodiversity loss, presents critical challenges to global sustainability. Young people, particularly students, are seen as key actors in achieving long-term environmental goals

(UNESCO, 2017). Their knowledge, attitudes, and behaviors toward the environment are essential indicators of the success of environmental education programs (OECD, 2020).

1.1 Environmental Knowledge

Environmental knowledge encompasses an understanding of ecosystems, environmental problems, and potential solutions (Kollmuss & Agyeman, 2002). Numerous studies suggest that students possess a moderate level of environmental knowledge, especially concerning visible and widely publicized issues such as plastic pollution and global warming (Bradley et al., 1999). However, more complex concepts such as the greenhouse effect, ecological footprint, and biodiversity conservation are often poorly understood (Esa, 2010).

Some of the factors influencing environmental knowledge include education (exposure to environmental topics in school); access to information (books, documentaries, internet, social media, etc.); teachers' expertise and enthusiasm in teaching environmental topics; participation in school programmes such as eco-clubs, recycling campaigns, or environmental days; family influence such as parents' and siblings' environmental awareness and discussions at home; and socioeconomic status as higher SES often correlates with better access to quality education and resources (Palmer et al., 1999).

Sources of environmental knowledge include School curriculum, Social media and online platforms, Environmental clubs and campaigns, Family and community influences. Despite these sources, gaps often exist between superficial awareness and deep understanding, indicating a need for more structured and experiential learning.

1.2 Environmental Attitudes

Environmental attitudes refer to the values and feelings individuals hold toward environmental protection. A positive attitude is often associated with concern for nature, sustainability, and a sense of personal responsibility (Schultz et al., 2005). Research indicates that many students exhibit concern for the environment and support green policies. However, these attitudes can be influenced by factors such as peer norms, cultural context, and self-efficacy (Steg & Vlek, 2009). The Theory of Planned Behavior suggests that attitudes, subjective norms, and perceived behavioral control are all key determinants of environmentally responsible action (Ajzen, 1991). Some influencing factors include cultural beliefs about nature and human responsibility toward the environment; religious/spiritual beliefs; peer influence as friends who are eco-conscious can shape similar attitudes; personal experiences such as interaction with nature; media influence such as documentaries and campaigns; and perceived severity and relevance (understanding the real-life impact of environmental problems).

1.3 Environmental Friendliness

Environmental friendliness, or pro-environmental behavior, includes activities such as recycling, conserving energy, reducing waste, and participating in community clean-up initiatives (Kollmuss & Agyeman, 2002). While many students express concern, fewer actually engage in these behaviors consistently—a phenomenon known as the "attitude-behavior gap." Barriers to behavior include lack of infrastructure, peer pressure, and inconvenience (Bamberg & Möser, 2007). However, supportive environments such as schools with active environmental clubs tend to improve students' participation in green behaviors (Rickinson, 2001). Some factors that influence environmental friendliness include environmental knowledge and attitude (as knowledge alone is not enough - positive attitudes encourage action); behavioral norms that are considered "normal" or expected in school, family, and community; facilities and infrastructure such as availability of recycling bins, water refill stations, etc.; motivation and incentives such as rewards for eco-friendly behavior, competitions, or recognition; self-efficacy which involves belief in one's ability to make a difference; and, school and government policies such as environmental rules, green certifications, eco-school initiatives and so on.

Limited integration of environmental education across subjects (UNESCO, 2017), insufficient experiential learning opportunities, lack of behavioral reinforcement in school policy and

culture tend to pose as challenges to environmental friendliness.

The purpose of the study was to find out the level of environmental knowledge, attitude and friendliness among senior secondary school students in Edo State. The specific objectives are to:

- determine the level of environmental knowledge among senior secondary school students in Edo State, Nigeria;
- find out the environmental attitude of senior secondary school students in Edo State, Nigeria;
- determine the level of environmental friendliness among senior secondary school students in Edo State, Nigeria; and,
- find out the sources of environmental information that are available to senior secondary school students in Edo State, Nigeria.

1.4 Research Questions

- What is the level of environmental knowledge among senior secondary school students in Edo State, Nigeria?
- What is the environmental attitude of senior secondary school students in Edo State, Nigeria?
- What is the level of environmental friendliness among senior secondary school students in Edo State, Nigeria?
- What are the sources of environmental information available to senior secondary school students in Edo State, Nigeria?

2. Research Methodology

The study adopted the descriptive survey research design. The population comprised 21,222 students. The sample size was 1,202 students. The multi-stage sampling procedure was used for selecting the sample. Firstly, three local government areas in the Edo South senatorial district were purposively selected for the study. Secondly, all senior secondary schools in the three selected local government areas were listed and grouped according to their ownership (that is, public and private). This was done through stratified random sampling. Six (6) public co-educational senior secondary schools and six (6) private senior secondary schools were selected from each of the three local government areas. Thus, 12 schools were selected from each local government area to give a total of thirty-six (36) schools; lastly, 34 students were selected from each school. The sample consisted of 564 boys and 638 girls. Two instruments were used for the study - an achievement test and a questionnaire. Data collected for this study was analysed using

descriptive statistics such as frequency counts, simple percentages and ranking.

3. Results

Research Question 1: What is the level of environmental knowledge among secondary school students in Edo State?

Table 1: Students' Level of Environmental Knowledge

Level	Frequency	Percentage (%)
Low	95	8.0
Moderate	501	42.0
High	606	50.0
Total	1202	100

Key: Scores between 0-6=Low; 7-12=Moderate; 13-18=High.

Table 1 showed that 95(8.0%) of the respondents have low environmental knowledge; 501(42.0%) have moderate environmental knowledge; while 606(50.0%) of the respondents have high environmental knowledge. It can be inferred therefore that students have high environmental knowledge.

Research Question 2: What is the environmental attitude of secondary school students in Edo State?

Table 2: Students' Environmental Attitude

Scale	Frequency	Percentage (%)
Negative	41	3.4
Positive	1161	96.6
Total	1202	100

Key: 17-42.5=Negative; 42.6-68=Positive.

Table 2 showed that 41(3.4%) of the respondents have negative environmental attitude while 1,161(96.6%) of the respondents have positive environmental attitude. It can be said therefore, that students have positive environmental attitude.

Research Question 3: What is the level of environmental friendly practices among secondary school students in Edo State?

Table 3: Students' Level of Environmental Friendliness

Level	Frequency	Percentage (%)
Very low	24	2.0
Low	18	1.5
Moderate	489	40.7
High	551	45.8
Very high	120	10.0
Total	1202	100

Key: 20-31=Very low; 32-43=Low; 44-55=Moderate; 56-67=High; 68-80=Very high

From Table 3, it can be observed that 24(2.0%) of the respondents have very low level of environmental friendly practices. 18(1.5%) of the respondents displayed low level of environmental friendly practices. Again, 489(40.7%) of the respondents engaged moderately in environmental friendly practices while 551(45.8%) of the respondents displayed high level of environmental friendly practices. Lastly, 120(10.0%) of the respondents displayed a very high level of environmental friendly practices. It can be inferred from the analysis that students' level of environmental friendliness is high.

Research Question 4: What are the sources of environmental information available to secondary school students Edo State?

Table 4: Sources of Environmental Information among Secondary School Students

Sources	Yes	No	Total	Mean	Ranking
a. Home	541 (45)	551 (55)	1202 (100)	0.46	2 nd
b. School	853 (71)	349 (29)	1202 (100)	0.71	1 st
c. Television	156 (13)	1046 (87)	1202 (100)	0.13	8 th

d.	Radio	288 (24)	914 (76)	1202 (100)	0.24	4 th
e.	Books	301 (25)	901 (75)	1202 (100)	0.25	3 rd
f.	Friends	228 (19)	974 (81)	1202 (100)	0.19	6 th
g.	Internet	276 (23)	926 (77)	1202 (100)	0.23	5 th
h.	Place of worship	168 (14)	1034 (86)	1202 (100)	9.14	7 th

*(Percentages in parentheses)

Table 4 showed the data on the sources of environmental information. From the table, the mean and ranks of the sources of information on the environment show the school as first with a mean 0.71; the home as second with a mean of 0.46; books as third with a mean of 0.25; radio as fourth with a mean of 0.24; internet as fifth with a mean of 0.23; friends as sixth with a mean of 0.19; places of worship as seventh with a mean of 0.14; and television as eighth with a mean of 0.13. While more than half (about 71% of the respondents indicated school as the major source probably because they have received instruction on environment, less than half of the respondents (about 45%) indicated their homes as source of environmental information. However, the mass media- radio, television and the internet are very low sources of environmental information to the respondents at 24%, 13% and 23% respectively.

4. Discussion

Findings showed that students have very high environmental knowledge. This finding is in line with that of Sharma and Verma (2013) in which they observed that adolescents have deep knowledge of environmental issues. This finding therefore gives credence to effective implementation of Social Studies curriculum with regards to Environmental Education-related theme. One of the goals of Environmental Education is that it should help individuals acquire awareness and basic understanding of the environment and its allied problems. This goal can be said to have been achieved judging from the findings of this study.

Findings also showed that students have positive attitudes towards the environment and environmental issues. It is not surprising since it was earlier observed that a large majority of the students have high level of environmental knowledge. It is expected therefore that their environmental knowledge should influence their attitude. This finding is in line with the findings of the study done by Zarrantaj et al (2013).

Findings also showed that students have high level of environmental friendliness. It is expected that increased environmental knowledge will bring about positive environmental attitude and both will

influence the students' environmental friendliness. This finding is in contrast with the findings of the study conducted by Ifegbesan (2010) in which he observed that students had low level of environmental friendliness.

Also, findings showed that the school provided the highest source of environmental information to the students. This could be as a result of having contents on environment integrated in school curriculum and especially in social studies to which the students are being exposed to. The low level of the mass media could be due to low feature of environmental matters or the students' attention and interest not directed towards them. The finding does not support prior studies like Keinonem, Yli-Panula, Vilkonis, Presson and Palmberg (2014), Ostman and Parker (1987) and Haklay (2002) that identified the internet, newspapers, radio, and television as the sources of environmental information.

5. Conclusions

Students play a pivotal role in shaping a sustainable future. While many have a foundational knowledge of environmental issues and display positive attitudes, there is a critical need to bridge the gap between awareness and action. Education systems must rise to the challenge by providing not just knowledge, but the tools, motivation, and opportunities to practice environmental responsibility. With the right support, students can become powerful agents of environmental change. This study reached a conclusion that secondary school students in Edo State have high level of environmental knowledge, positive environmental attitude and displayed a high level of environmental friendliness. Information about the environment is gotten from various sources but the most significant sources being the school and the home. It can be concluded that sources of environmental information among secondary school students in Edo State according to the order of their ranking includes the school, followed by the home, then books, radio, internet, friends, places of worship, with television coming last.

6. Recommendations

This study recommended that schools should put more efforts into ensuring that students continue to get environmental information by integrating environmental education related contents across various subjects; hands-on activities such as eco-projects and community service should be emphasized; sustainable actions by students should be Recognized and rewarded so as to reinforce environment-friendly behaviours; the school should collaborate with parents and local organizations so as to extend learning beyond school.

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