

Impact of Environmental Education On the Knowledge and Attitude of Students Towards the Environment

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ABSTRACT

Environmentally aware and empowered youths are potentially the greatest agent of change for the long term protection and stewardship of the environment. Thus environmental education which promotes such change will enable these youths to have a greater voice on environmental issue if effectively implemented in Nigeria. Hence, this study was conducted to assess students' level of knowledge and attitude towards the environment. The survey was conducted on 130 respondents who were full time students of environmental education in a federal university in Edo state, Nigeria. The result revealed that high level of knowledge and positive attitude towards the environment among the students. Also it was observed that the relationship between their knowledge and attitude towards the environment is a negative, little or no relationship. Therefore, it was concluded that environmental literate students especially in tertiary institutions are being nurtured to foster EE in Nigeria. Thus the researchers recommend that more needs to be done to promote and encourage EE at all levels in the country especially by the government and its agency to ensure effective implementation; nongovernmental organizations and international bodies all have a role to play in the country sustainable development goals.

KEYWORDS

Environmental education (EE), attitude, environmental knowledge

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Introduction

Human activities as a result of search for quality standard of living through science and technology have brought problems on the environment. Such issues include over population, greater pollution, the death and destruction caused by toxin spills and dumps, the massive deforestation of the world forest for commercial purposes, the harm caused by numerous oil spills, the destruction of wildlife habitats for human development amongst others. These activities also

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occur in Nigeria and leads to lots of environmental crisis or consequences such as loss of biological diversity, threat to food security, destructions due to flooding, soil erosion, desertification, poor environmental health, social unrest due to limited water and land rights. However, the Nigeria government proposed various strategies to curb these crises such as abatement measures, legislation and policies but little or no change was realised. This could be attributed to the fact that ignorance, poverty, greed and over population are majorly responsible for human anti-environmental behavior and actions in the country. According to Thathong (2012), those previous strategies proposed were more of control and treatment rather than prevention. Consequently, these environmental crises can be seen to emanate mainly from human activities due to their attitude and behavior towards nature. Therefore in resolving such problems, special attention needs to be placed on increasing the knowledge of the populace and thereby inculcating a positive attitude and behavior towards the environment. This can be achieved by effective implementation of environmental education. Thus, Nigeria among other African countries began to realize the role of environmental education in solving environmental issues. In 1990's the Nigerian Ministry of Education embarked on National Environmental Education program in schools towards sustainable development.

However, Environmental Education is seen as a process of infusing into the educational system environmental content in order to enhance the awareness of the people on environmental issues at all levels of education. It is an approach to education which is hoped to bring some solutions to the deterioration relationship between man and the environment. According to the North American Association for Environmental Education as cited by Thompson and Hoffman (2003) , stated that environmental education is learner centered; providing students with opportunities to construct their own understanding through hands on, minds on investigations involves engaging learners in direct experiences and challenges them to use higher order thinking skills is supportive of the development of an active learning community where learners share ideas and expertise. Palmer (1998), stated that the special feature of environmental education (EE) is that the knowledge of environmental laws and principles of functioning of the natural system are studied within the environment which help to develop practical skills and the ability to make assessment of the state of the environment. The awareness of the negative impacts of mankind in the natural environment has risen remarkably and environmental policies and programmes worldwide have being developed. People are more aware of their own impact on the environment in their everyday life and in parallel, their influence on the way their local community is run. The idea emerged, covering two aspects which are to inform people of environmental system and educate them so that they can adopt a more responsible attitude towards the environment. During the 1970's a great effort was jointly made by UNESCO and UNEP to put environmental education higher on the agenda, to define its scope, to state clearly some quality measures and guidelines and to promote environmental Education. Thereafter, Tbilisi Declaration gave the mostly widely recognized definition for EE when they defined EE as "a learning process that increases people's knowledge and awareness about the environment and associated challenges, develop the necessary skills and expertise to address the challenges and foster attitudes, motivations and commitments to make informed decision and take responsible action.

Furthermore, the European Resolution on Environmental Education stated that the goals of EE are to increase the public awareness of the problems which exist in the field, as well as possible solutions and to lay foundations for a fully informed and active participation of the individual in the protection of the environment and the prudent and rational use of natural resources. However, in a world where it is increasingly challenging to get students interested in classroom lessons, EE offers an enriching way for both students and teachers to connect their appreciation of the natural to academic, it created enthusiastic students. EE helps build critical thinking and relationship skills among students. It also helps students learn important life skills such as cooperation and communication. Moreover, Archie (2003) stated that when students learn through a problem or project based approach as proposed in EE, they tend to gain better understanding of what they learn, retain it longer and take charge of their own learning.

However, there is the need to instill the knowledge of the use of environment to the children in primary, secondary and higher institution. Hence the incorporation of environmental education into primary and secondary school curriculum in Nigeria is a way of enhancing the people awareness of the danger of environmental issues. It is also believed that this awareness and incorporation of EE into all curriculum at every grade create a more comprehensive treatment of environmental issues (Jekayinfa & Yusuf, 2008). In this regard, in Nigeria, the National Educational Research Development Council (NERDC) now the National Educational Research Council NERC (1992), proposed the goals and objectives of EE in the country, and they include

1. To enable young people to participate in decision making related to environmental issues
2. To enable learners to develop operational understanding of some of the basic concept and processes relating to environmental issues e.g. pollution, deforestation
3. To develop the ability to enquire into problem situations associated with the environment
4. Taking into account social and cultural factors of the people and suggesting solutions

In achieving these goals, environmental education is taught in schools as an infusion of several environmental education themes into existing school subjects in the primary and secondary schools in the country. Although the secondary school syllabus contains no specific subject on environmental education except with sketchy mention in geography, social studies and agricultural science (Robinson, 2013). While in tertiary education level, it is taught as a separate, specialized or part of the general studies subject in Nigeria. For this research, the federal University understudied offer environmental education as a specialized course. Therefore base on the notion that the course is still at its infancy stage, the urgency in developing specialist in EE to increase the environmental literacy of the citizens and the need to inculcate in the students a positive attitude and behavior toward the environment and environmental education. Also with the fact that teachers are seen as the link between the ignorant world of their audience and their later knowledge and mastery of their field, it is therefore mandatory to assess the attitude of these prospective Environmental Educators. Thus these teachers determine the success or failure of the proposed environmental education



curriculum goals in the country. Therefore, the researcher seeks to investigate the level of knowledge and the attitude of the prospective environmental educators towards the environment. Thus this study will help ascertain whether their attitude influence their readiness to take part in environment and environmental education activities as expected in the country.

Research questions

This study address the following research questions

1. What is the students' level of knowledge about the environment?
2. What is the attitude of the students towards the environment?
3. What is the relationship between the students' level of knowledge and their attitude towards the environment?

Hypotheses

The following hypotheses guided this study

1. There is no significant relationship between their level of knowledge and their attitude towards the environment

Research Methodology

The population and sample of the study consisted of the full time environmental education students in University of Benin, Nigeria. Thus one hundred and thirty students constituted the sample for the study. Hence, a questionnaire titled "knowledge and attitude of students towards the environment" was used. It was divided into two sections (A and B). Section A was used to elicit responses on the respondents knowledge towards environment. While sections B which was a four likert scale ranging from strongly agree (SA) to strongly disagree (SD) was used to elicit responses to ascertain the students' attitude towards the environment based on the following attributes such as proenvironmental, anthropocentric and social responsibility. A test retest method was used to assess the reliability of the instrument through the administering of the instrument to twenty (20) students. And a correlation coefficient of 0.82 was derived. This was considered adequate for the study. The researchers administered the questionnaires personally with two trained research assistants. Thereafter face to face method was adopted to make sure that the respondent filled the questionnaire effectively.

Result

Research question 1: what is the level of knowledge on the environment among the students?

Table 1a revealed the level of knowledge about the environment possessed by the students. For the item on *an interaction of plants, animals and microorganisms with their non- living components is referred to as ecosystem* revealed a mean score of 0.85 which is greater than the criterion mean of 0.5. Thus the students have adequate knowledge of the item. On the items of *environmental education helps learners learn skills on how to destroy the environment, Tbilisi conference that gave environmental education international recognition was held in 2005, The human disturbance of the natural environment leads to environmental degradation, Environmental Education should only focus on*

present environmental situations, Conservation of nature helps to protect the environment from loss, waste and harm, All buildings, monuments , roadways make up the natural environment, Sustainable development is meeting the needs of only present generation, Gradual increase in the earth temperature is known as global warming, and Environment is composed of only man and animals had mean scores of 0.91, 0.56, 0.81, 0.82, 0.92, 0.60, 0.80, 0.92 and 0.95 respectively. Thus this showed that the students have adequate knowledge of each of the items

Table 1a. Data on the level of knowledge of students towards the environment

S/N	Item	Mean	Standard deviation
1	An interaction of plants, animals and microorganisms with their non- living components is referred to as ecosystem	0.85	0.35
2	Environmental education helps learners learn skills on how to destroy the environment	0.91	0.25
3	Tbilisi conference that gave environmental education international recognition was held in 2005	0.56	0.49
4	The human disturbance of the natural environment leads to environmental degradation	0.81	0.39
5	Environmental Education should only focus on present environmental situations	0.82	0.38
6	Conservation of nature helps to protect the environment from loss, waste and harm	0.92	0.27
7	All buildings, monuments , roadways make up the natural environment	0.60	0.49
8	Sustainable development is meeting the needs of only present generation	0.80	0.40
9	Gradual increase in the earth temperature is known as global warming	0.92	0.27
10	Environment is composed of only man and animals	0.95	0.21

Table 1b. Summary of data on level of knowledge towards the ecosystem

N	Calculated Mean	Statistical mean	Standard deviation
130	8.18	5.00	1.58

The result from table one showed a calculated mean of 8.18 which is above the statistical average of 5. This implies that environment education students have adequate knowledge of the environment.

Research question 2: What is the attitude of students towards the environment?

The table reveals the attitude of the students towards the environment. For the item on *the course has increased my love and appreciation for nature* had a mean score of 3.48 which is greater than the criterion mean of 2.5. Thus it can be deduced that the students have a positive attitude to that item. Furthermore, for

items on *Environmental Education helps to produce active and well informed individuals*, *Despite our special abilities, humans are still subject to the laws of nature*, *Environmental Education gives me an edge over other colleagues in different course areas*, *The course helps to produce effective and well prepared workforce*, *Humans have the right to modify the natural environment to suit their needs*, *Plants and animals have as much right as humans to exist*, *The course shows me that humans were meant to rule over the rest of nature*, *Humans are severely abusing the environment*, *If things continue on their present course, we will soon experience a major ecological catastrophe*, *The earth has plenty of natural resources if we just learn to develop them* had their mean scores higher than the criterion mean of 2.5 which serves as benchmark. Thus indicating a positive attitude towards the environment among the students. While for item on *The balance of nature is strong enough to cope with the impacts of modern industrial nations*, a mean score of 2.31 which is lower than 2.5 also revealed a positive attitude because the item was negatively constructed.

Table 2a. Attitude of EE students towards the environment.

S/N	Item	Mean	Standard deviation
1	The course has increased my love and appreciation for nature	3.48	0.64
2	Environmental Education helps to produce active and well informed individuals	3.62	0.53
3	Despite our special abilities, humans are still subject to the laws of nature	3.33	0.66
4	Environmental Education gives me an edge over other colleagues in different course areas	2.98	0.85
5	The course helps to produce effective and well prepared workforce	3.32	0.63
6	Humans have the right to modify the natural environment to suit their needs	2.81	0.96
7	Plants and animals have as much right as humans to exist	3.41	0.73
8	The course shows me that humans were meant to rule over the rest of nature	2.72	0.98
9	Humans are severely abusing the environment	3.40	0.73
10	If things continue on their present course, we will soon experience a major ecological catastrophe	3.58	0.64
11	The earth has plenty of natural resources if we just learn to develop them	3.66	0.57
12	The balance of nature is strong enough to cope with the impacts of modern industrial nations	2.31	0.93

The summary of Table 2b below revealed a mean score of 38.64 and a standard deviation of 4.29 which is higher than the statistical mean of 24. This shows that EE students have a positive attitude towards the environment.

Table 2b. Summary of data on attitude towards the environment

N	Calculate mean	Statistical mean	Standard deviation
130	38.64	24.00	4.29

Research question 3: what is the relationship between the knowledge and attitude towards the environment?

Hypothesis 1: There is no significant relationship between the knowledge and the attitude of students towards the environment.

Table 3. Correlation coefficient showing the relationship between knowledge and attitude towards the environment.

S/N	Result relationship	Correlation r	p-value
1	Knowledge and attitude	-0.078	0.380 p> 0.05

The Table 3 shows a correlation coefficient (r) of -0.078, which reveals that there is little of no relationship between the knowledge and the attitude of the students towards the environment. This implies that the knowledge the students possess towards the environment does not influence their attitude to the course of study.

Discussion of Result

The result in table one revealed that the students have a high level of knowledge towards the environment in Nigeria. This can be deduced as the calculated mean score is greater than the statistical average. The result is confirmed by Mrema (2008) in her study in measuring environmental literacy among students of faculty of social science in University of Putra Malaysia which showed that more than 80% of all students had high level of knowledge towards EE.

Thereafter, in table two, the overall result revealed a calculated mean of 38.64 which is greater than the statistical mean of 24. The attitude items were divided to three components in the questionnaire (pro-environmental, anthropocentric and social responsibility). For the attitude items, the mean of proenvironmental was 13.42, which was higher than the mean score for anthropocentric (12.27) and social responsibility (12.95). These scores therefore show that the students have a positive attitude towards the environment. This finding is in line with the study of Jekayinga and Yusuf (2004) when they reported that respondents have a positive attitude towards the teaching of environmental education at all levels of education in Nigeria. The positive attitude and high level of knowledge among the students signifies that environmental education has great prospects in actualizing its goals and objectives in the country. Thereby enabling the establishment of positive environmental attitude among the country citizens.

Table three reveals a statistical analysis to show the relationship between the students' knowledge and attitude towards the environment in Nigeria. The correlation coefficient derived showed a negative little or no relationship between the students' knowledge and their attitude towards EE in the country. This can be deduced as "r" derived is -0.078. Therefore it implies that the students' level of knowledge towards the environment is independent of their attitude towards the



course of study. This is in line with the study by Aminrad, Zakariya, Haidi and Sakari (2013) when they reported a weak relationship between knowledge and attitude towards environmental education among students in Malaysia. In this present study, the little or no relationship observed reveals that the knowledge possessed by the students does not influence their attitude towards the environment.

Conclusion

Environmental Education as a course of study has come to stay in Nigeria school system especially the higher education, although more needs to be done to sustain the trend. This study revealed that environmental education students in the University of Benin have a level of knowledge towards the environment and also on the contents, goals and objectives of EE in Nigeria. They also possess a positive attitude towards the natural environment. Thus, this positive attitude and high level of knowledge reveals that the human and material resources in the institution of study have a great impact on the students. Meanwhile there was little or no relationship between their knowledge and their attitude towards the environment. Hence this study reveals that environmental literate students are being nurtured to foster environmental education in the country, although more needs to be done to encourage the students and promote the course of study in the country.

Recommendations

The following recommendations are proposed by the researcher based on the findings from this study.

1. There should be effective cooperation between international, national and local organization dealing on environmental promotion with the various departments offering environmental education as a course of study in higher institutions in Nigeria
2. There should be increased awareness raising avenues on environmental education towards the general public.
3. Environmental education contents should be introduced into the general studies curriculum in tertiary institutions in the country.
4. Research grants and scholarship opportunities should be provided for lecturers and students of environmental education in the country.
5. There should be full and effective implementation of environmental education into the Nigeria school system.

References

- Aminrad, Z., S.Z.S. Zakaria, S. Hadi and M. Sakari (2012). Relationship Between Awareness, Knowledge and Attitudes Towards Environmental Education Among Secondary School Students in Malaysia. *World Applied Sciences Journal* 22 (9): 1326-1333
- Archie, M. (2003). Advancing education through environmental literacy. Alexandria, VA: Association for Supervision and Curriculum Development.
- Jekayinfa, A.A, & Yusuf, A.R. (2008). Teachers' opinions on the incorporation of environmental education in the Nigerian primary school curriculum. *Educational Research and Review* 3 (11), 334-338
- Mrema, K.(2008). An Assessment of Student's Environmental Attitude and Behaviours and the Effectiveness Their School Recycling Programs Master Dissertation, Dalhousie University, School of Resource and Environmental Studies.



- NERDC (1992). *Draft Curriculum for Infusing Environmental Education in Secondary Schools*, Lagos: NERDC.
- Palmer J.A. (1998). *Towards Progress and Promise*, Environmental Education in the 21st Century, pp 240-244
- Robinson, J.O. (2013). Environmental Education and Sustainable Development in Nigeria: Breaking the Missing Link. *International Journal of Education and Research*, 1(5) 1-6.
- Thathong, K. (2012). A spiritual dimension and environmental education: Buddhism and environmental crisis. In: *Procedia - Social and Behavioral Sciences* 46, 5063 – 5068
- Thomson, G., & Hoffman, J. (2003). *Measuring the Success of Environmental Education Programs*. Calgary, AB: Canadian Parks and Wilderness Society.