



# The Importance of Incorporating Environmental Education (EE) into Teacher Education Programmes in Nigeria

**Comfort Nkongho Agbor<sup>i</sup>**  
Department of Environmental Education  
University of Calabar, Nigeria  
[commyspaco@yahoo.com](mailto:commyspaco@yahoo.com)

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## Abstract

Environmental education (EE) is the process that gives individuals opportunities to explore environmental issues, engage in problem solving, and take action to improve the environment. As a result, the global movement especially in the west to include environmental issues and preservation of our environment in the curriculum has been successful and the best way they did this is to begin from including EE in teacher education programmes curriculum because of the importance of teachers in the lives of children and the communities in which they live and practice. The purpose of this study is to examine the importance of incorporating environmental education into teacher education programmes in Nigeria. A structured and suitable questionnaire was designed along a four-point Likert-type scale of strongly agree (4), agree (3), disagree (2) and strongly disagree (1), on all the items on lecturers' perceptions of the importance of incorporating EE into teacher education, the relationship between EE and information about the environment, and the approaches in incorporating environmental education in teacher education curriculum. Expending a linear regression analysis, the study found that there were significant relationships on the importance of incorporating EE into teacher education, the relationship between EE and information about the environment, and the approaches in incorporating environmental education and teacher education curriculum. The study recommends that EE should be incorporated into the teacher education programmes in Nigeria.

**Keywords:** Environmental education, Information, Teacher education, Approaches, Nigeria.

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## INTRODUCTION

Several decades ago nothing was extensively talked about environmental education. However, the past two to three decades have witnessed great concern on environmental issues, and the burden falls on environmentalists who are supposed to play prodigious role on topical issues like ozone depletion, waste mismanagement, greenhouse emission, global warming, fossil fuel combustion, air and water pollution, etc. and the role humans play in changing the landscape matters a lot. These factors indicate a clear link between human beings and environmental disagreements makes environmental chemistry a particularly important and topical discipline (Özmen & Karamustafaoğlu, 2006).

Globally, world leader are demanding massive cut in the amount of emissions to improve the living standard of humans globally through effective and responsible reduction, treatment, management, and disposal of chemicals. The environmental challenges experienced globally are due to combination of several factors. These factors mutually cause environmental and health challenges. The chemical components of materials and the processes of handling them are the most important features of environmental concerns. Practically observing the dangerous effects of chemicals and traditional energy sources on human lives and the environment, has motivated environmentalists and stakeholders to make effort towards finding solution to the unprecedented environmental challenges.

The very last few years has seen tremendous shift in the move for environmental protection and has experienced expansion in various capacities and academic fields including environmental education (EE). As a result, there is a global move especially in the west to include environmental issues and preservation of our environment in the curriculum. The best way to do this is to begin from including EE in teacher education programmes curriculum because of the importance teachers have in the lives of children and the communities in which they live and practice. When societies become aware of the need for and the ways of protecting their environment, they will act and learn how to preserve it. Therefore, schools should be proactive and assume the ultimate responsibility for educating people about environmental protection. Thus, EE would be effective if only it will be part of teacher education curriculum. Some of the notable environmental declarations are highlighted in table 1.

Table 1: Chronology of Some Declarations about the Environment

Year	Location	Declarations
1972	Stockholm / Sweden	The Stockholm Declaration
1977	Tibilisi/ Russia	Tibilisi Declaration
1990	Talloyres/ France	The Talloyres declaration
1991	Halifax / Canada	The Halifax declaration
1992	Rio de Janeiro / Brazil	United Nations Conference on Environment and Development
1993	Kyoto / Japan	The Kyoto Declaration
1993	Swansea / Wales	Swansea Declaration
1994	Geneva / Switzerland	CRE-Copernicus Charter
1997	Thessaloniki / Greece	Declaration of Thessaloniki

Source: Özmen & Karamustafaoğlu (2006).

### Purpose of the Study

Conventionally, schools are expected to teach children environmental issues, but teachers' and students' undesirable adherence to environmental issues has raised a lot of concerns, probably because environmental education are not incorporated into teacher education

programmes in Nigeria. As such, this study is aimed at evaluating the importance of incorporating environmental education into teacher education programmes in Nigeria. Specifically, this study:

- Examines the importance of environmental education and teacher education;
- Examines the relationship between environmental education and information about the environment;
- Examines the approaches in incorporating environmental education and teacher education curriculum

## Hypotheses

Three hypotheses were raised to direct and guide this research:

- HO<sub>1</sub> There is no significant relationship between the importance of environmental education and teacher education.
- HO<sub>2</sub> There is no significant relationship between environmental education and information about the environment.
- HO<sub>3</sub> There is no significant relationship between the approaches in incorporating environmental education and teacher education curriculum.

## CONCEPTUALIZATION

### What Environmental Education Stands for

According to the United States Environmental Protection Agency (EPA) (n.d), EE is the process that allows individuals to explore environmental issues, engage in problem solving, and take action to improve the environment. As a result, individuals develop deeper understanding of environmental issues as well as the skills to make informed and responsible decisions. The components of EE are:

- **Awareness and sensitivity:** includes awareness and sensitivity to the environment and environmental challenges,
- **Knowledge and understanding:** includes the knowledge and understanding of the environment and environmental challenges,
- **Attitudes:** includes the attitude and concern for the environment and motivation to improve or maintain environmental quality,
- **Skills:** to identify and help resolve environmental challenges, and
- **Participation:** includes the participation in activities that lead to the resolution of environmental challenges. EE does not advocate a particular viewpoint or course of action. Rather, EE teaches individuals how to weigh various sides of an issue through critical thinking and it enhances their own problem-solving and decision-making skills.

Table 2: Difference between EE and environmental information

s/n	Environmental Education	Environmental Information
1	Increases public awareness and knowledge of environmental issues	Provides facts or opinions about environmental issues
2	Does teach individuals critical-thinking	Does not necessarily teach individuals critical-thinking
3	Does enhance individuals' problem-solving and decision-making skills	Does not necessarily enhance individuals' problem-solving and decision-making skills
4	Does not advocate a particular viewpoint	May advocate a particular viewpoint

Source: <https://www.epa.gov/education/what-environmental-education>

### The Importance of Environmental Education on Teacher Education

Environmental education (EE) could be seen as the process of recognizing values and clarifying concepts in order to develop skills and attitude necessary to understand and appreciate the inter-relatedness among people, their culture and biological surroundings. EE entails practices in decision making and self-formulation of a code of behaviour about issues concerning environmental qualities (Inyang-Abia, 1996). EE is a road map to environmental consciousness and environmental sustainability for posterity. The developments that are taking place around the world are pointers that call for stimulation and re-orientation of global implementation of EE in schools in contemporary society.

The United Nations Conference on the Human Environment held in Stockholm (1972) declared that EE must be used as a tool to address global environmental problems in the preservation and enhancement of the human environment. The Tbilisi declaration in 1977 also noted the important role of EE in the preservation and improvement of the world's environment, the declaration updated and clarified the Stockholm declaration and the Belgrade charter by including new goals, objectives, characteristics and guiding principles for EE. This resulted to EE being included in the school curriculum. These were conscious moves in redefining and re-establishing of EE. Subsequent conferences for the improvement of the human environment are:

- Rio de Janeiro (Brazil) 1992 encouraged sustainable development and environmental protection. The implication of the Rio de Janeiro conference in environmental education is the recommendation that environment and education should be incorporated as an essential part of learning in schools (formal and informal sector);
- Agenda 21-1996 which proclaimed the integration of environmental education in schools;
- 1980-international union for conservation of nature and wildlife fund;
- 1987 by UNESCO and UNEP;
- Climate change;
- Biological diversity.

In line with the above efforts for improving EE, it therefore behooves that to achieve a better environment for prosperity, EE should be introduced in all levels of education both formal and informal, this will enable the society to produce students of high regards for the environment who may not only depend on the environment for their own sake but will as well care for the environment so that the environment will in turn care for them.

However, in Nigeria according to Adara (1972) the Nigerian Ministry of Education embarked on National Environmental Education Programmes in schools towards sustainable

development as far back as 1990 with the effort of the Nigerian Conservation Foundation (NCF).

The National workshop on integration of EE gave an impetus on research and studies, which emphasis lend support on the need for functional implementation of environmental education in secondary schools curriculum Olusaya (2002).

Despite the fact that huge resources have been put in on EE awareness programme in schools by the government, the resultant implementation has not been encouraged. According to Omoogun, Onoghen and Ateb (2014), teachers have the basic knowledge of environmental education but may not discuss the concepts during lessons on the conventional school subjects.

However, much is left to be desired in achieving world sustainable development with the full application or practical implementation. In line of the above assertions, it therefore follows that for EE to be effectively implemented in the classrooms, the teacher preparation programmes should provide the training for EE integration in schools. Osokoya (2010) subsumes that the curriculum for teachers is well designed to provide teachers exposed to a breath of studies covering all that is required to make them competent professionals. It therefore follows that for teacher education programmes to be effective, it must be comprehensive, elaborate and flexible in response to the social demands relevant to societal needs.

Education is a systematic training and instruction designed to impart knowledge and develop skills, ability character and intelligence (Akpan, Ntukidem, Ekpiken & Etor, 2009). From this perspective, teacher education can be described as the process of training prospective teachers through a well-planned course of study to increase the capacities competencies knowledge and techniques in providing effective instruction.

Teacher education programmes are intended to impart not only a body of knowledge to trainee teachers, but also inculcate in them those skills competencies and attitudes that would enable them to adapt effectively to the changing demands of the educational system and the society (Ololubu, 2007; Ololube, 2009). Inculcating skills is very important because no system of education can rise above the quality of its teachers (FRN, 2014).

The importance of teacher education in the educational system of any nation cannot be overemphasized as the teacher is the pivot of any educational process. What the teacher knows and does can make a difference and what he does not know and cannot do, could be a serious problem (Aduke, 2007).

According to Aduke (2007), quality education cannot be obtained without quality teachers. The author further avers that the future of a nation or society depends greatly upon the quality of education provided for its citizens and upon inspired, qualified and dedicated teachers.

Thus any meaningful development in the educational system is associated with well-trained and dedicated teachers who are enthusiastic to put in their best into the teaching profession. Onyeachu (2007) observes that to make the society better and to help the teachers to possess the necessary emotional psychological and intellectual competencies expected of a good teacher, the teacher has to be well trained and developed. This is because the quality of training determines the capabilities of the teacher which in turn set the boundaries for educational attainment in the society (Giwari, 2005).

In recognition of the importance of teacher education, Ukeje (1985) and Lawal (2003) state that the teacher is the hub of any educational system because the school cannot be better than its teachers. According to them, it is upon teachers' quality and devotion to teaching that the effectiveness of an educational system can be tested.

In studies conducted by Pillai (2001) and Ololube (2005), they recommended that teachers should be well-prepared for their duties through appropriate teacher education

programmes. Lawal (2003), maintains that teacher education programmes shall continue to be key to educational development in Nigeria. Thus, education is nothing without quality teachers. Perhaps, this must have informed Nigeria's national policy on education to articulate the objectives of teacher education as follows:

- To produce highly motivated, conscientious and efficient classroom teachers for all levels of our educational system;
  - To encourage further the spirit of inquiry and creativity in teachers;
  - To help teachers to fit into the social life of the community and society at large and enhance their commitment to national goals;
  - To provide teachers with the intellectual and professional background adequate for their assignment and make them adaptable to changing situations;
  - To enhance teachers' commitments to the teaching profession.
- (FRN, 2004:38)

To achieve the aforementioned objectives, the Federal republic of Nigeria (FRN, 2004) recommends that teacher education programmes shall be structured to equip teachers for the effective performance of their duties and that teacher education shall continue to take cognizance of changes in methodology and the curriculum. What emerges from these views and the objectives of teacher education is the emphasis on quality and professional competence of teachers. The teacher is the core of the education process and this has always been stressed by various scholars, committees and conferences in the history of educational development in Nigeria. For instance, the Somade Committee of 1971 notes that promising development programmes have founded due to lack of trained teachers and concluded that it is a short-sighted policy, waste of time, energy and resources to embark on the improvement or the expansion of programmes without adequate provision being made for the production of well-trained teachers (Adesina, 1977).

Similarly, the third National Development plan reiterates that the quality of the teaching staff is probably the most important determinant of educational standards at all levels. Supporting this assertion, Ukeji (1992) stresses that teachers are the hub of any educational system. He concludes, that the success of the educational system and indeed the future of the nation depend on the teachers. According to Hillard (1971:72), teacher education requires that the beneficiary should not only have certain basic academic knowledge but in addition should acquaint himself with specific amount of educational theory (principles and methods of teaching drawing upon educational psychology philosophy and sociology) and efficient practice in the application of the knowledge so gained through training).

Esu (1985) observes that the success or failure of an educational programme dependent very much on the availability qualified well-trained and dedicated teachers. In this regards, the only way EE concepts can be taught in schools, is to train and equip the teachers on the methodology of handing such concept since the concept of EE are mostly infused into other subjects. To this end, Esu (1985) reveals that the implementation of the senior secondary school curriculum was married by lack of qualified teachers to handle the new curricula. This was as a result of lack of skills and professional knowledge by many teachers that affected their ability to interpret the new curricula adequately.

It suffices that if EE concept must be successful taught in schools, the teachers must be trained to handle such concept so that they will be able to teach the concept in subjects alongside other concepts. This is because environment education concepts taught in schools are either by infusion or interdisciplinary in approach. According to Omoogun et al. (2014) since EE concept do not form a part of the planned syllabus, it is often not given any attention

by the subject teachers. In this regards, the teachers may possess the knowledge of EE but lack the strategies for promoting EE during classroom instruction and as a result the concept may not be taught by the students. However much is left to be desired in achieving environmental sustainability with the full application or practical implementation.

From the above, it is cleared that the school curriculum must consistently be resolved to relate more realistically to the needs of the society. Isyaku (2004) confirms the validity of teacher content of education as he notes that general studies and other basic Mathematics and English are compulsory course for NCE students and that every NCE holder can now teach these subjects in addition to the specialization that he/she initially registered for. The researcher also notes that the general studies and other components have been strengthened with the content of drug abuse, HIV/AIDs, population/family life education, adolescence, violence education for healthy and education for target groups. As such, EE concepts can be infused to such general studies so that every teacher who graduates from the teacher education programmes must have adequate knowledge about the environment. This will in turn help the teacher to teach EE concepts successfully alongside other subjects as well as his/her area of specialization.

In discussing the importance of quality teachers, Oyeken (2006) maintained that the qualities of teachers constitute a pervasive force that makes the students internalize desirable concepts and skills with multimedia instructional system approach. The teacher is the hub of any educational process. What the teacher knows and does can make a difference and what he does not know and cannot do, could be a serious problem (Aduke, 2007).

Therefore quality education cannot be obtained without quality teachers. Aduke (2007) further notes that the future of a nation or society depends greatly upon the quality of education it provides for its citizens. This showed that teachers' competency and adequacy is a panacea for the attainment of educational goals and objectives. In view of this, Oshodi (1991) reveals that the qualities of teachers are the most important determinant of students' academic performance in secondary schools.

Onyechu (2007) and Akpan, Ntukudem, Ekpiken and Etor (2009) buttress the above assertion that to make a society better and to help the teachers possess the necessary physical, emotional, psychological and intellectual competencies expected of a good teacher, the teacher has to be well-trained and developed. According to Mezeiobi (1999), the importance of having qualified and experienced teachers in any educational setting cannot be over emphasized.

Adebile and Adeyemi (2008) reveal that teachers/quality variables are one of the most significant variables for student's achievement. At this juncture, it is very obvious that teacher quality plays a very significant role in the teaching and learning process. In discussing the importance of teachers in enhancing academic achievement, Emeh and Agbor (2005) reveal that teacher's quality variable was found to be a predictor of student's academic achievement in French. In view of this, Akiri and Ugborugbo (2009) opine that effective teachers produced better performing students.

Teacher effectiveness has been accepted as a multi-dimensional construct since it measures a variety of different aspects in teaching such as subject mastery, effective communication, lesson preparation and presentation. Adebile and Adeyemi (2008) note that research consistently show that teacher quality, whether measured by content, knowledge, experience, training and credentials or general intellectual skill is strongly related to students' achievement. Okorn, Okoi and Williams (2008) recommend that for quality to be assured, all necessary determinants that will enhance quality assurance in teacher preparation should be effectively put in place by the stakeholders to enable teachers perform more effectively. Etuk (2008) points out that the professional task of the teacher in curriculum implementation is

very important and vital for any curriculum implementation. He further notes that the greater part in ensuring quality rests on the teachers themselves.

Emmanuel (2011) reveals that there is a significant relationship between teachers' professional qualification and students' academic performance. It therefore behooves that for any curriculum implementation to be successful, the teacher must be well-trained, developed and also exhibit some teacher quality variables such as length of training, educational qualification, length of service, years of experience, teaching style and assessment style among others Agbor (2013). With these, they will be able to produce students with high academic performance. In this regards, Esu (2012) concludes that teachers are not born but made and that without professionally trained, qualified and dedicated teachers, all our laudable and fantastic programmes as well as the nation's dreams in all facets of life would be in vain.

In view of the above assertions by some prominent authors in teacher education there is no gainsaying integrating EE concepts in the teacher education programmes. The experiences gained by the teachers through training is one of the surest way to teach EE concepts to students to enable them appreciate the environmental problems in which the country is facing as well as to seek for solution to solve these environmental problems.

### **Is Environmental Education More than Information about the Environment?**

Nigeria experiences both dry and rainy season; these two seasons come with terrible heat and horrible rainfall that obstruct peoples' movement. Too much heat damages crops and vegetation while too much rainfall causes widespread flooding causing some households to relocate. Weather-related calamities have become a yearly occurrence for which people have not learned to prepare. Scientific findings reveal that changes in weather conditions have and will continue to have a major impact on human life and ecosystems. Rising temperatures, floods, droughts, and heavy precipitation can lead to severe problems such as increased diarrhea, malnutrition and malaria. Floods and rising sea levels can cause injuries, drowning, severe physical and mental trauma, particularly for citizens who live along major river deltas, on islands and in low-lying coastal areas.

In Nigeria, no particular area is spared from flooding, which destroy human property, marooned people, with canoes occasionally deployed to relocate people to more convenient quarters. Last year some places in the Niger delta regions, including Lagos and its environs, were worse hit. Some places in the northern part of Nigeria were also drastically affected; for instance, because of heavy flooding that covered even bridges, participants attending the Nigeria Institute of Management (NIM) Conference at Abuja in 2012 were unable to travel back home because of flooded areas around the confluence town called Lokoja. In Anambra state, flooding destroyed several homes, rendering many people homeless around the Aguata area, where erosion has been a menace for years despite the fact that the state government has been tackling the problem at great expense. No area of Nigeria is secure from the effects of flooding.

According to a recent UNICEF (2013) report, although children are worse hit however, they should not be considered inactive or weak. Children can be powerful agents of change. Studies have shown that many children can be astonishingly resilient in the face of significant challenges when they arise. UNICEF advocates empowering children through germane education on climate change and disasters management, which can reduce their susceptibility to risk for sustainable development of their communities. Educating students on issues of climate change is one of the best ways of strengthening communities on the problems of adaptation to climate change (UNICEF 2010). Due to the serious and adverse effects which climate change has caused on the environment, UNICEF is working on scaling



up and mainstreaming climate change adaptation, disaster, and risk reduction plans in school systems globally. These works are based on the principles of child-friendly education aimed at integrating climate change, disaster, risk management and environmental concerns across education system. They include education sector plans, policies, legislation, school budgets, teacher education, curricula and examinations, infrastructure and facilities in school, learning environments, school management and governance. An inclusive climate change and EE, and education on disaster-risk management into school curriculum guarantees the realization of students and children's environmental rights as preserved in articles of the Convention on the Rights of the Child (UNICEF, 2013).

According to UNESCO (n.d), education alone cannot achieve a more sustainable future; however, without education and learning for sustainable development, we will not be able to reach that goal. It is remarkable that UNICEF has made great efforts in educating people on sustainable development. The IAC promotes the role of ESD and its implications for all forms of international initiatives such as the Millennium Development Goals (GOALS) (Amanchukwu, Amadi-Ali & Ololube, 2015). The IAC therefore aims to achieve the following goals:

- Share a common vision, principles and values on ESD and ensure DESD visibility as a common objective and agenda for the system;
- Share programs and plans in order to encourage mutual reinforcement and avoid duplication or overlap within the UN system;
- Share good practices and lessons learned and coordinate ongoing activities to further advocate for the decade;
- Harmonize approaches to ESD and sustainable development practices within each organization;
- Provide a forum for agencies to integrate the insights and perspectives of other international actors into their ESD agenda;
- Provide an international platform to ensure high visibility of the challenges and progress of ESD as well as the maximum impact of ESD initiatives.

### **Approaches in Incorporating EE into Teacher Education Curriculum**

Following the report of the Tbilisi conference EE should be incorporated into existing programmes at any level. This is because the existing time table is already overcrowded. It is not different in teacher education programme. The general studies, Basic mathematics and Basic English are compulsory courses in addition to their various specialization. EE concepts should be introduced in the general courses so that all the teachers will benefit from EE concept beside their specialization. This will enable them to handle the concept of EE alongside other concepts in the class simultaneously.

However, there are various methods for incorporating EE into the school system. In Nigeria, according to Adebisi and Alawepo (1997), the following approaches of integrating EE have been adopted.

- Introduction of specific EE units into existing subjects;
- Reappraisal or restructuring of the whole content of different subjects to include EE components;
- Creation of brand new subjects such as citizenship or human ecology with strong EE components;
- Integrating the content of various subjects by teachers in a cross-curricular arrangement on in an interdisciplinary manner, through team teaching;

- The generation of EE topics from each of the units of the existing education incorporating them into lessons by teachers.

## METHODOLOGY

This research adopted a descriptive study to ascertain the environmental conditions or connections that exist and the opinions and attitudes that follows. The descriptive research method applied in this study is largely concerned with representing the fundamental conditions and connections that exist concerning EE.

The central purpose of this study is to examine the prevailing circumstances on EE and teacher education programmes. More precisely, the purpose of this study is to evaluate lecturers perceptions about the importance of EE on teacher education; the relationship between EE and information about the environment; and the approaches in incorporating environmental education and teacher education curriculum.

The target population of this study are all the lecturers in universities in Nigeria, whereas the accessible population are the lecturers within the reach of the researchers. The research population for this study is drawn from lecturer 1, senior lecturers and professors.

Simple random sampling was employed in the study because it is by far the easiest and simplest sampling method in the collection of data. Two public universities in Cross Rivers State were chosen for the study. A total number of one hundred and fifty (150) questionnaires were distributed to lecturers in the faculties of education of the selected universities, out of which one hundred and twenty-five (125) were returned, and one hundred and eleven (111) questionnaires were finally selected. Fourteen questionnaires were discarded because of errors in the ways they were filled out. See table 3 for details of respondents' demographic variables

Table 3: Descriptive analysis of respondents' demographic information

<b>Gender</b>	<b>Number of Respondents</b>	<b>Percentages (%)</b>
Male	65	58.6
Female	46	41.4
Total	111	100.0
<b>Age</b>	<b>Number of Respondents</b>	<b>Percentages (%)</b>
45-54 years	85	76.6
55-64 years	25	22.5
65-70 years	1	.9
Total	111	100.0
<b>Academic Rank</b>	<b>Number of Respondents</b>	<b>Percentages (%)</b>
Lecturers 1	20	18.0
Senior Lecturer	45	40.5
Assoc. Professor	33	29.7
Professors	13	11.7
Total	111	100.0
<b>Faculty</b>	<b>Number of Respondents</b>	<b>Percentages (%)</b>
Education	111	100.0

A structured and suitable instrument was design (questionnaire) along a four-point Likert-type scale of strongly agree (4), agree (3), disagree (2) and strongly disagree (1), on all the items on lecturers' perceptions on the importance of incorporating EE into teacher education, the relationship between EE and information about the environment, and the approaches in incorporating environmental education and teacher education curriculum. The respondents responded with a degree of agreement or disagreement on all the items. The questionnaire was structured into two sections: section "A" of the questionnaire focused attention on items

such as gender, age, academic rank and faculty. Section “B” was directed at possible factors that may or may not be perceived as being capable of having relationships between EE and teachers education.

The questionnaire used for this study was validated by professional colleagues, who are experts in measurement and evaluation, and the questionnaire was pre-tested on a population (10 lecturers) outside the sample size and their replies were used to improve on the items. Cronbach Alpha reliability tool of the Statistical Package of the Social Sciences (SPSS) version 22 was employed to statistically test the reliability of the questionnaire, and a reliability estimate of .717 was obtained, which showed that the reliability of the questionnaire is good.

Regression analysis was conducted to test the hypotheses for relationships. Secondly, the discussion of the results made use of evidence from literature to support them.

## RESULTS AND DISCUSSION

### Hypothesis 1: Importance of EE and Teacher Education

In testing hypothesis one, the hypothesis states “There is no significant relationship between the importance of environmental education and teacher education”, and the linear regression analysis conducted as depicted in Table 4 indicated that most of the relationships were significant and positive with an R of .272, R square of .074 and an adjusted R square of .065 of the entire variables entered.

The ANOVA analysis represented the sum of square for the linear regression to be 1.992 and that of the residual is 24.945, and a degree of freedom (df) = 1, with an F-value of 8.703 and a significance of .004. This implies that lecturers’ perceptions showed significant relationship between the importance of environmental education and teacher education.

The estimated constant Coefficient analysis for teacher education is significant at .012. This implies that perceptions towards importance of EE and teacher education with a significance level of .004 and a calculated t-value of 2.950 were significant. Thus, hypotheses 1 was rejected because there are significant relationship between the importance of environmental education and teacher education.

The findings in this study are in line with the studies of Inyang-Abia (1996), Olusaya (2002), Omoogun et al. (2014) and Amanchukwu et al. (2015) when they hold that EE is a roadmap to environmental awareness and environmental sustainability for future generations, and the developments that are taking place around the world are pointers that call for stimulation and re-orientation of global implementation of EE in schools in contemporary societies around the world. They suggested that teachers should have the basic knowledge of environmental education to be able to discuss environmental concepts and issues during lessons on the conventional school subjects.

Table 4: Linear Regression analysis of the relationship between the importance of environmental education and teacher education

<b>Model Summary</b>						
<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error</b>		
1	.272 <sup>a</sup>	.074	.065	.47839		
<b>ANOVA Analysis</b>						
<b>Model</b>		<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
1	Regression	1.992	1	1.992	8.703	.004 <sup>b</sup>
	Residual	24.945	109	.229		
	Total	26.937	110			

<b>Coefficients</b>		Unstandardized Coefficients		Standardized Coefficients		
<b>Model</b>		<b>B</b>	<b>Std. Error</b>	<b>Beta</b>	<b>t</b>	<b>Sig.</b>
1	(Constant)	.663	.259		2.561	.012
	Importance of EE and Teacher Education	.210	.071	.272	2.950	.004

b. All requested variables entered

## Hypothesis 2: EE and Information about the Environment

To test hypothesis two, the hypothesis states that “There is no significant relationship between environmental education and information about the environment”, and the results in Table 5 showed that most of the relationships were significant and positive with an R of .376, R square of .142 and an adjusted R square of .134, including a standard error of .46060 for the entire variables entered.

The ANOVA analysis depicted the sum of square for the regression to be 3.813 and that of the residual is 23.124, and a degree of freedom (df) = 1, with an F-value of 17.971 and a significance of .000. This implies that perceptions have significant relationships between environmental education and information about the environment.

The estimated constant Coefficient analysis for teacher education is positive. This implies that perceptions towards organizational change with a significance level of .000 and a calculated t-value of 4.496. The calculated t-value for EE and Information about the Environment is 4.239, and a significant value of .000 showed that there are significant relationship between environmental education and information about the environment. Thus, hypothesis 2 was rejected because there are significant relationships between leadership lecturers’ perceptions of environmental education and information about the environment.

This study is in line with Amanchukwu et al. (2015) and UNESCO (n.d) studies, they are of the view that education alone cannot achieve a more sustainable environmental education and information future; however, without education and learning for sustainable development, we will not be able to reach that goal.

Table 5: Linear Regression analysis of the relationship between environmental education and information about the environment

<b>Model Summary</b>						
<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error</b>		
1	.376 <sup>a</sup>	.142	.134	.46060		
<b>ANOVA Analysis</b>						
<b>Model</b>		<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
1	Regression	3.813	1	3.813	17.971	.000 <sup>b</sup>
	Residual	23.124	109	.212		
	Total	26.937	110			
<b>Coefficients</b>		Unstandardized Coefficients		Standardized Coefficients		
<b>Model</b>		<b>B</b>	<b>Std. Error</b>	<b>Beta</b>	<b>t</b>	<b>Sig.</b>
1	(Constant)	.741	.165		4.496	.000
	EE and Information about the Environment	.235	.055	.376	4.239	.000

b. All requested variables entered

### Hypothesis 3: Approaches in Incorporating EE and Teacher Education Curriculum

The regression analysis conducted to test hypothesis 3 which states that “There is no significant relationship between the approaches in incorporating environmental education and teacher education curriculum” as depicted in Table 6 showed that most of the relationships were significant and positive with R .297, an R square of .088 and an adjusted R square of .080 of the entire variables entered.

The ANOVA breakdown depicted the sum of square for the linear regression to be 1.973 and the residual to be 20.460, and a degree of freedom (df) = 1, with an F-value of 10.510 and a significance of .002, implies that lecturers perceptions have significant relationships between the approaches in incorporating environmental education and teacher education curriculum.

The estimated constant Coefficient analysis for teacher education is positive. This implies that perceptions towards organizational change with a significance level of .000 and a calculated t-value of 6.380. Approaches in incorporating EE and teacher education curriculum were significant at .002 with a calculated t-value of 3.242. Thus, hypothesis 3 was rejected because there are significant relationships between approaches in incorporating EE and teacher education curriculum in Nigeria.

In line with the findings of this study, Adebisi and Alawepo (1997), are of the opinion that the following approaches of integrating EE should be adopted—the introduction of specific EE units into existing subjects; reappraisal or restructuring of the whole content of different subjects to include EE components; the creation of brand new subjects such as citizenship or human ecology with strong EE components; integrating the content of various subjects by teachers in a cross-curricular arrangement on in an interdisciplinary manner, through team teaching; and the generation of EE topics from each of the units of the existing education incorporating them into lessons by teachers.

Table 6: Linear Regression analysis of the relationship between the approaches in incorporating environmental education and teacher education curriculum

<b>Model Summary</b>						
<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error</b>		
1	.297 <sup>a</sup>	.088	.080	.43325		
<b>ANOVA Analysis</b>						
<b>Model</b>		<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
1	Regression	1.973	1	1.973	10.510	.002 <sup>b</sup>
	Residual	20.460	109	.188		
	Total	22.432	110			
<b>Coefficients</b>						
		Unstandardized Coefficients		Standardized Coefficients		
<b>Model</b>		<b>B</b>	<b>Std. Error</b>	<b>Beta</b>	<b>t</b>	<b>Sig.</b>
1	(Constant)	1.495	.234		6.380	.000
	Approaches in Incorporating EE and Teacher Edu. Curri.	.209	.065	.297	3.242	.002

b. All requested variables entered

## CONCLUSION

In this study, the researcher examined the importance of incorporating EE into teacher education programmes in Nigeria. The study found pertinent information that could encourage the need to incorporate EE in teacher education programmes in Nigeria. In finishing, the strategic implementers of an EE programmes are the teachers. To achieve the objectives of EE, EE should be incorporated into the basic teacher education programmes like the general studies courses, which are compulsory subjects for all teacher education students. To this end, the teachers will not just acquire the knowledge of EE but the skills and methodology to handle this course in the classroom alongside other concepts. Since teacher education programmes are meant to train teachers to handle all levels of teaching in school programmes. This will go a long way to teach concept to all levels of our educational system that may leads to attitudinal changes.

## REFERENCES

- Adara, O. A. (1972). Improving the quality and outreach of environmental education in Nigeria world council for curriculum development and instruction, Region 2. Jos publishers.
- Adebisi, A., & Alawepo, J. A. (1997). Integration of environmental education in social science curriculum at the secondary school level in Nigeria: problems and prospects. *Journal of educational Research*, 3(1), 1-11.
- Adebile, J. A., & Adeyemi, B. A. (2008). Influence of teacher quality variables on Nigerian primary school pupils' achievement in English language. *The African Symposium*, 8(2), 108-112.
- Adesina, S. (1977). *Planning and educational development in Nigeria*. Lagos: Education Industries.
- Adetayo, J. O. (2008). Quality of teaching practice exercise organized by tertiary institutions as perceived by lecturers. *Journal of Curriculum Studies*, 15(3), 121-128.
- Aduke, A. F. (2007). Quality and quantity of teachers in public and private secondary schools in Ekiti State, Nigeria. *Nigeria Journal of Educational Management*, 2(2), 143-148.
- Agbor, C. N. (2013). Correlates of quality teacher education in colleges of education in Cross River State, Nigeria. Unpublished Ph.D. Dissertation, department of curriculum and Teaching, University of Calabar, Nigeria.
- Akiri, A. A., & Ugborugbo, N. M. (2009). Teachers' effectiveness and students' academic performance in public secondary schools in Delta State, Nigeria. *Studies on Home and Community Science*, 3(2), 107-113.
- Akpan, C. P., Ntukidem, P. J., Ekpiken, W., & Etor, R. (2009). The challenges of teacher education in Nigeria. *International Journal of Internet Education*, 4, 169-178.
- Amanchukwu, R. N., Amadi-Ali, T., & Ololube, N. P. (2015). Climate change education in Nigeria: the role of curriculum review. *Education*, 5(3), 71-79. DOI:10.5923/j.edu.20150503.01.
- Emeh, J. U., & Agbor, C. A. (2005). Teachers' classroom managerial variables and students' academic achievement in French in Cross River State, Nigeria. *Global Journal of Humanities*, 4(1&2), 25-27.
- Emmanuel, O. E. (2011). Influence of teacher factors on academic performance of secondary school students in Ogun State, Nigeria. *African Journal for the Study of Educational*, 3(4), 19 - 21.

- EPA (n.d). What is environmental education? Retrieved June 1, 2016 from <https://www.epa.gov/education/what-environmental-education>.
- Esu, A. E. O. (2012). The teacher and the nation: An inaugural lecture delivered in Calabar on the 7th of October 2012.
- Esu, A. E. O. (1985). The importance of qualified teacher in the planning of secondary school curriculum in Cross River State. In L. E. Amadi (ed.), *Senior secondary school curriculum implementation (Guidelines)*. Calabar: Ministry of Education.
- Etuk, E. N. (2008). Ensuring the production and retention of quality teachers for quality universal basic education in Nigeria. *Journal of Curriculum Studies*, 75(3), 69 -79.
- Federal Republic of Nigeria (FRN)(2004). *National policy on education*. Lagos: NERDC.
- Giwar, A. M. (2005). *Teachers' registration council and quality assurance in teacher education*. Ilorin; Indemac Print Machine.
- Hillard, F. H. (1971). *Teaching and the teacher trends in teacher education*. Birmingham: George Allen and Unwin.
- Inyang-Abia, M. E. (1998). Lecture notes on introduction to environmental education.
- Lawal, H. S. (2003). Teacher education and the professional growth of the 21 century Nigerian teacher. *The African Symposium*, 2(2) 12-19.
- Lkpan, C. P., Ntukidem, P. J., Ekpiken, W. & Etor, R. (2008). The challenges of teacher education in Nigeria. Being a paper presented at the international internet education conference and exhibition (7-8 October) held at Ramsis Hilton, Cairo Egypt.
- Mezieobi, K. A. (1999). Teacher quantity in Nigeria: what quality? *Journal of the Association of Teacher Educators*, 1(1), 8-14.
- NERD (1992). Draft curriculum for infusing environmental education in secondary schools Lagos: NERDC.
- Ololube, N. P. (2005). School effectiveness and quality improvement: quality teaching in Nigerian secondary schools. *The African Symposium*, 5(4), 17-31.
- Ololube, N. P. (2009). *Understanding Teachers professional competencies for educational effectiveness*. Owerri: Springfield Publishers.
- Ololubu, C. O. (2007). Challenges in teacher preparation efforts in colleges of education: the way forward. *Journal of Curriculum Studies*, 14(3), 59 -171.
- Omoogun, A. C., Onnogen, U. N., & Ateb, G. A. (2014). Adequacy of knowledge of environmental concepts among junior secondary school teachers for the multi-disciplinary approach of implementing environmental education curriculum. *Journal of Education and Practice*, 36(5), 8-17.
- Oshodi, A. O. (1991). Resource utilization and students' academic performance in Kwara State Secondary Schools. Unpublished M.Ed. Thesis, Department of Curriculum Studies, University of Ilorin.
- Osokoya, I. O. (2010). *Teaching and researching history in Nigeria*. Ibadan: Laurel Educational Publishers.
- Oyekan, S. O. (2006). *Foundations of teacher education*. Ibadan: Ben Quality Prints.
- Özmen, H., & Karamustafaoğlu, O. (2006). Environmental consciousness and education relationship: determination of how environment-based concepts are placed in Turkish science curricula. *Asia-Pacific Forum on Science Learning and Teaching*, 7(2), Article 7.
- Pillai, R. (2001). Teachers must engage in active capacity building. Retrieved May 30, 2016 from [www.unesco.org](http://www.unesco.org).
- Ukeje, B. O. (1985). *Education for social reconstruction*. Ibadan: Macmillan.
- Ukeje, B. O. (1992). *Educational administration: theory and practice*. Owerri: Totan publishers.

UNESCO (n.d). Climate change education for sustainable development at UNESCO. Retrieved March 18, 2016 from <http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/climate-change-education/>.

UNICEF (2010). Climate change. Retrieved March 22, 2016 from [www.unicef.org/cfs/...UNICEF-ClimateChange-ResourceManual-lores-c.pdf](http://www.unicef.org/cfs/...UNICEF-ClimateChange-ResourceManual-lores-c.pdf).

UNICEF (2013). Chair of the United Nations inter-agency committee (IAC) decade on education for sustainable development. Retrieved April 22, 2016 from [www.unicef.org/education/bege-61668.html](http://www.unicef.org/education/bege-61668.html).

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<sup>i</sup> Dr. Comfort Nkongho Agbor is a lecturer in the Department of Environmental Education, Faculty of Education University of Calabar, Nigeria. She holds a Ph.D. in Teacher Education, M.Ed. in Environmental Education and B.Ed. in Environment from University of Calabar. Dr. Agbor has attended and presented papers in learned conferences locally and internationally which culminated in her publishing widely in the area of teacher education, instructional methods, education effectiveness, and teacher competences in reputable journals. She also has some published chapters in edited books. She is a member of several professional associations.