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Products Evaluation of Environmental Education Curriculum/Program Implementation in the University of Calabar, Nigeria

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Abstract. This study evaluates the implementation of the environmental education curriculum in the Department of Environmental Education, University of Calabar, Nigeria. Using the expost facto research design, nine objectives were pursued. These include: 6 strategic objectives, the

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curriculum content, career prospects of graduates, and lecturer's pedagogic knowledge and problems militating against the effective implementation of Environmental Education (E.E). A sample of 969 graduates of Environmental Education from 1997-2021, were the respondents. The researchers used an open and closed ended questionnaire with a modified four-point Likert scale response options that they designed as an instrument to collect information. Simple percentages were used for data analysis. The results of the analyses show that the curriculum content of Environmental Education as in force today is not adequate. The knowledge and awareness acquired when they studied E.E. did not help them enough to solve their community environmental problems. However, Environmental Education built their skills and prepared them well to actively participate in solving current environmental problems. Some of the lecturers who taught these respondents at undergraduate levels have the requisite pedagogic knowledge of the subject matter but, the government who is a signatory to the implementation of Environmental Education is not serious about engaging these graduates. Overall, Thirteen problems were identified as factors hampering the effective implementation of Environmental Education curriculum, and 13 feasible solutions were proffered by the respondents. It was concluded that Environmental Education in the University of Calabar has achieved some level of success, despite the fact that there are some issues that needs to be addressed to get the complete success anticipated by the crafter of the program's objectives. It was recommended among others that a regulatory body should be created to regulate the practice of Environmental Education in Nigeria.

Keywords: Environmental Education; curriculum evaluation; products evaluations; career prospects; curriculum overhauling; challenges to curriculum implementation

1. Introduction and background to the study

The knowledge of environmental perception and human behavior has shown that the world environment has been under serious environmental threats from both anthropogenic and natural causes. These threats are caused as a result of human's quest to feed his teeming population, improve their livelihoods and living conditions and to elongate their life expectancy. These threats to the global environment are revealing very tormenting adverse effects on both man and the living component of the environment, including the earth planets and all its resources (Eneji et al., 2017; Ardoin et al., 2020). Worried by the prevalence of these threats and the unending unsustainable production and consumption patterns adopted by humans, scholars and development partners came togetheto design the best approach to address these environmental malaises, (Punzalan, 2020; Seo et al., 2020; Onnoghen et al., 2020). One of the most feasible approaches to address this plethora of environmental problems was the introduction of the course Environmental Education. Environmental Education is a learning process designed to develop in the learners the skills and attitude that will help in reducing existing issues regarding the environment, while attempting to avoid creating new environmental issues. Androin et al., (2020)

defines Environmental Education as a knowledge exchange which tries to develop in the learners, new attitudes, capacities, skills, the commitment that prepares the learners and the society to work either as a person or as a community to carry out sustainable environmental actions and activities.

However, it is sometimes used more broadly to include all effort and processes to educate the public, individuals and other audience including print materials, websites, media campaigns etc to explore environmental issues, engage in problem solving, and takes responsible actions to improve the environment. Moreover, Freire, (1996 in Pirrie et al., 2006) observed that the effectiveness of environmental education is dependent on multidimensional perspective of information dissemination acquired through education as a whole, thereby, involving shared knowledge between indigenous education systems already possessed by the rural communities and the social realities on ground. Based on these perspectives, individuals who have acquired environmental education should have the thorough and effective understanding of our environmental challenges, while also possessing the requisite skills, capacities and knowledge to address these environmental issues accordingly. This will guide them to make informed decisions concerning the extent of participation to address these issues so identified.

Gruenwald, (2004 in Eneji, 2017a) and Ford Foundation, (2005 in Eneji, 2017a) defined Environmental Education as the process of learning that improves human knowledge and awareness concerning the environment, with its numerous problems, developing people's attitude, and that gives them the motivation and commitments to make valid and reliable decisions to take sustainable actions in tackling these environmental issues so identified. The Tbilisi conference of 1972 defined Environmental Education as a learning process that help the students develop positive attitudes, skills, belief, knowledge, capacities and the commitment to work as a learner or as a community to address current environmental issues and avoiding new environmental issues.

Most often than not, people make the mistake of using Environmental Education and Environmental Science interchangeably, while both focus on environmental problems, they have a thin line of differentiation. The duty of the environmental scientist is to bring out facts concerning the environment, while that of the Environmental Educator is to pass the message through education and awareness creation to the public.

2. Vision, Mission, Goals and Objectives of Environmental Education

After the United Nation Conference on Human Environment (UNCHE) held in Stockholm in 1972, the United Nation Educational and Scientific Organization – United Nation Environment Programs (UNESCO-UNEP) conference in Belgrade in 1975 drafted the concept and vision of Environmental Education. Another conference themed Intergovernmental Conference on Environmental Education held at Tbilisi in 1977crafted the goals, vision, mission and objectives of Environmental Education, which were as follows:

Vision: To develop a people who will use the environmental knowledge so acquired to engage in environmental stewardship.
Mission: Ensure that Environmental Education, based on sound science and effective education practices, is used as a tool to promote and protect human health and the environment and to encourage student academic achievements and active participation in solving environmental problems (Tbilisi, 1972).

2.1 Objectives of Environmental Education

The Intergovernmental Conference on Environmental Education (the Tbilisi, 1977) has the following as the objectives of Environmental Education:

a) **Awareness**—to help social groups and individuals acquire awareness and sensitivity to the total environment and its allied problems.

b) **Knowledge**—to help social groups and individuals gain a variety of experience in, and acquire a basic understanding of the environment and its associated problems.

c) **Attitudes**—to help social groups and individuals acquire a set of values and feelings of concern for the environment and the motivation for actively participating in environmental improvement and protection.

d) **Skills**—to help social groups and individuals acquire the skills for identifying and solving environmental problems.

e) **Participation** - To provide individuals, groups and societies with opportunities and the motivation to be actively involved at all levels in creating a sustainable environment. This participation includes the individual taking up careers in environmentally related organizations where the skills and values acquired can be used to solve environmental problems, while preventing the occurrence of new ones (Tbilisi, 1977).

2.2 Nigeria's Environmental Education perspective

The foundation stone for what became Environmental Education (E.E.) today was the visit of the King of Edinburgh to the Chief of Oban clan in the Oban Division of the Cross River National Park, though a tropical rainforest then. The major actors behind the growth of E.E were the World Wildlife Fund for Nature (WWF) championed by Nigerian Conservation Foundation (NCF) and Nigerian Educational Research and Development Council (NERDC) in the late 1980s. These organizations contributed a great deal of efforts towards the development of EE curricula for secondary schools as well as community conservation clubs. Unfortunately, the curriculum has not been implemented in secondary school curricular till date.

In Nigeria in 1988, the unprecedented efforts of the Nigerian Conservation Foundation (NCF) pushed for the introduction of some topics in environmental education into some school subjects like in the curriculum of general study courses in some universities, for example,the citizenship education. In 1990 the UNESCO sponsored a national workshop on curriculum review tagged ''National Curriculum Review Conference'' where it was agreed that environmental education topics should be integrated into school subjects and other teacher development programs in the country.

The first Environmental Education program in Nigeria was anchored by the Nigerian Conservation Foundation sponsored by WWF and domiciled in the Institute of Education, University of Calabar in 1992 with the Diploma in Environmental Education as the first program. This was possible through the efforts of some Nigerians who went to Glasgow for the initial training, and upon their return, they held conferences and developed the initial curriculum for the new course. As time went on, the degree program in Environmental Education was introduced; this was followed by the post graduate diploma in Environmental Education and the Master's degree program in Environmental Education.

All these programs were domiciled in the Institute of Education, University of Calabar. The bachelor's degree programs initially offered are in two streams, B. Env. Edu with teaching subjects and B. Env. Edu with areas of professional specializations. Areas of specialization in the teaching subject streams include Geography, English Language, Biology, Physics, Mathematics, Chemistry, History, French, Political science, Social Studies, Economics, etc., while in the specialization, six broad areas are offered: Pollution and Waste Management (EPW), Forestry and Wildlife Management (EFW), Women and Environment (EWE), Population and Resources Management (EPR), Tourism and Eco-management (ETE) and Community Environmental Services (ECS). The Women and Environment (EWE) was later changed to Gender and Women Studies.

Later in 2005, there was a decentralization of programs, where Environmental Education was given to the Department of Curriculum and Teaching in the Faculty of Education, with this transfer, the bachelor's degree awarded in Environmental Education became B. Ed in Environmental Education. It is worthy to note that, while University of Calabar was busy growing in leaps and bounds, other universities were lagging behind. Today, most universities have Environmental Education still at diploma level, while only about four or six universities have Environmental Education as a course in combination with other courses at the degree level. These are the University of Calabar, the University of Abuja, the University of Benin, the University of Nigeria Nsukka (UNN),the University of Lagos, and the Michael Okpara University, Umudike among others.

In 2014, the current Department of Environmental Education was detached from the Department of Curriculum and Teaching as a substantive department with both programs streams growing higher every day. The department has produced more than one thousand five hundred bachelor's degree graduates, more than four hundred Master's degree and more than five hundred postgraduate diplomas. The PhD program in Environmental Education just enrolled the first set of students who had since begun their lectures. University of Calabar is the first in the whole country to run the PhD program in Environmental Education. Other universities are running the program in combination with other subjects like UNN; it is done under Geography and Environmental Education, while at the University of Abuja, it is called Science and Environmental Education. It is assumed that most of the graduates of the

program are working in well-established agencies, parastatal in government, and in private companies and organizations across the country and in many countries across the world.

The environmental education program now has Pollution and Waste Management Education, Population and Resource Management Education, Gender and Women Education, Forest and Wildlife Resources Management Education, Tourism and Eco-Management Education and Community Environmental Services Education. The fact that the department based on National University Commission' (NUC) recommendations had changed the outlook of the program, does not limit our graduates from working in other environmentally related disciplines outside teaching.

3. Environmental Education Program Curriculum evaluation

Broadly speaking, a curriculum is the totality of all the learning experience a learner is expected to cover in the course of an educational program, be it primary, secondary or tertiary level. It can be defined as the total experience which a learner faces in the educational process. This is often referred to as a planned and guided sequence of instruction for student's experience in terms of the school's instructional goals. Curriculum could also be seen as a planned interaction of pupils with instructional content, materials, resources and processes for evaluating the attainment of educational objectives and goals. Curriculum is all written and unwritten experiences which a learner must go through in the course of his or her studies to qualify for a particular certification or program. Basically, curriculum is divided into several classifications name: explicit, implicit (including the hidden curriculum), the excluded and the extracurricular also known as co-curricular curriculum. Curriculum is a learning which is planned and guided by the school, whether it is carried out in groups or individually, inside the school or outside the school (Blatt, 2013; Catalano et al., 2018). Curriculum is made up of its foundation based on the philosophical, historical, psychological and social foundations, and domain of knowledge, as well as the research theories and principles. As an area of study, curriculum should be scholarly and theoretical.

Studies have shown that in curriculum development, there are four major approaches to the theory and practice; these approaches include:

a) Curriculum is a body of knowledge to be transmitted from one person to another or from one generation to another.
b) Curriculum is an attempt of helping learners to achieve educational goals.
c) Curriculum is a process which is systematic and outlined activities by the school for the wilful and guided learning of students.
d) Curriculum is praxis **(**Murray et al., 2015; Bilbao et al., 2008; Maria del Carmen & Sanchez, 2010; Hancock et al., 2012).

A good curriculum should comprise three major characteristics:

- Humanistic (Bloom's affective domain) orientation involving human feelings, development and growth (Bloom's affective domain)

- A behaviorist also known as psychomotor domain; which is concerned with performance, doing, using physical activities to practice what has been learnt by responding to stimulus outside of the learner.
- A rational cognitive (cognitive domain) orientation which deals with memory, recalling, reciting among others, (Bloom's cognitive domain) (Gooder and Cantwell, 2017; Harrison, 2020; Yuxuan et al, 2022).

Gooder and Cantwell, (2017); Harrison, (2020); Yuxuan et al, (2022) respectively posited that the evaluation of curriculum is an attempt to measure and give judgement on the extent to which a curriculum has met the objective of the school. It is used to measure and judge the curriculum in terms of the courses planned, the program to be assessed, the activities presented to the learners and their participation in the learning process including the opportunities used in the formal school curriculum., to make an objective decision in the school process, the curriculum evaluation helps to guide the school in the implementation of such curriculum. Not only does the curriculum helps to guide program implementation, it also help the schools and the managers of the process to evaluate whether the goals and schedule of responsibilities of those assigned to implement the process were actually carried out as laid down in the curriculum process and have the goals set out in the curriculum been achieved. It is an activity which looks at the process to identify any potential defects or challenges in the implementation process of the curriculum, while it also tries to make a comparative analysis of the outcomes with the stated objectives and the entire curriculum implementation process. This also helps look at the effectiveness of the worth of the curriculum implemented (Gooder and Cantwell, 2017; Harrison, 2020; Yuxuan et al, 2022). The major concern of this paper is to evaluate the Environmental Education curriculum implemented and the products there from in the University of Calabar, Nigeria. Therefore, our concern is primarily centered on the evaluation of the curriculum implemented, the process, and the products of the program from its inception at the University of Calabar, Nigeria.

Petegem et al., (2007 in Mbilinyi and Msuya, 2018) posited in their study that to evaluate the implementation of Environmental Education from two Flemish (Belgian) teacher education college, two curriculum design approaches were studied, one with a long history of cross curricular education and another with a straight curriculum. The authors reported that at some points, the two curriculum models stagnated because of organizational and personal interference or obstructions. The authors then reported that after incorporating Environmental Education into the curriculum for pre-service teachers' education and in the job description of the participating teachers, the implementation goals improved considerably. Based on this finding and discovery, the authors took the initiatives and made progress through the institutionalization of Environmental Education. The implication of this result is that like in most schools, the implementation of EE is not yet made a standalone subject, but EE topics are rather infused into other subjects like Integrated Sciences, Biology, Agriculture, Geography, Economics etc. This has also made the institutionalization of Environmental Education to be slow and given a second

fiddle priority (Harder et al., 2014; Lewis et al., 2014; Eneji et al, 2017b; Thomas et al., 2018; Astutik & Widiaty, 2018; Stevenson et al., 2019).

Ardoin et al., (2013) posited that several factors have played against the proper implementation of EE in most schools, some of these factors include: funding, facilities, EE inclusion in conventional school curriculum, teacher apathy and attrition, absence of proper regulatory bodies, variations and differences in curriculum content and practices among others. Others include poor career prospect, poor teacher's pedagogic knowledge of the subject Environmental Education among others (Ana et al., 2009; Gonzaga, 2016; Marpa & Juele, 2016; Raman, 2016; Astutik & Widiaty, 2018; Sotiriadou et al., 2019).

These authors further opined that very few institutions of higher learning have actually begun the implementation of Environmental Education programs. They further stated that in most schools, Environmental Education is domiciled in Faculties of Education, in some under faculties of Social Sciences, while in others in Development Studies (Yusof et al. 2011 in Kelani & Khourey-Bowers, 2012; Godin et al., 2015). These faculties where the programs are domiciled are not the problem, but the course content of what Environmental Education should be is hampered by the thinking and specializations within where the program is domiciled (Ardoin & Heimlich, 2013; Ardoin et al., 2015; McKinley et al. 2017; Seo et al., 2020). The University of Calabar is one such university where the EE program has adequately been implemented, and their curriculum content has been adjudged by the Nigerian Universities Commission (NUC) accreditation team as one of the best in the country, being in operation for well over thirty (30) years now.

What then are the challenges facing the implementation of Environmental Education programs in the University of Calabar? Authors like Carleton-Hug and Hug (2010); Camp and Fraser, (2012); Barnosky and Hadly (2016) listed funding, near absence of universally accepted curriculum, inconsistent and incoherent curriculum content, poor commitment and space among others as the factors militating against the effective implementation of Environmental Education curriculum. While others looked at school classroom facilities, office spaces and practicum facilities, poor army of unqualified teachers, lack of regulatory bodies for the program, and absence of conference for teachers of Environmental Education to cross fertilize ideas on current trend among teachers of EE (Petegem et al., 2007; Crohn and Birnbaum, 2010; Eneji et al., 2019; Ardoin et al., 2018; Adroin et al., 2020).

The positions of Wang et al, (2010) as cited by Carleton and Hug, (2010) was further affirmed by Knight et al., (2017) whose study on challenges and opportunities for evaluating Environmental Education programs listed poor funding and facilities for the implementation of the program, student's apathy and attitude to lecture attendance and doing of assignments, their commitments to studies, institutional based prejudice and administrative bottle necks, poor or near absence of Environmental Education regulatory agencies, absence of the program in primary, secondary and final qualifying examination bodies like

West African School Certificate Examination (WASSCE), National Examination Council (NECO) National Board for Technical Education (NABTEC) among others.

Other scholars also posited that Environmental Education like other new courses like Business Education, Integrated Science, Introductory Technology, and many others are left halfway because these are not written in the final qualifying examinations by these examining bodies (Amirshokoohi, 2010; Kelani & Khourey-Bowers, 2012**;** Kelani, 2015). Kelani and Khourey-Bowers, (2012) further posited that there is the need for serious professional development for the teachers of this new program (McDonald and Dominquez, 2010; Krasny et al., 2010; Kuhar et al., 2010; Bull, 2013;Lemos et al., 2018). Most of those teaching this new course have disjointed certificates, some read science related courses, and others studied pure education (Curriculum and Teaching, Biology Education, Guidance and Counselling, Physical and Health Education, Sport Psychology, Agricultural Education, Forestry and Wildlife, Chemistry, Physics, Biological Sciences, Geology, Medicine and Nursing Sciences amongst others). These according to some authors could only teach borrowed courses, but not core courses (Amirshokohi, 2010; Okhakhu and Evawoma-Enuku, 2011; Kelani & Khourey-Bowers, 2012; Kelani, 2015; Monroe and Krasny, 2016; Monroe et al., 2017; Yoni and Dasining, 2018; Mellish et al., 2019).

On the issue of career prospects for Environmental Education graduates, authors Kelani and Khourey-Bowers, (2012) observed that Environmental Education is an almighty course which has solutions to nearly every human problem on earth. To these authors, learning Environmental Education and specializing in the course is like having the antidote to most of human problems. This position is so held because every human activity takes place on the earth planet. Once the problem of the earth is solved through the knowledge acquired during the period of taking up courses in Environmental Education, the problems can greatly be mitigated or solved. These authors summarized their thesis by insisting that graduates of Environmental Education program should be enabled and employed to work in environmentally related discipline or organizations to enable them translate what was taught to them in the classroom into practical situation, where their knowledge can be used to tackle these environmental problems (Ballard and Belsky, 2010, Ballard et al., 2017; Catalano et al., 2018; Knight et al., 2019; Punzalan, 2020).

While adding credence to this study, Blatt (2013), writing on the roles Environmental Education specialists and graduates should play and where they should work to solve environmental problems, posited that the essence of introducing the course Environmental Education is to work to forestall the creation of new environmental issues, while mitigating the already existing problems. In Blatt's (2013) work on exploring environmental identity and behavioral change in an environmental science course, the author said those who become committed to the course should be trained in values, skills, attitude and belief to have the necessary commitment to work towards solving environmental problems. This is a challenge that is in line with the goals and

objectives of Environmental Education. This is the crux of the whole essence of Environmental Education which is educating the populace to have the awareness, skills, attitude, knowledge, belief and values with the right commitments to work individually and collectively towards solving the current environmental problems while preventing the creation of new ones. Where then do these Environmental Education graduates of the University of Calabar since the establishment of the department and program work? Have the goals of Environmental Education as envisaged by the crafters and designers of the program been achieved? What are the factors militating or otherwise working for or against the achievements of these goals and objectives? However, the major focus of this paper is to evaluate the product of Environmental Education program in the University of Calabar from inception till date. Our focus is primarily on the Bachelor's degree and Master's program from 1993-2021.

Evaluating the implementation of Environmental Education program and the product there from became important because for close to thirty years, the Environmental Education program has been running with more than 1900 graduates produced from the various program under the two streams of Environmental Education in the University of Calabar, has the program goals, objectives and mission or vision been achieved or are they being achieved? This research therefore looks at three aspects of the broader goals of Environmental Education.

The program implemented – the input and resources
The product of the program implemented- the output
What is the career prospects of the program so implemented –the outcome (where are these graduates working, are they in environmentally related firms or organizations?)
What are the challenges to the program? Have they met the objectives of Environmental Education, what about the broader goals?

a) **Awareness –**
b) **Knowledge –**
c) **Attitudes –**
d) **Skills –**
e) **Participation –**

3.1 Research objectives

The main objective of this study is to evaluate the products of the environmental education curriculum program implemented in the University of Calabar. Specific objectives include assessing the extent of awareness, knowledge, attitude, skills and participation of graduates of environmental education in providing solutions to environmental problems in their communities, places of work or wherever they find themselves. Other objectives include adequacy of the curriculum contents, lecturer pedagogic knowledge of subject matter, career prospects of graduates of environmental education and problem militating against the effective implementation of environmental education program in the University of Calabar, Nigeria.

3.2 Research questions

1. How does the curriculum content of environmental education as used in Unical meet the objectives of the course?
2. How has the knowledge gained in studying environmental education assisted in solving environmental problems in your community or place of work?
3. How has studying environmental education improved your level of environmental awareness?
4. How has the knowledge gained from studying environmental education brought about a change of attitude towards environmental problems?
5. How have you deployed the skills you acquired from studying environmental education to participate in solving environmental problems in your community, office or residents?
6. To what extent are the lecturers of the department of environmental education abreast of the pedagogy of environmental education including their knowledge of subject matter, lesson delivery and evaluation?
7. How has the component of environmental education job prospects been achieved?
8. What are the problems militating against the effective implementation of Environmental Education curriculum in the University of Calabar?
9. What are some feasible solutions to effectively implement Environmental Education curriculum in the University of Calabar?

4. Research design and methods

The research approach adopted for this study is the expost facto using the survey inferential design. This approach is most suitable because the phenomenon under study has already occurred. The duty of the researchers was to collect data from a representative sample for an in-depth study to evaluate whether the goals and objectives of environmental education have been achieved or not and if not, what is responsible for the objectives not being achieved?

4.1 Study area: The study was carried out in the Department of Environmental Education University of Calabar. University of Calabar is located in the Calabar Municipality between latitudes 4^0 15' and 5^0 00 North and longitude 8^0 15' and 8^0 23' East. The students who graduated from the department between 1997-2021 are our research subjects. The reason for choosing these sets of graduates is because that was when the department began graduating students with first degree and for the 2021 session, this was the last sets of students who graduated before this study was carried out. According to the list of graduates found in the department's archive, the department had produced about one thousand, nine hundred and thirty-eight (1938) graduates, (1,455 Bachelor's degree graduates and 483 Master's degree graduates). This population excludes ordinary diploma and post graduate diploma in graduates of environmental education. The collection of data took the researchers well over eight months for the administration of the instrument.

Since the location and residents of most of these graduates are not known, the graduates from the department have an alumna WhatsApp's platform where issues concerning the department are discussed. Incidentally, some of the researchers carrying out this research are graduates of the department and are also members of the alumna platform. A sample of 50% of the research subjects (969) were purposefully selected for the study. A researcher design closed and open-ended questionnaire was used for data collection. The instrument was validated by three lecturers in the department of test, measurement, and evaluation and three lecturers from the Department of Environmental Education. The instrument was administered through the online platform, where the instrument was posted on the WhatsApp platform. Some respondents filled directly while others who could not fill them online, printed a copy, filled them and mailed them back to the researchers. Others, are located within Calabar, filled the hard copies and returned them to the researchers in the department.

Those filled online were printed out, where the hard copies were all coded, analyzed and result interpreted. Simple percentage was used for data analysis. Results are presented on tables.

5. Results and discussions

Based on the simple percentage analysis of the result on table 1, three hundred and forty-one, respondents representing 35.2%, strongly agreed that the curriculum content of environmental education as taught to them during their undergraduate as students in environmental education is not adequate. Two hundred and twenty five respondents (23.21%) agreed that the content was not adequate enough as compared to what is obtainable in other climes. Two hundred and thirteen respondents, representing 21.98% disagreed that the curriculum content during their undergraduate days was adequate, while, one hundred and ninety respondents (19.61%) strongly disagreed to support the position that the curriculum content was adequate.

Further, summary shows that a total of five hundred and sixty-six respondents, representing 58.41%, strongly agreed that the curriculum content is not adequate, while four hundred and three, representing 41.59%strongly disagreed that the curriculum content is adequate. Based on the percentage and response options obtained from this analysis, the curriculum content as in force today is not adequate and therefore needs urgent overhauling and review.

The results show that, three hundred and fifty-four respondents, representing 36.53% strongly agreed that the knowledge they got from studying environmental education cannot afford them the ability to solve environmental problems in their communities, two hundred and one respondents representing 20.74%agreed that the knowledge they obtained has not helped them much in solving community environmental problems.

Table 1. Respondent's opinion on Environmental Education curriculum content in Unical

S/N	Environmental Education Curriculum contents	S A	A	D	SD	Total
1	The courses I was taught as a student in the department was in line with global environmental curriculum contents	199	201	298	271	969
2	The courses I took as a student, helped me to become an environmentally conscious person	321	268	144	236	969
3	About 50% of the courses we took were not relevant to the achievement of the objectives and goals of Environmental Education	411	98	251	209	969
4	The courses taught in Environmental Education are in line with what is obtainable in other universities we have visited or seen	144	298	378	149	969
5	Even at that, there is the need for serious curriculum review or modification to meet with current and modern realities	452	201	227	89	969
6	All the courses in the areas of specializations should be used as core courses for the entire Environmental Education program	324	266	115	264	969
7	There are too many general Education courses than core Environmental Education courses	433	211	188	137	969
8	More core Environmental Education courses should be introduced, while some general Education courses should be reduced	443	256	102	168	969
	Response options based on scoring	2727	1799	1703	1523	7752
	Number of respondents and their response	341	225	213	190	969
	Percentage response	35.2	23.21	21.98	19.61	
		566	58.41	403	41.59	

While, two hundred and two respondents, representing 20.85%, agreed that the knowledge they received has helped them to solve some community environmental problems, two hundred and twelve respondents, (21.88%) strongly support the position that the knowledge has help them so much in solving some environmental problems in their communities. A further summary shows that five hundred and fifty-five respondents representing 57.3% strongly opposed the fact that the knowledge they acquired could not help them to solve environmental problems, while four hundred and fourteen respondents agreed that the knowledge they received helped them solve some environmental issues in their communities.

Table 2. Knowledge of Environmental Education and solution to environmental problems in the community

	SA	A	D	SD	Total
The courses I took in Environmental Education has improved my environmental skills for action to protect the environment	388	206	164	211	969
During and after leaving school, I have used the skills acquired from Environmental Education program to solve most environmental problems in my neighborhood and community	143	221	371	234	969
Unfortunately, the courses we were taught did not give us specific skills to solve any Environmental Education problem	344	257	182	186	969
Where I work, designing and solving environmental problem is one of my core area of duties	59	45	402	463	969
During my days as a student, we do not have the necessary facilities and equipment's to give us the practical skills needed to solve environmental problems	452	244	150	123	969
Even the available whether station within the department could not be used to teach us how to collect weather data	471	211	88	199	969
We were rather forced to go for teaching practice instead of industrial attachment, where practical skills on how to solve environmental problems could have been taught.	454	222	135	158	969
Environmental Education students should be exposed to a full year industrial attachment for practical experience instead of teaching practice.	521	204	123	121	969
Response options based on scoring	2832	1610	1615	1695	7752
Number of respondents and their response	354	201	202	212	969
Percentage response	36.53	20.74	20.85	21.88	100
	555	57.	414	42.7	

Based on the opinion of respondents, the knowledge they acquired when they studied Environmental Education did not help them enough to solve their community environmental problems. The result of simple percentage analysis on table 3 shows that two hundred and twenty-three respondents (23.03%) strongly agreed that the environmental awareness level created during their studies was enough to enable them to solve environmental problems in their society or community, two hundred and thirty three respondents, representing 23.99%, agreed that the environmental awareness created in them as students of environmental education gave them the leeway to help in solving environmental problems within their communities and where they work, whereas, two hundred and seventy seven respondents (28.64%) disagreed that the quality of environmental awareness created in them was not sufficient enough to give them all it takes to help in solving community environmental problems, while, two hundred and thirty six respondents (24.34%) strongly disagree that the environmental awareness they got as students in the

department of Environmental Education could not afford them the needed knowledge and skill to work individually and collectively in solving community environmental problems.

Summarizing further, it was discovered that four hundred and fifty six respondents, representing 47.02%, strongly agreed that during their period of studies in the department of Environmental Education, the awareness they got was enough to help them solve community environmental problems, individually and collectively, while, five hundred and thirteen respondents strongly disagreed that the awareness during their studies in the department was not sufficient to help them solve community environmental problem, whether at home or in their places of work.

Given the number of respondents who disagreed with the questions, we conclude that the awareness created during their study period was not good enough to help them solve community environmental problems.

Even though the numbers of those who ticked against having higher level of environmental awareness than those who ticked for, the margin is slim, implying that some said they got awareness enough to help in solving their community environmental problems, other said they did not get enough environmental awareness to help solve community problem. Even at this, most of the graduates' attitudes are influenced by the course they studied.

From the result of the simple percentage analysis shown on table 4, three hundred and six respondents representing 31.5% strongly agreed that the course which they studied had brought about a change of attitude towards environmental problems in their community and work place, two hundred and twenty eight, 23.5% of the respondents, also agreed that the environmental education they studied had brought a reasonable change of their attitude towards environmental problems in their community and their work place. Two hundred and forty eight respondents (25.7%) disagreed that the course they studied did not have any positive influence on their attitude towards environmental problems in their work place or community, while one hundred and eighty seven (19.3%) respondents, strongly disagreed that the course environmental education as studied did not change their attitude towards environmental prevention or creation.

Table 3. Respondent's opinion on environmental awareness for solving community environmental problems

Questionnaire items	S A	A	D	SD	Total
Enough environmental awareness was created during our days as students in the department	243	299	300	127	969
I have been using the environmental awareness knowledge I acquired from the department to help advise and solve some environmental problems in my community	143	222	361	243	969
Since I left school, I have engaged in a lot of environmental awareness campaign individually	266	298	183	222	969

and with some organizations					
In my place of work, we carry out different forms of environmental awareness	122	98	421	328	969
When I notice environmental issues, I draw the attention of the people around, including the relevant authorities to act in order to solve such problems	244	211	235	279	969
Since the government and the people around are not concerned, I ignore any environmental issue I notice around	321	267	165	216	969
Response options based on scoring	1339	1395	1665	1415	5814
Number of respondents and their response	223	233	277	236	969
Percentage response	23.03	23.99	28.64	24.34	100
	456	47.02	513	52.98	

A further summary of the result indicates that five hundred and thirty four respondents representing 55% agreed that the education they studied contributed so much in changing their attitude positively towards finding solution to the existing environmental issues, while avoiding the fermenting of new environmental issues, while four hundred and thirty five respondents (45%) disagreed that the environmental education they studied did not have any positive influence on their attitude towards providing dependable solution to the existing environmental issues, while avoiding the fermenting of new ones. By inference therefore, the course as taught to these graduates has contributed positively to influence their attitude towards providing dependable solution to the existing environmental issues while avoiding the fermenting of new environmental challenges. This therefore means this objective of Environmental Education is being achieved, though gradually.

Two hundred and thirty three respondents (24.1%) agreed that their studying environmental education has built their skills to actively participate in working to provide solution to the existing environmental concerns. Two hundred and seventy nine respondents again ticked that they agreed that the course improved their skills to actively participate in finding solutions to our environmental issues. On the other hand, two hundred and fifty respondents (250, 25.8%) and two hundred and seven (207; 21.3%) disagreed and strongly disagreed respectively that the environmental education they studied did not contribute to build their environmental skills to participate in finding solutions to the environmental challenges currently being felt by humans. A further summary of the simple percentage analysis on table 5 shows an aggregate score of five hundred and twelve respondents representing 52.9% who strongly agreed that the course which they studied built their environmental skill positively to empower them to actively participate in providing solutions to the existing environmental issues, this will help them to avoid creating new environmental concerns. Four hundred and fifty seven respondents representing 47.1% strongly disagreed to the postulation that the environmental education they studied did not improve or develop their skills to provide feasible solution to the current existing environmental challenges, not to talk of avoiding the production of of new environmental issues.

From the results on table 5, enough evidence abounds to show that the introduction of environmental education as studied by these sets of graduates shows that the course built their skills and prepared them well to actively participate in solving current environmental problems, while preventing the creation of new ones. Therefore, Environmental Education as introduced in University of Calabar, has met this objective too.

Table 4. Environmental Education and attitude towards environmental problems

Questionnaire items	SA	A	D	SD	Total
People around me have very negative attitude towards environmental conservation	322	344	189	114	969
People throw waste indiscriminately	451	244	201	73	969
Because I am an environmentalist, I try to discuss people's negative attitude to waste disposal and management with them	359	331	83	196	969
Because of the nature of my job, I hardly have time to participate in any environmental activity in my office or my neighbourhood	368	228	128	245	969
Since people in my neighborhood throw waste indiscriminately, I also throw my waste like that too	245	112	350	262	969
Every now and then, I mobilize youths within my neighborhood for environmental activities	133	211	389	236	969
After my graduation, I have encouraged a lot of people to take up courses in Environmental Education	261	127	400	181	969
Response options based on scoring	2139	1597	1740	1307	6783
Number of respondents and their response	306	228	248	187	969
Percentage response	31.5	23.5	25.7	19.3	100
	534	55	435	45	

Table 5. Showing response for Environmental Education skills and graduates' participation in solving environmental problems

		SA	A	D	SD	Total
SKILLS/PARTICIPATION	Since I graduated from the department, I usually participate in a lot of environmental activities	235	441	159	134	969
	I carry out personal environmental activities like planting trees, cover crops and work to prevent erosion in my neighborhood	156	232	355	226	969
	I carry out personal sanitation regularly in my compound and neighborhood	324	298	189	158	969
	I carry out awareness creation about	154	212	311	292	969

	environmental issues within my community					
	I participate in every environmentally related activities carried out both in my work place and my community	344	289	229	107	969
	I enjoy joining voluntary organizations and community self-help activities to carry out environmental mitigation activities within my work place and community	187	201	256	325	969
	Response options based on scoring	1400	1673	1499	1242	5814
	Number of respondents and their response	24.1	28.8	25.8	21.3	100
	Percentage response	233	279	250	207	969
		512	52.9	457	47.1	

In order to address the question of the extent to which lecturers in the Department of Environmental Education are abreast of the pedagogy of environmental education including their knowledge of subject matter, lesson delivery and evaluation? Table 6 shows respondents' opinion on this question.

Table 6. Respondents opinion on the lecturer's pedagogic knowledge of Environmental Education

	Questionnaire items	SA	A	D	SD	Total
LECTURER' S PEDAGOGIC KNOWLEDGE ABOUT ENVIRONMENTAL EDUCATION	Our lecturers were just wonderful in their relationship with their students	188	208	299	274	969
	Most of our lecturers are grounded in environmental issues	102	111	325	431	969
	Our lecturers came from different background, so they are not core environmentalists	324	432	135	78	969
	Most of our lecturers cannot teach environmental concepts to our understanding	299	397	65	208	969
	Some lecturers are just there for being there	322	266	177	204	969
	We have very good lecturers who can teach environmental concepts very well	188	232	199	350	969
	Most of our lecturers are core Environmental Educators	155	125	355	334	969
	Some of our lecturers are very harsh and unaccommodating to students	288	389	155	137	969
	Because of this attitude towards students, most of our students are scared going close to ask questions for clarification	344	287	251	87	969
	Our lecturers are robust when it comes to teaching Environmental Education courses	151	133	289	396	969
	Response options based on scoring	2361	2580	2250	2499	9690

	Number of respondents and their response	236	258	225	250	969
	Percentage response	24.4	26.6	23.2	25.8	100
		494	51.0	475	49.0	100

The result of the simple percentage analysis on table 6 revealed that two hundred and thirty six respondents (24.4%) strongly agreed that the lecturers that taught them as undergraduate students have the pedagogic knowledge of the subject matter, two hundred and fifty eight respondents (26.6%), also greed that most of the lecturers that taught them have the pedagogic knowledge of the subject matter. Two hundred and twenty five respondents (23.2%) disagreed that most of the lecturers who taught them do not have the pedagogic knowledge of the subject matter, while two hundred and fifty respondents (250, 25.8%) strongly disagreed that most of the lecturers who taught them do not have the requisite knowledge to teach.

Further summation of respondents opinion posits that four hundred and ninety four respondents (51.0%) shows that most of the lecturers who taught them during their undergraduate days have the requisites pedagogic knowledge of the subject matter, while four hundred and seventy five respondents (475; 49.0%) strongly disagreed that most of the lecturers who taught them do not have sufficient pedagogic knowledge of the subject matter. Deducing from the result on table 6, it therefore stands to reason that some of the lecturers who taught these respondents at undergraduate levels have the requisite pedagogic knowledge.

Table 7. Respondent's opinion on career prospect of Environmental Education

	Questionnaire items	SA	A	D	SD	Total
CAREER PROSPECTS	Because of admission situation, some of us just found ourselves in the department of Environmental Education.	256	299	287	127	969
	I never actually liked Environmental Education	93	143	351	382	969
	I did not apply to study Environmental Education	56	33	451	429	969
	Since I graduated from Environmental Education, I have a fulfilled career in an environmentally related job	156	234	299	280	969
	It is because I studied Environmental Education that I got this job I am doing now	356	102	341	170	969
	Because I studied Environmental Education, I used the knowledge and skills acquired from there to establish my current occupation	156	133	472	208	969
	The work I am currently doing is not because I studied Environmental Education	215	133	298	323	969
	I am teaching in a secondary school as a graduate, but I am not teaching environmentally related courses	212	156	399	202	969
	Most persons who studied Environmental Education have nowhere to work, so they work in mostly unrelated areas to Environment	422	313	146	88	969

	Response options based on scoring	1922	1546	3044	2209	8721
	Number of respondents and their response	214	172	338	245	969
	Percentage response	22.1	17.8	34.8	25.3	100
		386	39.9	583	60.1	

The result of the simple percentage analysis shown on table 7 indicates that 214 respondents (22.1%) strongly agreed that the job they are current doing is as a result of the course environmental education which they studied, 172 respondents, agreed that the course they studied help them to get the current job they are doing, while 338 respondents representing 34.8% disagreed that the job they are doing is not because they studied environmental education, but because they are graduates, the remaining 249 respondents (25.3%) strongly disagreed that the job they are doing now is not because they studied environmental education, but because they have somebody somewhere who assisted them to get the job. The implication of this result is that most of the graduates got the job they are doing not because they studied environmental education, but because they have somebody who assisted them to get the job just because the job was meant for graduates. A further look at the result again shows that 386 respondents, representing 39.9% agreed that the current job they are doing is because they studied environmental education, while 583 respondents, representing 60.1% vehemently disagreed that the job they are doing is not because they studied environmental education. The implication of this result is that most of the graduates of environmental education are not employed because they studied environmental education, but because they are just graduates. This therefore means that even the government who are signatory to the implementation of environmental education are not even serious about engaging these graduates where they actually should be or belong.

What are the problems militating against the effective implementation of Environmental Education curriculum content in Nigerian universities?

Seven issues raised as factors militating against the effective implementation of Environmental Education curriculum in University of Calabar include: Environmental Education is not a subject written in the final secondary school certificate examination, poor funding to implement environmental education curriculum, facilities, laboratory, libraries, studios), no uniform Environmental Education curriculum implemented across universities offering the course, poor or near because of qualified lecturers to teach the course, no regulatory body (ies) to regulate the implementation and practice of Environmental Education curriculum in tertiary institutions, poor job prospect/ poor employment of professional graduates of Environmental Education and the delay in the computation and graduation of students in the department were identified as possible militating factors against the implementation of Environmental Education curriculum.

Looking at the result on table 8, it was discovered that three hundred and eighty six respondents (39.8%) strongly agreed that the seven factors listed above are militating factors working against the effective implementation of environmental education in the University of Calabar, three hundred and thirty

six respondents (34.8%) agreed that the seven factors listed militates against the effective implementation of environmental education as a course. While, one hundred and sixty six respondents, representing 17.0%, disagreed that these factors listed do not in any way militate against the implementation of environmental education, whereas, eighty one respondents (8.4%) strongly disagreed that these seven factors do not act as militating factors against the implementation of environmental education. A further analysis found that seven hundred and twenty two (74.6%) agreed that the seven factors listed are some of the militating factors working against the effective implementation of environmental education, while two hundred and forty seven respondents, (247: 25.4%) disagreed that the factors listed here may not be responsible for the poor implementation of environmental education curriculum. From the result of simple percentage analysis on table 8, it is clear that the factors listed above are militating against the implementation of environmental education curriculum.

Table 8. Problems of the implementation of Environmental Education curriculum contents in Nigerian universities

	Questionnaire items	SA	A	D	SD	Total
PROBLEMS OF ENVIRONMENTAL EDUCATION	Because Environmental Education is not written in the final certificate exams, most secondary schools do not offer it as a subject	369	315	166	119	969
	Funding to carry out Environmental Education implementation is not always available to implement it in secondary schools	378	382	127	82	969
	Most tertiary institutions running Environmental Education program do not have a uniform curriculum content	330	312	200	127	969
	In most schools, there hardly have qualified lecturers	377	289	212	91	969
	There is a near absence of regulatory bodies to regulate the practice of Environmental Education in Nigeria	332	431	155	51	969
	Because most graduates of Environmental Education are hardly employed, most persons are discouraged from studying the course	399	333	202	35	969
	From the experience of previous students, the delay in the preparation of result for student's graduation is one major issue affecting the taking up of Environmental Education by prospective students	521	288	100	60	969
	Response options based on scoring	2706	2350	1162	565	6783
	Number of respondents and their response	386	336	166	81	969
	Percentage response	39.8	34.8	17.0	8.4	
		722	74.6	247	25.4	

On the way forward, the open-ended questionnaire which involves the listing of feasible solutions by the respondents were summed up and the scores are listed on table 9. Thirteen suggestions were made from the respondents as feasible solutions to the problems of implementation of environmental education curriculum in the University of Calabar: funding from both federal and state government and other relevant agencies, retraining of teachers of environmental education, curriculum overhauling in line with modern realities, formation of statutory regulatory body and including environmental education in the primary and secondary school curriculum. Others include writing environmental education in final secondary school certificate examination like West African Senior School Certificate Examination, National Examination Council and National Board for Technical Education and the Basic Certificate Examination (BCCE).

The simple percentage analysis on table 9 shows that thirteen feasible solutions were filtered from the list of suggested solutions to the problem of implementation of environmental education curriculum and the products in the University of Calabar. Three hundred and fifty seven respondents (36.8% strongly agreed that the solutions suggested can correct the issues of the curriculum implementation, two hundred and ninety seven (30.7%) agreed that the feasible solutions identified by the respondents are capable of solving the problems militating against the implementation of environmental education curriculum.

Table 9. Captured some feasible solutions to the problem militating against the effective implementation of Environmental Education curriculum in the University of Calabar from the respondents.

S/N	Suggested solutions	SA	A	D	SD	Total
1	Both the federal government and the relevant authorities should make adequate provision of funding to run the program	452	255	42	220	969
2	Training and retraining of Environmental Education lecturers within and outside the country should be encourage through sponsorship from TETFUND and the federal government	512	311	21	125	969
3	Redesigning the curriculum in line with current realities is a sure way to go	344	352	180	93	969
4	Formation of standard regulatory body for EE must be done as a matter of urgency	488	211	255	15	969
5	Collaboration with authorities to include EE in final examination board curriculum like WASSCE, NECO, NABTEC, etc	433	343	120	73	969
6	Creating more awareness on the job prospect of EE Graduates can go a	235	322	388	24	969

	long way to help					
7	Provision of functional school facilities (libraries, laboratory, weather station, classrooms etc	433	323	123	90	969
8	Teaching practice for EE students should be abolished and replaced with a compulsory one year industrial attachment in relevant agencies and ministries	256	288	183	242	969
9	Ministries of Environment and other agencies and departments should compulsorily send their staff to the department for on the job retraining.	189	288	299	193	0969
10	Only graduates who have studied EE in Undergraduates and Master degree program should be employed to teach EE, not just people within relevant degree.	345	322	180	122	969
11	As a professional course, separate lecture venues should be built and designated for Environmental Education including functional libraries and state of the art facilities.	122	155	431	261	969
12	The regulatory body should convoke a national conference for Environmental Education, where the curriculum content of Environmental Education can be overhauled and standardized to have one uniform curriculum across the country for the program	388	352	106	123	969
13	Student's results should be prepared as soon as scores are sent from lecturers for fast graduation of students with their colleagues in other departments.	441	344	98	86	969
	Response options based on scoring	4638	3866	2426	1667	12597
	Number of respondents and their response	357	297	187	128	969
	Percentage response	36.8	30.7	19.3	13.2	100
		654	67.49	315	32.51	

One hundred and eighty seven respondents, representing 19.3%, disagreed that these solutions suggested cannot solve these problems, while another one hundred and twenty eight (13.2%) strongly disagreed that these list of possible solutions as identified by the respondents cannot solve environmental education curriculum implementation as identified by the same respondents. Others include reinvigorating the awareness on the job prospects of graduates of environmental education, provision of functional school facilities like well-furnished lecture theater, libraries, laboratories, weather station among others, and teaching practice for environmental education students should be replaced with a full session's industrial attachment in environmentally related

establishments. The feasible solutions suggested also include line ministries related to environmental management should always send their staff to the department for refreshers courses.

It was further suggested that only graduates of environmental education from first degree to master's degree and above should be recruited to teach environmental education courses. There should be separate lecture theaters, classrooms, libraries, laboratories and weather station for the course. Finally, it was also suggested that the regulatory body, federal ministries of education, environment, agriculture, tourism and national orientation agencies with the national universities' commission in collaboration with universities (departments) offering environmental education should as a matter of urgent national interest convoke a curriculum conference to overhaul the curriculum content of environmental education to be in line with current realities and come out with a uniform curriculum contents for environmental education across all universities in Nigeria, and above all, departments should compile students result as soon as there are marked and submitted for students to graduate on record time like their colleagues in other departments in the university. This result is clear that these feasible solutions as suggested by these respondents could go a long way to ameliorate these problems if properly handled.

A further observation of the result of the analysis on table 9 further revealed that six hundred and fifty four respondents representing 67.49% agreed completely that these feasible solutions suggested has the magic wand to solve the problems militating against the effective implementation of environmental education curriculum, while three hundred and fifteen respondents (32.14%) disagreed that these solutions proffered here cannot solve the problems of the environmental education curriculum implementation in the University of Calabar. From this analysis therefore, these thirteen suggested solutions are feasible.

6. Discussion of findings

Judging from respondents' opinion from the result of the simple percentage analysis on table1, it is submitted that five hundred and sixty six (58.41%) respondents strongly agreed that the curriculum contents of environmental education as it is presently in force is not adequate, while four hundred and three (41.59%) strongly disagreed that the curriculum contents as is used in the department of environmental education is adequate. The simple percentage analysis points that the environmental education curriculum content is not adequate, these respondents in their response posited that there are more of education courses in the curriculum contents than core environmental education courses. Reasons adduced by the respondent's shows that most of the lecturers teaching the courses were not very grounded in the pedagogic content of environmental education; rather they were in some other courses, which they insist on including making them relevant and staying in the department.

Some said because of the few hands in the department, most lecturers are borrowed from other departments, so they design the curriculum to suit their

needs and qualifications. This result is in agreement with those of Ana et al., (2009) and Ardoin et al., (2013) whose work found that the introduction of environmental education into many schools is still being impeded by the shortages of manpower. These authors in their respective positions stated that there are disjointed curriculum contents based on the design brought by those who are not very grounded, but because they have participated or taken short courses in the subject, want to teach these courses. In situations like this, facts presented are at times distorted, teaching methods used are wrongly applied and teaching and learning becomes boring and redundant. When situations like this occurs, especially if schools float such programs without adequate qualified teachers with the basic pedagogic knowledge of teaching and subject matter, the course at best will be minimally beneficial to the students. Practical are skipped or are haphazardly done, these practical's including fieldwork (trips) carries a larger chunk of the knowledge these students would have learnt, and this will in turn destroy rather than make the course a lucrative and an enjoyable one.

Specific attention is drawn to questions item numbers 1, 5, 6, 7 and 8. In item 1, respondents posited that the courses they were taught are not in line with global best practices in terms of curriculum contents: 400 respondents agreed that the curriculum contents is adequate, while 569 respondents strongly disagreed that the curriculum contents is not adequate. In item 5 of the instrument on this variable, 653 respondents strongly agreed that the current curriculum contents were in line with global best practices, while 316 respondents disagreed that the curriculum contents is not in line with global best practices. These respondents posited that the curriculum needs very serious over hauling and review. Again item 6 of the instrument posited that all the courses in the areas of specializations should be converted to core environmental education courses, 590 respondents agreed that these courses should be actually converted, while 379 respondents did not agree to this position. In items 7 and 8 of the questionnaire, 644 and 699 respondents respectively averred that there are too many general education courses in environmental education curriculum than is necessary, so there is the need to reduce some general education courses and add more of core environmental education courses, while 325 and 270 respondents respectively did not support the reduction of too many general education courses and introducing more of core environmental education courses. The curriculum content of every course must be in line with the best practice and must be uniform across board. Unfortunately, the curriculum content of environmental education in the University of Calabar is over loaded with core education courses, instead of core Environmental Education courses.

The result of this analysis has come to confirm the earlier finding of Ballard and Belsky, (2010); Ardoin and Heimlich, (2013); Ardoin et al., (2015) who in their respective works found that the curriculum contents of every course introduced in any school setting must meet the Basic Minimum Academic Standard (B-MAS). Basic minimum academic standard in terms of content, coverage, practice and delivery systems including facilities and staff to implement such course content. From data gathered from the field, it is unfortunate that respondent's opinion suggested otherwise about the

curriculum content. These respondents completely disagreed that the current environmental education curriculum content as taught in the University of Calabar needs a serious over hauling and redesigning.

This result again confirmed the earlier works of Bull, (2013) and Ballard et al. (2017) whose researches concluded that the content of any curriculum must address the course objectives, thereby striving to meet the current challenges and realities in the profession. It is on this premise that it was revealed that many courses produce half-cooked, half-baked and poorly trained graduates, because most of the core courses that make such course what it should be are either ignored completely or are played down because there are no core specialties in that area to teach such courses. To address these imbalances in curriculum content delivery, we suggest that grants should be provided for further training outside the university where they are employed to teach such courses. We recommend that foreign staff or qualified experts could be brought from outside the university (either from other universities or ministries) with qualified staff to handle such professional areas.

On the question of knowledge gained in studying environmental education, the result on table 2 indicates that five hundred and fifty-five respondents representing 57.3% strongly opposed the fact that the knowledge they acquired from studying environmental education could not help them to solve environmental problems, while four hundred and fourteen (42.7%) respondents agreed that the knowledge they got from the studies of environmental education helped them solve some environmental issues in their communities. From this result, the respondents held strongly that the knowledge acquired in studying Environmental Education is not helping them enough to solve environmental issues in their community and offices where they work. Further observation of the data generated after analysis shows that most of the courses as stated in the curriculum content were educational courses and very few were core environmental courses.

Attention is again drawn to the respondent's opinion on items 3 on the instrument, 601 respondents agreed that unfortunately, the courses they were taught as undergraduates in the department did not give them the specific skills to resolve environmental problems in their communities or places of work, while 368 respondents said the courses were specific on skills to resolve environmental problems. Item 4, 696 respondents averred that during their days as undergraduates' students in the department, they did not have the facilities and equipment's for practical skills to solve environmental issues, while 273 respondents did not agree with the statements of no facilities and equipment to teach them practical skills to solve environmental problems. Item 5 said even the available weather station, within the department which is a shared facility was never used to teach them anything. 692 students agreed that the weather station was not used for even a day to teach them how to collect basic weather data, while 287 respondents disagreed that this was not true as stated. Item 7 showed that 676 respondent said they were rather forced to go for compulsory teaching practice exercise instead of industrial attachment to enable them learn through

practical experience, while another 725 respondent said industrial attachment should be made compulsory for environmental education for a full session instead of teaching practice, whereas 293 and 244 respondents respectively said they are conformable with teaching practice instead of industrial attachment for Environmental Education students.

The implication of this result therefore is that most of the respondents were not satisfied with the knowledge they acquired from studying environmental education in the University of Calabar. This result is in line with the results of Bilbao et al., (2008) and Maria del Carmen & Sanchez, (2010) who found a correlation between deficiency in curriculum and graduate knowledge level. In their respective researches, they observed that when curriculum contents are either staggering or disjointedly implemented or handled by non-experts without the basic knowledge of subject matter and poor pedagogic knowledge, the course is poorly implemented and haphazardly carried out, at this point, students who passed through such deficient process will themselves be deficient in knowledge, skills and values and may hardly have the required capacities to replicate, practice or participate in solving community problems.

Knowledge is acquired based on some factors such as the teacher's pedagogic knowledge, the knowledge of subject matter, classroom management, the student's preparedness to learn, the learning content, learners chronological and mental age, the learning environment, peer influence and the student's home factors. But within the school setting, the teachers hold a greater percentage of what the students learn and how knowledge can be learned by the student. Based on these factors, it is true that some of the students may not really understand the content of the subject they learnt, hence their environmental knowledge could be limited, while some who were serious minded went outside the box to do more research, these group have improved knowledge of environmental issues and how to tackle them.

Looking at the extent to which the course environmental education studied improved their level of environmental awareness acquired in their community after graduation, four hundred and fifty six respondents representing 47.02%strongly agreed that the course they studied actually improved their environmental awareness knowledge enough to assist them carry out the solving of environmental issues in their respective communities, while five hundred and thirteen respondents strongly disagreed that the course they studied as environmental education graduates did not give them enough environmental awareness to become conscious of environmental issues and how to solve these issues. It is concluded from this result that the course which these students studied did not give them enough awareness to help them solve environmental issues in their respective communities. This result shows that the respondents who were students of the department were not satisfied with the level of environmental awareness they got from the department as students. This also has affected how they perceive environmental problems in their community and how they could not do anything to solve these problems as a result of the limited knowledge they acquired from the department.

This result partly may be blamed on both students and the school system including the lecturers who either out of laziness did not do enough for the students or the students who refused to work extra to acquire enough of this knowledge. An analysis of the result shows that about 47.02% of the students said they acquired enough environmental awareness when they were students. Could this be blamed on these groups of students who claimed not to have acquired enough environmental awareness? This reasoning is buttressed out of the fact that they were taught by the same group of lecturers, while others are claiming to have adequate knowledge. Hancock et al., (2012) in their study had earlier said despite all efforts put by the school system to make reasonable learning possible for the students, the students must give excuses for failure. These were blamed on the poor facilities, near absence of practical experience from industrial attachments, field trips, excursion, and field work. These practical exercises are introduced to give the students firsthand information in the real world on how to identify, manage and solved most environmental problems in the real practical situation and not in theory as is the case.

In a related research by Carleton-Hug and Hug (2010) and Camp and Fraser, (2012), we assessed the environmental awareness level of college students after been exposed to some piece of instruction and their reaction to a physical environmental situation. Their result shows a positive correlation between the student's exposure to practical awareness on environmental issues and their demonstrated skills based on the awareness they were exposed to during the instructional process. These results are a confirmation of these studies, where student's level of awareness were lower towards understanding environmental issues and how to proffer feasible solutions to these problems in their local communities.

The result on table 4 shows that five hundred and thirty four respondents representing 55% agreed that the course they studied contributed so much in changing their attitude positively towards providing solutions to the environmental issues already in existence, while helping them t avoid causing more environmental problems, while four hundred and thirty five respondents (45%) disagreed that the environmental education they studied did not have any positive influence on their attitude towards providing tangible solution to the existing environmental issues, talk less of helping them to avoid causing new ones in their homes or work place. This implies that the course as taught to these graduates has contributed positively to influence their attitude towards solving current environmental problems, while preventing the creation of new ones. This therefore means this objective of environmental education is being achieved, though, gradually but steadily.

This result is similar to the result of Barnosky and Hadly (2016) whose result shows a positive perfect correlation between environmental education knowledge and people's attitude toward environmental issues. This result has also confirmed the result of an earlier research by Eneji et al., (2017) on people's attitude towards waste management and disposal methods. The authors found a

positive correlation between the environmental knowledge they acquired and their attitude to waste and how they manage and dispose their waste in urban centers. This result affirms the earlier result found by Harder et al., (2014); Lewis et al., (2014), Thomas et al., (2018) and Stevenson et al., (2019).

Looking at the summary of the simple percentage analysis on table 5, it is revealed that five hundred and twelve respondents (52.9%) strongly agreed that the course environmental education which they studied built their environmental skill positively to empower them to actively participate in solving environmental problems. Four hundred and fifty seven respondents (47.1%) disagreed and held that the environmental education they studied did not improve or develop their skills to solve environmental problems nor to prevent creating new environmental issues.

The implication of this result therefore is that the introduction of environmental education as studied by these sets of graduates had built their skills, not only that, but had also prepared them well to actively participate in solving environmental problems within their communities. This means that this objective of establishing the course is being achieved. This result is a confirmation that environmental education as it were has built the skills of these young graduates who studied the course to prepare them for working to solve environmental problems. This result is also in line with the earlier finding of Sotiriadou et al., (2019). These authors found that when any instructional curriculum is properly covered by teachers with the right pedagogic knowledge of the course, proper assessment is also made. This will help guide the teacher in using every form of evaluation, especially diagnostic evaluation, or assessment to identify the knowledge gap of these students after a piece of instructional process. This is to bring in remedial process to fill the missing gap in the learners. Once this is done, student's empowerment in terms of knowledge, skills and capacities are guaranteed. This result found that the skills of the students, as well as their capacities were developed enough to help them fit in properly into the society and to help society solve their current environmental problems.

The results found by Mbilinyi and Msuya, (2018) on knowledge and strategies for controlling plagiarism in universities, Eneji, et. al., (2019) gave credence to this current study based on their work on lecturer's strike actions and the performance of students of environmental education in terms of their academic achievements. They found that teaching students under an acceptable learning environment, while considering the necessary factors which influence human learning imbues in the learners the needed skills, knowledge, strategies, and methods to transfer such knowledge into practical situations. If this is done by universities, students would always transfer theories in classrooms into practical solutions to society's problems. Eneji et al., (2019) cited schools in Finland, Norway, etc where the authorities believe more in practical than theoretical knowledge in their dispositions. Schools, especially universities and the management authorities should provide all enabling environment, including functional classrooms, facilities, and teachers to teach these courses that are the

basic needs of the society. It therefore stands to reason that with this knowledge so acquired from practical experiences, they can solve community problems.

The result on table 6 revealed that four hundred and ninety four respondents (51.0%) shows that most of the lecturers who taught courses in environmental education have the requisites pedagogic knowledge of the subject matter of environmental education, while four hundred and seventy five respondents (49.0%) strongly disagreed that most of the lecturers who taught courses in environmental education at their undergraduate level do not have sufficient pedagogic knowledge of the subject matter of environmental education. The conclusion here is that most of the teachers who taught these students do have the requisite pedagogic knowledge while some too do not have the requisite knowledge to teach these courses they picked to teach.

In considering the quality of teachers to be employed to teach at any level of our educational system, the teachers must have basic characteristics and qualifications before such persons can be appointed to teach the courses. Basically, the teacher's qualification, his pedagogic knowledge of subject matter, his teaching methods and lesson delivery, the relationship between students and the teacher, the classroom management skills, knowledge of individual difference and the choice of instructional methods to be adopted when teaching different topics is a compulsory requirement to pick teachers, unfortunately, it appears when these lecturers were picked to teach these courses, it was done on the people available. This has created some knowledge gaps ab initio.

A further look at the items on table 6 which looked at lecturer's pedagogic knowledge of environmental education subject matter, contents, delivery and evaluation, 756 respondents suggest that these lecturers came from different background, so they are not core environmental educations, 213 said even though they came from different backgrounds, they were core environmentalist. Based on item 4, 696 respondents said most of the lecturers cannot teach environmental concept to their understanding, 273 respondents said they can teach environmental concepts to their understanding. Item5 said some lecturers are just there for being there, 588 strongly agreed that most of their lecturers are just there for being there, while 381 respondents disagreed that the lecturers know their onions. Item 6 tries to describe lecturer's relationship with their students, 677 students strongly agreed that some of these lecturers were too harsh with the students, while 292 respondents disagreed that some of the lecturers are very homely and friendly with their students.

Following these figures, it appears some of the lecturers are really harsh to their students. This could be one of the major reasons for graduate's poor quality of the knowledge, skills, and awareness about environmental issues. One major characteristics of a good subject teacher is to be accommodating, homely and friendly, and giving student's access to approach him/her anytime they have issues, especially concerning the course(s) they teach these students. Access to the teacher, accommodation, and warm reception of students by the lecturer is

one of the characteristics of a good environmental education lecturer (Eneji, 2017).

Eneji et al., (2017) and Toomey et al., (2017) found that research in most universities, especially in the third world countries where anything goes to satisfy political leaders has had significant impact on the quality of graduates we produce from our tertiary institutions, especially in countries where the will power to fund education is grossly lacking. Countries like this hardly engage in teacher education funding to produce the best hands for the job. This boils down to Bab Fafunwa's popular quote'' the quality of any nation's educational system cannot grow above the efficiency, competence and established pedagogic foundations of her teachers''. The result obtained in this study is a true reflection of this dictum and the earlier assertion of Eneji et al., (2017). This is a true reflection of the quality of teachers that were used at that initial stage to teach these courses, when it was newly introduced. However, in recent times, it appears much improvement has been recorded as there is an astronomical rise in the number of qualified lecturers in the department now.

Result on table 8 shows that seven issues were raised as factors militating against the effective implementation of the environmental education curriculum in the University of Calabar, these issues are:

A. Environmental education is not a subject written in the final secondary school certificate examination,
B. Poor funding to implement environmental education curriculum,
C. No uniform environmental education curriculum implemented across universities offering the course,
D. Poor or shortage of qualified lecturers to teach the course
E. No regulatory body (ies) to regulate the implementation and practice of environmental education curriculum in tertiary institutions,
F. Poor job prospect/poor employment of professional graduates of environmental education
G. The delay in the computation and graduation of students in the department

A summary of the result on table 8 indicates that of the total number of respondents (969), seven hundred and twenty two (74.6%) agreed that the seven factors listed are some of the major factors working against the effective implementation of environmental education in the University of Calabar, while two hundred and forty seven respondents, (25.4%) disagreed that the factors listed here may not be completely responsible for the poor implementation of the curriculum. From the result, these factors are the major issues working against the effective implementation of the curriculum. In Onnoghen et al., (2020) studies on school environment and environmental education lecturer's job performance, the authors posited that the school must be provided with functional facilities including human resources to teach and implement the curriculum of environmental education to achieve the goal it was meant to achieve. These authors listed three major issues as determining the functionality of any educational program: the school factor (management and funders), the teacher factors (lecturers and partners) and the student's factors (home

background, readiness to learn, peer influence among others). These three factors summarized by Onnoghen et al., (2020) had elaborately settled the issues with the factors militating against the effective implementation of environmental education curriculum in the University of Calabar.

To remedy the problems listed as working against the effective implementation of the environmental education curriculum, thirteen feasible solutions were suggested to include: funding from both federal and state government and other relevant agencies, retraining of teachers of environmental education, curriculum overhauling in line with modern realities, formation of statutory regulatory body, including environmental education in the primary and secondary school curriculum, and writing environmental education in final secondary school certificate examination like West African Senior School Certificate Examination, National Examination Council and National Board for Technical Education and the Basic Certificate Examination (BCCE). Others include reinvigorating the awareness on the job prospects of graduates of environmental education, provision of functional school facilities like well-furnished lecture theater, libraries, laboratories, weather station among others, and teaching practice for environmental education students should be replaced with a full session's industrial attachment in environmentally related establishments.

The feasible solutions suggested also include line ministries related to environmental management should always send their staff to the department for refreshers courses, only graduates of environmental education from first degree to master's degree and above should be recruited to teach the courses, there should be separate lecture theaters, classrooms, libraries, laboratories and weather station for the course. Finally, it was also suggested that the regulatory body, Federal Ministries of Education, Environment, Agriculture, Tourism and National Orientation Agencies with the National Universities' Commission in collaboration with universities (departments) offering Environmental Education should as a matter of urgent national interest convoke a curriculum conference to overhaul the curriculum content of environmental education to be in line with current realities and come out with a uniform curriculum content for environmental education across all universities in Nigeria, and above all, departments should compile students result as soon as there are marked and submitted for students to graduate on record time like their colleagues in other departments in the university..

This study used Tyler's and Enukoha' curriculum evaluation models for evaluating the environmental education curriculum implementation in the University of Calabar. The resources used (the input), the processes of curriculum implementation, the output and the impact which the environmental education curriculum implementation has produced reasonable success as indicated in the study. Despite this success recorded by these models and its applicability in this study, there are some works which the result of this study has come to nullify, works like those of Kelani, 2015; Marpa & Juele, 2016; McKinley et al., 2017; Kuhar et al., 2019). While their studies found that the implementation of environmental education in their various levels of schools

were not positively correlated with the success of implementation of the objectives of environmental education curriculum, this study rather found a positive result on the successes recorded so far on the products of the curriculum implemented in the university of Calabar, Nigeria.

7. Conclusion

The study identified six objectives of environmental education as envisaged by the curriculum designers and planners for which it set out to achieve, career prospect, problems working against the effective implementation of environmental education curriculum and the feasible solutions to these problems were listed as the purpose of this sturdy. The study discovered that the basic objectives were being achieved, but there are still some aspects lagging behind for which it was discovered that the issues listed to include no uniform curriculum, poor funding, delay in result computation and compilation, shortage of qualified lecturers, poor facilities and weather station, forcing students to go on compulsory teaching practice instead of one year industrial attachment among others were responsible for the lagging behind. It was also discovered that most of the teachers brought to compliment the core environmental education teachers actually lack the basic pedagogic knowledge of the subject matter of environmental education, while some students who could not get admission into the university, saw environmental education as introduced as an avenue to get into the system.

Having enumerated all these, the curriculum as implemented has achieved some encouraging degree of success (62%), but more needed to be done to effectively implement the curriculum. This must be followed by a commensurate awareness of the job prospects including convincing and liaising with final examination bodies to make the course an external examination subject. This will improve the employment of environmental education graduates to be teachers of the course in the lower educational rungs.

The objectives of this study wwas successfully achieved, it is therefore concluded that environmental education curriculum program as implemented in the University of Calabar is achieving some desired result based on the products of the curriculum implemented, despites some hick ups here and there. The management is therefore urged to look into the areas of staff development, infrastructure developments including facilities provision to enhance student's practical hands on knowledge in finding dependable solutions to our environmental problems as graduates of environmental education.

8. Recommendation for policy direction:

Already as stated in the work, problems working against the effective implementation of the environmental education curriculum were identified and feasible solutions to correct these problems have also been identified, these solutions serve as the recommendations for policy directions.

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