

Teacher's Educational Qualification and Perception of Interdisciplinary Approach to the Teaching of Environmental Education in Secondary Schools in Cross River State, Nigeria

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Abstract

This study investigated secondary school teachers' Educational Qualification and their perception of the interdisciplinary approach to the teaching of Environmental Education in Cross River State, Nigeria. The study adopted a survey research design. The population comprised all public secondary school teachers in Cross River State, totaling 5,194 teachers, from which a sample of 1,038 respondents was drawn using proportionate, stratified and simple random sampling techniques. Data were collected using a structured questionnaire validated by experts and tested for reliability using Cronbach's alpha. Descriptive statistics (mean and standard deviation) and inferential statistics (one-way Analysis of Variance) were used to analyze the data at the 0.05 level of significance. The findings revealed that secondary school teachers in Cross River State have a positive perception of the interdisciplinary approach to the teaching of Environmental Education. Results further showed that teachers' educational qualification significantly influenced their perception of interdisciplinary teaching, with higher-qualified teachers demonstrating greater and more positive perceptions. The study concludes that while teachers generally recognize the importance of Environmental Education and interdisciplinary teaching, educational qualification is a critical determinant of effective perception and potential implementation of the interdisciplinary teaching approach of Environmental Education. The study recommends continuous professional development, integration of Environmental Education into teacher education programs, and institutional support for interdisciplinary collaboration to enhance effective Environmental Education delivery in secondary schools.

Keywords: Environmental Education, interdisciplinary approach, teachers' educational qualification, secondary schools.

Introduction

Environmental education is education aimed at molding and developing a world population that is aware of, and concern about the knowledge, skills, attitude, motivation and commitment to work individually and collectively towards a solution of current environmental problems such as deforestation, pollution, unsanitary attitude, unhygienic practices etc. and the prevention of new ones in order to achieve sustainable development. This is achievable through attitudinal change which is offered by education especially through qualified and professional teachers. The teaching of environmental education therefore aimed at changing people attitude from environmental degrading attitude to environmentally friendly attitude. This attitudinal change ought to begin from the lower level of education like primary or secondary school because Bruner (1977) in Inyang-Abia (1995) points out that any subject matter which is relevant to the adult

and which after knowing it as a child can make people better adults can be developed as a spiral curriculum. Certainly, Environmental Education is one of those relevant subject matters. However, environmental degradation is still going on unabated in spite of the number of graduands from all level of Education in Nigeria.

According to Kamlakar and Sandeep (2025) Environmental education in elementary schools is crucial for fostering environmentally conscious and responsible citizens. Early exposure to sustainability concepts helps children develop eco-friendly habits and a sense of duty toward environmental protection. By enhancing awareness, problem-solving skills, and climate literacy, environmental education empowers future generations to address global challenges like climate change. It also promotes activism, critical thinking, and community engagement. Furthermore,



integrating sustainable practices at home reinforces these lessons, encouraging lifelong environmental responsibility. Ultimately, environmental education plays a vital role in shaping a sustainable future for present and future generations.

A study by. Katja, and. Thomas, (2016) on Teachers' Perceptions of Environmental Education, Awareness, and Behavior Toward Environmental Issues, ten teachers from five secondary schools in Meru County were interviewed. The semi-structured interviews aim to provide an understanding of the implementation of environmental issues in schools and its influence of the awareness and the behavior of people from the point of view of teachers. The results show that teachers and students receive knowledge about environmental issues through various channels. In secondary schools in Meru County, it is conveyed as a complementary topic in all subjects. Yet teachers state that some subjects put a stronger focus on environment issues than others do. The results further highlight that differing characters and interests of a teacher influence the way and frequency of how environmental issue are conveyed during lectures. All teachers, however, point out that it is an important issue and that humans should take care of the environment. The majority of the interviewed teachers seem to be well informed about local environmental problems and this knowledge is then partly passed on to the students. With regard to implementation, there is nonetheless a lack of frequency and intensity.

Government over the years have challenged efforts towards the sustainability of the environment with emphases on Environmental Education. Therefore, the federal government through the Nigeria Educational Research and Development Council (NERDC) have developed a national environmental education core curriculum. The philosophy of this curriculum was derived mainly from the national policy on Education which specified producing people or citizenry who can apply knowledge to the improvement and solution of environmental problem for the use and conveniences of man.

In 1990, the Nigerian conservation foundation and the Institute of Education, University of Lagos organized workshop and seminar for different categories of people including secondary school teachers. In 1999, the Nigerian conservation foundation and the Institute of Education, University of Calabar organized workshop and seminar for different categories of people including secondary school teachers specially to enlighten them on the delivery of

Environmental Education through the interdisciplinary or multidisciplinary approach. As a follow up to these workshops and seminars, environmental clubs were introduced in secondary schools especially in Cross River State. When skills are not properly learned, the student who possesses the skills is unsure and undecided over what exactly it is to do with the skills and how to do it. In response to the educational needs of Nigerians, it was imperative to introduce Environmental Education in the school system. Part of the reason was to make the educational system more functional and sustainable so that those who acquired the skills will be able to think globally and act locally.

But the way environmental skills are taught in our schools, especially in Cross River State leaves much to be desired. The interdisciplinary approach of teaching environmental education may not have been understood by many teachers; nevertheless, situations that necessitated the introduction of environmental education can be explained based on the fact that environmental degradation has today become a major problem in Nigeria. Our once scenic and beautiful environment is no more. The Nigeria tropical rain forest has almost disappeared in our efforts to develop, the air being polluted by solid, human and industrial waste. There is an alarming rate of the atmospheric changes such as ozone depletion and the building of greenhouse gases resulting to climate change. Fertile lands are almost turning to *deserts* and farmers both in Nigeria and other parts of the world have lost 500million tons of topsoil which is an amount equal to the tillable soul coverage of India and France combined (Obi, 1997). lakes, rivers even whole sea has been turned into sewers and industrial slums. Tens of thousands of plants and animals that once shared the planet with us have since gone into extinction and the state of the world has gone downhill (Today Sunday Magazine, (1992).

It is this alarming state of degradation in the world that led to the formation of Nigeria Conservation Foundation (NCF) A Non-Government Organization aimed at promoting the standard of the Nigeria environment through formal and non-formal ways. In order to achieve her set objectives, NCF presented a draft proposal for a National Conservation Education Strategy to the Federal Ministry of Education in 1988. The proposal was adopted by the National Council on Education (NCE) in 1990. This proposal then became an official educational policy that environmental education be taught in secondary and primary schools in Nigeria from 1991 academic session as part of the citizenship education curriculum.

Unfortunately, the content, methods and emphasis are not equal to the challenges it faces. This has, *ipso facto* given the researchers the impetus to carry out this research. It is on this premise that, this research is aimed at finding out the level of teachers' perception of interdisciplinary approach to Environmental Education in secondary schools in Cross River State.

Problem Statement / Justification

Environmental Education is a new comer in Nigeria education system and only few Universities in Nigeria Offer Environmental Education courses. The problem is further compounded by the fact that environmental education curriculum is based on the UNDP recommendation of teaching Environmental Education through interdisciplinary (infusion) or multidisciplinary approach especially in the primary and secondary schools. However, only few teachers in the secondary schools have higher degree in Environmental Education as a discipline while most secondary school teacher have their traditional teaching subjects where environmental education is infused with high degree of variations in teachers' perception of the interdisciplinary approach.

Moreso, it is worrisome that the environmental activities such as: conservation clubs, excursion, and field trips that existed in secondary schools have disappeared. Students and teachers no longer pay attention to environmental awareness creation. The teaching of environmental education in secondary schools are gradually declining and its status is uncertain. There is capacity building issue within the secondary school level in terms of adequate environmental education knowledge. This in a way has affected its transmission approach to the learners. The lack of capacity is closely linked with low awareness of green policy, both the green policy awareness and teachers' perception of interdisciplinary approach may be seriously dependent on teachers' capacity building, the absence of which leads to low awareness. What then is responsible for this?

The concern of this research is therefore to investigate the influence of teacher's Educational Qualification on their perception of interdisciplinary approach to the teaching of environmental education because the status of environmental education in secondary schools in Cross River State is uncertain.

Objective of the study

The aim of the study was to investigate the influence of secondary school teachers' educational qualification on their perception of interdisciplinary approach to the teaching of Environmental Education

Research questions

What influence does teachers' educational qualification have on their perception of the interdisciplinary approach to the teaching of Environmental Education in Cross River State?

Research hypothesis

There is no significant influence of teachers' educational qualification on their perception of the interdisciplinary approach to the teaching of Environmental Education in Cross River State.

Review of related literature

Opinions, and views of different authors about teacher's educational qualification and their perception of interdisciplinary approach to the teaching of Environmental Education are reviewed here.

Egbonyi, Ephraim and Omoogun (2018), found out in their study of capacity building and perception of interdisciplinary approach to the teaching of Environmental Education among secondary school teachers in Cross River State, using a population of 5,164 secondary teachers in Cross River State, stratified and simple random sampling techniques were employed to select a sample of 1030 for the study, simple linear regression was used for the analysis of the result, which revealed that there is a possible significant influence of teacher's capacity which builds on their perception of interdisciplinary approach, (to the teaching of Environmental Education) and it was recommended that, secondary school teachers should be encouraged to engage in training and retraining. This is in order to build capacity and enhance interdisciplinary approach in teaching.

Egbonyi, Enu and Omoogun (2019), in their study; green policy awareness and secondary school teachers' perception of interdisciplinary approach to the teaching of Environmental Education in Cross River State which employed the survey research design, a population of the study was the total number of teachers in Cross River State public secondary school which was 5,194 at the time, a sample size of 1030 and structured questionnaires was used to gather data and was analyzed by simple linear regression analysis. The result of the study showed that teacher's green policy

awareness significantly predicted their perception of interdisciplinary approach to the teaching of Environmental Education. It was recommended that, teachers should be rational, entrepreneurial and resourceful in the teaching of Environmental Education and that they should infuse environmental concepts in their traditional teaching subjects.

Jonas and Ephrem (2025), assessed the perspectives of teachers towards integration of education for Sustainable Development in Tanzanian ordinary secondary school curriculum.

Teachers were drawn from eight schools in the city council; qualitative approach and phenomenological design were adopted to guide the study. Thematic analysis was used to gather data and the study revealed that their perspectives regarding the Integration of ESD into ordinary secondary schools in Tanzania was positive.

In ascertaining the influence of teachers professional qualifications and area of specialization on the implementation of Environmental Education: Emmanuel and Ambe (2014), surveyed 480 teachers and randomly selected them, through simple random sampling, questionnaire was the instrument for data collection, the reliability estimate of the instrument was established through split half reliability method, a one way analysis of variance was the statistical tool employed to test the hypothesis at 0.05 level of significance. The result of the study revealed that teacher's professional qualification, area of study; do not significantly influence the implementation of Environmental Education curriculum in Cross River State Nigeria. Based on the result they recommended amongst others that pre-employment aptitude test be administered to would be teachers to check for elements of professional competence before they are fully employed and periodic training for teachers should be included in school calendar.

UNESCO (2020) emphasized that teachers' understanding of environmental policies and sustainability goals is crucial for effective curriculum integration. Similarly, Pandery and Pandey (2024) argued that teachers' awareness and perception of Environmental Education directly influence their ability to inculcate environmental values and skills in learners.

In another study, Anyolo, Karkkainen and Keinon (2018), Investigated the implementation of education for Sustainable development in Namibia school teachers' perceptions and teaching practices. Using a qualitative- explorative study design, data was drawn and gathered from a two semi structured interview and lesson observation and the findings revealed that senior secondary school teachers perceived environmental sustainable development in terms of knowledge acquisition about the environment, that teachers have positive sentiment towards the inclusion of ESD into the senior secondary school curriculum and they suggested that ESD should be implemented as an independent subject or integrated as a much disciplinary subject

Methodology

The research area is Cross River State, that was stratified into Calabar, Ikom and Ogoja Education Zones, Therefore, using the proportionate and simple random sampling techniques 412 out of 2062 respondents were drawn from Calabar education zone, 345 out of 1724 from Ikom education zone and 281 respondents out of 1408 from Ogoja education zone. A sample of 1,038 was therefore drawn from a population of 5,194 teachers.

Data was analyzed using descriptive statistics (mean, standard deviation), and One Way Analysis of Variance (ANOVA) at 0.05 alpha level.

Results

The presentation of results was guided by the research question and hypothesis formulated for the study. To answer the research question, responses obtained from teachers on items measuring perception of the interdisciplinary approach were analyzed using mean and standard deviation. The results are presented in Table 1.

Table 1: Mean and Standard Deviation of Teachers' Perception of the Interdisciplinary Approach Items (N = 1,038).

Item	Statement (Abbreviated)	Mean	SD	Decision
1	EE should be interdisciplinary	3.62	0.71	Positive
2	Integration improves understanding	3.58	0.73	Positive
3	Teacher collaboration improves EE	3.54	0.75	Positive
4	Interdisciplinary approach is practical	3.49	0.77	Positive
5	Confidence using interdisciplinary methods	3.31	0.81	Positive
6	Promotes critical thinking	3.46	0.74	Positive
7	Enhances environmental awareness	3.57	0.72	Positive
8	Lack of training limits effectiveness	3.64	0.70	Positive
9	Time constraints hinder implementation	3.28	0.83	Positive
10	Need for professional development	3.69	0.68	Positive
Grand Mean		3.52	0.74	Positive

The results presented in Table 1 show that secondary school teachers in Cross River State demonstrated a positive perception of the interdisciplinary approach to the teaching of Environmental Education. All ten items recorded mean scores above the decision benchmark of 2.50, indicating a generally favourable disposition toward interdisciplinary teaching.

Specifically, teachers strongly agreed that Environmental Education should be taught using an interdisciplinary approach ($M = 3.62$, $SD = 0.71$) and that integrating Environmental Education across different subjects improves students' understanding ($M = 3.58$, $SD = 0.73$). Respondents also acknowledged that collaboration among teachers from different subject areas enhances the delivery of Environmental Education ($M = 3.54$, $SD = 0.75$).

The findings further revealed that teachers perceived the interdisciplinary approach as practical and relevant ($M = 3.49$, $SD = 0.77$) and reported confidence in using interdisciplinary teaching methods ($M = 3.31$, $SD = 0.81$). Teachers also agreed that interdisciplinary teaching promotes critical thinking (M

$= 3.46$, $SD = 0.74$) and enhances students' environmental awareness ($M = 3.57$, $SD = 0.72$).

Items related to implementation challenges also recorded high mean scores. Teachers agreed that lack of training limits the effective use of interdisciplinary approaches ($M = 3.64$, $SD = 0.70$) and that time constraints hinder implementation ($M = 3.28$, $SD = 0.83$). The highest mean score was recorded for the need of professional development, emphasizing interdisciplinary approaches ($M = 3.69$, $SD = 0.68$), indicating strong support for capacity-building initiatives. The grand mean score of 3.52 with a standard deviation of 0.74 confirms that, overall, secondary school teachers in Cross River State hold a positive perception of the interdisciplinary approach to the teaching of Environmental Education.

To test the hypothesis, a one-way Analysis of Variance (ANOVA) was conducted to determine whether teachers' perception of the interdisciplinary approach differed significantly based on their educational qualification. The results of the analysis are presented in Table 2.

Table 2: One-Way Analysis of Variance of Teachers' Educational Qualification and Perception of the Interdisciplinary Approach with Descriptive Statistics.

Interdisciplinary Approach with Descriptive Statistics:					
Educational Qualification		N	Mean	SD	
NCE		310	3.12	0.61	
B.Ed/B.Sc.(Ed)		412	3.34	0.63	
M.Ed/M.Sc.(Ed)		256	3.56	0.66	
Ph.D		60	3.69	0.70	
Total		1038	3.48	0.65	
Source	SS	df	MS	F	p
Between groups	22.16	3	7.39	7.42	< .001
Within groups	1029.88	1034	0.99		
Total	1052.04	1037			

The ANOVA result further indicates that the observed differences in mean scores were statistically significant, $F(3, 1034) = 7.42, p < .001$. Since the p -value is less than the 0.05 level of significance, the null hypothesis was rejected. Based on the findings, the Hypothesis was rejected. This implies that secondary school teachers' educational qualification has a significant influence on their perception of the interdisciplinary approach to the teaching of Environmental Education in Cross River State, Nigeria.

Discussion of Results

The result of the hypothesis revealed a significant influence of teachers' educational qualification on teachers' perception of the interdisciplinary approach, with teachers possessing higher qualifications exhibiting more positive perceptions, and Ph.D holders demonstrating higher perception of the interdisciplinary approach than those with NCE, Bachelor's and Master's Degrees. This finding supports earlier studies which have established that perception of the interdisciplinary approach to the teaching of Environmental Education tends to increase with higher levels of education. For instance, the finding is consistent with studies that emphasize the role of teacher preparation and professional competence in shaping perceptions of interdisciplinary teaching. Egbonyi et al. (2018) found that teachers' capacity building significantly influenced their perception of interdisciplinary approaches to Environmental Education in Cross River State. Similarly, Ruthanam et al. (2021) observed that teachers' pedagogical content knowledge and professional identity strongly determine their teaching methodology, including interdisciplinary practices.

On the other hand, some studies suggest that teachers may hold positive perceptions regardless of qualification level but struggle with implementation due to systemic challenges. For example, Kinnear (2021) and Davies (2022) reported that teachers often lack the confidence, training, and institutional support needed to translate positive perceptions into effective classroom practice. This supports the current study's descriptive findings, which highlighted training gaps and time constraints as key challenges.

The finding is also in line with UNESCO (2020) emphasizes that teachers' understanding of environmental policies and sustainability goals is crucial for effective curriculum integration.

Conclusion

This study examined secondary school teachers' Educational Qualification and their perception of the interdisciplinary approach to the teaching of Environmental Education in Cross River State. Using a survey research design, data were collected from a representative sample of secondary school teachers and analyzed using descriptive and inferential statistics. The findings revealed that secondary school teachers in Cross River State generally hold a positive perception of the interdisciplinary approach to Environmental Education. These results suggest that teachers recognize the relevance of environmental sustainability policies and appreciate the value of integrating Environmental Education across subject areas.

The study further established that teachers' educational qualification significantly influences their perception of interdisciplinary Environmental Education. Teachers with higher academic

qualifications demonstrated more favorable perceptions of interdisciplinary teaching approaches. This highlights the role of academic preparation and professional competence in shaping teachers' understanding and acceptance of Environmental Education practices.

Recommendations

Based on the findings and conclusions of this study, the following recommendations are made;

1. Given that teachers' educational qualification significantly influence perception of interdisciplinary approach to Environmental Education, it is recommended that the Cross River State Ministry of Education should organize regular in-service training, workshops, and seminars focused on Environmental Education and green policies. These professional development programs should emphasize practical strategies for integrating Environmental Education across different subject areas and should be accessible to teachers of all qualification levels.
2. Teacher training institutions should incorporate Environmental Education and interdisciplinary pedagogy as compulsory components of pre-service teacher education curricula. This will ensure that newly trained teachers acquire the necessary knowledge, skills, and attitudes required to effectively teach Environmental Education using interdisciplinary approaches, regardless of their subject specialization.

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