
DEMOGRAPHIC ASSESSMENT OF ENVIRONMENTAL EDUCATION STAKEHOLDERS AND ITS IMPLICATIONS IN NIGERIAN
UNIVERSITIES SYSTEM

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ABSTRACT

The study investigated the demographic assessment of Environmental Education stakeholders and implications in Nigerian Universities. Demographics were used to identify in the study of quantifiable subsets within the population which characterized the population at a specific point in time. Survey design was adopted for the study. A sample of 860 respondents comprising 60 Environmental Education Lecturers, 15 Administrators and 785 Environmental Education Students from five (5) Universities in three (3) geo-political zones viz; South-East, South-West, South-South were obtained from a population of one thousand two hundred (1200) using purposive sampling technique. The instrument for data collection was the questionnaire titled Environmental Education Implementation Questionnaire (EEIQ) with 10 research items. The Cronbach-Alpha (α) coefficient was used and a reliability coefficient of the instrument was determined as 0.93. The data were analyzed using percentage (%). The results revealed that there were 60 lecturers, 15 administrators and 785 environmental education students. Also revealed on qualification was that 23 lecturers have PhD, 9 have M.Sc., 5 have M.Ed./M.Sc. Ed, 17 have PGDE/PGCE, and 4 have B.Ed./B.Sc.(Ed), 13 have B.Sc (Ed) and 4 have B.Sc (Hons). On the ranks of environmental education lecturers and administrators, 5 were professors; 9 associate professors, 12 senior lecturers, 9 lecturer I, 16 lecturer II, 5 assistant lecturers, 4 graduate assistants and 15 administrators. There were 588 male and 272 female on the frequency distribution of sex of respondents in EE programme in Nigerian Universities. This study revealed that the numbers and qualities are below accepted standards in Nigerian Universities, in terms of ranks, qualifications and sex, especially in this era of combating climate change. Recommendations are related to students' academic achievements, education and behavior change.

Keywords: Demographic, Assessment, Stakeholders, Environmental Education (EE).

INTRODUCTION

The degradation of the environment constitutes a threat to human survival and man has been responsible for this. Concerted effort to arrest the environmental degradation did not start until about three decades ago. In 1972, the international community worked out a global sensitization and management strategy in Stockholm. This consequently, resulted in the establishment of the United Nations Environmental Programme (UNEP). This was followed by the Belgrade Chapter in 1975.

The effort to include Environmental Education (EE) in the educational system came up after the Tablis Conference in 1976 (Nwafor, 2006). The recent sensitization drive was the outcome of Rio Conference "The Earth Summit of 1993, known as Agenda 21". The concerted effort of Nigerian Conservation Foundation (NCF) in 1988 gave an impetus to the infusion of some element of EE into the Citizenship Education Curriculum in 1990. The national workshop on the integration of EE gave an impetus to many research studies that emphasize the need for functional

implementation of EE in the Curriculum (Kola – Olusanya, 2000 & 2005).

In the nation's educational system; separate disciplines of EE have been developed, and in some Universities, it has been integrated. Among the Nigerian Universities, only the University of Calabar, Calabar; University of Ibadan, Ibadan; University of Nigeria, Nsukka; University of Port Harcourt, Port Harcourt and the Lagos State University, Ojo that have developed comprehensive programme in Environmental Education. The programme has functioned for more than decade from inception, thus, demographic assessment of stakeholders in this programme would invariably boost teacher education and the production of Environmental Education materials (Eguabor, 2004).

Demographics are the quantifiable statistics of a given population (Preston, Heuveline, Guillot, 2000; Wattenberg, 2004). Demographic analysis includes the sets of methods that allow us to measure the dimensions and dynamics of populations (Murray, 2016). In the context of human biological populations, demographic analysis uses administrative records to develop an independent estimate of the population. Demographic analysis estimates are often considered a reliable standard for judging the accuracy of the census information gathered at any time (Longman, 2004). In the labour force, demographic analysis is used to estimate sizes and flow of population of workers; in population ecology the focus is on the birth, death, migration and immigration of individuals in a population of living organisms, alternatively, in social human sciences could involve movement of firms and institutional forms (Schutt, 2006). Demography is used widely in public opinion polling and marketing. While Emaikwu, (2005) defined assessment as a process by which information is obtained relative to some known objective or goal through data gathering strategies, analysis and reporting processes that provide information that could be used to determine whether or not intended outcomes are being achieved. Therefore, demographic

assessment will bring about relevant decisions that will improve the teaching of EE and development of stakeholders.

Successful programmes in that respect would be achieved by bringing a coalition of stakeholders together to design, implement and evaluate a programme that meets their needs (Monroe, 1999). Stakeholders are those that have stake in the programme that is developed. They are those people who care about a programme, are willing to develop a commitment to it and are best able to offer input into it. These stakeholders might be teachers, funders, agency supervisors, community leaders, extension workers, landowners, parents and curriculum developers. The lecturers, administrators and students have direct impact on the academic dimension of the programme, hence their numbers and qualities are quite significant. Their participation lends a variety of perspectives to the programme, shaping the programme focus and audience.

The role of Environmental Education is to help the individual to go through the process of awareness bearing in mind that Environmental Education does not aim at transferring idea logical tendencies (Kola – Olusanya, 2005). Part of its goal is to provide a rich diversity of options, in which learners can choose the most significant alternative relating to their own realities. This process is fundamental since environmental, social and economic problems are increasingly more complex and abilities of solving them are multifaceted and interdisciplinary (Farmer, Knapp & Benton, 2007). In promoting the development of these abilities and new ethical paradigms, environmental education may contribute to higher respect for life, not only for human, but all living beings.

Environment connotes the natural, social and the constructed world we live in. we should care for it the same way we care for ourselves. The health of the environment strongly correlates with the human health (Eze, 2008). Environmental quality therefore, is defined as an environment with healthy and beautiful

attributes to live in (Olawejaju, Agusiobo & Vowa, 2008). It is clean and well ventilated, it is well-lit and the grass around the home is properly maintained. Besides, people are protected from diseases and economic development of the community improved. Three concepts of Environmental Education include education from the environment, education about the environment and education for the environment. Madumere (2008) reported that education from the environment could be regarded as the application of all the human senses to learn from the environment. Education about the environment focuses on the body of knowledge on the environment as reflected in school subjects like Geography, Biology and Agricultural Sciences, while education for the environment is a situation where education is focused on the need to promote personal responsibility of the condition of the environment.

In order to ensure the achievement of the goals of environmental education, the National Universities Commission (NUC) has approved Minimum Academic Standards for Education for all Nigerian Universities (Anijah-Obi (2004). In pursuit of these goals, there is need for lecturers in Environmental Education Programme in Nigerian Universities to utilize appropriate teaching methods. Adequacy of infrastructural facilities for Environmental Education Programme based on Minimum Academic Standards ought to be considered. Facilities such as seating accommodation for library services, enough classrooms and staff offices are based on the adequacy of the facilities and resources for the realization of the goals of EE programme.

The adequacy and quality of staff are based on the extent to which they meet the provisions of the Minimum Academic Standards of Supervisory agencies in terms of: staff/student ratio, staff mix by rank, the competence of teaching staff; and the qualification of teaching staff. The administrations of the University/Faculty/Department are placed in the hands of qualified professionals with considerable experience. The leadership ensures the maintenance

of the facilities for staff and students, routine administration, conducting examinations, scheduling of staff and interpretation of policies to the staff, students and the public. It ensures that all EE students must meet the admission requirements. There should be no compromise of any nature in order to ensure quality products for the society.

Environmental education programmes have been designed to occupy unique positions in the educational system, to equip students with the necessary scientific, technological knowledge and skills necessary to build a progressive society (Monroe, 2010). This situation places greater responsibility on the Universities, lecturers, administrators, curriculum planners/developers and government with regards to the effective implementation of these programmes.

Amidst numerous, growing and complex environmental problems, the need for the preparation of world problem solvers is as great as ever. Educators have globally accepted this role of preparing students to become critical thinkers, informed decision-makers and able communicators. Therefore, the numbers and qualities of these EE stakeholders are of paramount importance in this demographic assessment or analysis in Nigerian universities system.

Lecturers have been reported to make use of ineffective teaching methods in teaching Environmental Education concepts. Students' enrolment, attitude, interest and achievement have dwindled from year to year, a trend which may not be unconnected with the poor implementation of EE programme in Universities (Eguabor, 2004). Furthermore, there is no empirical evidence to show that neither objectives of EE nor curricular course content are being achieved. It is probable that the inputs and interactions in the system are defective and perhaps the quality of the programme has not improved as to enhance the quality and quantity of products.

Purpose of the Study

The major purpose of the study was to assess demographically EE stakeholders (Lecturers, Administrators, Students) and implications in Nigerian Universities system. Specifically, the study:

- i. determined the numbers of lecturers, administrators and students in EE programme in Nigerian Universities system;
- ii. determined the ranks and qualifications of EE lecturers in EE programme in Nigerian Universities system;
- iii. determined the numbers of male and female stakeholders in EE programme in Nigerian Universities system; and
- iv. Determine the mean achievement scores of students in EE programme in Nigerian Universities system for a period of five years (2005 – 2009).

Research Questions

The following research questions were raised to guide the study.

- i. What are the numbers of lecturers, administrators and students in EE programme in Nigerian universities system?
- ii. What are the ranks and qualifications of EE lecturers in EE programme in Nigerian universities system?
- iii. What are the numbers of male and female stakeholders in EE programme in Nigerian universities system?

- iv. What are the mean achievement scores of students in EE programme in Nigerian universities system for a period of five years (2005 – 2009)?

METHODOLOGY

Survey design was adopted for the study. It deals with gathering of information about a large population of people by examining a representative sample of the entire population (Emaikwu, 2011). The study was carried out in Nigerian Universities offering Environmental Education Programme such as University of Calabar, Calabar; University of Ibadan, Ibadan, University of Nigeria, Nsukka; University of Port Harcourt, Port Harcourt and Lagos State University, Ojo. The population of the study was 1200 which comprised 120 lecturers, 30 administrators and 1050 students (Field Survey, 2013). Through purposive sampling, 860 was sampled for the study, made up of 60 Environmental Education lecturers, 15 administrators and 785 students from five (5) Universities in three (3) geo-political zones (South-East, South-West and South-South) for their long duration of implementing EE Programme in Nigeria.

The instrument for data collection was the questionnaire titled "Environmental Education Implementation Questionnaire (EEIQ)", which was subjected to face and content validation by three experts in areas of Environmental Education, Curriculum Studies, Measurement and Evaluation from University of Nigeria, Nsukka, University of Calabar, Calabar and University of Agriculture, Makurdi. The reliability of EEIQ was established using Cronbach-Alpha (α) coefficient. Based on the data collected, a reliability index of 0.93 was established.

RESULTS: The results were analyzed and presented based on the following demographic data.

Table 1: Frequency Distribution of Respondents

Respondents	Frequency	Percent (%)
Environmental Educators (Lecturers)	60	7.0
Administrators	15	1.7
Environmental Education Students	785	91.3
Total	860	100.0

Table 1 revealed that out of 860 respondents, the demographic data indicated 60 Environmental Educators (Lecturers) representing 7.0%; 15

Administrators representing 1.7%; while 785 were Environmental Education Students representing 91.3%. The frequency distribution is as shown on Table 1.

Table 2: Frequency Distribution of Qualifications of EE Lecturers and Administrators in Nigerian Universities

Qualifications	Frequency	Percent (%)
Ph.D	23	30.7
M.Sc.	9	12.0
M.Ed (Sc.Ed.)	5	6.7
PGDE/PGCE	17	22.7
B.Ed (Sc.Ed.)	4	5.3
B.Sc (Ed.)	13	17.3
B.Sc. (Hons)	4	5.3
Total	75	100.0

With respect to qualifications of respondents, Ph.D holders were 23 representing 30.7%. Respondents with M.Sc. were 9 and M.Ed (Science Education) were 5 representing 12.0% and 6.7% respectively as well. PGDE/PGCE holders were 17

representing 22.7%. The B.Ed (Science Education) were 4 while B.Sc (Ed.) were 13 representing 5.3% and 17.3% respectively. B.Sc (Hons) were 4 constituting 5.3%. The frequency distribution is as shown in Table 2 above.

Table 3: Frequency Distribution of Ranks of EE Lecturers and Administrators in Nigerian Universities

Ranks	Frequency	Percent (%)
Professors	5	6.7
Associate Professors	9	12.0
Senior Lecturers	12	16.0
Lecturer I	9	12.0
Lecturer II	16	21.3
Assistant Lecturers	5	6.7
Graduate Assistant	4	5.3
Administrators	15	20.0
Total	75	100.0

In the ranking of respondents in the Universities, Professors were 5 representing 6.7%; Associate Professors were 9 representing 12.0%; Senior Lecturers were 12 representing 16.0%; Lecturer I were 9 representing 12.0%; Lecturer II were 16 representing 21.3%. Assistant Lecturers and

Graduate Assistants were 5 and 4 representing 6.7% and 5.3% respectively. The Administrators (Deans, Sub-Deans and Heads of Departments) were 15 representing 20.0%. The frequency distribution is as shown in Table 3.

Table 4: Frequency Distribution of Sex of Respondents

Sex	Frequency	Percent (%)
Male	588	68.4
Female	272	31.6
Total	860	100.0

Out of the 860, 588 were male respondents representing 68.4% and 272 were females representing 31.6% as shown in Table 4 above. The demographic variables are categorical variables, in that they belong to a kind of measurement where objects were assigned to a subclass or subset. These classes were distinct and non-overlapping. All objects put into the category were considered to have the same characteristic(s). However, they have values that vary in terms of magnitude that is making them quantitative.

The frequency distributions of the four demographic variables of the EE respondents were shown in Appendices I, II, III and IV. The bar chart was considered appropriate in presenting these variables

because they displayed frequencies. The height of each bar was proportional to the number of cases with that value. The frequency of cases with each value can be read off the vertical axis on the left-hand side corresponding with values on Tables 1, 2, 3 and 4.

Research Question 1: What are the mean achievement scores of students in Environmental Education programme of Nigerian Universities for the period of five years (2005 – 2009)?

To answer the research question, the mean achievements of students in Environmental Education programme in Nigerian Universities for the period of five years were computed and expressed in percentages as presented on Table 5.

Table 5: Percentage Distribution of Students' Mean Achievements on Environmental Education in Nigerian Universities

UNIVERSITIES	(N)	YEAR (%)				
		2005	2006	2007	2008	2009
University of Nigeria, Nsukka	126	13	12	13	12	13
University of Calabar, Calabar	180	15	14	17	16	12
Lagos State University, Ojo	195	17	16	18	19	15
University of Ibadan, Ibadan	120	11	10	12	13	10
University of Port Harcourt, P/H	164	14	13	15	16	11
TOTAL	785	70%	65%	75%	76%	61%

Based on Table 5, the study reveals that mean achievement of students in Environmental Education programme in Nigerian Universities were fairly high but not consistent. The percentages were as follows: 2005 – 70%; 2006 – 65%; 2007 – 75%; 2008 – 76%; and 2009 – 61%. The represented percentages were based on students' examination scores kept by Heads of Departments and Lecturers (Secondary data) on EE courses taught and evaluated for the specified period (see Appendix V).

DISCUSSION

Demographic assessment or analysis on numbers of EE lecturers, administrators, students, qualifications and ranks as revealed in Tables 1 to 4 of this study fall short of the National Universities Commission (NUC) guidelines, by Federal Republic of Nigeria (FRN, 2013) (Anijah-Obi, 2004) in order to maintain standard in the Environmental Education programme in Nigerian universities. The guidelines stipulated twenty percent (20%) of the academic staff should be at the professorial cadre, while twenty-five (25%) at the senior lecturership cadre, while the remaining fifty-five percent (55%) should be at cadres of lecturers one, two and assistant lecturers. Furthermore, Anijah-Obi (2004) noted that the extent of meeting the national educational aspirations by the universities depended much on available resources. It is therefore likely that the quality of environmental education given in universities could differ due to the difference in resources between the old and the young universities. The Approved Minimum Academic Standards for Environmental education for all Nigerian Universities, set up by NUC, is one of the series of efforts being made by the Governments of Nigeria (Federal and State) to lay a solid foundation in environmental education in the country.

Demographics on good environmental education programmes are relevant – relevant to the agency or organization, relevant to the audience and meaningful to their everyday lives. An agency or organization's mission and environmental priorities

provide direction for programme development in environmental education, guiding the development of goals and objects and their choice of target audience (Monroe, Day & Grieser, 2000; Siegel, 2002; Korotayor & Daria, 2006). While it would be impractical to consult a large number of stakeholders on every decision, their input and participation is essential in the beginning stages (Hwang & Jeng, 2000; Monroe, 2010). Their participation lends a variety of perspectives to the programme, shaping the programme focus and audience which is in line with the present demographic assessment in Nigerian universities system.

However, constructivism also supports cooperative learning associated with environmental education in Nigerian universities system (Nwafor, 2006). Cooperative learning allows learners to work in small groups to explore a new idea, gather information, discuss ideas, apply concepts and solve a problem as reported by Kola-Olusanya (2005) and Monroe (2010). Eguabor (2009) and Monroe (2010) collaborated the effective approach of cooperative learning in students' achievement in Mathematics, Science and thinking skills. Students social skills and interactions with peers are affected positively also. All of which are important aspects of environmental literacy in Nigerian universities system (Kola-Olusanya, 2005).

The results of this study as shown in Table 5 were good but not consistently high from year to year. The percentages were as follows: 2005 – 70%; 2006 – 65%; 2007 – 75%; 2008 – 76%; and 2009 – 61%. The highest mean achievement was in 2008 with 76% recorded. Appendix v on percentage distribution of students' mean achievements in EE in Nigerian Universities equally conveys the information with the highest bar in 2008.

This finding is consistent with Kola-Olusanya (2005) who found out that good achievement was in a way related to students' attitude towards EE, but contrary to the findings of Kola – Olusanya (2000) and Eguabor (2004) who reported poor achievements in

Environmental Education. Therefore, one could say that the good mean achievement though not consistently high, was because these students had imbibed the EE skills necessary to enable them apply the knowledge inherent in EE to other areas of life. This assertion was supported by Eguabor (2009) that students were mastering concepts and principles outlined in the National Policy of Environment (1989).

IMPLICATIONS OF THE STUDY

The implications include the following:

1. Demographics of EE stakeholders are relevant to the mission of the agency or organization, to the educational objectives of the audience, and to the everyday lives of the individual learners.
2. Demographics in environmental education programme involve stakeholders in all stages of the programme, from the development of the programme to its evaluation.
3. Again, demographic studies of environmental education programmes will improve EE teaching and empower learners with skills to help prevent and address environmental issues, and with a sense of personal and civic responsibility.

These implications translate into issues useful to environmental education programmes that are learner centered and involve active learning. These aspects are crucial to experiential education, a methodology that is closely related to constructivism. Experiential education incorporates several specific instructional methods, including problems or project – based learning, service learning, and field-based instruction. These have direct impact on students' motivation and academic performance.

CONCLUSION

This investigation has unraveled the statistical and mathematical study of the size, composition and spatial distribution of EE stakeholders

and how these features could change over time in Nigerian Universities system. For environmental educators, changes in numbers, knowledge, attitude, intentions and behaviours of programme participants are of interest. While important, designing an assessment to measure these changes is difficult.

RECOMMENDATIONS

1. Efforts must be made by Nigerian Universities to improve and sustain good performance by way of encouraging lecturers to work harder through provision of incentives, procuring the necessary resources required for implementing EE programmes.
2. Nigerian Universities should address complex environmental issues through environmental education related to education and behavior change.

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