PERCEPTIONS OF SECONDARY SCHOOL STUDENTS ON FORESTRY AND ENVIRONMENTAL SCIENCE EDUCATION IN OYO-STATE, NIGERIA

Asunlegan O. A., Akanni O.F., Olumide-OjoO., Ojedokun C.A. and Agboola I. S.

Forestry Research Institute of Nigeria, P.M.B 5054. Jericho Hills, Ibadan, Oyo State, Nigeria

*Corresponding Author e-mail: *oluyomibobakre@yahoo.com*; +234 816 901 9912

ABSTRACT

Forestry and Environmental Science education have become inevitable in Nigerian schools considering the numerous environmental problems encountered daily in almost all the states within the country, hence the need for this study. This study assessed the perception of secondary school students on Forestry and Environmental Science Education in Oyo State, Nigeria. A total of two hundred and forty copies of questionnaire were administered to the students in the study area. The student's average perception of Forestry and Science Environmental Education was quite impressive because majority (95.9%, 99.2%) of the students in government and private schools respectively agreed with that protection of the environment is important. Majority (89.1%, 73.1%) of the students in private and government schools were knowledgeable about the environmental issues in Oyo state. Some perceived benefits of forest such as Tree roots helps in absorbing surface water and Forest creates job opportunities for people with a mean score of 1.73 and 1.62 were ranked 1st and 2nd respectively. The regression analysis result shows that students' knowledge of environmental issues has contributed significantly to their perception of Forestry and Environmental Education. Based on the findings of the study, it is therefore concluded that majority of the students have high level of knowledge about environmental issues in Oyo state although they were not satisfied with the current state of environment in the state. The study recommends that more orientation and re-orientation programs on the issue of environmental protection are needed in schools in Oyo State.

Keywords: Perception, Environmental schools education, Forestry, Environmental problems, Secondary students

INTRODUCTION

The basic understanding and knowledge of forestry and environmental education differs widely from one state to another and so does perception among the different segments of population. "Environment" according to Charette (2010) includes not only air, ground and water, but also indoor air quality, food and the living and working environment. Benny (2009) also observed that "Environment is the physical and biotic habitat that surrounds us". while Forestry is the science, art and craft of creating, managing, using, conserving and repairing forests and associated resources in a sustainable manner, to meet desire goals, needs and values for human benefits Arokoyo (1995).

Environmental Education is a learning process that increases people's knowledge and awareness about the environment and associated challenges, develops the necessary skills and expertise to address the challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action (UNESCO, 2007). Adeniyi (1999) also defines Environmental Education as a form of education that plays a key role in promoting the development of values, attitudes, and belief that are conducive to the enhancement of the quality of environment.

One of the commonly studied population groups in environmental studies are students of different sex,

age, educational level and how these variables impact their perceptions of Environmental Education. Students comprise of an important segment of a society and warrant attention in terms of studying environmental culture, opinions, attitudes and behaviors. In the nearest future, these students will be playing important roles as managers, teachers, business persons, industrialists and the like (Erdogan, 2013). Students' knowledge and awareness of environmental issues has become central aim of science education now. Students should know environmental issues and develop attitudes to the issue of environmental protection. Hence, understanding students' perceptions on environmental issues are fundamental for the design of policies to enhance their environmental awareness and sensitivity, to support development and use of sustainable practices, methods and products (Erdogan, 2013). For an environmental education program to be effective in changing students' perceptions, it must be part of holistic EE curriculum in the schools (Eagles and Demare, 1999). Environmental Education has a big role to play in bringing change in people's value and attitudes towards the environment, its health and problems such as land degradation, pollution, population increase, deforestation, flooding, climate change among others. The aforementioned environmental problems in Nigeria can be addressed by the introduction of environmental education in our educational system and sensitization of the general public on the perceived benefits of the forest and a healthy environment in Oyo State.

The objective of this study was to assess the environmental perception potential of secondary school students on the basis of different environmental issues, to identify the perceived benefits of forest and a healthy environment and to determine the factors influencing students' perception of forestry and environmental education.

MATERIALS AND METHOD
Study Area
This study was carried out in Oyo State, South - West Nigeria. Oyo State is one of the thirty-six states of the Federal Republic of Nigeria. It was created in February 3, 1976 out of the old Western State by the then regime of General Murtala Mohammed. The State has an estimated population of over 5,591,589 people. It is located in the rainforest vegetation belt of Nigeria within longitude 7°23'47"N and 3°55'0"E and covers approximately an area of 28,454 square kilometres.

Agricultural sector forms the base of the overall development thrusts of the state, with farming as the main occupation of the people in the area. Crops usually grown include cocoa, oil-palm, maize, yam, cassava, cocoyam, melon, cowpea, and vegetables under mixed cropping practices. Agricultural activities utilize more than 65% of the total land area of the state. Lowland Rainforest account for about 6%, while trees/woodlands/shrubs covers about 22% of the total land area of the state. Most people in the state depend on fuel wood as energy source for cooking while, poles are used for supporting electricity cables, and sawn wood are utilized for production of furniture, pulp, paper and building houses. Oyo state is divided into three senatorial districts namely: Oyo south, Oyo central and Oyo north. The target population for the study was senior secondary students from twelve (12) public and (12) private schools in the three (3) senatorial district of Oyo-state

Experimental Design
Multistage sampling technique was used to select the sample size for this study. The study area was stratified into three Senatorial Districts of Oyo State. Two Local Government Areas (LGAs) were selected from each Senatorial District based on the number of both public and private schools available in the Local Government. Twelve public and twelve private secondary schools in each of the LGA were selected for assessment. Ten (10) students in senior secondary classes were proportionally selected for interview.

Table 1: Distribution of respondents in the study area

S/No	Sampled schools	Type of school	Senatorial Districts	Local Government Areas	No of Respondents
1	Yinbol college, Orogun	Private	Oyo central	Akinyele	10
2	Bishop Philips Academy	Government	Oyo central	Egbeda	10
3	Leire comprehensive college	Private	Oyo central	Egbeda	10
4	Distinct Jubilee international college	Private	Oyo central	Akinyele	10
5	De-lord's model college	Private	Oyo central	Egbeda	10
6	Aponmode moniya high school	Government	Oyo central	Akinyele	10
7	Ajibode grammar school	Government	Oyo central	Akinyele	10
8	Monatan high school	Government	Oyo central	Egbeda/ Lagelu	10
9	Lead city international school	Private	Oyo south	Ibadan north west	10
10	Urban day secondary school Jericho	Government	Oyo south	Ibadan north west	11
11	All saints' college	Private	Oyo south	Ibadan north west/ ido	10
12	Jericho high school	Government	Oyo south	Ibadan north west	10
13	Apata grammar school	Government	Oyo south	Ibadan south west	10
14	Queen's school Apata	Government	Oyo south	Ibadan south west	10
15	Saint Catherine's college	Private	Oyo south	Ibadan south west	10
16	Nesam international school	Private	Oyo south	Ibadan south west	10
17	Morenike memorial comprehensive	Private	Oyo North	Ogbomoso north	10
18	Best legacy international high school	Private	Oyo north	Ogbomoso north	10
19	Oyo state school of science ogbomoso	Government	Oyo north	Ogbomoso north	10
20	Ori Oke community high school	Government	Oyo north	Ogbomoso north	10
21	Ogbomoso Baptist high school	Government	Oyo north	Ogbomoso south	9
22	Smith international Baptist academy	Private	Oyo north	Ogbomoso south	10
23	Caretaker community high school	Government	Oyo north	Ogbomoso south	10
24	Olafunmi comprehensive college	Private	Oyo north	Ogbomoso south	10
	Total	**24**	**3**	**6**	**240**

Data collection

Data was collected by using a semi-structured questionnaire administered to the respondents in their classrooms under strict supervision.

Data Analysis

Data collected was analyzed by using descriptive statistics and regression analysis. The descriptive statistics was used in determining student's awareness of Forestry as a course of study, their perception of Forestry and Environmental Education, their knowledge of environmental issues and perceived benefits derived from the forest. The regression analysis was used in identifying the factors influencing student's perception of Forestry and Environmental Education where Perception (p)-dependent variable. The independent variables

include the following: Age, measured at exact level, Type of school: Government (1), Private (2), Household size measures at exact level, Class: SS1 (1), SS 11(2), SS111 (3), Awareness of forestry: Yes (1), No (0), Environmental issues: Yes (1), No (0).

RESULTS

The result as presented in table 2 revealed that 60.4% of the respondents were female while 39.6% of them were male. In addition, 81.7% of the respondents were between 13-16 years of age, 17.9% of them were between 17-20years of age while only 0.4% of the respondents were above 20 years of age. The result also shows that 50.4% of the respondents were from private owned schools while 49.6% of them were from government

schools. Furthermore, the result also revealed that 82.5% of the respondents had a household size of 5-8 persons, 13.8% of them had a household size of 1-4 persons while only 3.8% had a household size of more than 8 persons. The result also shows that 68.8% of the respondents were in senior secondary school (11 class), 20% of them in senior secondary school (1 class) while 11.3% of them were in senior secondary (111 class).

Table 2: Distribution of respondents by personal characteristics (n=240)

Variable	Frequency	Percentage
Sex		
Male	95	39.6
Female	145	60.4
Age(years)		
13-16	196	81.7
17-20	43	17.9
>20	1	0.4
Type of school		
Private	121	50.4
Government	119	49.6
Household size		
1-4persons	33	13.8
5-8persons	198	82.5
>8persons	9	3.8
Class		
SS1	48	20.0
SS2	165	68.8
SS3	27	11.3

Results on the awareness of forestry as a course of study among the respondents in the study area as revealed in Table 3 shows that 89.9% and 95.0% of students in government and private schools respectively were aware of forestry as a course of study while 10.1% and 5.0% of the students in government and public schools respectively were not aware of forestry as a course.

Table 3: Distribution of respondents by awareness of forestry as a course of study

Awareness	Government School	%	Private school	%	Total	Proportion %
Yes	107	89.9	115	95.0	222	92.5
No	12	10.1	6	5.00	18	7.5
Total	119	100	121	100.0	240	100

Results on respondent's perception of Forestry and Environmental Education as shown in Table 4 below shows that majority of the students both in private (95.9%) and government (99.2%) schools agreed that protection of the environment is important while only 4.1% and 0.8% of the students disagreed. Majority (73.6%) of the students in private schools in the study area also disagreed that the state of the environment is satisfactory while (47.1%) of the government school's student refuted the claim. The results also show that most students in private (89.3%) and government (81.5%) schools agreed that deforestation should be totally discouraged in Oyo State. Majority of the students in private (90.1%) and government (95.0%) schools in the study area were in agreement more educational programs focusing on environmental issues should be taught in secondary schools because the knowledge gained about environment gives a positive attitude towards environment.

In Table 5 below, students' responses to statements on environmental issues show that most students from private (89.3%, 57.3%) and government

(73.1%, 69.7%) schools agreed that overuse of fertilizers and intensive crop production has contributed to land and environmental degradation. The results also revealed that majority of the students in both private (91.7%, 83.5%) and government (83.2% and 81.5%) schools were in agreement that Inappropriate waste disposal and oil spillage causes major environmental problems in our society. The result also showed that 85.1% and 79.8% of the students in both private and government schools in the study area believes that air pollution is an important environmental issue in Nigeria while only 14.9% and 20.2% of the students disagrees with this statement. The students in private schools (73.6%) agreed that urbanization was one of the causes of deforestation" while (65.5%) of the students in government schools agreed with this statement.

The three-point Likert scale was used in assessing the students' response on the perceived benefits of forest and a healthy environment as shown in table 6 below. Using the mean score to rank the perceived benefit of forest and a healthy environment as indicated by the respondents, tree roots helps in absorbing surface water (1.73 $\pm$0.75) was ranked 1st, forest creates job opportunities for people (1.62 +0.75) was ranked 2nd , forest and woodlands play important role in protecting the environment (1.55 $\pm$0.60) was ranked 3rd while trees provides shade for humans and animals (1.48 $\pm$0.70) and a clean and well protected environment is a key building to a healthy environment (1.43 $\pm$0.65), was ranked 4th and 5th respectively.

Table 4: Distribution of respondents by their perception of forestry and Environmental Education

Statement	Private Schools Yes	Schools %	Private No	Schools %	Government Yes	School %	Government No	Schools %
Environmental protection is important	116	95.9	5	4.1	118	99.2	1	0.8
Current state of environment is satisfactory	32	26.4	89	73.6	63	52.9	56	47.1
Protection of the forest is important for the environment	112	92.6	9	7.4	105	88.2	14	11.8
Good environmental conditions are of public interest	107	88.4	14	11.6	108	90.8	11	9.2
Deforestation should be discouraged	108	89.3	13	10.7	107	81.5	22	18.5
Educational programs focusing on environmental issues is needed at schools	109	90.1	12	9.9	113	95.0	6	5.0

Table 5: Knowledge on environmental issues in the study area

Environmental issues	Private Schools Yes	Schools %	Private No	Schools %	Government Yes	School %	Government No	Schools %
Overuse of fertilizers contributed to land degradation	108	89.3	13	10.7	87	73.1	32	26.9
Intensive crop production leads to environmental degradation	69	57.0	52	43.0	83	69.7	36	30.3
Inappropriate waste disposal is one of the environmental problem	111	91.7	10	8.3	99	83.2	20	16.8
Oil spillage causes major environmental problem	101	83.5	20	16.5	97	81.5	22	18.5
Urbanization is one of the causes of deforestation	89	73.6	32	26.4	78	65.5	41	34.5
Air pollution is an important environmental issue in Nigeria	103	85.1	18	14.9	95	79.8	24	20.2

Table 6: Benefits derived from forest and the environment in the study area

Perceived benefits of forest and a healthy environment	Very large extent F (%)	Large extent F (%)	Little extent F (%)	Mean $\pm$(SD)	Ranking
Forest creates job opportunities for people	131 (54.6)	70 (29.2)	39 (16.3)	1.62 $\pm$0.75	2nd
Tree roots helps in absorbing surface water	109 (45.5)	88 (36.7)	43 (17.9)	1.73 $\pm$0.75	1st
Forest and woodlands play important role in protecting the environment	131 (54.6)	86 (35.8)	23 (9.6)	1.55 $\pm$0.66	3rd
Gums, bamboos, honey, herbs and spices are gotten from the forest	156 (65.0)	69 (28.8)	15 (6.3)	1.41 $\pm$0.61	6th
Forest provide a wealth of natural medicines and herbs	174 (72.5)	48 (20.0)	18 (7.5)	1.35 $\pm$0.61	7th
Trees provides shade for humans and animals	153 (63.7)	58 (24.2)	29 (12.1)	1.48 $\pm$0.70	4th
A clean and well-protected environment is a key building to healthy Nigeria	157 (65.4)	61 (25.4)	22 (9.2)	1.43 $\pm$0.65	5th
Maintaining a healthy environment is primary to increasing its quality	164 (68.3)	70 (29.2)	6 (2.5)	1.34 $\pm$0.53	8th

Figures in parentheses are percentages; SD = Standard Deviation

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Maintaining a healthy environment is primary to increasing its quality	164 (68.3)	70 (29.2)	6 (2.5)	1.34 ±0.53	8th

Figures in parentheses are percentages; SD = Standard Deviation

The result in table 7 below shows that type of school was scientifically significant to student's perception of Forestry and Environmental Education with a p-value of 0.023 and accounted for approximately 50 % of the variance of Forestry perception and EE (R^2= 0.524, Adj. R =0.398). Student's awareness of forestry as a career was also scientifically significant to student's perception of forestry and EE with a p-value of 0.045.

Table 7: Regression analysis indicating factors influencing students' perception of forestry and environmental education in the study area

Variable	Coefficient	Standard error	t-statistics	Probability	Decision
Constant			**5.136**	**0.000**	
Age	0.008	0.048	0.159	0.874	Not significant
Type of school	0.279	0.123	2.281	0.023	Significant
Household size	-0.067	0.044	-1.524	0.129	Not significant
Class	-0.043	0.117	-0.368	0.713	Not significant
Awareness	0.151	0.075	2.014	0.045	Significant
Knowledge of Environmental issues	0.170	0.037	4.576	0.000	Significant
Benefits	0.001	0.018	0.045	0.964	Not significant

(R^2= 0.524, R= 0.752, Adj.R =0.398, p=0.05)

DISCUSSION

From the results in table 2 above, it can be deduced that 81.7% of the respondents were between the ages of 13-16 years and their understanding of Environmental Education at an early stage of their lives will play a key role in promoting the development of values, attitude and belief that are conducive to the enhancement of the quality of the environment. The result in table 3 above implies that more awareness is needed in needed in schools, so that all students in both private and government schools in Oyo state are aware of Forestry as a course of study. The results in table 3 also shows that the students were not satisfied with the current state of the environment in the state and much awareness is still needed. The result in table 4 implies that that there is need to incorporate Environmental Education into the school curriculum which is in line with UNICEF (2013) report, it was reported that an inclusive climate change, EE and education on disaster-risk management into school curriculum guarantees the realization of students and children's environmental rights as perceived in articles of the convention on the Rights of the child. The findings in table 4 above are in line with the studies of Omoogun et al. (2014) and Amanchukwu et al. (2015) when they hold that Environmental Education is a roadmap to

environmental awareness and environmental sustainability for future generations, and the developments that are taking place around the world are pointers that call for stimulation and re-orientation. The results in table 5 above is in line with the findings of Kofoworola (2007), Ephrampoush and Maghadam (2005), Rahardgan et al. (2004) and Grodzinska et al. (2003) which pointed out that deliberate dumping of household solid waste into drainage, flooding, industrialization amongst others are the problems of environmental degradation in Nigeria. It was observed in table 6 above that students from both Government and Private schools were fully aware of the perceived benefits of the forest and a healthy environment. Since, the students are the future of a nation, those who are exposed to environmental knowledge may protect and safeguard the environment. The results in table 7 show that student's knowledge of environmental issues has contributed significantly to student's perception of forestry and EE with a p-value of 0.000. The results further reveal that some independent variables such as age, household size, class and perceived benefits of forestry and a healthy environment were not scientifically significant to student's perception of Forestry and Environmental Education.

CONCLUSION

The study revealed that both students in government and private schools were aware of forestry and environmental education. Majority of the students have high level of knowledge about environmental issues in Oyo State although they were not satisfied with the current state of environment in the State. It was also indicated from the results that the type of school the students attended influenced their awareness on Forestry as a career and their perception on environmental issues, Forestry and Environmental Science Education in Oyo State.

Recommendations

Based on the findings of this study, it is therefore recommended that:

i. More Orientation and re-orientation programs on the issue of environmental protection are needed in schools so that the students can develop a positive attitude towards the environment.

ii. There should be increased awareness on environmental education since the students were not satisfied with the current state of the environment in Oyo State

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