



Assessment of Environmental Education Awareness of Secondary School Teachers in Chikun Local Government, Kaduna State

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ABSTRACT: *This study assessed the environmental education awareness of secondary school teachers in Chikun local government area of Kaduna State. Data for the study were obtained through the use of structured questionnaires administered to eighty (80) respondents. The respondents were selected via stratified random sampling procedure. Data collected were presented and analyzed using simple descriptive statistical techniques. Results from this study showed that majority (81.25%) of the respondents were males. Majority (33.75%) of the respondents were within the age grade of 26-35. Majority (55%) were singles with 10% of the total sampled population as widowed. It was observed that majority (87.5%) of the science teachers that participated in the survey had obtained a tertiary education as their highest level of education. It was further confirmed that majority (58.75%) of the science teachers from the various secondary schools surveyed had their tertiary education where environmental courses were taught at the level of National Certificate of Education. Majority (46.25%) of the respondent indicated to have average knowledge of the term environment. 60% of the respondents were well aware of erosion/ soil degradation issues and 52.5% were well aware of environmental pollution concerns. It was observed that majority (91.25%) of the respondents sampled in the selected secondary schools agreed that environmental education should be incorporated into lessons in order to raise the awareness of the student. Majority (72.5%) of the respondent reported that the student showed interest in environmental education. Similarly, majority (61.25%) of the respondents reported that the performance of their students in environmental related subjects are averaged. 50% of the respondents from all the sampled schools agreed that no environmental education activities/competitions were organized in their respective secondary schools. Based on the findings of the study. It was recommended that there is the need for regular trainings, workshops and conferences for teachers to enhance their knowledge and awareness of environmental education.*

KEYWORDS: *Environmental Education, Awareness, Secondary School Teachers, Chikun, Kaduna.*

INTRODUCTION

Our environment is inseparable from life. There is every need for the proper management of our world. This calls for the need for environmental awareness to all and sundry in schools at all levels especially in developing countries such as Nigeria which has little or no provision for such awareness in curriculum/syllabus in areas of some related subject(s) among which is Environmental Education (EE) (Bosah, 2013). This activated some elites in the developed world-organization for Economic and Cooperative Development (OECD) in April 1971 to analyse the serious need and urgency of establishing and developing new teaching programmes

at school, college and university (Orodho, 2012). Many developing countries are beginning to realize the role of environmental education in abating the environmental issues - the African Social and Environmental Studies Programmes (ASESP) with its seat in Nairobi, Kenya encourages and promotes the creation of environmental awareness and protection in pupils and student at the same time develops useful activities for pupils and student at the same time develops useful activities for pupils during instruction (Bosah, 2013).

According to Bosah, (2013), the desire and commitment of government to tackle environment education issues in Nigeria pointed to the need to develop a baseline survey, the Nigeria living standard survey 2003/2004 for monitoring and evaluation of the various government programmes like tree planting campaign, sustainable environmental management technique such as soil erosion control, shelter belt control, afforestation and reforestation, biodegradation programme for pollution amongst others (Jekayinfa and Yusuf, 2008). Since independence in 1960, successive Nigerian government have initiated and promulgated differences policies programmes and projects for environmental education in Nigeria. However, Kola-Olusanya (2006) argues that many of these policies and programmes have failed to attain their objectives or fallen short of the ends they were set up to attain.

Environmental Education (EE) is defined as the educational and cultural process through which subjects build knowledge and develop capacities, attitudes, and values that allow them to understand the environmental and socio-cultural reality in order to establish a responsible relationship with the environment and implement actions to address environmental problems (Luna-Krauletz *et al.*, 2021). That is why EE has been fostered as a benchmark in the pedagogical and institutional field (UNESCO, 2019). However, the solution to current environmental problems is not only a matter of technical or pedagogical aspects, but it must also transcend beyond classroom education and consider wider educational spaces where the subjects can influence and can also be influenced (dos-Santos *et al.*, 2020). In this context, the EE must be articulated with other fields of knowledge and have a multi-referential approach (Luna-Krauletz *et al.*, 2021). EE refers to organized efforts to teach how natural environments function, and particularly, how human beings can manage behaviour and to field integrating disciplines such as biology, chemistry, physics, ecology, earth science, atmospheric science, mathematics, and geography.

The United Nations Educational, Scientific and Cultural Education (UNESCO, 2019) states that EE is vital in imparting an inherent respect for nature among society and in enhancing public environmental awareness. UNESCO emphasizes the role of EE in safeguarding future global developments of societal quality of life (QOL), through the protection of the environment, poverty reduction, minimization of inequalities and insurance of sustainable development. The term often implies education within the school system, from primary to post-secondary. However, it sometimes includes all efforts to educate the public and other audiences, including print materials, websites, media campaigns etc. There are also ways that environmental education is taught outside the traditional classroom. Aquariums, zoos, parks, and nature centres all have ways of teaching the public about the environment.

Abdullahi *et al.* (2018) has the opinion that EE is a process of learning to understand the interaction of humans and the environment and how human need to manage the environment as smart with full responsibilities towards a harmonious and peaceful life. This study will look at the Assessment of Environmental Education Awareness Amongst Secondary School

Teachers in Chikun LGA, Kaduna State by determining the socio demographic characteristics of the respondents in Chikun local govt area; examining the level of awareness of secondary school teachers to environmental education and the effect of environmental education on students' academic performance.

RESEARCH QUESTIONS

The following research questions are set to be answered by the study: What is the socio demographic characteristics of secondary school teachers in Chikun local government area? What is the level of awareness of secondary school teachers to environmental education? What is the effect of environmental education on students' academic performance?

MATERIALS AND METHODS

Study area

Chikun local government area is one of the local government areas that constitutes the Kaduna Capital Territory located within latitude 10°17'6''N and longitude 7°6'37''E with a mass of 4,446 km² and a density of 112.5/km². According to the National Population Census (NPC, 2006), Chikun has a population strength of 372,272. The Local Government consist of 12 wards which includes; Kujama which is the capital, Gwagwada, Kakau, Kunai, Narayi, Nasarawa, Rido, Sabon Tasha, Anguwan Yelwa, S/Garin Arewa Tirkaniya, Chikun.

Chikun Local Government has a number of primary and post primary schools, private and government owned including federal higher institutions e.g. CASSS unit of Kaduna Polytechnic.

Sample Size and Sampling Procedure

In order to achieve the set objectives, the sample size of eighty (80) was arrived at by randomly selecting ten (10) science teachers from the eight (8) secondary schools randomly selected from Chikun local government area. Stratified random sampling procedure was adopted in the selection of the respondent to avoid any biasedness.

Data Collection Procedure

The selected secondary schools were each visited on a reconnaissance survey to find and establish their location and subsequently questionnaire were shared to science teachers in the various schools. In each school, ten (10) questionnaires were shared randomly amongst the science inclined teachers which are our target population. A total number of eighty (80) questionnaires were distributed in total to the eight (8) secondary schools which represent 100%. After the survey exercise, only seventy-four (74) were successfully retrieved and after check and cross check to ensure that only valid data were used for the study, it was discovered that the seventy-four (74) were properly filled and fit for used for further data analysis. The discarded retrieved questionnaire had some not completely filled while others were not retrieved due to the absence of some teachers when we returned for collection the next day. The seventy-four (74) filled questionnaire ensured we had 92.5% retrieval rate. Although a 100% was anticipated but 92.5% surpassed the threshold mark of 50% as recommended hence the study considered the number to be sufficient for use in the data analysis. The breakdown of the distribution and retrieval from each secondary school is as presented in Table 1.

Table 1: Number of Questionnaire Distributed and Retrieved

Secondary Schools	Distributed	Retrieved	Rate (%)
GJSS Chikun	10	10	100
GSS Kaku	10	10	100
GSS Kujama	10	8	80
GSS Narayi	10	10	100
GJSS Nassarawa	10	8	80
GSS Sabon Tasha	10	9	90
GJSS Buruku	10	9	90
GJSS Rido	10	10	100
Total	80	74	92.5

[Source: Field Survey (2023)]

Methods of Data Analysis

Statistical analysis was used to analyse the data obtained from the field. Descriptive statistics such as percentages, frequency distribution, bar and pie charts were principally used to describe and interpret the results. Descriptive statistics was thus used to answer all the set-out objectives in the study.

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

Presentation and Analysis of Data

The presentation and analysis of results from the study were captured in Percentages, table, charts in the whole of this chapter.

Respondents' Socio Demographic Characteristics:

The demographic information collated on the study respondents are graphically presented in Table 2. The result depicted that the majority (81.25%) of the study participants were males with 18.75% females. Also, the result showed that 33.75% of the participants were within the age grade of 26-35 which constituted the majority whereas 26.25%, 18.75% and 21.25% participants were well within the age bracket of 36-45, 18-25 and 46 and above respectively. Furthermore, the result of the survey also showed that 87.5% of the science teachers that participated in the survey had obtained a tertiary education as their highest level of education while just about 3.75% of them had a secondary learning and none of them had primary education as the highest level of education. Lastly, the study revealed that majority (55%) of our respondents are singles whereas 35% of them were married. Those that are widowed amongst them where at 10%.

Table 2: Socio-demographic characteristics of respondents

Sl. No.	Variables Percentage	Frequency	Percentage (%)	Cumulative (%)
1.	Age (years)			
	18 – 25	15	18.75	18.75
	26 – 35	27	33.75	52.50
	36 – 45	21	26.25	78.75
	46 and above	17	21.25	100
2.	Sex			
	Male	65	81.25	81.25
	Female	15	18.75	100
3.	Marital Status			
	Single	44	55.00	55.00
	Married	28	35.00	90.00
	Widowed	8	10.00	100
4.	Education			
	Primary	-	-	-
	Secondary	3	3.37	3.75
	Tertiary	70	87.50	91.25
	Others	7	8.75	100

[Source: Field Survey (2023)]

Level of awareness of Secondary School Teachers to Environmental Education:

In order for us to be able to examine the level of awareness of secondary school teachers to environmental education, we found out their highest level of education, their knowledge of the term environment and their knowledge about a number of key environmental concepts.

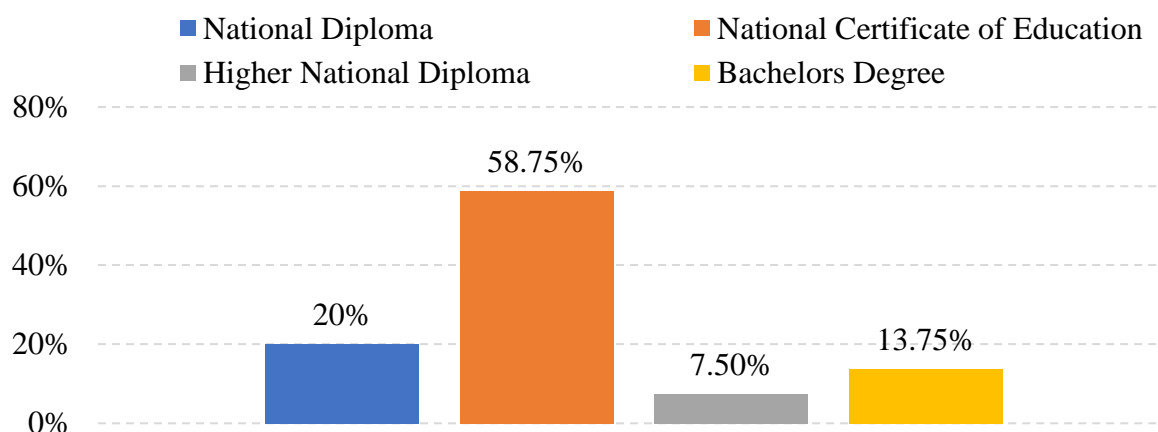


Figure 1: Highest level of education where environmental courses were taught

Results depicted that majority (58.75%) of the science teachers from the various secondary schools surveyed had their tertiary education where environmental courses were taught at the level of National Certificate of Education (NCE). Around 20% had National Diplomas (ND), 13.75% had Bachelor's Degree (BSc) as their highest level of education and 7.5% of them which represented the overall least percentage had Higher National Diploma (HND) as their highest level of education. The result goes to show that majority of the respondents in the selected schools sampled are NCE holders and hence, trained teachers by profession. This therefore provides a good platform for environmental education.

To further establish the level of awareness of the teachers to environmental education, questions were asked about their knowledge of the term environment (Figure 2).

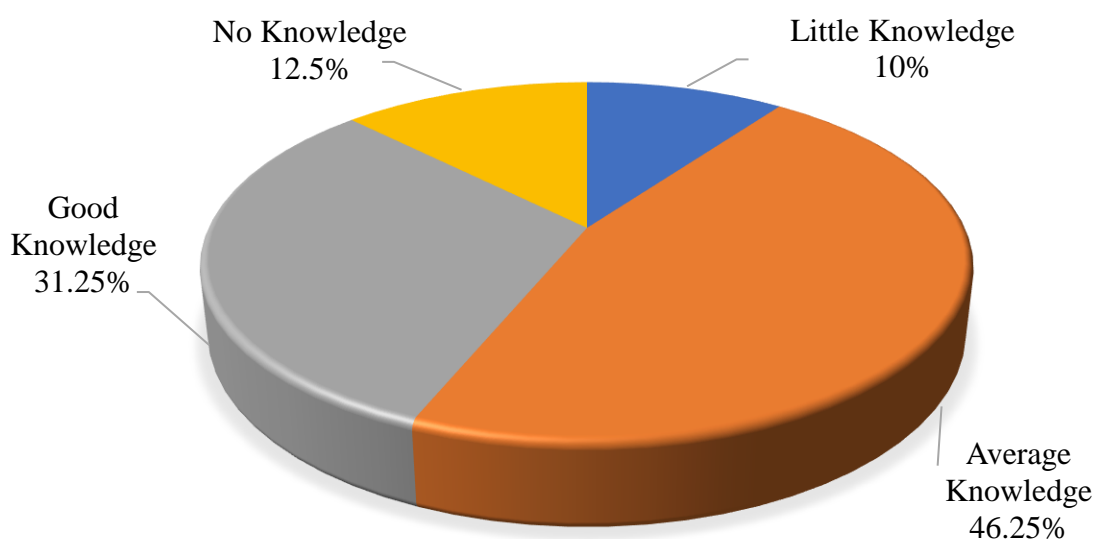


Figure 2: Knowledge of the Environment

The result of the survey showed that only 25% of the respondent have a good knowledge of the term environment hence the need for more teachers to be aware of the term for them to be able to pass down the information to the student under their tutelage. 46.25% of the respondent indicated to have average knowledge of the term which implies that they have heard about it and are able explain to explain some concepts that has to do with the environment. 10% claimed to have little knowledge whereas 12.5% reported that the don't know anything about the term environment. This is a call for the government and the authorities to organize trainings, workshops and conferences from time to time in order to train the trainers where these teachers can be properly informed so they can easily cascade the information to the students thus helping in raising their awareness to environmental issues.

The result showed that 42.5% of the respondents were averagely aware of the concepts climate change/ global warming. 26.25% reported to be well aware whereas 20% and 11.25% claimed to be either not aware or least aware respectively. The survey obviously depicted that 60% of the sampled respondents were well aware of the environmental concept erosion/soil degradation. 17.5% indicated averagely aware, 15% reported least aware and 7.5% claimed not to be aware of the concept. Similarly, 36.25% indicated to be least aware of deforestation/ afforestation matters, 13% reported to be well aware, 28.75% claimed average awareness and 18.75% revealed to be not aware.

Table 3: Results showing the level of awareness of the science teachers to environmental concepts using Likert scale.

Environmental Concepts	Not Aware Frequency (%)	Least Aware Frequency (%)	Averagely Aware Frequency (%)	Well Aware Frequency (%)
Climate change/global warming	16 (20)	9 (11.25)	34 (42.5)	21 (26.25)
Erosion/soil degradation	6 (7.5)	12 (15)	14 (17.5)	48 (60)
Deforestation/afforestation	15 (18.75)	29 (36.25)	23 (28.75)	13 (16.25)
Waste Management	8 (10)	21 (26.25)	32 (40)	19 (23.75)
Biodiversity loss	24 (30)	25 (31.25)	17 (21.25)	14 (17.5)
Environmental pollution	5 (6.25)	13 (16.25)	20 (25)	42 (52.5)

[Source: Summarized computational output (2023)]

(Figures in parenthesis represents the percentages)

Results further showed that 40% of the respondents reported average awareness about waste management. 23.75% claimed to be well aware, 26.25% reported to be least aware and 10% indicated not to be aware of the concept. 30% of the respondents revealed not to be aware of any concept called biodiversity loss, 31.25% claimed to be least aware and 17.5% reported to know the concept well. Finally, the survey revealed that 52.5% of the sampled respondents from the selected secondary schools in Chikun local government area of Kaduna State were well aware of the concept of environmental pollution, followed by 25% respondents who reported average awareness. 6.25% claimed not to be aware whereas 16.25% concluded to be least aware of the concept.

Effect of Environmental Education on Students' Academic Performance:

In order to examine the effects of environmental education on students' academic performance, a number of questions were asked which includes incorporation of environmental education in lessons, students' interest in environmental education, students' performance in environmental education and organization of environmental education competitions/ activities as presented in Table 4 and Table 5.

Results from the survey carried out showed that majority (91.25%) of the respondents sampled in the selected secondary schools agreed that environmental education should be incorporated into lessons in order to raise the awareness of the student whereas 8.75% disagreed.

Table 4: Incorporation of Environmental Education in Secondary Schools Lesson

Respondents	Frequency N=80	Percentages (%)
Agreed	73	91.25
Disagreed	7	8.75
TOTAL	80	100

[Source: Field Survey (2023)]

Table 5 shows us the percentage of the students that are interested in environmental education as seen below.

Table 5: Students interest in environmental education in secondary schools

Respondents	Frequency N=80	Percentages (%)
YES	58	72.5
NO	20	25
NO RESPONSE	2	2.50
TOTAL	80	100

[Source: Field Survey (2023)]

The survey results indicated clearly that majority (72.5%) of the respondent reported that the student showed interest in environmental education whereas 25% were not interested. 2.5% of the respondents did not respond.

In order to further provide answer to the third objective, students’ performance on environmental related subjects were probed and the result was presented in Figure 3.

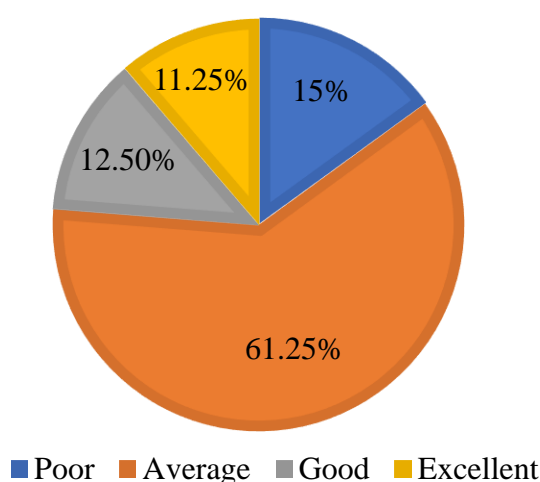


Figure 3: Students performance on environmental related subjects

The results of the survey done depicted that 61.25% of the respondents which represent the majority reported that the performance of their students in environmental related subjects were averaged. In the same vein, 15% claimed the performance of the student in environmental related subjects are poor. Only 11.25% of the respondents indicated an excellent performance whereas 12.5% reported that student performance was good.

Finally, the survey probed how frequent the schools organized activities/competitions in the area of environmental education and the result was presented in figure 4. The results showed that majority (50%) of the respondents from all the sampled schools agreed that no environmental education activities/ competitions were organized in their respective secondary schools whereas 46.25% of them claimed that organization of environmental education competitions and activities were seldom. Only 3.75% of the respondents indicated that environmental education activities and competition takes place in their various secondary schools.

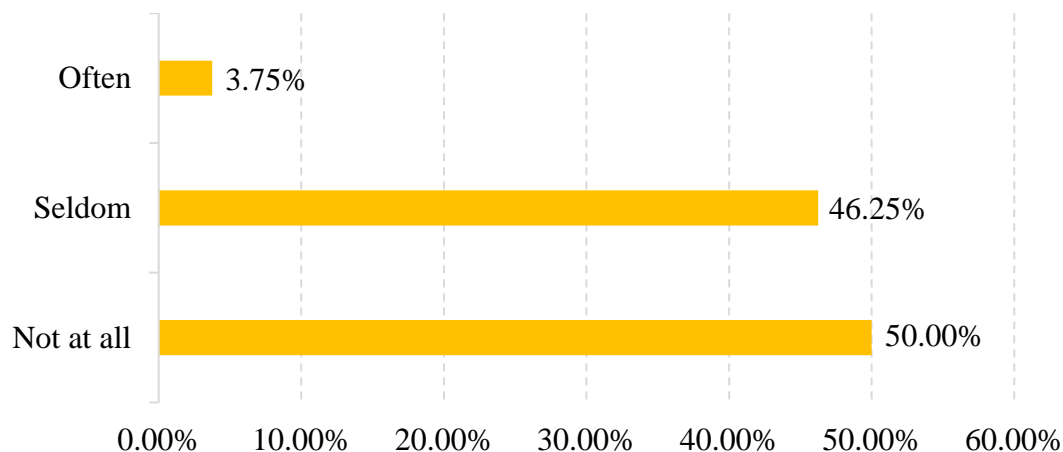


Figure 4: Organization of environmental education activities/competitions

DISCUSSION OF FINDINGS

The study on assessment of environmental education awareness of secondary school teachers in Chikun local government, Kaduna State was carried out and the results showed that the majority (81.25%) of the study participants were males with 18.75% females. This finding is akin to the studies done by Francis (2022) in Ramat Polytechnic, Maiduguri who revealed that 62.5% were males and 37.5% were females. Similarly, Abdullahi *et al.* (2018) did a study on the assessment of environmental awareness of teachers in secondary schools in Dutse, Jigawa State where he reported that 61.7% of the respondents were males and 38.3% were females. This could be attributed to the fact that most parents consider girls child education of less importance and hence, they are reluctant to send them for further studies after the basics. It could either be due to religion or economic power. Also, the result showed that 33.75% of the participants were within the age grade of 26-35 which constituted the majority whereas 26.25%, 18.75% and 21.25% participants were well within the age bracket of 36-45, 18-25 and 46 and above respectively. Abdullahi *et al.* (2018) findings when it comes to the age distribution where it claimed that the highest respondents were within the age range of 30-41 is in contrast with the findings in this research. The implication is that most of the teachers enrol to further their education or were engaged elsewhere before finally accepting to teach which makes them a little older. Furthermore, the result of the survey also showed that 87.5% of the science teachers that participated in the survey had obtained a tertiary education as their highest level of education while just about 3.75% of them had a secondary learning and none of them had primary education as the highest level of education. Lastly, the study revealed that majority (55%) of our respondents were singles whereas 35% of them were married. Only 10% of our respondents were widowed. This completely agreed with the study of Francis (2022) in Ramat Polytechnic, Maiduguri which revealed that 80% of the respondents were singles and 20% married.

Results depicted that majority (58.75%) of the science teachers from the various secondary schools surveyed had their tertiary education where environmental courses were taught at the level of National Certificate of Education (NCE). 20% had National Diplomas (ND), 13.75% had Bachelor's Degree (BSc) as their highest level of education and 7.5% of them which represented the overall least percentage had Higher National Diploma (HND) as their highest level of education. The result goes to show that majority of the respondents in the selected schools sampled are NCE holders and hence, trained teachers by profession. This therefore provides a good platform for environmental education.

The result of the survey showed that only 25% of the respondent have a good knowledge of the term environment hence the need for more teachers to be aware of the term for them to be able to pass down the information to the student under their tutelage. 46.25% of the respondent indicated to have average knowledge of the term which implies that they have heard about it and are able explain to explain some concepts that has to do with the environment. 10% claimed to have little knowledge whereas 12.5% reported that the don't know anything about the term environment. This is a call for the government and the authorities to organize trainings, workshops and conferences from time to time in order to train the trainers where these teachers can be properly informed so they can easily cascade the information to the students thus helping in raising their awareness to environmental issues. This is in total disagreement to the study done by Abdullahi *et al.* (2018) who found that 90.8% of teachers in secondary schools in Dutse were knowledgeable about the term environment.

The result showed that 42.5% of the respondents were averagely aware of the concepts climate change/global warming. 26.25% reported to be well aware whereas 20% and 11.25% claimed to be either not aware or least aware respectively. The survey obviously depicted that 60% of the sampled respondents are well aware of the environmental concept erosion/ soil degradation. 17.5% indicated averagely aware, 15% reported least aware and 7.5% claimed not to be aware of the concept. Similarly, 36.25% indicated to be least aware of deforestation/ afforestation matters, 13% reported to be well aware, 28.75% claimed average awareness and 18.75% revealed to be not aware. Results further showed that 40 % of the respondents reported average awareness about waste management. 23.75% claimed to be well aware, 26.25% reported to be least aware and 10 % indicated not to be aware of the concept. 30% of the respondents revealed not to be aware of any concept called biodiversity loss, 31.25% claimed to be least aware and 17.5% reported to know the concept well. Finally, the survey revealed that 52.5% of the sampled respondents from the selected secondary schools in Chikun local government area of Kaduna State are well aware of the concept of environmental pollution, followed by 25% respondents who reported average awareness. 6.25% claimed not to be aware whereas 16.25% concluded to be least aware of the concept.

From the above presentation, it's clear that 60% of the respondents were well aware of erosion/ soil degradation issues and 52.5% are well aware of environmental pollution concerns. These represented over 50% of the population of the sampled respondents. This could be attributed to the fact that both erosion and environmental pollution issues are common concerns in the society and we often encounter these challenges or easily get information about them. Issues of biodiversity loss and deforestation/afforestation from the survey carried out revealed no (30%) and least (36.25%) respectively. The respondents claimed to be averagely aware (42.5%) about the issues of climate change/ global warming whereas waste management is at 40%. This is despite the fact that climate change/ global warming are global environmental concerns yet, a large of sampled respondents reported average awareness. This could be attributed to either

little access to information in the form literatures or on the internet, or absence of trainings, workshops on the issues that bordered environment. Even the little knowledge may be from their schooling days which may be long ago depending on the year of graduation.

Results from the survey carried out showed that majority (91.25%) of the respondents sampled in the selected secondary schools agreed that environmental education should be incorporated into lessons in order to raise the awareness of the student whereas 8.75% disagreed. This is also in agreement with Abdullahi *et al.*, (2018) who revealed that 75.8% of the teachers in Dutse agreed to the incorporation of environmental education into lessons whereas 24.2% did not. Also, According to Bosah (2013), in environmental education in Nigeria, her study revealed that 100% of respondents agreed that EE should be taught as a core subject in secondary schools. The study further revealed that 70% of respondents agreed that EE should be incorporated into lessons in primary schools and 30% did not. The implication is that both primary and secondary schools' authorities and the government should ensure that EE is either taught as a course or incorporated into lessons so that pupils and students can be aware of their environment at an early age.

The survey results indicated clearly that majority (72.5%) of the respondent reported that the student showed interest in environmental education whereas 25% were not interested. 2.5% of the respondents did not respond. The results of the survey done depicted that 61.25% of the respondents which represent the majority reported that the performance of their students in environmental related subjects are averaged. In the same vein, 15% claimed the performance of the student in environmental related subjects are poor. Only 11.25% of the respondents indicated an excellent performance whereas 12.5% reported that student performance was good.

The results showed that majority (50%) of the respondents from all the sampled schools agreed that no environmental education activities/ competitions were organized in their respective secondary schools whereas 46.25% of them claimed that organization of environmental education competitions and activities were seldom. Only 3.75% of the respondents indicated that environmental education activities and competition takes place in their various secondary schools. Its therefore obvious from the presentation of the results that not much environmental education activities/ competition awareness to boost the understanding of the student about environmental issues is carried out amongst the sampled secondary schools hence, the need for government and school authorities to look into it in order to raise the awareness of both teachers and students alike.

CONCLUSION

The study assessed the environmental education awareness of secondary school teachers in Chikun local government area of Kaduna Sate. It revealed that over 50% of the sampled respondents were aware of some basic environmental concepts like environmental pollution and erosion/ soil degradation. Similarly, majority of them also agreed that EE should be incorporated into lessons and that EE activities/competitions should be carried out regularly since the performance of majority of the students as indicated by the respondents showed average.

Recommendations

Based on the findings of the study, it was recommended that:

- a. There is the need for regular trainings, workshops and conferences for teachers to enhance their knowledge of EE.

- b. There is the need for the government, planners and the school authorities to ensure that EE is incorporated into lessons in order to raise the awareness of both teachers and students.
- c. Core subjects with a lot of environmental contents should be made compulsory in secondary schools e.g. biology, geography, agriculture, social studies, basic science, etc.

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