



Influence of Location on Students' Level of Knowledge of Topical Environmental Issues in Delta State

Ukala, Geoffrey¹ & A.M. Osuafor²

¹Department of Science Education, University of Nigeria, Nsukka.

²Department of Science Education, Nnamdi Azikiwe University, Awka

Corresponding Author: geoffrey.ukala@unn.edu.ng

Abstract

The study sought to determine the influence of location on SS2 Biology students' level of knowledge of topical environmental issues in Delta state. One research question and one null hypothesis guided the study and descriptive survey design was adopted. The population of the study comprised 19,845 SS2 Biology students from 310 public secondary schools in Delta state. The sample for the study comprised 992 Biology students representing 5% of the population. Students Environmental Knowledge Test (SEKT) was used for data collection. A reliability coefficient of 0.84 was obtained for the instrument using Kuder-Richardson 20 (KR-20). Mean and standard deviation was used to answer research question while z-test was used to test the null hypothesis at 0.05 level of significance. The findings of the study revealed that both Urban and Rural SS2 Biology students are not knowledgeable on topical environmental issues in Delta state and there is no significant difference in their knowledge level of topical environmental issues based on location. The findings were exhaustively discussed and far-reaching recommendation made.

Keywords: Environment, Knowledge and Topical environmental Issue

Introduction

Environment is the most vital part of our lives. It is concerned with the surroundings in which we dwell, inhabit and cherish our life. Nowadays, environment is a highly concerned area as a result of the unplanned and unguided human activities which has led to what is now termed environmental issues (Sundaravalli, 2012). At the global level, environmental issue has become a major focus of many physical, biological and environmental education program. As a result, both print and electronic media continue to do an excellent job of sensitizing the global community about current environmental issues and disasters threatening the nations of the world today. According to World Commission on Environment and Development (WCED) in Rawatee (2015) getting the young persons (students) to think critically about environmental issues should be a global priority toward attaining environmental sustainability.

In general, the environment provides all life-support systems needed in the air, on water and on land as well as the materials for accomplishing all developmental aspirations of every nation. Environment entails all surroundings that are capable of affecting the behavior, growth and development of the interacting living things within the system (Adu, Olatundun & Oshati, 2014). However, the nature of our environment today, presents serious problems or issues across the length and breadth of the nation. These environmental issues occur in different forms; for example, climate change, flood, pollution, deforestation, land degradation, loss of bio-diversities, erosion among others. According to Adekunle, Bola and Bolanle (2015) every state in Nigeria is suffering from one or more of these environmental issues. Ukala and Osuafor (2019) lamented over students' careless attitude toward the environment such as bush burning during vacation, open defecation and disposal of non-biodegradables among others.

Environmental issues such as climate change, pollution, droughts, floods etc are often terrible experiences for those affected resulting in loss of life and properties, destroy countless livelihoods and leave



millions of people devastated. It could be recalled that human society formally lived in harmony with his environment, but man exerted an ever-increasing influence on the environment which resulted to the depletion, dilapidation, degradation and destruction of the environment as we experience today (Benneth, 2013, pp.502-503)

According to Owolabi, Gyimah and Amponsah (2012) the following are the expected effects of environmental issues on our global community especially in Nigeria:

- i. Drop in food production and farm yields, because crop yields depend directly on climatic conditions (temperature and rainfall patterns), and could lead to reduction in food yields.
- ii. Floods will become more common due to changing rainfall patterns and glacier melt in the summer.
- iii. Sea level rise could inundate large areas of low lying countries
- iv. The changing climate may indirectly cause misery by increasing the incidence of disease and conflict
- v. Biological diversity, the source of enormous environmental, economic, and cultural value will be threatened.

It is feared that the new challenges presented by these topical issues will make it difficult for many poor nations to achieve the objectives of the Millennium Development Goals (MDGs) presently Sustainable Developmental Goals (SDGs), as this threatens the progress in the fight against environmental degradation, corruption, extreme poverty and disease eradication. Adu, Olatundun and Oshati (2014) reiterated that not that environmental issues are new but they are simply increasing and threatening to become uncontrollable phenomena. They stressed that all efforts to check this social menace is intrinsically futile. According to Ukala and Osuafor (2019) the only way to deal with this menace is to raise student's environmental knowledge through enlightenment/awareness program.

Knowledge is a human faculty resulting from interpreted information, understanding the germinate from combinations of data, information, expression, experience and individual interpretation (Dekel, 2016). Knowledge reflects a more intellectual framework. It is more than to retain acquired information about an issue, but being able to orderly comprehend, apply, analyze, synthesize and evaluate situations (Sakari, 2009). Environmental knowledge is therefore the capacity of an individual to act successfully in daily life on a broad understanding of how people and societies relate to each other and to natural systems, and how they might do so sustainably (Kumud, 2014). It is believed that if people become more knowledgeable, they will in turn become more conscious of the environment and its problems, thus be more motivated to act toward the environment in more responsible way (Fahlquist, 2008).

Empirical studies over the years revealed mixed findings. Some found that students' knowledge on environmental issues are low while others found that students are highly knowledgeable on environmental issues. The following researchers Ukala (2019), Samuel, Ezeudu and Monday (2016), Jamilah, Shuhaida and Nurzali (2015), Onoja (2014), Zarrintaj, Sharifah, Abdul and Mahyar (2013), Kathryn (2010), Olorunfemi (2010), Indrain (2010) and Omotosho (2007) found out that student knowledge of environmental issues is low. On the contrary, Adekunle, Bola and Bolanle (2015) and Arbaat (2009) found out that students have high knowledge of environmental issues. These contradictory findings among scholars left educators worried about students' level of knowledge of topical environmental issues.

Therefore, to effectively determine students' knowledge level on environmental issues facing our nation, it is vital to consider the influence of location of students. Location of individuals or school could also affect students' level of knowledge of environment issues. Location simply means individual's area of residence. Samuel, Ezeudu & Monday (2016) described location as a geographical place or area where somebody live or where something is situated. Location could either be Urban or Rural. The Rural areas are mostly villages. The inhabitants are mostly dominated by closely related individuals who either live closely or disperse within same region. Their source of information is mostly from the few learned individuals or teachers within the area. On the other hand, Urban areas are relatively large, characterized with dense and permanent settlement of individuals with diver's social status.

Adu, et al., (2014) found out that location has significant influence on students' knowledge level of environmental issues. Also finding of Jamilah, et al., (2015) revealed that students location influences their knowledge. On the other hand, Zarrintaj, et al., (2013) found out that students' location has no



significant influence on their knowledge level. The mixed/contradictory findings failed to establish if student's location truly influences their knowledge level of environmental issues. In addition, few studies have been carried out as seen above to determine students' level of knowledge of environmental issues in Nigeria. However, none to the best of the researcher's knowledge has sought to determine influence of location on students' environmental knowledge level in Delta state. It is on this note that the researcher therefore seeks to determine the influence of location on senior secondary school Biology students' level of knowledge of topical environmental issues in Delta state. The problem put in question form therefore is; what is the influence of school location on students' knowledge on topical environmental issues in Delta state?

Purpose of the study

The purpose of the study was to determine the influence of school location on secondary school Biology students' level of knowledge of topical environmental issues in Delta state. Specifically, the study seeks to determine the influence of school location (Urban and Rural) on SS2 Biology students' level of knowledge of topical environmental issues in Delta State.

The null hypothesis "There is no significant difference in the mean scores of Urban and Rural SS2 Biology students on their knowledge level of topical environmental issues in Delta state" was tested at 0.05 level of significance:

Methods

The study adopted descriptive survey design. A survey research design is one in which a group of people or items are studied by collecting and analyzing data from only a part considered to be representative of the entire group (Nworgu, 2015). The study was carried out in Delta state. The choice of the area was anchored on the fact that the area is deeply faced with many environmental issues such as erosion, flooding, population explosion, deforestation, land degradation, bush burning, pollution amongst others which are strongly linked to the effects of human activities in the environment.

The population of the study consists of 19,845 SSII Biology students from 310 secondary schools in Delta state. The sample for the study is made up of 992 (Representing 5% of the population) SSII Biology students, randomly selected from 32 public secondary schools (21 Urban and 11 Rural) obtained through a proportionate stratified sampling technique. Researcher developed instrument termed Students Environmental Knowledge Test (SEKT) was used for data collection. SEKT was developed using West African Senior School Certificate Examination (WASSCE) past question papers and environmental related questions from Biology textbooks. The instrument contains 20 items with each item having multiple choice options numbered A-D.

Each correctly answered question attracts five (5) marks with a highest score of 100. The instruments were divided into two (2) sections, A and B. Section A contain respondents' bio-data while section B contained items that will ascertain students' level of knowledge of topical environmental issues like pollution, climate change, bush burning, land degradation, flooding, deforestation and global warming as it affects humans and their environment. The students were instructed to tick the option that is best suitable to them. The instrument was validated by three experts one each from Department Science education and educational foundation, both from Nnamdi Azikiwe University, Awka and third expert from Department Science education, University of Nigeria, Nsukka. The instruments were trial tested on 40 students from four senior secondary schools in Ika federal constituency which was outside the study area but share similar characteristics with the study area.

The reliability of the items in the instruments was determined using Kuder-Richardson formula 20 (KR-20) and the reliability coefficients of 0.84 was obtained. The instrument was administered by the researcher with the help of the Biology teachers in the selected schools to facilitate data collection. Mean and standard deviation were used to answer the research questions while z-test was used to test the null hypothesis at 0.05 level of significance. The decision rule was, when mean score is less than 50 it is seen as not knowledgeable while mean score of 50 and above is knowledgeable. In the test of hypothesis, where p-value is less than 0.05, the null hypothesis was rejected; otherwise, the null hypothesis was not rejected.



Results

The results of the study are presented in line with the research questions.

Research Question: What is the mean score of Urban and Rural SS2 Biology students on their knowledge of topical environmental issues in Delta state?

Table 1: Mean Knowledge Scores of Urban and Rural Biology Students on Topical Environmental Issues

Gender	N	\bar{x}	SD	Remark
Urban	570	40.67	15.04	Not Knowledgeable
Rural	422	40.30	14.64	Not Knowledgeable
Total	992	40.49	14.84	Not Knowledgeable

Table 1 shows that Urban SS2 Biology students have knowledge mean score of 40.67 with a standard deviation of 15.04 while Rural students have mean score of 40.30 with a standard deviation of 14.64 on knowledge of topical environmental issues. The result showed that the total knowledge mean score of Urban and Rural SS2 Biology students is 40.49 with a standard deviation of 14.84 which is less than 50.00 mean benchmark for the study. Thus, both Urban and Rural SS2 Biology students are not knowledgeable of topical environmental issues in Delta state.

Hypothesis: There is no significant difference in the mean score of SS2 Urban and Rural Biology students on their knowledge level of topical environmental issues in Delta state.

Table 2: z-test of significance difference between the Mean Scores of Urban and Rural Students' Level of Knowledge of Topical Environmental Issues

Gender	N	\bar{x}	SD	Df	t	pvalue	Decision
Urban	570	40.67	15.03	990	.389	.697	Not significant
Rural	422	40.30	14.63				

The result in Table 2 showed a t value of .389 with a significant Pvalue of .697 which is greater than 0.05 level of significance for the study. The null hypothesis was therefore not rejected. Thus, there is no significant difference in the mean score of Urban and Rural SS2 Biology students on their knowledge level of topical environmental issues in Delta state. Therefore, students school location has no significant influence on their knowledge level on topical environmental issues in Delta state.

Discussion

The result of the study revealed that both Urban and Rural SS2 Biology students have low knowledge (not knowledgeable) on environmental issues in Delta state. In the test of significance, the study further revealed that there is no significant difference in the mean score of SS2 Urban and Rural Biology students on their knowledge level on topical environmental issues in Delta state. Although much work has not been done in this area. However, the findings of this study agreed with Adekunle et al (2015) who also found out that there is no significant difference in the mean score of Urban and Rural students on their knowledge level of environmental issues in Akure South Local Government Area of Ondo State. This by implication suggests that more environmental concepts should be incorporated into the school curriculum so as to improve student's knowledge on environmental issues and research should also be encouraged in this area.

Conclusion

Based on the findings of the study, it was revealed that biology students' in Delta state possesses low knowledge level of topical environmental issues and also that location has no influence on students' knowledge level of topical issues.



Recommendations

1. Subjects like Biology, Chemistry, Basic science and Agricultural science which treat aspect of environmental issues should be properly utilized by teachers at all level to promote adequate knowledge of these issues among students.

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