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UTILIZATION OF EDUCATIONAL MEDIA AND STUDENTS' INTEREST IN BIOLOGY IN ENUGU EAST LOCAL GOVERNMENT AREA OF ENUGU STATE

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Abstract: The study investigated the utilization of educational media and students' interest in Biology in some selected senior secondary schools in Enugu East Local Government Area of Enugu State. The study employed a descriptive survey design. Three research questions guided the study. The instrument for data collection was a structured questionnaire which was adapted by the researcher. The instrument was validated and a reliability coefficient of 0.87 was obtained using Cronbach alpha statistics. The population of the study was 4,042 public senior secondary schools (SSS) in Enugu East L.G.A. A purpose sampling technique was used to sample six public senior secondary schools out of 10 public secondary schools in the area. In each of the six public senior secondary schools sampled, a balloting simple random sampling technique was used to sample 45 biology students from each school. This gave a sample size of 270. Mean and Standard Deviation were used to answer the research questions. The findings of the study revealed that educational media are utilized in teaching of Biology in senior secondary schools to a low extent. It also indicated that students' interest in Biology was increased with the use of educational media. The educational implications were highlighted. The researcher recommended among others that teachers of biology should use various means of educational media to enhance student's interest in the subject. Government should equally provide schools with educational media so as to facilitate teaching and learning.

Keywords: Utilization, Educational Media, Students, Interest, Biology.

Introduction

Science has emerged as the most significant influencing field of study that has improved man's life. Starting as a very refined method of investigation, the way man relates to his environment has been transformed dramatically through technology. For example, diseases can be controlled or total eradicated through the application of the knowledge of science. Environmental awareness as a result of science has culminated in more rational use of resources to aid better living. Emphasizing the role of science in the modern world, Folorunso (2014) maintained that science provides the tools of industrialization and national development. The role played by science in the development of any nation cannot be over emphasized, it is for this reason that governments all over the world, Nigeria not an exception give priority to science education. For example, Nigerian government has always encouraged science instruction especially at the primary and secondary schools where solid foundation in science education is expected to be laid.

In Nigerian secondary schools, one of the sciences being thought is biology. Biology is the scientific study of living things. It is concerned with the study of man and his environments. With the knowledge of biology, students are in the position to understand the structure and functions of different parts of the body, the environment they live and how best to conduct themselves. Comparative Education Study and adaptation Centre, CESAC (2004) maintained that biology provides an avenue for teaching students the ability to apply learned concepts and principles in science related problems. Studying biology is prerequisite for studying so many courses like medicine, nursing, biochemistry, microbiology, pharmacy, dentistry, zoology, botany, just to mention but a few.

The main objective of biology education in Nigeria is that the Nigerian child should observe and explore the environment and develop basic skills in biology. There is also emphasis on developing functional knowledge of biology concepts and principals which will enable the child explain simple natural phenomena and develop attitude towards biology which include critical thinking, reflection, curiosity and objectivity. According to the Federal Republic of Nigeria (FRN, 2004), the objectives of biology teaching in secondary schools are to prepare students to: acquire adequate laboratory and field skills in biology, acquire meaning and relevant knowledge in biology, apply scientific knowledge to everyday life in matters of personal and community health and agriculture, acquire reasonable and functional scientific attitude.

In order to achieve the above objectives, the biology curriculum is intended to provide a modern biology course as well as meet the needs of the society through relevant and functional content, method, process and application (FRN 2004). Biology education can offer employment such as fishery, poultry, piggery, snailing to mention but a few and therefore very important for any growing nation like Nigeria. Therefore for learners to become competent future biologist and scientist, the learners are expected to acquire reasoning ability, hands-on experience and scientific skills and rationalization (Ogujawa & Udoh, 2015).

Despite the importance of biology education, students' achievement in the West African Examination Council (WAEC) and National Examination Council (NECO) continues to deteriorate yearly, particularly in the areas of biology (Akubuiro & Joshua, 2014). Available data on students' achievement in the school certificate biology reveals that on the average, more than 60% of students score below credit level in the senior school certificate biology in the past six years. This could be attributed to teachers' centered method of teaching, lack of qualified and inexperienced biology teachers who could utilize educational media for effective teaching and learning.

From the researcher's point of view, media itself means a method of communication. Educational media refers to channels of communication that carry messages with an instructional purpose. Wildan (2013) stated that educational media are all the materials and tangible means a teacher might use to put into effect and facilitate students' achievement of instructional objectives. Omenge and Priscah (2016) also states: that educational media are the means for transmitting or delivering messages and contents to the learner to achieve specific instruction. Oladejo (2011) refers to educational media as objects or devices, which help the teacher to deliver a lesson much clearer to the learner. Educational media is one of the primary tools in the hands of the teacher for effective teaching in the classroom. Its importance is demonstrated in the popular saying that what I hear I forget, what I hear and see I remember but what I hear, see and do I learn how to do and forgetting is significantly low (Jacob, 2017). Ekpo (2016) advised that the modern day teachers should not attempt teaching without a careful selection and use of educational media. The level of teaching and learning greatly depends on the degree of availability of up-to-date educational media as they form the hub around which teaching –learning process revolve. According to the researcher, accessibility deals with how accessible are the educational media

to the teachers and students for teaching and learning purposes. Irrespective of differences in culture, language, gender and location it has to be accessible to everyone. On the other hand utilization of educational media means making use of available materials that are at the disposal of teachers and students for effective teaching and learning process. Utilization of educational media is like an outlet by which the teacher communicates to the students, thereby making teaching and learning effective. For teaching and learning to be effective, there should be proper utilization of educational media to achieve the educational objectives.

However, it has been noted that in Nigeria education system, little or no attention is paid to the availability of educational media. Sometimes when they are available, they are not accessible; equally, when they are accessible, they are not properly utilized to positively influence the teaching and learning process in senior secondary schools. The question then becomes, will the utilization of educational media arouse interest of biology students so as to enhance academic achievement.

Interest according to Boekaerts and Boscolo (2012) is an effect that relates one's self to the activities that provide the type of novelty, challenge, or aesthetic appeal that one desires. Hidi and Harackiewicz (2010) describe interest as an interactive relation between an individual and certain aspects of his or her environment (e.g. objects, events, ideas). It can be viewed both as a state and as an outlook of a person, and it has a cognitive as well as an affective component. Hidi (2016) considered interest to be a unique motivational variable, as well as a psychological condition that occurs during interactions between persons and their objects of interest, and is characterized by increased attention and concentration. Ubulom (2017, stated that interest is a feeling of likes and dislikes towards an activity. According to (2016), interest is subjective feeling of concentration or curiosity over something. Interest is regarded as learning responses which provide set of readiness for behaviour. Interest involves a combination of what we would like to achieve and how confident we are about achieving it, making the competence component of a child's self- esteem. A major determinant of children's academic interest is of course, the academic performance. Del Favero (2017) have found that the energising function of interest include fostering remembering and understanding material, and stimulating students' positive attitude towards a topic. This view is supported by Hidi and Anderson's (2019) work who argue that interest has a profound effect on students' recollection and retrieval processes, their acquisition of knowledge, and their effort expenditure. In addition, an interested individual is more likely to develop high competency and to receive positive feedback from others (Hidi, 2016). Being interested may also serve as protection against the negative effects of failure (Hidi & Renninger, 2016). In view of the above, this study was embarked upon in order to find out the influence of educational media utilization in stimulating the interest of students in Biology.

Statement of the Problem

In Nigeria, students' performance in secondary school biology has not been encouraging. In spite of the desire for technological development, which needs biology education, there is persistent poor academic achievement of students in the subject. To the best of the researcher's knowledge and based on available literature, there are so many factors which have been attributed to student poor performance in biology, they include teachers use of inappropriate instructional approaches, lack of adequate educational media, poor organization of laboratory activities, lack of commitment to laboratory work by both teachers and students, partial or total absence of laboratory, lack of qualified biology teachers and mode of laboratory activities that are used in biology laboratory. In spite of the desire for technological development, these poor academic performances of students in biology have become a source of concerns to all stakeholders. Can the utilization of educational media arouse students' interest in biology so as to attain academic excellence? Hence, the need to carry out a survey to

investigate the utilization of educational media and students' interest in Biology in Enugu East Local Government Area, Enugu State.

Purpose of the Study

The main purpose of this study is to investigate the utilization of educational media and its influence on students' interest in Biology in secondary schools in Enugu East L.G.A of Enugu State. Specifically, the study sought to:

1. Determine the extent of utilization of educational media in teaching and learning of Biology
2. Find out the extent educational media arouses students' interest in Biology?
3. Ascertain the challenges facing the utilization of educational media for teaching and learning of biology.

Research Questions

The researcher formulated the following research questions which guided the study:

1. To what extent are educational media utilized in learning Biology in secondary schools?
2. To what extent do educational media arouse students' interest in Biology in secondary schools?
3. What are the challenges facing the utilization of educational media in learning biology?

Methods

The study was a quantitative study which adopted a descriptive survey research design. According to Nworgu (2015), descriptive survey research design involves samples of different sub-groups of a population to look at similarities or differences between them at any particular time. Based on this, a descriptive survey research design was considered appropriate for this study. The population of the study was 4,042 public senior secondary schools (SSS) in Enugu East L.G.A. A purpose sampling technique was used to sample six public senior secondary schools out of 10 public secondary schools in the area. In each of the six public senior secondary schools sampled, a balloting simple random sampling technique was used to sample 45 biology students from each school. This gave a sample size of 270 SS2 biology students. The instrument for data collection was a questionnaire titled "utilization of educational media and students interest in biology (UOEMASIB). The UOEMASIB contains five clusters, each containing items which addresses the research questions formulated in the study. The UOEMASIB was validated by three experts, two from science education department of Enugu State University of Science and Technology and one from measurement and evaluation of same university. The instrument was trial tested on 30 SSS 2 students in Enugu North Zone, who were not part of the area but have the characteristics of the study population. Data collected from the trial testing was analyzed using the Cronbach Alpha. The reliability coefficient of 0.87 was obtained. This is a positively high reliability index which confirmed the instrument reliable for the study. Three research questions guided the study. Mean and Standard Deviation were used to answer the research questions. The researcher personally visited the selected schools and obtained permission from the schools' authority for this study. Copies of the questionnaire were personally distributed to the respondents by the researcher and effort was made to see that the respondents understand the contents of the materials and assistance was given where necessary so that they will comply with the directives. At the end of the exercise, copies of the questionnaire administered were returned to the researcher immediately. The personalities of respondents were also kept confidential and anonymous, while research ethics and legal issues in research were also observed.

Analysis of data

Data collected were analyzed using mean and standard deviation in answering the research questions. Values are assigned to the response options as shown below; Very High Extent (VHE)-4 points, High Extent (HE)-3 points, Low Extent (LE)-2points, Very Low Extent- 1 point

Decision Rule

Any item with a criterion mean of 2.50 or above was regarded as High extent while item below 2.50 was regarded as low extent.

Results

The data collected were summarized, analyzed and presented as follows:

Research Questions 1:

To what extent are educational media utilized in learning Biology in secondary schools?

Table 1: Mean and standard deviation of the extent of utilization of educational media in teaching and learning Biology in senior secondary schools

S/N	Item Statement	Mean ($\bar{X}$)	SD	Decision
1.	Computer is used by teachers to teach concept of Biology	1.20	0.29	LE
2.	Televisions are used for the teaching of reproduction in living things	1.16	0.36	LE
3.	Charts are used for the broadening of ideas to help the students write the content of Biology well	1.11	0.21	LE
4.	Posters and radio are used by teachers to teach students how to have interactive session during the instruction of Biology	1.33	0.48	LE
5.	Bulletin and models are used to show the respiratory system of living things	1.30	0.44	LE
	Grand Mean	**1.24**	**0.39**	**LE**

Keys: LE Low Extent, SD Standard Deviation

The above Table 1 shows that educational media are not utilized. This is revealed by the grand mean of 1.24 which is below the bench mark of 2.50 criterion. Hence, teachers and students do not utilize educational media in teaching and learning of Biology in senior secondary schools in Enugu East Local Government Area. This can be deduced from the mean values of items 1 to 5 as all the items have mean ratings that are below 2.50 bench mark.

Research Question 2:

To what extent do educational media arouse students' interest in Biology in secondary schools?

Table 2: Mean and standard deviation of the extent educational media arouse students' interest in learning Biology in senior secondary schools

S/N	Item Statement	Mean ($\bar{X}$)	SD	Decision
6.	I get more interested in learning biology using technology tools	2.60	0.79	HE
7.	I get more confused while using educational media to learn Biology	2.76	0.86	HE
8.	Using educational media for learning biology makes no differences	2.31	0.51	LE
9.	Learning Biology is more encouraging with the use of educational media	2.53	0.88	HE
10.	Technology tools for learning Biology is time wasting	2.50	0.84	HE
	Grand Mean	**2.54**	**0.79**	**HE**

Keys: HE High extent, LE Low Extent, SD Standard Deviation

The above Table 2 shows that educational media arouse students' interest in Biology. This is revealed by the grand mean of 2.54 which is above the bench mark of 2.50 criterion. Hence, educational media arouse students' interest in learning of Biology in senior secondary schools in Enugu East Local Government Area. This can be deduced from the mean values of items 6,7,9 and 10 which have mean ratings that are above 2.50 bench mark.

Research Question 3

What are the challenges facing the utilization of educational media in learning biology?

Table 3: Mean ratings of the challenges facing the utilization of educational media

S/N	Item Statement	Mean ($\bar{X}$)	SD	Decision
11.	Available educational media are obsolete	2.81	0.89	HE
12.	Poor remuneration of teachers	2.77	0.85	HE
13.	Teachers poor knowledge in educational technologies	2.91	0.83	HE
14.	Erratic electric power supply in most parts of the country	2.73	0.81	HE
15.	Lack of finance	2.85	0.94	HE
	Grand Mean	**2.81**	**0.83**	**HE**

Keys: HE High Extent, SD Standard Deviation

The above Table 3 shows the challenges facing the utilization of educational media in Biology. This is revealed by the grand mean of 2.81 which is above the bench mark of 2.50 criterion. Hence, the listed items are the constraints to the full utilization of educational media in learning of Biology in senior secondary schools in Enugu East Local Government Area. This can be deduced from the mean values of items 11-15 which have mean ratings that are above 2.50 bench mark.

Discussion of the findings

The study established that educational media are utilized to a low extent in teaching biology in senior secondary schools in Enugu East L.G.A. The reason for the low utilization of educational media in teaching Biology could be traced to the fact that these facilities are available to a low extent in the first place. The findings are in support of Amuchie (2015) reports that the extent of utilization of educational resources in teaching and learning of physics was very low. This present study is also in agreement with the findings of Eze and Aja (2014) who found that educational media were not adequately utilized in secondary schools in Ebonyi State. The reasons for low extent of utilization of educational media in teaching biology as a subject include but not limited to teachers' incompetency, erratic power supply, low availability of educational media, negligence and laxity towards utilization of educational media in teaching and learning.

Moreover, it was noted that some students find learning Biology more interesting with the use of technological tools, which is in line with Bigler & Hanegan (2011); Peterman, Pan, Robertson, & Lee (2014) and Spernjak, Puhek, & Sorgo (2010) whose research studies indicated that the use of educational technology tools for learning increase students engagement, interest, motivation and satisfaction in learning chemistry and other science subjects. On the contrary, Cheung, Yen & Tsang (2011) stated that students don't necessarily find the

learning of Biology like other subjects more interesting with the use of technology tools except for the particular technology tools which they find acceptable.

In addition, it was noted that challenges like scarcity of technology tools, epileptic power supply to drive those tools, and the obsolete nature of some tools are encountered by the teachers in the course of employing technology tools for the teaching and learning of Biology, which is in line with the position of Beak, Jung and Kim (2018) that in spite of the widely advocated benefits of implementing technology-based teaching/learning activities, there are obstacles preventing teachers and students from using technology in their classrooms and thus its application in Nigerian high schools is still low. Ogunleye, (2017), Ndudi and Chinedu,(2016) however have a contrary view on the calibre of challenges faced in employing technology tools for learning biology by stating that the problem is not about students learning but that most teachers are not prepared to use technology tools and that the majority of the existing school buildings are not equipped to integrate the new media especially in public Schools.

Conclusions of the findings

Based on the analyses made above, the following findings were made:

1. That educational media are utilized to a low extent in teaching biology in senior secondary schools in Enugu East L.G.A
2. It was noted that some students find learning Biology more interesting with the use of technological tools,
3. It is also established that there are challenges encountered by students while learning Biology. Some of this are: scarcity of technology tools, epileptic power supply to drive those tools, some tools are obsolete while some others are quite expensive to afford.

Recommendations

Based on the findings of the study, the researcher made the following recommendations:

1. Government, non-governmental organizations, communities, and other well-meaning individuals should invest in education through provision of educational media in schools in Enugu East L.G.A.
2. Principals (school administration) should encourage the utilization of available educational media for teaching and learning of Biology by giving incentives to teachers that use educational media in teaching. This if done would encourage all teachers to endeavour to use educational media for teaching Biology in senior secondary schools.
3. Governments through the relevant ministries of education should organize seminars and workshops for professional development of teachers. This is because no nation can grow above the quality of her teachers. This will make them equipped to teach the students and help them overcome their fears and negative attitudes toward the utilization for teaching and learning process.
4. Both government and school administration should ensure that the available educational media are maintained by providing technical officers for regular maintenance of the facilities. This when done, would enhance the functionality of facilities for effective utilization.

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