

Application of Audio Visual Aids in The Teaching and Learning of Biology in Secondary Schools in Ikere Local Government Area of Ekiti State

AUTHOR(S): KENNI, Amoke Monisola (Ph.D), FALEMU Funke Aina, AKINWUMI Ibukun Omolara (PhD), DARAMOLA, Mercy Adesola (PhD),

Abstract

The study investigates the application of audio visual aids in the teaching and learning of biology in secondary schools. The design for this study was descriptive survey. The sample size of the study was 100 respondents, For the purpose of this research study the sample was made up of Biology students and teacher of the ten selected secondary schools in Ikere local government area of Ekiti State, who are at present teaching biology as a subject in senior secondary schools. Some of the students are in SSI, SS2 and SS3. The sample population therefore consists of such students and teachers. The instrument for the study was a 20 item self-structured questionnaire. The data were analysed using descriptive statistics tools while chi-square (X^2) was used to test all the hypotheses at 0.05 alpha level of significance. The findings revealed that there was no significant difference in the use of audio-visual materials between male and female students, there was a significant difference in the use of audio-visual materials among students in different classes and there was a significant difference in the use of audio-visual materials among students in different age groups. The study recommended that the ministry of education in Nigeria should enhance that schools do not just have computers, but rather, they should ensure that the computers are effectively utilized in instructional programme in schools. Software learning packages should be made available for use in schools. In this regard, academic research should focus more on the development and validation of these software packages.

Keywords: Technology, Audio Visual Aids, Teaching and Learning,

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**ABOUT
AUTHOR**

Author(s):

KENNI, Amoke Monisola (Ph.D)

Department of Science Education,
School of Science Education,
College of Education,
Bamidele Olumilua University of Education, Science and Technology,
Ikere Ekiti, Nigeria.

FALEMU Funke Aina

Department of Science Education,
College of Education,
Bamidele Olumilua University of Education, Science and Technology,
Ikere, Ekiti State, Nigeria.

AKINWUMI Ibukun Omolara (PhD)

Department of Science Education,
College of Education,
Bamidele Olumilua University of Education, Science and Technology,
Ikere, Ekiti State, Nigeria.

DARAMOLA, Mercy Adesola (PhD)

Department of Science Education
Bamidele Olumilua University of Education, Science and Technology,

Introduction

There is no question that the advancement of modern means of communication has transformed the globe into a global village. Unfortunately, though, technology, like a coin with two sides, has both beneficial and harmful consequences. Individuals benefit from increased knowledge, understanding, and awareness as a result. Rapid societal shifts have occurred as a result of technological progress. Today's methods of problem-solving and communication are in large part the result of technological advancements (Imasuen, 2020).

According to Paul (2010), the internet is a global "network of networks" that links millions of computers together. Within this network, any two computers with an internet connection may exchange data and have conversations with each other. There are LANs that link computers inside the same building, and WANs that link LANs across geographically dispersed areas. More and more personal computers are now part of the private, business, government, and academic networks that it links.

What we now term "audio visual" is the result of rapid technological development towards the end of the 20th century, spurred by the advent of the internet, satellite television, and other similar technologies. Audiovisual, on the other hand, is a phrase that nowadays encompasses the need of a digital, computerised, or networked interactive information channel, Adu (2012). Furthermore, audiovisual electronic communication allows for engagement based on specific attributes and interests. Audiovisual media are a kind of social media that uses web-based technology to turn media monologues into social conversations via the use of easily available and scalable publishing tools. Twitter, Yahoo Messenger, Facebook Messenger, BBM, Whatsapp, 2go, Skype, Google Talk, Google Messenger, iPhone, and Android are all examples. Most individuals utilise these platforms to keep in touch with friends both real and virtual (Asemah & Edegoh, 2018).

Therefore, Facebook was originally a Harvard University-centric platform. A sophomore came up with the idea for it. In 2010, Mark Zuckerberg Facebook was created by stealing photos of Harvard students from a database. The concept originated as a joke in which student looks would be compared to cartoon animals. The site's founders took it down before it was discovered by school officials owing to concerns about its possibly harmful content. The billions of individuals who use the internet to interact through social networking sites every day make the concept of a global village a reality. The usage of social media for long-distance communication has several positive effects (William, et al., 2019). Even though the app was taken down, the concept of a student-run online community was born. The technology was subsequently refined, and Facebook was made available to universities outside Harvard far sooner than anybody had anticipated. After then, the website became accessible to a younger demographic as interest in online communities among high schools grew (Asuquo, 2007). In 2006, Facebook.com made it possible for everyone else to join in. Some secondary schools lack any kind of teaching resources at all, and even those that do often aren't put to good use due to factors including lack of knowledge, inefficiency, and access to reliable energy. A passing grade of "credit" is required for entrance to most universities.

Communication, like every other aspect of modern life, has been revolutionised by technological progress. These days, having access to a computer or the internet is a must in what has essentially become a global community. One of the many ways that people now connect with one another and share information is via the media. Social networking sites like Facebook, 2go, Twitter, and others have attracted millions of users, many of whom are young



adults interested in sharing and discussing news, opinions, and information. The purpose of the research was to determine the impact of media consumption on students' schoolwork. The purpose of this study was to determine the effect of audio and audio visual materials on the teaching and learning of Biology in secondary schools. This is with a view to helping both the special effect of audio and audio-visual aids and other related issues as enumerated in this study.

Hypotheses

1. There is no significant difference in the use of audio-visual materials between male and female students.
2. There is no significant difference in the use of audio-visual materials among students in different classes.
3. There is no significant difference in the use of audio-visual materials among students in different age groups.

Methodology

The research method was discussed under the following sub-headings; Research design. area of the study, population of the study, sample and sampling techniques, instrument for data collection, validation of the instrument, reliability of the instrument, administration of the instrument, data analysis. The research design was employed in the study was survey type of descriptive research. Survey design of descriptive research can be defined as a systematic description of an event in a very factual and accurate manner. For this research, the students was given the questionnaire designed to filled, so that the researcher was able to gather information on application of audio visual aids in teaching Biology in senior secondary school. The populations for the study were the public secondary schools in Ikere Local Government Area of Ekiti State. While the target populations were the Biology students and Biology teachers in the elected schools.

For the purpose of this research study the sample was made up of Biology students and teachers of the ten selected secondary schools in Ikere local government area of Ekiti State, who were presently teaching Biology as a subject in senior secondary schools. Some of the students were in SS1, SS2 and SS3. The sample population therefore consisted of such students and teachers. The sample population was taken from the groups because they were the people involved with the use of audio visual materials in teaching and learning respectively. For these reason, they are in better position to give the required information concerning audio- visual materials as regards to their usefulness availability, how often they are used in teaching and the level of improvisation.

The instrument used for data collection was a self- structured closed ended questionnaire, the questionnaire was made up of sections A and B. Section A involved bio data while section B consisted of 20 items to seek information on the research variables and it was in YES/NO format. The instrument was given to two experts in the field of Biology and test and measurement in Bamidele Olumilua University of Education, Science and Technology, Ikere Ekiti, this is to ensure the content and the face validity. Reliability of the instrument was ascertained by using test-retest method. The instrument was administered on twenty students in of the school outside the sample schools. The instrument was administered twice on the same set of respondents within a space of two weeks and the data collected was analyzed using Pearson's Product Moment Correlation (PPMC). A correlation coefficient of 0.79 was obtained which was high enough and adjudged the instrument reliable for the study.



Data collected from the respondents was analyzed using a t-test and analysis of variance (ANOVA).

Results

The result of data analysis and the interpretation of the result are presented below:

Hypotheses Testing

Hypothesis 1: There is no significant difference in the use of audio-visual materials between male and female students.

Table 1: t-test analysis of the responses of male and female students

Variables	N	Mean	SD	df	t _{cal}	t _{tab}	Decision
Male	47	1.37	0.22	98	0.43	1.96	NS
Female	53	1.39	0.23				

$p < 0.05$ level of significance. NS = Not Significant

Table 1 above reveals the difference in the use of audio-visual materials between male and female students. The mean score of male students (1.37) was less than the mean score of female students (1.39) with mean difference of (0.02). The t-test analysis showed that t_{cal} (0.43) was less than t_{tab} (1.96) at $p < 0.05$ level of significant which implies that there is no significant difference in the use of audio-visual materials between male and female students. Hence, the null hypothesis was upheld.

Hypothesis 2: There is no significant difference in the use of audio-visual materials among students in different classes.

Table 2: ANOVA of responses of students in terms of class

	Sum of square	df	Mean square	F _{cal}	F _{tab}	Sig.	Decision
Between Groups	0.330	2	0.165	3.324	3.03	0.04	S
Within Groups	4.808	97	0.050				
Total	5.138	99					

$p < 0.05$ level of significance. S = Significant

The result of the analysis in table 2 shows the differences in the use of audio-visual materials among students in different classes. The analysis of variance revealed that F_{cal} (3.324) was greater than F_{tab} (3.03) at $p < 0.05$ level of significance. This means that there is a significant difference in the use of audio-visual materials among students of different classes. Hypothesis 2 was therefore not upheld.

Hypothesis 3: There is no significant difference in the use of audio-visual materials among students of different age groups.

Table 3: ANOVA of responses of students in terms of age

	Sum of square	df	Mean square	F _{cal}	F _{tab}	Sig.	Decision
Between Groups	0.445	2	0.223	4.601	3.03	0.012	S
Within Groups	4.693	97	0.048				
Total	5.138	99					

$p < 0.05$ level of significance. S = Significant

The result of the analysis in table 3 shows the differences in the use of audio-visual materials among students of different age groups. The analysis of variance revealed that F_{cal} (4.601) was greater than F_{tab} (3.03) at $p < 0.05$ level of significance. This means that there is a significant difference in the use of audio visual materials among students of different age groups. Hypothesis 3 was therefore not upheld.

Discussion of Findings

The findings of the study revealed that there was no significant difference in the use of audio-visual materials between male and female students. This implies that students' gender has no influence on the use of audio-visual materials for learning Biology. It was however revealed that there was a significant difference in the use of audio-visual materials among students in different classes. This implies that students' class has effect on the use of audio-visual materials for learning Biology. Lastly, it was revealed that there was a significant difference in the use of audio-visual materials among students in different age groups. This implies that students' age has effect on the use of audio-visual materials for learning Biology

Conclusion

The study concluded that the use of audio visual enhance academic performance of biology students.

Recommendations

Based on the finding of the study, the following recommendations are made:

1. Honest effort should be made by government. religions group, parent, teachers association, non-governmental organizations to provide required ICT-based facilities to students, fully well that, products of an educational system are consumed by the economy of the society.
2. Where these facilities are available, a bar of improvement can only be raised on the level of utilization through aggressive but in-service training for the teachers.
3. The ministry of education in Nigeria should enhance that schools do not just have computers, but rather, they stonily ensure that the computers are effectively civilized in instructional programme in schools.
4. Software learning packages should be made available for use in schools. In this regard, academic research should focus more on the development and validation of these software packages.
5. Government should establish centers at local and state levels. Packages are developed by competent hands, this matting it more accessible for utilization.

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