



Influence of Internet Usage on Senior School Students' Achievement in Biology in Osun State, Nigeria

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Abstract. The study examined the influence of internet usage on senior school Biology students' in Osun Central Senatorial District, Nigeria. This research is a descriptive research of the survey type. A total number of six hundred (600) students and 20 schools were selected for this study using simple random sampling technique. The instrument used was a researcher's designed questionnaire. The instrument was validated for data collection by three experts from the Department of Science Education, University of Ilorin, Ilorin, Nigeria. The reliability was determined by test-retest method using Pearson Product Moment Correlation Coefficient and a reliability index of 0.68 was obtained. Two hypotheses were tested at 0.05 alpha level of significance and statistically analyzed using t-test. The first hypothesis was rejected while the second was accepted. The result revealed that access to internet contributes positively to the achievement of biology students, it was further revealed that student who use internet for academic purpose and those who do not use it for academic purpose perform at almost the same level. It is therefore concluded that internet usage had positive influence on the academic achievement of Biology students but it is not too significant.

Keywords: Achievement, Influence, Scoring Level, Internet

1. Introduction

There has been a great deal of efforts to improve science teaching and learning over the years worldwide. In recent times this efforts are channeled towards classrooms that are student-centered, activity-oriented and focused on understanding rather than rote-learning and simple recall of knowledge (Owolabi, 2007). Science education is a fundamental component of basic education that prepares children to live in a world increasingly defined by science and technology (International Council for Science ICS, 2002).

Biology is a very important subject in science at the secondary school level in Nigeria. It enables one to understand oneself and his/her intermediate environment. Biology as a subject is one of the basic sciences that are taught in secondary school whose teaching and learning are universally known to be efficient if only they are undertaken simultaneously with the help of adequate instructional materials and facilities (Oghenevwe, 2010).

Biology being one of the science subjects involve processes as identified by Abimbola (2006). these processes include: observing,

classifying, inferring, predicting, measuring, communicating, interpreting data, making operational definitions, formulating questions and hypotheses, experimenting and formulating models. Also biology has two branches, these branches of biology are; Zoology (the study of animals) and Botany (the study of plants), biology is further divided to branches such as ecology, physiology, histology, mycology, entomology, virology, anatomy, etc.

Ahmed (2008) stated that Biology is a prerequisite subject for many fields of learning that contributes immensely to the technological growth of the nation. This includes medicines, pharmacy, nursing, agriculture, forestry, biotechnology and many other areas (Ahmed & Abimbola, 2011). Furthermore, Sarojini (2001) cited some of the usefulness of biology as follows: it helps;

- Scientific research and development of new tools and techniques which in variable improve the quality of our lives,
- Finding applications in medicine, dentistry, veterinary, science, agriculture and horticulture,
- Biotechnology which include fields like genetic engineering and hybrid technology.
- Dealing with ecological problems such as over population, food storage, erosion, pollution, and diseases etc.

Biology plays a vital role in the economic development of the nation. Nwakonobi and Igboabuchi (2010) revealed that recent advances recorded in the field of biochemistry, physiology, ecology, genetics and molecular biology have made the subject a central focus in most human activities including solutions to the problems of food scarcity, pollution, population explosion, radiation disease, health, hygiene, conservation of natural resources, family life, various social vices as well as biotechnology and ethics.

Due to the immense benefits of the subject (Biology), it appears to be the most popular choice of science and non-science students nationwide despite the fact that it is not a compulsory subject. Despite the interest of

students in the subject, researches have revealed poor performance of students in it and student performance over years has been unsatisfactory.

The term Internet according to Cawkell in Ogedebe, (2004) is a large computer network formed out of some thousands of interconnected networks, and it supports a whole range of services such as electronic file transfer protocol, database access and many others. According to Awais, Bilal, Usman, Waqas and Sehrish, (2008) the word Internet is the combination of two words: "international" and "network". They therefore expressed that Internet can be defined as an international computer network of information available to the public through modem links. So, internet is a worldwide system of linked computer networks.

Today, the Internet has an impact on every facet of our life including business, education, communication, entertainment, social activities, shopping, government, and so on. Many educational institutions around the world are investing greatly on Information Technology (IT), especially internet facilities in order for them to be able to meet up with the societal demand; also they are making efforts to actively promote its usage among students. Although learning using internet or online tools by students has different dimensions, it may consist of some variables such as prior student knowledge of IT, their experience, their perceptions, their competencies, and so on.

2. Statement of the Problem

Biology as one of the major science subject plays a vital role in economic development of the nation and it enjoys a massive enrollment than any other science subjects. Despite its importance to mankind and the effort of researchers to improve its teaching and learning, students' performance in biology compared to the other pure science subjects taught in secondary school is not encouraging. This observable problem has been blamed on a number of factors, namely, inadequate teachers, inadequate material resources, lack of using effective methodology for the teaching of the subject in secondary schools etc.

The poor academic achievement of students in the subject as indicated in the report of WAEC has become a persisted public outcry as regards the falling standard of biology education. Biology as a subject is very important at secondary school level; it enables one to understand himself and his immediate environment.

In addition, students nowadays, spend the better part of their time in school and at home on one information technology device which is connected to the internet, this seems to have reduced interest in reading and limit the time they spent on working on their school courses. This then, is the cause for concern and the need for this study. It is therefore necessary to note that perceived influence of internet on academic achievement of student might not be the actual influence.

3. Research Questions

The following research questions were answered in this study;

- Do Biology students have access to the internet?;
- For which purposes do Biology students use the Internet for?;

4. Research Hypotheses

The following null hypotheses are formulated and were tested

6. Result

Research Hypothesis 1: There is no significant difference in the achievement of students offering Biology who have access to internet and students who do not have access.

Independent sample t-test analysis of the determent of student offering Biology who have access to internet and student who do not have access to internet.

TABLE 1: t-test for hypothesis 1

Internet Access	No.	Mean	SD	df	Sig.	t _{cal}	p value	Decision
Yes	489	1.8744	0.76499	598	0.05	0.874	0.021	H0: rejected
No	111	1.7678	0.65996					

Source: Survey Data, 2016

The result of this analysis could be reported that the number mean and SD of the students who have access (mean =1.8344, SD 0.76) were not significantly greater than that of those who have access to

HO₁: There is no significant difference in the achievement of students offering Biology who have access to internet and students who do not have access.

HO₂: There is no significant difference in the achievement of students offering Biology who use internet and those who do not use it for academic purpose.

5. Research Method

The research was a descriptive research of the survey type. The study was carried out in Osun State Nigeria. The study was limited to all Senior School Biology Students in Osun Central Senatorial District of the State. The study covered all the 10 Local Governments in the senatorial district. A total number of 20 schools and 600 students offering Biology as a subject were selected as the sample for this study using simple random sampling technique. A researcher-designed questionnaire was the instrument used for this study. The questionnaire was designed in such a way that it will provide answers to the research questions and the hypotheses which the study would answer and test respectively. The instrument was validated by three lecturers in the department of Science Education, University of Ilorin, Ilorin Nigeria. Reliability of the instrument was determined by test and re-test method.

internet (Mean = 1.7658, SD 0.659). The difference is statistically significant and the null hypothesis of no significant difference between the achievement of students who have access to internet and those who do not have was rejected at $t = 0.874$ at the degree of freedom of 598 and $P < 0.05$ for a two-tailed test.

Research Hypothesis 2: There is no significant difference in the achievement of students offering Biology who use internet and those who do not use it for academic purpose.

Independent sample t-test Analysis of the achievement student offering biology o who use internet and those who do not use it for academic purpose.

TABLE 2: t-test for Hypothesis 2

Variable	No.	Mean	SD	df	(2-tailed) Sig.	t _{cal}	t _{tab}	Decision
Yes	507	1.8225	0.74656	598	0.950			H0: accepted
No	93	1.8172	0.75103					

The result of this analysis could be repeated that the number and mean of students who use internet to academic purpose (N 507) (Mean=1.8225) are not significantly greater than that of those who did not use it for academic purpose (N 93) (Mean=1.8172). But the (SD = 0.75103) of those who do not use it for academic purpose is greater than that of those (SD =0.74655) who use it of academic purpose. The difference is not statistically significant across the mean, standard deviation and the null hypothesis of no significant difference between the achievement of student who use internet and those who do not use it for academic purpose was accepted at $t = 0.065$, df of 598 and p-value (0.95) > 0.05 level of significance for a two-tailed test.

7. Discussion of Findings

Discussions on the findings from the research were based on the results obtained from the data analyzed. These were used to draw conclusion on the research questions and hypotheses while recommendations were duly made.

Globally today Internet is used in almost all sphere of live. More importantly, in an academic environment where students need to search for more information, in order to enhance their academic performance. The study investigated on the influence that internet usage has on the achievement of senior secondary school students in Biology subject. Data was gathered from 600

Biology students in 20 Senior Secondary Schools in Osun State, Nigeria.

Results gotten showed that 489 (81.5%) Biology students out of the 600 respondents have access to the internet against 111(18.5%) who do not have access. The result further revealed that there is a significant difference in the academic achievement of students who have access to internet and those who do not. This aligned with the results of a three-year study conducted by Judge, Puckett and Bell (2006), this researchers monitored the achievement of the students for 3 years in their study, the result gotten shows that access to and the use of the Internet are positively correlated with student academic achievement.

Result gotten from the analysis also revealed that there is no significant difference in the achievement of students offering Biology who use internet and those who do not use it for academic purpose. This implies that the null hypothesis was not rejected. A few studies in literature have found no significant evidence of the Internet usage on students' academic performance, and a few have shown contradicting results otherwise (Englander, Terregrossa, & Wang 2010). Although in an oral interview between the researcher and some respondents, many respondents claimed that they make use of internet for academic purpose and to socially network with friends. some revealed that using of internet make them stay late at night but it does not affect their studies.

This finding goes in agreement with the work of Goolsbee and Guryan (2006) who analyzed the impact of electronic-rate (E-Rate) program on California's public schools' technology adoption for the period of four years (1996-2000). The authors found that the increase in Internet access at schools had no effect on students' test scores.

8. Conclusion

With the result obtained from this study, it is clear that Biology students in Osun State are aware of internet and make use of it. The data collected from the respondents was analyzed t-test. It is therefore concluded that internet usage had positive influence on the academic achievement of Biology students but it is not too significant. This is because the students that use internet had a relative higher score than students that do not make use of internet.

9. Recommendations

Based on the findings in this study and the discussions that followed, the following recommendations are made:

- Students should be taught and guide by their parents and teachers on how the internet could be used in a beneficial manner to aid them in their studies.
- Since the internet is a great library to get information to supplement school work, teachers should encourage giving of assignment and project work to the students. For example 3D images in Biology such as Human Tissue can be found on internet.

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