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EFFECT OF EDUBLOG PACKAGE ON SECONDARY SCHOOL STUDENTS' PERFORMANCE AND ATTITUDE IN TEACHING AND LEARNING OF COMPUTER EDUCATION IN LAGOS STATE, NIGERIA

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Abstract

This study focused on the effect of edublog package on secondary school students' performance and attitude in teaching and learning of computer education in Lagos State, Nigeria. Three research questions were raised and one hypothesis was formulated. The study adopted the pretest, posttest quasi experimental research design. Thirty students were selected from two private schools to participate in the research. Fourteen (14) students participated for the experimental group while 16 students were used for the control group. Student Achievement Test (SAT) and Questionnaire on Students Attitudes towards the use of Edublog package were used as instruments and validated by experts with reliability indexes of 0.78 was and 0.72 obtained respectively. Data collected were analysed using mean scores, simple percentage and ANCOVA at a 0.05 level of significance. The results indicated that students in the Edublog group performed better in the performance test than those in the CMT group and there was a significant difference between the mean performance score of students taught with Edublog and their counterpart in the CMT group. The students had positive attitude towards the use of Edublog. It was recommended that teachers should encourage diversifying the various approaches to complement the conventional way of teaching.

Key words: Effect of Edublog Package, Performance and Attitude, Teaching and learning, Computer Education.

Introduction

The use of computer globally has become an important device which has brought people together, facilitate contacts between them using different platforms such as email, chatting, video-conferencing, mobile calls and social medias. The benefits of it are enormous, which include buying and selling products, communicating throughout the world, enhancing our knowledge, job influences, entertainment, research, paying bills and enhancement of knowledge (Wikibooks, 2022). It utilizations have subsumed various activities beyond human imagination. Through computer, technology development can only be enhanced among others things. It has become so invaluable that inaccessibility to it even in the home is now being seen as a tool for child's skill competence and knowledge development. Computer is conceived as a device or machine designed specifically to perform calculations, process data and store information, which can be easily retrieved when required (Adamu & Bello, 2002). Learning or teaching about computers is referred to as computer education.

Computer education hence is defined as gaining of basic knowledge and skills to operate computers in order to perform desired jobs. Computer Education not only involves basic knowledge about computer, hence it extends to various branches of study in various fields and sectors (IT Training NEPAL, 2022). Charles (2018) depicted that computer education

involve the capability to effectively use computers and related technology from its elementary use, programming and advanced problem solving skill. It referred to as the proficiency of using computer program and its applications (Charles, 2018). Computer Education is a broad term but in general there are two concepts used in education; with computer and about computer. In the past, computer used the languages which were too complex for everyone to understand, only specific people having specific qualification could be educated about and in computer. But, as the technology has evolved, their application and reach has widened due to simplicity they provide to general people and sophisticated operations they can perform (IT Training NEPAL, 2022). As the human civilization further advances in technology, more and more ubiquitous use of computers is bound to be certain. The benefits of computer education as highlighted by IT Training NEPAL (2022) include; it improves research, efficient use of technology, career aspirations, enhances creativity, and improves performance.

The field of education has not been unaffected by the penetrating influence of information and communication technology (ICT). Undoubtedly, ICT has impacted on the quality and quantity of teaching, learning, and research in traditional and distance education institutions (Yusuf, 2005). In concrete terms, ICT has enhanced teaching and learning through its dynamic, interactive, and engaging content; and it has provided real opportunities for individualized instruction. To further emphasis the uses of ICT in education, it has added value to education through the use of computer assisted instruction (CAI), the use of videos and audios for instructional material, conference or online lecture rooms used in distant learning, presentations using power point and web-blog to mention a few. To this effect the federal government put in place a policy to ensure the stated impact ICT can have on education come to fruition. Some of the itemized objectives of Information Technology (IT) in National Policy on Education in Nigeria include to develop a pool of IT engineers, scientists, technicians, and software developers; to increase the availability of trained personnel; to provide attractive career opportunities; and to develop requisite skills in various aspects of IT (FRN, 2013). For this goal and objectives to be achieved other areas also must be looked into like the various problems facing the teaching and learning of computer education in Nigeria, some of which includes inadequate professionally trained computer teachers; inadequate computers; lack of support infrastructural facilities; inadequate instructional materials or teaching aids; poor teachers attitude toward the subject; general students apathy and indifference in computer science; lack of motivation and encouragement for students; lack of incentive and motivation for teachers and; misuse and inappropriate use of teaching method (Charles, 2018).

In recent years, different types of teaching and learning method has been discussed and adopted by stakeholders in education, in tradition these methods are mainly two learner centered and teacher centered which can be further classified into; lecturing; demonstration collaboration; classroom discussion; debriefing; classroom action research (Zendler, 2019, Nadyrova, Zhanys, &Mubarakov, 2019). Furthermore, the method of teaching and learning in Nigeria and computer education must be considered in order to have the desired effect on the learner, as it is important for the goal and objective of the National policy on Education on information technology to be met. From the above mentioned approaches, it is seen in our educational system that despite all said, the objectives and goals of the NPE has not been fully met due to inability of fully implementing the best method of teaching and learning in computer education in the methods listed above because of certain problem like the unavailability of instruction

materials to back up the teaching of information technology in our society. In the developed countries statistics has shown that most of those countries have adopted a more effective teaching method which aid in the use of technology to teach in the traditional way or even fully adopted the online method of teaching through the use of Computer Assisted Design (CAD), Computer Assisted Instruction (CAD), Webquest, Webblog (Edublog) to mention a few. The use of these methods have really enhanced the teaching of computer education and other subject matter, it helps the instructor or the teacher to better deal with practical aspect of teaching which was a major problem in the old teaching method, with these technologies enhanced teaching not only does it allow the teacher to better express himself/herself but it also help them to better communicate with the learner through the use of various multimedia tools at their disposal. One of the methods as earlier stated is the edublog which allows the learner to learn at his own pace with readily provided learning package where the learner can visit the blog-site go through the content with all resources needed at his disposal and can ask question like in the traditional sense and get answer to his/her questions.

Edublog (a truncation of the expression "weblog") is a discussion or informational website published on the World Wide Web consisting of discrete information, or an online platform for learning. An edublog is a blog created for educational purposes. Edublogs support student and teacher learning by facilitating reflection, questioning by self and others, collaboration and by providing contexts for engaging in higher-order thinking. Some of its importance includes provision of services digitally in terms of e-resources, formation of digital infrastructure in terms of computing resources in educational organizations, helps develop proficiency in using ICT enabled services, allows creativity in the use of ICT resources, promotion of collaborative learning and shared learning resources. Edublogs is one of the internet-based free platform that provides the user to post their idea and thought in the form of blogs (Riswand, Ngadiso, & Asib, 2018). Edublog in recent time is been utilized by various institutions and even cooperate organizations for educational purposes. It helps various institutions of learning get their information across to the people faster and easier. It is a good communication tool for the teachers and the students from any location and also provides detailed information to the students at the same time.

Attitude in learning has been a major factor that determines how much a student will learn in the place of learning. Attitude can alter every aspect of a person's life, including their education. Students attitude on learning determine their ability and willingness to learn. If negatives attitudes are not altered, a student is unlikely to continue his education beyond what is required. Changing students' negative attitudes towards learning is a process that involves determining the factors driving the attitude and using this information to bring about change. The word attitude in the dictionary is defined as 'a way of feeling or acting toward a person, thing or situation' another defined it as 'the position or posture assumed by the body in connection with an action, feeling, mood and many more. Therefore, attitude of student to learning can be defined as the physical position or posture assumed by the learner in the learning environment and the mental awareness of student towards learning in during the teaching and learning.

Statement of the Problem

Over the years many different teaching methods have been utilized and scrutinized for failing to meet up to what is expected of it which is why researchers never stopped trying

to research new methods so as to achieve best result in teaching the right knowledge to the learners while at the same time learners get the best possible learning experience. Teaching and learning computer education in our various secondary schools especially in Lagos State have not yielded sound result because parents are still enrolling their wards for extra computer training for students' competent in computer use. It was observed that method of teaching used for students to learn computer education was purely without practical and no avenue was made for them to interact on their learning for better understanding. Edublogs are user friendly and functioning by giving students access to the technology-based learning activities which can expose students the opportunity to share what they learn collaboratively with their colleagues and teachers. Attitude has been established as one of the main factors of student performance in examinations, if the attitude toward an approach is positive there is tendency for better result. Therefore, this study sought to investigate the effect and attitude of secondary school students on utilization of an Edublog package in teaching and learning of computer education in Ikorodu and Kosofe Local Government Areas of Lagos State.

Objectives of the Study

The objectives of this study were to examine the effect of Edublog package on secondary school students' performance and attitude in teaching and learning of computer education in Lagos state, Nigeria. Specifically, this study was to determine;

i. The difference between the mean gains of students taught with *Edublog* and those taught with conventional method of teaching (CMT)
ii. If there is any significance difference in the post-test performance of students taught computer education using the *Edublog* and those taught using conventional method of teaching (CMT)
iii. The attitude of student towards the use of Edublog for learning computer education .

Research Questions

The following research questions were raised in the study:

i. What is the difference between the mean gains of students taught with *Edublog* and those taught with conventional method of teaching (CMT)?
ii. Is there any significance difference in the post-test performance of students taught computer education using the *Edublog* and those taught using conventional method of teaching (CMT)
iii. What is the attitude of student towards the use of Edublog for learning computer education in Lagos State?

Research Hypothesis

The following research hypothesis was stated in the null form and was be tested in this study:

H_{O1}: There is no significant difference in the post test performance of students taught computer education using the *Edublog* and those taught using conventional method of teaching (CMT)

Methodology

The study adopted pre-test, post-test quasi experimental research design method to carry out this study. The target population comprised all secondary school students particularly secondary school students in Lagos State. The purposive sampling technique was used to select two (2) private schools within Ikorodu Local Government Area and Kosofe Local Government Area of Lagos State.The two selected schools are private co-private school, operating on the same curriculum and the both schools have functioning computer room. Chrisfield Private Schools Ikorodu, was used for experimental group (Edublog) while Humbies College, Omojuwa Estate, Kosofe was for control group (conventional method of teaching). Junior secondary school II students selected purposively for this study because the choosing subject is offered at the level which was computer education. Fourteen (14) students participated for Edublog while 16 students served as conventional method of teaching. The selected students were grouped into experimental and control groups. The experimental group was exposed to the Edublog package as the teaching instrument, while the control group was subjected to the conventional method of teaching using the same learning content for both groups.

The instruments used for this research study include (i) Edublog Instructional Package: The package has the Home section, the class content section, Required reading section containing extract from the national school curriculum of Nigeria in Information Technology (computer science) topics including Basic concept of computer, Introduction to computer science, Characteristics of Computer, Computer Organization, Computer Software, Computer Language, Operating System and Computer File Management and the Test and Assignment section which contains fifteen (15) objective questions. The second instrument was student achievement test (SAT), this containing twenty (20) objective questions with four (4) options to choose from. It comprised of sections A and B. Section A was on demographic information, while section B comprised twenty (20) multiple choice items while the third instrument was a questionnaire on students' attitude towards the use of Edublog (QSATUE). This contained 2 sections (A and B). Section A was on bio-data where student data including name, gender, age, class are collected while section B comprised items used to measure the attitude of the students on how confortable the students are learning with the Edublog package.

The instruments were subjected to face and content validity by given to three experts in education, one from educational technology and one from computer expert and educational evaluation. There were twenty five Multiple choice questions but were reduced to twenty to suit the purpose and considering the respondents. Meanwhile, all other corrections that were identified were effected. The reliability of an instrument was ascertained by using the test-retest method which made the instrument a reliable. The reliability of SAT was determined by administering it on a trial group of 11 secondary school students of another school within the study population but not included in the main study using test-re-test method. A reliability test using Kudar Richardson (KR-21) revealed a reliability of 0.78 which was considered very adequate for the study. The reliability index of 0.72 was obtained for QSATUE using Cronbach alpha.

The statistical tools used in this research were simple percentage, mean score and ANCOVA through the aid of SPSS.

Results

Research Question 1: What is the difference between the mean gains of students taught with Edublog and those taught with conventional method of teaching (CMT)?

Table 1: Mean Gain Scores of Students' Pre and Post Performance Test Scores in Computer Education

Groups	N	Pretest		Posttest		Mean Gain
		X_1	SD_1	X_2	SD_2	
Edublog	14	8.500	1.224	15.714	0.995	7.214
CMT	16	8.000	1.211	11.563	1.365	3.563

Table 1 showed that pretest mean score of students in experimental group taught using Edu-blog was 8.500 and posttest mean score of 15.714 respectively giving a mean gain of 7.214, while students in the control group taught using CMT had pretest mean score 8.000 and posttest mean score of 11.563 with a mean gain of 3.563. The result indicated that students in the Edublog group performed better in the achievement test than those in the CMT group. This implied that the treatment (Edublog) had positive effect on students' mean performance score in computer education.

Hypothesis One: There is no significant difference in the mean achievement scores of student taught computer using Edublog and those taught using conventional method of teaching (CMT).

Table 2: Analysis of covariance (ANCOVA) of mean achievement scores of students taught Computer using EduBlog and those taught using CMT

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	129.886[a]	2	64.943	44.264	.000
Intercept	134.983	1	134.983	92.001	.000
Pretest	1.181	1	1.181	.805	.378
Group	128.220	1	128.220	87.392	.000
Error	39.614	27	1.467		
Total	5637.000	30			
Corrected Total	169.500	29			

a. R Squared = .766 (Adjusted R Squared = .749)

Table 2 showed the analysis of covariance on mean achievement scores of student taught computer education using Edublog and those taught using CMT. After adjusting for pretest scores, there was a significant effect of the subject between factor groups, $F(1,27) = 87.392$, $p = 0.000$ at 0.05 level of significance. The result revealed that there was a significant difference between the mean performance score of students taught with Edublog and their counterpart in the CMT group. The implication was that Edublog group performed better than that of CMT group.

Research Question 3

What is the attitude of students towards the use of Edublog for learning computer education in Lagos State?

Table 3 revealed the statistical data gathered through the distribution of questionnaire given to the participating students in the experiment group showed some of the students are excited using the Edublog package.

Table 3: Attitude of Student towards the Use of Edublog for Learning Computer Education

Variables	SA (%)	A (%)	D (%)	SD (%)	Mean	St. D
Edublog make learning more interesting	10 (33.3)	10 (33.3)	6 (20.0)	4 (13.3)	2.867	1.042
Learning with Edublog promote collaborative among their peers.	13 (43.3)	10 (33.3)	2 (6.7)	5 (16.7)	3.033	1.098
I think that learning with Edublog is better than using printed materials or textbooks	10 (33.3)	10 (33.3)	6 (20.0)	4 (13.3)	2.867	1.042
I like the idea of using Edublog for learning	12 (40.0)	11 (36.7)	3 (10.0)	4 (13.3)	3.033	1.033
Edublog is very effective to improve students' learning	14 (46.7)	10 (33.3)	3 (10.0)	3 (10.0)	3.167	0.986
Average Mean = 2.993						

From the results in Table 3, the average mean was 2.993 which is above the midpoint of 2.5. This implied that students exhibited positive attitude towards the utilization of Edublog for learning computer education in secondary schools.

Discussion of the findings

The findings of this study demonstrated that the students scored higher in their learning after having a treatment by using Edublog package for teaching and learning computer education. Edublog in this study was used as a tool to give the students an opportunity for collaboration. Furthermore, the results from this study revealed that using Edublog, the students could also acquire knowledge and ideas from their peers' and further enhance their attitude. The better performance of the students that exposed to Edublogs was as a result of the great opportunity the students received when using the package. The good performance of Edublog group was in line with the study of Riswandi, Ngadiso and Asib (2018), in their study they found out that students demonstrated higher scores in their writing assignments after having a treatment by using Edublogs as a teaching Media in teaching and learning and students' writing skill was improved significantly through blogging activity.

To the computer education learning process, before actions were conducted, the students were unmotivated to participate in writing process. The writing learning process was monotonous. The teacher only used the course book without any media. During the implementation of the actions, Edublog helped the teacher in learning process. The students were interested and enthusiastic to improve their skills. The Computer education learning process in the Blog process were more active and enjoyable than the previous condition, the classroom atmosphere was better. The learning process looked easier because of the use of media like Edublog in the classroom. The positive attitude exhibited by students towards Edublog could be attributed to the fact that students were actively engaged with the bloggings. Specifically, the structure of well-defined work provided by Edublogs helped the students to understand clearly what is expected from them and it also helped them to better evaluate their work. This result agreed with the works of Venzon (2011) who revealed that the attitude of the students toward the incorporation of ICT-based instructional strategies into standard educational curricula was positive.

Conclusion

The use of Edublogs will have many advantages to teaching and learning of computer education especially at secondary schools levels which if incorporated will not only promote students to learning but also advances their collaboration in class and better academic achievement. It have been proven to be good as an approach to achieve better results among the students which also have open avenues for teachers to succeed in creating means of communication for knowledge dissemination to the learners. The attitude of the students were positive when engaged with Edublog which showed that integrating such approach will contribute meaningful enrolment of students in the schools and desire thinking of knowledge among the students.

Recommendations

Based on the result of this study, the following are recommended;

Teachers should encourage to diversifying the various approaches to complement the conventional way of teaching like using Edublog. This will further motivate the learners more in their study and further boost their attitude positively to learning.

Students' position to an action in the class cannot be over-emphasied through which their interest can be recognized. Teacher should use ICT initiative like Edublog to promote students' positive attitudinal disposition to learning and encourage collaborative learning among the students.

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