EFFECTS OF SCHOOLOGY AND CANVAS BLENDED INSTRUCTION TOOLS ON STUDENTS ACHIEVEMENT AND INTEREST IN ECONOMICS CONCEPTS IN FCT COLLEGE OF EDUCATION ZUBA, ABUJA

ONUOHA JOSEPH C. (Ph.D.)
Department of Social Science Education University of Nigeria Nsukka

YAHAYA JAMES
Department of Economics FCT College of Education Zuba – Abuja

ABSTRACT
The study investigated the effects of schoology and canvas Blended instructional tools on Economics Students' achievement and interest in Economics in FCT College of Education Zuba – Abuja, Nigeria. Two hypotheses were tested at 0.05 level of significance. The study employed a quasi-experimental design. The area of study is FCT College of Education Zuba. The instrument used for data collection was a Multiple Choice Economics Achievement Test (MCEAT). Sixty (60) Economics Students formed the sampled used for the study. The findings of the study revealed that mean achievement scores of students taught economic using schoology and Canvas have increased. It facilitates the effective teaching of Economics. It was found out that blended learning offer opportunities and support for producing knowledge, individual or in collaboration with others. Based on the findings, it was recommended that economic teachers are enjoyed to involved students in schoology and canvas methods of instruction and that it is important for teachers to varied design that is conducive to progression in student learning trajectories.

Key Words: Students achievement, Economics, Canvas, Schoology, Effective Learning ry.

1. INTRODUCTION

Today, as the educational sector is faced with a series of changes and reforms, it is indisputable that lecturers are no longer the only basis in giving the learning information. Numerous teaching strategies have been developed which correspond to the accommodation of students' need and diverse learning methods. One such strategy involves the use of schoology and canvas blended instruction tools. It refers to the practice of face-to-face learning and teaching in the classroom which is combining with technology whether online and offline. The era of the teacher being a reservoir of knowledge has passed. The teacher is a reservoir of knowledge has passed. The world is moving at a fast speed as a result of advances in technology. Research studies of Information and Communication Technology (ICT) in Economics education have shown that ICT facilitates the acquisition of important cognitive skills required for effective economic analysis and evaluation. It provides the cognitive scaffolding for students to acquire complex concepts and understand the connection between them (Sheraga, 1986, Smith and Smith. 1989; MacDonald and Shield, 1998; Katz, 2018), allow teacher and students to

communicate both their thoughts and interest in the subject matter (manning, 2016; Grenlaw 2017), and offers a better match to students' learning style Lage et al (2018); moreover, it is a medium through which students can observe the real-life implication of economic theories Simkins (1999).

Importantly, technology entails information communication which may be defined as the handling, and processing of information (Texts, images, graphs, instruction, etc) for use employing electronic and communication devices such as computers, cameras, telephone, etc (Ozoji, 2003). Khairu (2012) named this group as the alpha generation where the usages of digital technology turn out to be one of their lifestyle features. Moreover, the newer cohort is more attracted to use electronic devices such as smartphones, laptops, gadgets, or android. And definitely, they can expose Google search, Youtube, Google Play Store, etc. to access the variety of materials which is linked to the internet.

Therefore, the lecturers are no longer occupying a single position in conveying knowledge to the digital generation in this era. Oshodi (1999) Observed that awareness towards the use of communication technology is increasing in the classroom in the developing world such that mere verbalization or over verbalization of words alone to communicate ideas, skills and attitudes to educate learners is futile. Thus, the Nigerian government initiative indicated that teachers must move swiftly to more internets and web-based works in school. Today, technology has entered the classroom in a big way to become part of the teaching and learning process.

Concerning that lecturers have to adjust to the effect of the technological revolution in the learning course. The use of appropriate media will be of benefit for the lecturers in presenting the subject well. Lecturers easily transfer learning materials and attractive to students through suitable use of media can also stimulate learners' learning spirit. This is in line with research done by Yana and Darwati (2017). The invention in the learning process that applies the development of ICT is blended learning or hybrid learning or virtual learning. However, economics as a science-orientated course or discipline is known for its abstract nature having no material existence). Sometimes the economics teachers do not have adequate knowledge but have to fall on ideas that lead to contradictions with what the economic theory says or meant.

However, economics is a unique subject, which promotes the acquisition of specialized science skills and knowledge, which explains the natural phenomena of life in the society. Despite the abstract nature of economics, its teaching is to bring about scientific thinking in students; a mindset that requires students to test out, through experimental. According to Osunade (2003), the internet is a valuable idea for projects and assignments. Supporting this argument, Agommuoh and Nzewi (2003) believed that secondary students who are exposed to video-based instructions in economic had significantly better results than those who were taught using conventional methods.

The researcher has been using schoology in lecturing, based on short notes, it seems that the students learning achievement have enriched, students were interested in the learning process and keen to submit the assigned tasks, they also perform curiosity in following the lectures. It is also easier to deliver the learning material resources and supplementary digital references links such as Slide-Share, video in YouTube, etc, besides, it is also easy in accepting student's tasks, straightly checking and assessing their performance without downloading it first. Also, the researcher applied canvas in lecturing in another semester.

Therefore, this research tries to prove scientifically the extent of students learning achievement using schoology and canvas as a learning media based blended learning. However, little or no study has been carried out in the study area to ascertain the effects of schoology and canvas blended instruction tools on economic student's achievement/interest in FCT College of Education Zuba – Abuja.

Objectives of the Study

The study examines the effects of the use of schoology and canvas blended instruction tools on economics students' achievement/interest in FCT College of Education Zuba – Abuja Nigerian. Specific objectives were to:

i.   Determine how the use of schoology in the classroom affects the learning of Economics in FCT College of Education.
ii. To evaluate students' learning achievement through canvas as media-based blended learning. You seem not to be serious about this. Make sure you are copying this because the similarity index will be found.
iii. To find out the mean achievement scores of students taught Economics concepts using schoology and canvas blended learning.
iv. The mean interest scores of students taught Economics concepts using schoology and canvas blended learning.
v.   The mean influence of gender on students' achievement in Economics.
vi. The interaction effect of gender and method on students' achievement in Economics.
vii. The interaction effect of gender and method on students' interest in Economics.

Research Question

i.   To what extent does the use of schoology blended instruction have a significant relationship with the learning achievement of economics students,
ii. To what extent does the use of canvas blended learning affect students' achievement/interest in economics?
iii. To what extent does gender affect students' achievement in Economics using schoology and canvas blended learning?

Hypotheses

To proof the research hypothesis

Ha: There is no significant difference between students' learning achievement through schoology and canvas blended learning.
Hb: There is no significant difference between students learning interest when taught Economics using schoology and canvas blended learning.
Hc: There is no significant difference between the mean score achievement of male and female students using schoology and canvas blended learning.

2. REVIEW OF RELATED LITERATURE

There are some purposes and benefits of learning media for lecturers as well as for students. Smaldino, Lowther, dan Russel (2008) cited by Mantiri (2014) noted that the purpose of using learning media is "to facilitate communication and learning", specifically it will present a meaningful teaching-learning process for teachers and students.

1. To ease the understanding of learning messages
2. To increase students learning motivation
3. To enhance learners' accomplishment
4. To growth students' learning motivation
5. To train and encourage students' critical thinking.

Additionally, Falahudcha (2014) summarized Kemp and Dayton's idea (1985) that the advantages of learning media can be stated as follows (1) homogenize learning materials, (2) address learning materials clearly and interestingly, (3) promote two ways communications in the learning process, (4) help in time management in the learning process (5) increase the quality of learning achievement (6) give chance to learn inside or outside of the classroom (7) rise-up students' positive perception and action toward learning materials and learning process, (8) enlarge teachers' productivity (9) concreted the abstract materials (10) provide unlimited space and time area of learning materials content.

Through Edmodo, educators and students can share notes, links, and documents. Educators also can send alerts, events, and tasks for students and may decide to send something in a timeline that can be viewed by the public (Gay & Sofyan, 2017). Edmodo can foster the combined knowledge creation of a group better than individuals' diaries and discussion because Edmodo facilities share ideas beyond the classroom via an online platform. This allows readily available access at random times to continue such discussion, online quiz, sharing folder options and mainly connection to the global experts of various disciplines (Balasubramanian, Jaykumar, & Fukey, 2014).

Blended learning is an activity that integrates teaching and learning processes with technology as learning media (Graham, Allen, and Ur, 2003). Graham (2016) defined blended learning as a combination of the learning process with several media, methods that integrated face-to-face and online learning models.

Furthermore, a report of the study published by NEALS, Melbourne in (2012) noted that the idea of blended learning can be perceived from various perspectives and cannot be costumed. Generally, blended learning can be defined as entirely learning activities based on information and communication technology. Schoology and Canvas are platform kinds (William Fenton, 2018) of the Learning Management System (Aaron Quigley) which is also known as Course Management System (CMS) or Virtual Learning Management (VLE). They provide some features that give some possibilities for teachers to create, manage, and share the learning contents and sources in an application. Also, the teacher can use the features to interact with the students whether inside or outside of the classroom.

Several researches have been conducted related to blended learning. Firstly, Ghahari and Golestan (2013) have studied the effect of blended learning on foreign pupils writing skills in Iran. They matched the marks of the pre-test and post-test writing skills of students who were taught through blended learning with those who were taught through face to face method. Blended learning applied was in the form of computer-assisted language learning (CALL). The results obtained showed the skills of students' writing in the blended learning group were positive and more significant than the full face-to-face group.

The research of Tosun (2015) aimed at determining the effectiveness of blended learning on the learners 'English vocabulary, at discovering the students' perceptions, and to search out the educational implications of blended learning in Turkey. The blended learning implemented is

a Web 2.0 tool that includes Quizlet, spelling city, and snappy word. The results acquired display blended learning does not impact on students' vocabulary mastery. This was as a result of the short time used in applying blended learning. However, the students appreciated the learning process the blended learning. The pedagogic implications given that blended learning applications should be maintained completely with digital tools that apply to the students' needs and interests.

Further research was conducted by Eryilmaz (2015) it was an experiment on 110 students at the University of Atilim, Ankara. It measured the effectiveness of blended learning classes with face-to-face classes. Blended learning class was applied in the form of sharing materials, pictures, learning and discussion videos, and online exam. The results describe that the students' achievement who were taught using blended learning is more effective than those who were thought through face-to-face.

This study is dissimilar to the previous related researches as it pursues to examine the students learning achievement using Schoology and Canvas as learning media based blended learning. Definitely, the results expected will provide scientific information for teacher, lecturers or curriculum developer regarding the learning media based blended learning to be used to encourage learners' achievement and promote students' autonomous learning by enhancing communication and dialogue, and to offering opportunities for both individual and collaborative critical and inquiry-oriented engagement in the knowledge practice of the domain (Nerland and Protz, 2018. To arrive to situations where digital technology successfully support such varied range of learning activities, there is a clear need for teachers and others involved actors for understanding the pedagogical principles and opportunities that come with different tools, and the way (digital) learning environment can/should be designed and employed and also from students' perspective.

The way technological affordances and pedagogical premises are incorporated into the LMS should thus be intertwined. This creates the potentials for LMS to have an accessible and user friendly structure and to the possibility of creating course design that are coherent and support teaching and learning activities with which the Economics students can engage optimally making the LMS a learning space where students engage, teachers feel they (can) cater to learning is important, and students participation is dependent on bringing these two aspects (i.e. accessible user friendly structure and coherent pedagogical design) together. Since the technology design is already established, sides of the teacher/instructors must unify these two aforementioned perspectives to understand and support teachers' efforts to create user-friendly and coherent Economics course designs that cater to students learning and encourage participation.

3. METHODOLOGY

This research applied a quasi-experimental method with a non-equivalent control group design. It was conducted in FCT College of Education Zuba in the Economic Department. Using microeconomics in 200 levels of NCE in the 2017/2018 academic session. The population was 78 students, and the samples were selected with purposive sampling technique characterized by the same level and course taken and also learn through blended learning. The variables comprised of 2 independent variables, namely the use of Schoology as learning media based blended learning (X1) and the use of Canvas as learning media based blended learning (X2).

Then, the dependent variable was the Student learning achievement (Y). The research instrument was in the form of written tests. The tests were prepared relevance to the topics learned and applied before and after the treatment is given. The validity and reliability have been measured previously. The test aimed at measuring students' comprehension of the learning materials that have been given. Furthermore, the research data obtained was analyzed in statistical analysis using a T-test with the help of SPSS. The statistics hypothesis can be stated as follow: if t counted > t table, it means Ho is accepted, and Ha is rejected; but if t counted < t table, it means Ho is rejected, and Ha is accepted. And or it also as follows: If Sig.(2-tailed) > 0.05, it means Ho is accepted and Ha is rejected; then if sig. (2-tailed) < 0.05, it means Ho is rejected, and Ha is accepted.

Research Design

This study adopted the quasi-experimental design. Specifically, the study employed pretest, posttest non-equivalent control group design.

Participants

The population of the study was NCE II Economics students of FCT College of Education Zuba – Abuja. The choice of NCE II students is because of their scheme of work in microeconomics. Two combinations were used for the study. That is; Economics/Social Studies and Economics/Geography. The researcher employed a simple random sampling technique. Out of the two combinations that were used for the study one was taught using schoology and the other using canvas through a simple toss of a coin. All the intact classes of NCE II in the selected combination were used for the study. The study samples were made up of 34 females and 28 males comprises of sixty-two students (62).

Instrument

The instrument for data collection was a Multiple Choice Economics Achievement Test (MCEAT) was face validated by three experts. Two of the experts are from the school of Arts and Social Science Education Department and they reviewed the items of the instrument in terms of clarity of language adequacy of items of the coverage while the other expert from Measurement and Evaluation unit of Science Education Department face validated the instruments in terms of content coverage. The experts made correction and amendments were accordingly effected.

The Thirty-one (31) item MCEAT was administered the group of students numbering 62. Data collected were used to carry out items analysis on MCEAT and two items were dropped leaving behind twenty-seven (27) items as the final instrument for the study. Multiple Choice Economic Achievement Test (MCEAT) was used to construct a test blueprint or table of specification to show the item coverage of the content for the treatment.

Data Analysis

The research data obtained was analyzed in statistical analysis using a T-test with the help of SPSS. The statistics hypothesis can be stated as follow if t counted > t table, it means Ho is accepted and Ha is rejected; but if t counted < t table, it means Ho is rejected, and Ha is accepted.

The t-test assesses whether the means of two groups are statistically different from each other. This analysis is appropriate whenever you want to compare the means of two groups, and especially appropriate as the analysis for the pretest and posttest two-group randomized experimental design. The differences between scores for two groups, we have to judge the means relative to the spread or variability of their scores. A paired-samples t-test was performed using an SPSS (version 18) statistical package.

Independent samples were used in the analysis of the pretest results of experimental. The scores of both groups were calculated and analyzed. The scores showed that the two groups were homogenous in the beginning (control group schoology and experimental group canvas).

Table 1: Pretest result for the experimental group

Mean	N	Mean	Std deviation	Std error mean
Achievement		68.70	9.087	1.895
		63.06	7.014	1.432

As shown in table 1, the means score for schoology is 68.70 and 63.06 for canvas, next, the standard deviation is 9.087 for schoology and 7.014 for canvas. Also, the standard Error mean for schoology is 1.895 and 1.432 for canvas.

Table 2: Independent Sample

	Learners test for equality of variance		t-test for equal of mean							
Equal variance Assurance	F	Sin	t	df	Sing-2 tailed	Mean dif.	Std Error Diff.	95% confidence interval of Difference		
									Lower	**Upper**
	1.424	228	2.388	45	.21	5.640	2.362		0.883	10.397
Equal variance not assured			2.375	41.389	.22	5.840	2.375		0.846	10.435

Note P = < 0.05

The table above describes the pretest data which encompasses the Lavene's and t-test for equality of means. It also provides the students' achievement results for equal variances assumed and equal variance not assumed.

Post-test have been done at the control and experiment class. Moreover, the posttest at the experiment class after canvas completely used as a learning media based blended learning for a semester, while control class using schoology as the previous semester. The results can be seen in the table below.

Table 3: Group Statistics

Mean		N	Mean	Std deviation	Std error mean
Achievement	1	30	76.94	11.585	2.365
	2	30	73.47	8.074	1.68

The data above explain that 30 students in the posttest at schoology, and 30 at canvas. Next, the average score for schoology is 76.94 while for canvas is 73.47 then, the standard deviation and standard error mean for schoology is 11.585 and 2.365; while 8.074 and 1.648 canvas.

Table 4: Independent Sample

Achievement:	Learners test for equality of variance		t-test for equal of mean						
Equal variance Assurance	F	Sin	t	df	Sing-2 tailed	Mean dif.	Std Error Diff.	95% confidence interval of Difference	
								Lower	**Upper**
	5.053	0.2	1.205	46	.235	3.473	2.883	-2.330	9.274
Equal variance not assured		9	1.205	41.079	.235	3.472	2.883	-2.349	9.293

Note P = < 0.05

Table 4 shows data in the posttest namely the independence sample test. It serves the Lavene's and T-test completely with equal variances assumed and not assumed.

Table 5: Summary Data of pretest and posttest score.

STATISTICS	SCORE PRETEST		SCORE POSTTEST	
N	Schoology	Canvas	Schoology	Canvas
Means	30	30	30	30
Std deviation	68.70	63.06	76.94	73.47
Std. error	1.896	1.432	2.365	1.648

4. DISCUSSION

The first and second objectives can be answered based on the Group Statistical data of the pretest and posttest which is summarized in table 5. On the test of significant effect on the mean achievement of students taught economics using schooling and those taught using canvas. The difference between the mean score of students learning achievement between pretest (68.70) and posttest (76.94) used schoology is 8.24 points. Next, the summary of the data also describes that the means score of pretest and posttest of learning using canvas is 63.06 and 73.47.

Therefore, the mean difference is 10.41 point, it means students learning achievement using canvas blended learning has improved. The t-calculated value of 2.375 at an alpha level of 0.05 based on decision rule. It means that Ha is rejected and Ho is accepted. These findings are in line with the view of Naido (2003) posits that blended learning is a tool for improving teaching, learning and research materials. He sees blended learning as a tool that makes delivery lessons flexible, interactive and long-lasting. Osunade (2003), stated that the internet is a valuable source of information for students looking for ideas for projects and assignments.

Supporting this, Agommuoh and Nzewi, (2003) believed that secondary students who are exposed to video-based instruction in economics had significantly better results than those who are taught using the conventional method. The use of schoology and canvas in teaching is a relevant and functional way of providing education to learners that required the use of skills in technology, collaboration, teamwork, and information; all of these can be acquired through teaching with blended materials. It fundamentally changes the way we live. From the findings, the study revealed that canvas and schoology offer opportunities and support for producing knowledge, individually or in collaboration with others. It also offers context and support formative assessment, feedback, and reflection, before summative assessment moment. Blended learning offers support for self-regulation and a user-friendly structure that enhances navigations and attractive visual design. The finding also shows that canvas and schoology offer the possibility for configuration set(s) of tools both teachers and students may want to employ to engage with specific learning tasks.

5. CONCLUSION

This study was conducted to investigate the effects of schoology and canvas on students' academic achievement/interest. We can say that schoology and canvas assisted economics class instruction and did create a quantifiable effect on student academic achievement / Interest. In conclusion, it can be said that schoology and canvas assisted economics class learning affects learners' economics learning abilities.

6. RECOMMENDATIONS

Based on the findings of the study, it is recommended that:

i.   Conferences, seminars and workshops and relevant programs should be organized by professionals of ICT to teach economics teachers on modern technology and its uses.

ii. The government should make ICT equipment and facilities available to all colleges of education in Nigeria.

iii. Teachers should plan for varied design that is conducive to progression in the students learning trajectories. Blending different types of activities, materials and learning tasks.

iv. Economics teachers enjoyed to involve their students in schoology and canvas methods of instruction. This is expected to improve their comprehension and understanding of Economic contents and eventually improve their performance in the subject.

REFERENCES

Aaron .Q. (2017). A digital learning environment to manage all aspects of the learning process. https://www.linkedin.com/learning/learing management - system-IMS - quick-start/what-is-an Ims. retrieved 26 November 2017.

Agommuoh, D. and Nzewi, A. (2003). Moving Towards E-learning in Schools and Colleges.*UK Price Water House Coopers.*http://www.dfes.gov. uk/research/ data/ upload files/RR595.pdf.

Balasubramanian, K., Jaykumar, V., &Fukey, L. N. (2014). A study on "Student preference towards the use of Edmodo as a learning platform to create responsible learning environment". *Procedia-Social and Behavioral Sciences*, 144, 416-422.

Enyimaz (2015). The effectiveness of Blended learning environments. contemporary issues in education Research-4th Quarter Vol. 8 No. 4 251 – 256.

Falahudedin .I. (2014). Remanfaatan Media delam Rembelajaran. Journal lingkar widaiswara. ISSN 2335-4118.Eclisi No. 4 October – December 2014. 104 – 117. Retrieved from www.juliwi.com. Retrieved on 13 November 2017.

Hanan, R. Abdul, S.R. (2019). A proposal Program on Edmodo Platform to Develop Differentiated Instruction Practices of Pre-Service Science Teachers/ International Journal of Education and Research Vol. 7.10 October 2019.

Gay, E., &Sofyan, N. (2017).The Effectiveness of using Edmodo in Enhancing Students' Outcomes in advance writing course of the fifth semester at fip-ummu. *Journal of English Education*, 2(1), 1-11.

Ghahari .C. Goletan .I. (2013). The Effect of Blended learning VS Classroom Learning Techniques on Iranian RFL learners Writing. *International Journal of Foreign Language Teaching & Research* – Vol. I – issues 3-spring. 1(3), pp. 606-614.

Graham C.R. (2006). Blended Learning System: Definitions, Current Trends, and Future Directions. https://www.researchgate.net/publiscation/258834966. Retrieved 26 November 2017.

Katz, A. (2018) "A computer-aided exercise for checking novices' understanding of market equilibrium changes, Journal of Economic education.

Khairul, A. (2012).http.//kharulabdullah.com generasi-alpha-generasi-selepas-xy-z/.Retrieved 12 Nov. 2017.

MacDonald, Z, and Shields, M.A (2016). Winston; An Evaluation: Journal of Economic Survey, Vol. 12 No. 2 221-226.

Mantiri F. (2016). Multimedia and Technology in Learning:*Abia-pacific International University.*

Naidoo, V. (2003). ICT in education policy – Reflecting on key issues: *A paper presented on ICT, at a pan-African workshop in Botswana.*

Nerland, M and Proitz, T. (eds) (2018). Pathway to quality in higher education intends to use some management system tools more than others. computers and education, 71, 247-256, Doi: 10.1016/j. compedi.2013.09.016.

Osunde, M (2003). ICT and Pedagogy, a review of the research literature. A report of DFES, http://www.becta.org.uk/page documents/research/ictpedagogysummarypdf\nsearch.

Ozoji, B.E. (2003). The place of Information and Communication Technology (ICT) in teaching and learning of Integrated Science. *44th Annual Proceedings of Science Teachers Association of Nigeria*. Pp167-171.

Prensky, Marc (2001). Digital natives, digital immigrants Part 1, on the Horizon, Vol. 9. Issue: 5pp.1-6.9(5), 1-6.

Saijo, R (2010). Digital tools and challenges to institutional traditions of learning: Technologies, social memory and the performance nature of learning. JCAL, 26, 53-64 DOI 111/j.1365-2729.00341x.

Sheraga, J.D (1986). instruction in Economics through stimulated computer-based programming. Journal of Economic Education, Vol. 17. spring 39-40.

Smith, L.M and Smith Jr., L.C. (1989) Microcomputer application for teaching microeconomics concepts: some old and new approaches, Journal of Economic Education, Vol. 20 spring 73-92.

Tosun L. (2015). The effects of Blended learning on EFL Student's Vocabulary Enhancement. procedia – social & behavior Science 199 (2015) 641-647.

William F. (2018 The Best (LMS) learning management system for 2018. http://sea.pcmag.com/absorb-ims/10984/guide/the-best-ims-learning management system - for 2018 retrieved 05 November 2019.

Yana, D & Darwati, F.F (2017). The Implementation of Android – Based application as a media for teaching English in simple present tense. Aglosax on, 8(2), 158-165. http://Journal.unrika. ac.id/index. Php/Journalanglo-Saxon/article/view/1215/945.