



Efficacy Of EDMODO On Students Achievement In Learning Electrical/Electronic Concepts In Nigerian TVET Institutions

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ABSTRACT

The purpose of the current study was to investigate effect of EDMODO on students' academic achievement and retention ability of Students in Colleges of Education (Technical) in Gombe and Yobe States. The study was guided by only two research questions and one hypothesis. Quasi experimental design was used for the study. The population of the study consists of 79 NCE III students comprising of 50 from Federal College of Education (Technical) [FCE (T)] Gombe and 29 from FCE (T) Potiskum. The entire population was used for the study. The instrument used for data collection is one hundred item multiple choice questions covering four content areas in TEE 322 (Telecommunications). The instrument was validated by three Electrical/Electronic technology education lecturers. The data were analyzed using the statistical mean, t-test, z-test and Analysis of Covariance (ANCOVA). The findings revealed that there was a significant difference between the overall mean achievement scores of students taught telecommunications concepts using traditional lecture method and those taught using Integration of EDMODO in Traditional Lecture Method. It was recommended that the government through National Commission for Colleges of Education should encourage College management to keep organizing an in-house workshop for teachers on how to embrace the use of EDMODO for effective teaching and learning so as to improve on students' achievement.

Keywords: Traditional Lecture Methods, EDMODO, and Students achievement

INTRODUCTION

Considering efforts made by the Federal Government of Nigeria, there is need for meaningful changes in pedagogical practice in higher institutions of learning. Also, the educational needs of individuals and society in 21st century continue to place a heavy burden on established educational institutions toward making teaching and learning situation easier for both teachers and learners (Mursali, 2019). It is therefore expected that teachers integrate ICT tools into some of their teaching methods like the traditional lecture method that might enhance understanding for better retention of the course content taught. The traditional lecture method of teaching is said to be teacher-centered because it is the teacher that dominates the activity while the students only listen and sometimes write down note (Sawant & Rizvi, 2015). This method of teaching does not encourage the growth of students' auditory sense rather than inquiry or creative minds work Chen, Lai, Lai, & Su, (2022).

According to Akili, (2021) traditional Lecture method of teaching relegates students to the role of passive spectators instead of active learners, traditional lecture method of teaching could be minimized through the integration of modern teaching technology such as EDMODO into the teaching and learning processes. According to Ibáñez, Portillo, Cabada, & Barrón, (2020). EDMODO is an educational learning platform that allows teacher communicate with their students, share

learning materials among others. A good number of teachers perceive that the use of new technologies might have a positive impact on students' achievement.

Statement of the Problem

Despite efforts by the Federal governments of Nigeria, traditional lecture method still remains as dominant teaching method in Nigerian Colleges of Education. Traditional Lecture method of teaching relegates students to the role of passive spectators in the classroom, According to Auwal (2013), lecture method of teaching has long since failed as an effective way of teaching especially to 21st century students. These set of students require a teaching strategy that will provide them with a parallel level of technology opportunity in their academic lives. In addition, there has been serious complaint that the development of ICT has not been accompanied by equal growth of ICT integration into the classroom (Ngoa, 2016). If these issues persist, there will be a disconnection between the way students' lives and learn. Hence, teachers in colleges of education need to adopt modern teaching approach like integration of EDMODO in order to engage students in online so as to reduce the effect of distractions resulting from persistent use of social media by the students for an improved performance.

Purpose of the Study

The main purpose of the study is to investigate the efficacy of Edmodo integrated in traditional lecture method on students' achievement when taught Telecommunication concepts.

Research Questions

The research questions for this study are:

1. What are the mean achievement scores of students taught electronic concepts using traditional Lecture method in Gombe and Yobe State Colleges of Education?
2. What are the mean achievement scores of students taught electronic concepts by integrated Edmodo in traditional lecture method in Gombe and Yobe States Colleges of Education?

Hypotheses

This study was guided by the following null hypotheses. The hypotheses were tested at 0.05 level of significance.

HO1: There is no significant difference between the overall mean achievement scores of students taught electronic concepts using traditional lecture method of teaching and those taught using integrated Edmodo in traditional lecture method of teaching in Gombe and Yobe States.

Significance of the Study

1. As Federal Government of Nigeria is responsible for provision of ICT facilities and formulation of ICT policies through the NCCE, the findings of the current research will be beneficial to the National Commission of College of Education (NCCE) especially when ICT policy redirection.
2. The findings of the research will motivate electrical/electronic lecturers in colleges of education on how to adopt modern teaching approach like integration of EDMODO to engage their students online even outside the classroom, so as to help students improve their performance.

Scope of the Study

In an effort to make the study manageable, it will only cover Colleges of Education (Technical) in Gombe and Yobe states of Nigeria. It is delimited to the Integration of Edmodo in traditional lecture method for teaching electronic concepts. This study will adopt a free Edmodo at www.edmodo.com for integration. The study is also delimited to cover the following four content areas in Telecommunication (TEE 322) offered by NCE III students of Colleges of education (Technical) as contained in the 2012 NCCE Minimum Standard for Technical and Vocational Education.

Literature Review

This section present review of related empirical studies generally on effect of learning management system on students Achievement. Tus, Cruz, Espiritu, & Paras, (2021) conducted a study title "Amidst Online Learning Modality: The Usage of Learning Management System (LMS) and Its Relationship to Academic Performance of the Filipino Students. The study utilized DeLone and McLean survey questionnaire from their research entitled "The Quest for a Dependent Variable." The questionnaire consists of 26-item inventory, and it is designed to know a student's evaluation of the usage of LMS. The study was guided by three research questions and investigates the relationship between LMS usage and students' academic performance. In line with this purpose, the study investigates the

relationship between the usage of a learning management system and academic performance among 188 Filipino senior high school students through quantitative research.

The results revealed that Based on Pearson correlation coefficient, there was no relationship between LMS usage and the students' academic performance. Their grades were not affected by the use of LMS. Thus, it is suggested that the students may use the LMS properly and make it more useful. They can use this more to unite with their teachers and their teachings. They could also strive to use this to improve their skills in school. Also, the teachers should use these LMS more often to bring out the LMS' use and purpose. They can also use this to help their students improve and enhance their skills academically.

RESEARCH METHODS

Research Design

Non-equivalent Quasi-experimental design was used for the current study. According to Aminizadeh, Pourvakhshoori, Beyramijam, Majidi, & Rabori, (2019). Such design is employed only when randomization was not possible and it is typically easier to set up than real experimental design, to use a natural classroom setting for experimental research, nonequivalent group Quasi-experimental design is considered appropriate Hunter, Colón-González, Brainard, & Rushton, 2021). The target populations of this study are all the 79 NCE III (Technical) students in Federal College of Education (Technical) Gombe, and Yobe. Entire NCE III students were considered manageable. Hence no sampling was conducted.

FINDINGS

Research Question 1: *What are the mean achievement scores of students when taught electronic concepts using traditional Lecture method of teaching in the Colleges of Education in Gombe and Yobe States?*

Table 1: Mean and Standard Deviation of Pre-Test and Post-Test Scores of Students Taught Using Traditional Lecture Method

Group	Pre-test			Post-test Control group (TLM)		
	N	\bar{X}	SD	N	\bar{X}	SD
Gombe	50	22.28	6.17	25	45.92	7.76
Yobe	29	27.00	7.36	15	46.67	8.24

TLM = Traditional Lecture Method

The findings shown in Table 1 answered research question 1. The table shows the pre-test and post-test learning achievement of the control groups in Gombe and Yobe States. The pre-test and post-test mean scores of students in Gombe were 22.28 and 45.92 while for Yobe were 27.00 and 46.67 respectively. This implies that the pre-test mean score of the students in both Gombe and Yobe states were extremely low while the post-test means achievement score was very low.

Research Question 2: *What are the mean achievement scores of students when taught electronic concepts using Edmodo integrated in lecture method of teaching in Colleges of Education in Gombe and Yobe States?*

Table 2: Mean and Standard Deviation of Pre-Test and Post-Test Mean Scores of Students Taught Using IEDMITLM

States	Pre-test			Post-test Experimental (IEDMITLM group)		
	N	\bar{X}	SD	N	\bar{X}	SD
Gombe	50	22.28	6.17	25	63.20	16.21
Yobe	29	27.00	7.36	15	66.29	13.75

IEDMITLM = Integrated Edmodo in Traditional Lecture Method

The findings in table 2 answered research question 2. The table shows that, the pre-test and post-test mean achievement scores of students in Gombe were 22.28 and 63.20 while for Yobe were 27.00 and 66.29 respectively. The Table shows mean learning achievement of student in Gombe and Yobe State as 63.20 and 66.29 respectively. This finding revealed that the experimental group achievement was high.

DISCUSSION OF FINDINGS

The findings of this study are discussed in relation to available literature. The discussions are based on the research questions and hypotheses.

Research question 1: Table 1 revealed that the achievement of students taught electronic concepts using the TLM of instruction was extremely low. The extreme low mean achievement in traditional method group could be due to student s attention not being aroused by the teaching method. The current finding is in agreement with research findings by Auwal (2013), who revealed that the lecture method has long since failed as an effective way of presenting information especially to students in the 21st century

Research question 2: Table 2 revealed that the mean learning achievement of student taught electronic concepts using the IEDMITLM of instruction was high. This could be as a result of using Edmodo. The current finding disagrees with a previous study by Tus, Cruz, Espiritu, & Paras, (2021), which pointed out that there was no relationship between LMS usage and the students' academic performance. Their grades were not affected by the use of LMS. The findings in table 1 and 2 clearly shows that the null hypothesis1 was rejected, this findings clearly indicates significant difference in the means learning achievement of those taught using IEDMITLM and those taught using TLM in Gombe and Yobe States. This further indicates that group taught using integrated Edmodo in traditional lecture method performed better than TLM group.

CONCLUSION

It is imperative to note that group of students taught electronic concepts using traditional lecture method integrated learning management systems performed better than those students taught electronic concepts using traditional lecture method alone. This implies that LMS enables teachers to commit more student senses in teaching when fully integrated especially into the traditional lecture methods of teaching. The implication of this study is when LMS is integrated into the traditional lecture method of teaching; graduates of electrical/electronic technology will be better prepared. As previous research revealed, there is disconnection between the way students live and learn, closing this gap poses a great challenge for our current school system. Current research suggests that with integration of learning management system in traditional lecture method, prospective teachers in Colleges of Education will be better prepared to face education challenges brought about by emerging technologies for instructional delivery. Integration of LMS will broaden teacher and students access to information and provide them with oportunities for collaboration and independent study at any place and time.

RECOMMENDATIONS

Based on findings of the current study and their implications, the following recommendations were made:

1. The Federal government of Nigeria through National Commission for Colleges of Education should encourage College management to organizing an in-house workshop for teachers on how to embrace the use of EDMODO for effective teaching and learning so as to improve on students' achievement

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