E-Learning and Students Academic Performance in Nigerian: Evidence from Enugu State Tertiary Institutions

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ABSTRACT: This study examined the effect of E-learning on students' academic performance in Enugu State tertiary institutions. Questionniare was used as a means of data collection. The population for the study consists of students of Enugu State University of Science and Technology, Enugu, and University of Nigeria, Enugu Campus. A sample of 102 students responded to the questionnaire and data were statistically analyzed using regression analysis. The result revealed that e-learning has a significant positive effect on academic performance among students of tertiary institutions in Enugu, Nigeria. Since e-learning is a welcome development, the tertiary institution management should ensure adequate logistics for E-learning of their students, this will enhance the students' academic performance.
Keywords: E-Learning, Academic Performance, and Tertiary Institutions

I. INTRODUCTION

In these days internet has become a major part of our daily life. Sharing our views ideas and our lives by using internet with other people, has transform a lot in the way we work, study, and spend our free time (Muhammad & Iqra, 2014). Recent calls for instructional innovation in undergraduate courses and programs highlight the need for a solid foundation of education research at the undergraduate level on which to base policy and practice (Somayeh, Dehghani, Mozaffari, Ghasemnegad, Hakimi, Samaneh, 2016). Learning is a process to achieve knowledge, skill, and ability to make decisions and performance that ultimately leads to a change in their behavior (Manya, Vishnu & Gayathri, 2018).

In the present era, education has been identified as a basic human right with the rapid changes and the advent of new techniques and skills in information technology has its impact on the ways and means of living and also on academic process, too (Romero, Guitert, Bullen, Morgan, 2013). Increasing a strong tendency toward e-learning shows the various benefits of this method compared to traditional methods of instruction (Anderson, 2008).

E-learning helps the learner to get knowledge at a distance through electronic means, as well enables people to learn at any time and any place, for this, it calls for computer and an internet connection". According to Chorng-Chyang, Jung-Yu, and Yi-Shun (2003) "Delivered or enabled experience by electronic technologies including the internet. Internet and extranet divide the limitations of time and space and also creates many benefits, including reduced cost, regulatory compliance, meeting business needs, retraining of employees, low recurring cost, and customer support. In medical, e-learning play a veritable role due to technological changes in health cares and nurses constantly need to update their professional knowledge and skills to ensure the quality of health care provision (Yu & Yang, 2006).

However, E-learning is gaining large popularity in the country due to various socio-economic parameters and the rising demand for education. The campus-based education system is not able to cope with the increased demand for training, education, and updating knowledge. E-learning has grass root as a viable option for lifelong learning and as a means for human resource development in the world (Kumar & Bajpai, 2015). The importance of e-learning is being realized by the educators and stakeholders across the globe as it has the potential to provide access to higher education. It encourages education system which has something to offer to people across the whole society. It covers all technologies and supports the pursuit of lifelong learning for all.

Anderson (2008), reported that majority of international studies that used technology in the classroom does not guarantee academic performance. Information and communication

technology for acquire knowledge is called E-learning. E-learning is a term which is used to describe the online education and web-based training etc. (Oye, Salleh & Lahad, 2010). E-learning has become major approach of learning in tertiary institutions due to increase in growth of internet technology. This approach of learning enables students at different continents to attend the same classes almost at the same time. E-learning is a process of using information and communication technology (ICT) to enhance and facilitate teaching and learning. The purpose of e-learning has significantly affect student's academic performance. E-learning use is associated with increased student's academic performance. These days technology is a tool used to remove geographical barriers and facilitates everybody to learn anytime and anywhere in the world without the presence of the lecturer. The main of e-learning is to increase accesses to education and reducing the costs and time as well as improving student's academic performance. Recently, technology is become a medium of teaching and learning without being at university campuses (Oye, Salleh & Iahad 2012).

There is an already existing concern on the adoption of e-learning and student academic performance in diverse areas. For instance, In the study of Manya, Vishnu, and Gayathri (2018), the results found that e-learning has a positive influence on the academic performance of undergraduate students. Kumar and Bajpai (2015) reported that to improve motivational effectiveness and academic achievement, higher education should consider aiming to develop e-learning strategies that encourage greater engagement and also take into consideration the diverse learning styles found among the student.

In another study by Neema-Abooki and Kitawi (2014) found that the e-learning strategies adopted at the University positively impacted on students' academic performance. On the other hand, Muhammad and Iqra (2014) measured the factors affecting the use of e-learning and its effect on students on the base of three variables time, technology and workload. The study found that the independent variables; time, technology, and workload have great influence on dependent variable, e-learning. Kassahun (2014) evaluated the influence of e-learning on the academic performance of year II mathematics students in Jimma University, in basic algebra course (main concept of algebra). The result showed no difference between the conventional and ICT supported learning on student performance with all pros and cones occurred during the experimenting

time. This study contribute to the already existing studies on e-learnings, its utilization and challenges are concerned enthusiastically focusing on students of tertiary institutions in Enugu.

II. REVIEW OF RELATED LITERATURE

E-learning

The e-learning is an umbrella term that describes learning done at a computer, usually connected to a network, great an opportunity to learn at any anytime, anywhere. E-learning is efficient as it eliminates distance and subsequent commutes. Distance is eliminated because the e-learning content is designed with media that can be accessed from properly equipped computer terminals and other means of Internet accessibility (Kumar & Bajpai, 2015).

Information and communication technology to enhance and facilitate teaching and learning is called E-learning (Oye, Salleh & Lahad, 2012). According to Rogers (2008), in this modern age E-learning has a competitive advantage and many universities have implemented it and this has impacts on student's performance or GPA, though, there are other Universities that use low interactive E-learning which is not enough to contribute to the performance of their students.

E-Learning is known as Web-based learning, online learning, distributed learning, computer-assisted instruction or Internet-based learning. It is primarily a web-based system of education that makes information or knowledge available to users, or learners. On the whole, E-learning disregards geographic proximity (Udjo & Amal, 2018).

E-learning describes using information and communication technology (ICT) as improving learning within educational training. Nevertheless, e-learning involves the uses and application of a variety of tools and techniques, for instance, e-mails, websites, blogs, social and business media, and being able to access program supplies on the internet whilst carrying out programs delivered entirely on the internet (Heeger, 2010).

Tavangarian, Leypold, Nölting, Röser, and Voigt (2004) found that E-learning is the adoption of electronic media to facilitate teaching and learning. It utilizes technology to deliver information embedded in educational material to learners situated in diverse geographical areas. E-learning is a substitute method for teaching and learning. It veers away from the conventional classroom lectures (Herrington et al., 2010). Alavi and Leidner (2001) conceptualized E-learning as a virtual learning environment where different forms

of information technologies are used to mediate between the learner and the instructor. E-learning attempts to shift the focus of academic environment away from the physical teacher-student environment while disseminating information, without concern to distance, instructors utilize new and improved web-based technologies to plan and structure teaching materials (Clark & Mayer, 2008). According to these authors, e-Learners are subjected to more critical challenges when compared to conventional learners. This is so because the efforts which should have been put in by instructors in motivating and instilling discipline in learners are transferred to the e-learner in an E-learning setting. Stated succinctly, the responsibility of inspiring and encouraging discipline is transferred from the conventional lecture- bearing instructor to the learner himself (Liaw, 2008).

E-learning and Academic Performance

Academic performance has been a fundamental concern in education right through recorded history (Plato, Apology, 399 B.C.) while it is daunting to try to make sense of all the literature in this area (Kumar & Bajpai, 2015). This section seeks to review the issues centered on these themes. The impact of E-learning is assessed by ascertaining if students were able to grasp what was delivered or taught to them. Rosenberg et al., (2006) noted that E-learning reduces the ability of students to grasp what is taught or delivered. These authors stressed that there are marked differences between traditional face-to-face learning and E-learning. On the other hand, Johnson (2005) found that online teaching strategies have a negative impact on academic performance.

On the contrary, Cavanaugh (2001) emphasized that E-learning and the traditional face-to-face approach are comparable. Arguments in favour of E-learning over the traditional or face-to- face learning are those of Breuleux, Laferrière & Lamon, 2002; Chambers, 2003). The core arguments of these authors are that E-learning have positive impact on students' performance and that it increases the enrollment in academic program. Further to this, Kearsley (2000) opined that online learners achieve the same level of performance and satisfaction which is equal to that of face-to-face setting provided that the quality of instructional materials is similar.

Empirical Studies

Manya, Vishnu, and Gayathri (2018) ascertained the effect of e-learning on academic performance of undergraduate students. A questionnaire was prepared and distributed among various undergraduate students, and the results were assessed. The results obtained, e-learning has a positive influence on the academic performance of undergraduate students. Udjo and Amal (2018) evaluated the influence of web-based learning on academic staff at King Khalid University utilizing a sample of 163 respondents as our unit of analyses. Structural equation modeling (SEM) was employed to test the hypothesized model. The results indicate that our hypothesized model reasonably fitted the data collected and five of the nine hypotheses were refuted. Kumar and Bajpai (2015) examined the data for the presence of interaction effects of e-learning study on male, female, and socio-economic characteristics. The study concluded that to improve motivational effectiveness and academic achievement, higher education should consider aiming to develop e-learning strategies that encourage greater engagement and emphasis on the different learning styles found among student. Mothibi (2015) estimated the relationship between e-learning and students' academic achievement in higher education, using a sample of 15 research studies conducted between 2010 and 2013. The results revealed that ICT has statistically significant positive impact on e-learning based students' academic performance. The findings indicate that ICT has a significant positive impact on students' educational overall academic achievements. Neema-Abooki and Kitawi (2014) examined the impact of e-learning strategies on students' academic performance at Strathmore University. This was done by comparing students' engaged on ICT with those that do not. The findings were that the e-learning strategies adopted at the University positively impacted on students' academic performance. Muhammad and Iqra (2014) measured the factors affecting the use of e-learning and its effect on students on the base of three variables time, technology, and workload. Questionnaire was used for data collection. A sample of 100 students of Islamia University of the Bahawalpur was selected for the survey. Data were analyzed by using Cronbach's Alpha, correlation, and regression in SPSS software. The study found that time, technology, and workload has high influence on e-learning. Kassahun (2014) studied the influence of e-learning on the academic performance of year II mathematics students in Jimma University, in basic algebra course. This study was a Quasi-Experimental design. The experimental result showed no difference between the conventional and ICT supported learning on student performance with all pros and cones occurred during the experimenting time.

III. METHODOLOGY

The population for the study consists of students of Enugu State University of Science and Technology, Enugu, and University of Nigeria, Enugu Campus. Convenience sampling technique was used to select the 150 respondents that served as the sample size for the study as the research was by online for student performance and questionnaires answered by students who used some form of e-learning. A sample of 102 students responded to the questionnaire. After the data collection, the results were statistically analyzed using regression analysis.

Model Specification

$ELjt = \beta0 + \beta1\ ACPRFjt + ejt$

Where: $ELjt$ = E-learning at time t

$ACPRFjt$ = Academic performance at time t

$\beta0$ = Constant or intercept.

$B1$ = Coefficients of explanatory variables.

ϵjt = Error term.

Test of Hypothesis

Ho: E-learning has not significantly affected academic performance among students of tertiary institutions in Nigeria.

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.952[a]	.906	.901	5.40003

a. Predictors: (Constant), EL

Table 1 reveals an adjusted R^2 value of .901. The adjusted R^2, which represents the coefficient of multiple determinations, indicates that 90% of the total variation in the dependent variable (academic performance) is explained by the explanatory variable (E-Learning). The adjusted R^2 of 90% did not constitute a problem to the study model and further suggests that the explanatory variable is properly selected and used. The value of adjusted R^2 of 90% also shows that 10% of the variation in the dependent variable is explained by other factors not captured in the study model.

Table 2: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5052.115	1	5052.115	173.253	.000[b]
	Residual	524.885	18	29.160		
	Total	5577.000	19			

a. Dependent Variable: ACPRF

b. Predictors: (Constant), EL

Table 3: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.625	2.323		-.269	.791
	EL	1.005	.076	.952	13.163	.000

a. Dependent Variable: ACPRF

The results in table 2 and 3 shows p-value of 0.000, this shows that e-learning has a positive effect on academic performance and this effect is statistically significant measured with a beta coefficient (β_1) and t- value of .952 and 13.163 respectively and p- value of 0.000 which is statistically significant at 5%: academic performance = $2.323 - 0.706\ EL + \mu$

This beta coefficient revealed that if e-learning increases by one unit, then the academic performance would increase by 0.71%. Based on the empirical evidence, e-learning has a significant positive effect on academic performance among students of tertiary institutions in Enugu, Nigeria at 5% level of significance, thus, the alternative hypothesis of the study is accepted.

This result is in line with Mothibi (2015) whose finding indicated that ICT has a significant positive impact on students' educational overall academic achievements. Manya, Vishnu, and

Gayathri (2018) results also revealed that e-learning has a positive influence on the academic performance of undergraduate students. However, Neema-Abooki and Kitawi (2014) found that e-learning strategies adopted at the University positively impacted on students' academic performance but a digital divide in disfavour of poor students is cutting back on the effectiveness of e-learning at the University.

IV. CONCLUSION AND RECOMMENDATION

New technology has caused serious issues in many domains of social and individual life. As an advanced tool, that played a veritable role in improving teaching and learning in light of educational reforms across the globe. E-Business, E-Government, E-Banking, and other such 'E' words have appeared and become globally popular. E-learning is one of them and can enhance economic outcomes through multiple mechanisms; it is difficult to measure the benefits. (Roffe, 2002).

So many issues have been on track among scholars on the effect of e-learning upon the academic performance in tertiary institutions in Nigeria. However, some scholars are in favour of e-learning while others have a different opinion over the possibility of e-learning in improving academic performance. In the course of this study, the empirical evidence, e-learning has a significant positive effect on academic performance among students of tertiary institutions in Nigeria at 5% level of significance. On this note, since e-learning is a welcome development, the University management should ensure adequate logistics for online learning of their students, this will enhance the students' academic performance.

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