Academic Performance in Online Classes of Undergraduates in Education: A Descriptive Study in Africa

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Abstract: This study investigated the academic performance in online classes of undergraduates in education: a descriptive study in Nigeria. The quantitative data from the study was analysed with descriptive and inferential statistics, and appropriate statistical tools were used to test the generated hypotheses. The statistical analysis determined the mean and the standard deviation. Pearson Product Moment Correlation coefficient (PPMC) was used to establish the magnitude and direction of the relationship between the two variables in hypotheses one and two, while one-way ANOVA was applied to compare the mean effects of the existing groups in the variable. All hypotheses were tested at a 0.05 level of significance using Statistical Software for Social Sciences (SPSS). Concerning online lectures, the finding showed a calculated r-value of 0.58, which is positive and more significant in magnitude than r-critical (r-crit. = 0.195) at 0.05 significance level and 199 degrees of freedom. It indicated a positive relationship between online lectures and students' academic performance because both variables are correlated positively. For the learner characteristics, the calculated r-value of 0.36 is positive and more significant in magnitude than r-critical (r-crit. = 0.195) at 0.05 significance level and 189 degrees of freedom. It has further indicated a positive relationship between learner characteristics and students' academic performance because both variables are correlated positively.

Key-words: online learning; student academic performance; learner characteristics; e-learning; self-directed learning; teaching technology.

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1. Introduction

In Nigeria, education is one of the most valued industries which touches every area of human life. It is the bedrock of economic and personal development, and it drives economic, social, and personal development, and all levels of governments proclaim its importance. It is also a way to achieve pollical change in the country; since it acts as the agent of change that revives a nation's economy and improves personal and social growth (FGN, 2004). The continuous growth of Nigeria's population heightens the demand for education at all levels. According to the National Population Commission, Nigeria has a population of about 140 million people (NPC, 2010); it is the most populous country in sub-Saharan Africa. The country occupies a landmass of nearly 923,768 square kilometers with more than 275 ethnic groups that make up the nation. Consequently, the dwindling financial and economic circumstance within the country makes it economically and socially challenging to provide quality education to the students (Jegede & Sadeq, 2003).

More than 1.5 million students in Nigeria write Jamb exam and meet the required cut-off mark, but only about half of them are admitted into the university. The major reason most students are denied admission is that the universities do not have enough space, resources, and facilities to accommodate all the qualified students. In the federal universities, the students are packed like sardine in the lecture rooms filled at overcapacity (Alonge, 2020). Additionally, students take longer time to complete their degrees because of strike which keeps them out of campus for long school periods. Unfortunately, the dispute between the university staff and the federal government of Nigeria extends the academic calendar by at least one or two years, as a result the students stay longer in school and there is even less space and resources for new batch of students to be admitted (Ojo, 2018).

The difficulty of funding Education for All (EFA) irrespective of social, environmental, cultural, and ethnic background through the traditional face-to-face means has compelled the need to implement appropriate and cost-effective mode of education. These situations necessitate the use of more reliable, efficient, and cost-saving mode of education (Sadeq, 2004). The logical means to achieve standard educational goals is to adopt online education (Jegede, 2003).

In Nigeria, most conventional universities are implementing the use of one mode of ICT or another to carry out their academic activities, hence the increased usage of ICT in education has promoted distance education in Nigerian universities (Jegede, 2007). Online education has increased the students' access to learning opportunities, created convenient time to learn, made available greater learning resources, improved opportunities for students

to learn individually and created more powerful cognitive tools for students (Khan, 1996, Pierre, 1998).

The use of technology in education helps to remove geographical barriers and encourage everyone to learn from anywhere at any time in the world without physically attending classroom. Students from different geographical locations can attend the same lecture online at the same time. It increased accessibility of education and reduced costs and time spent on attending classroom lectures (Ho, Chun-Ling, & Ren-Jye Dzeng, 2010; Sharpe, Rhona, Greg, & Richard, 2006; Draper, Stephen & Brown, 2004). Therefore, it is believed to improve students' academic performance, (Rogers, 2008). The adoption of ICT in teaching and learning has a significant influence on the students' academic performance and achievement; it has been associated with increased academic performance. Online lectures have competitive advantage over face-to-face classroom instruction, and this positively impacts student's academic performance and their GPA (Hughei, 2010).

Despite the increasing popularity of online learning among Nigerian universities, full online learning is still regarded with ambivalence because of mixed views from a large body of research findings. Some researchers conclude that students engaged in online education, learn as much as those in the traditional face-to-face classroom instruction, they earn comparable grades and are justly satisfied (Zhao, et al., 2005; Jahng, Krug, & Zhang, 2007; Sitzmann, et al., 2006; Phipps & Merisotis, 1999;). Contrarily, other researchers claim that students are not likely to complete their courses with the online mode of education (Beatty-Guenter, 2003; Carr, 2000; Chambers, 2002; Moore, Bartkovich, Fetzner, & Ison, 2003).

The application of ICT in higher institutions has changed teaching and learning processes. E-learning is the use of technological mode to enhance and promote teaching and learning (Oye, N.D., Iahad et al., 2012). According to Sale, (2002), online learning is the application of electronic technology to deliver learning training instructions, as well as monitor, assess and report learners' progress. It is also defined as an ingenious mode for transferring electronically designed, student-centered learning environment to the learner anytime and anyplace using the internet and other digital technologies (Hedge & Hayward, 2004). Online education and face-to-face classroom instruction are similar, they follow the same syllabus, textbooks, class size, same assignments, quizzes, tests, and grading guideline. The main difference is basically on the mode of instruction and communication; with online education, instructions occur online through standardized videos and audios. Several pedagogical, social, and economic factors necessitate the adoption of ICT techniques to classroom instructions. These include increased access to information, increased communication through electronic media, cost effectiveness, synchronous learning and increased collaboration and

cooperation, including improvement in pedagogy through simulation. Both teachers and students use applications that are flexible in time and place (Oye & Iahad, 2011).

2. Statement of Problem

Globally, educators believe that the COVID-19 pandemic is a prototypically adaptive and transformative challenge and so a swiftly designed response is needed in the form of alternative teaching methods (OECD, 2020). There is no preconfigured manual that will guide educators to take appropriate steps as they allow the pandemic to run its course while students continue learning, the only option in this situation is for higher institutions to embrace online lecture mode of teaching (UNESCO, 2020). In Nigeria, the traditional mode of education has been challenged recently because of the COVID-19 pandemic, therefore, online learning has speedily become an essential means to teach in higher institutions (Njoku, 2020).

Online learning or distance education (learning) has revolutionized the education system globally for some time. Most higher institutions have recognized that the physical presence of the learners and instructors in a classroom is not critical for learning to take place, with the rise in technology and Internet (Parajuli, 2020). In addition to offering higher institutions an alternative means to learning and teaching during period of COVID-19 pandemic, enabling students to continue with their studies, online lectures allow students acquire new cognitive and technical skills or improve old learning skills (United Nations, 2020). Online lecture avails the learning instructors the opportunity to take advantage of all forms of teaching technology for virtual classrooms such as videos, audios, slides, PDFs, and word documents (Godson, 2017).

Educators worldwide have divers view and varying degrees of enthusiasm concerning online education. This is reflected in numerous studies that fail to arrive at a consensus; some conclude that there exist significant differences in students' academic performance between online learning and traditional classroom learning (Mason, Robin, & Weller, 2000; Gholamhosseini, 2008; Ellis, Robert, Ginns, & Piggott, 2009). How well students thrive and achieve academic success under online lecture method depends on how the students and teachers are facilitated and encouraged to appreciate the learners' innate potentials and the numerous advantages of online education.

3. Purpose of the Study

Several quantitative studies have investigated the effectiveness of online learning (Bennett & Bennett, 2002; Goodwin, 1993; Hara & Kling, 1999).

Despite the increase in literature about the increase in online education, few studies have focused on the impact of online education on student's academic performance. There is need to investigate how online lectures influence students' academic performance. This study proposed to study the quality of online lectures received by the students of the Faculty of Education, University of Lagos. The study will investigate how online lectures influence students' academic performance.

The findings of this study will contribute to majority of literature focused on online lectures and how online learning affects students' academic performance. The results will enable institutions evaluate their online lectures based on the students' learning styles.

Aim of the Study

Previous studies have investigated the effectiveness of online learning and distance education very few studies have focused on the impact of online lectures on academic performance of undergraduate students. Therefore, this study investigates the academic performance in online classes of undergraduate students in education: a descriptive study in Nigeria.

The following research questions governed this current study:

1. How significant is the relationship between online lectures and students' academic performance?
2. To what degree does an online lecture correlate with learner characteristics?
3. Does an online lecture impact students' academic performance?
4. The study tested the following generated hypotheses.
5. There is no significant relationship between online lectures and students' academic performance.
6. There is no significant relationship between learner characteristics and students' academic performance.

Scope of the Study

The scope of this study covers the academic performance in online classes of undergraduate students in education: a descriptive study in Nigeria. Therefore, the investigation is limited to examining the academic performance in online classes of undergraduate students in education: a descriptive study in Nigeria.

4. Review of Related Literature

This study reviewed works of literature in three significant areas: online lectures; learner characteristics, and students' academic performance.

Online Lectures and Academic Performance

Contemporary learning theories emphasize constructivism, whereby students construct new knowledge based on their previous knowledge and experiences. Supporters of constructivism oppose the belief of the objectivists which states that students are passive learners while the teachers know what the students need (Creswell, 2009; Cobern, 1996). According to William (2004), students individually construct and socially negotiate new knowledge. They emphasize how learning takes place instead of the way learning develops (Yager, 1991; Cobern, 1996). Constructivists focus on the content of the learner's thoughts, with the learners as primary actors. Integrating ICT with learning facilitates students to individually construct knowledge (Kenny, 2001). Fisser & Felliccione (2002), emphasized that development in Information and Communication Technology (ICT) has influenced all aspects of human life, even education. The objective of online education is to increase and improve students' access to quality education in the country (Parsad & Lewis, 2008).

Online education is an old practice that promotes distance education, life-long learning, and e-learning in most parts of the world, including in Nigeria (Sale, 2012). It is usually used to refer to internet education, e-learning, virtual education, cyber-learning, and asynchronous learning (Allen & Seaman, 2003; Office of Sustainable Development, 2000). Choi (1995) argues that knowledge is naturally constructed when students interact with their environment and context. Wilson (1995) suggests that constructivism is a holistic approach to learning; it involves making sense of the world through information from the surrounding. What the student does is more important and crucial to learning than what the teacher does (Shuell, 1988). Additionally, students rely on what they perceive, interpret and plan to do (Biggs, 1999); hence, ICT integrated learning gives learners the opportunity to enhance learning through interaction. Perking (1991) argues that constructivist learning is reinforced when the student engages in play-oriented activities more than task-oriented activities such as in electronic-supported learning.

There are conflicting research findings in literature about the influence of online or electronic learning on students' academic performance, these findings range from positive, negative to no significant difference in students' academic performance between online education and traditional face-to-face classroom learning. Research studies have confirmed that online learning is as good and maybe better than the regular face-to-face classroom learning, even though experts claim that it is mentally, emotionally, and academically challenging to the students (Bintliff, 2011). Online education forces the students to think critically and be active participants in their learning activities, they are self-motivated, self-disciplined, independent, and goal-oriented learners (Kerr, Rynearson, & Kerr, 2006; Wojciechowski & Palmer,

2005). Students become conversant with modern technology as they learn new things at their convenience (Hachey et al., 2013; Parsad & Lewis, 2008).

Contrarily, other researchers suggest that students who engage in online education are naturally stronger at academic preparedness than average students (Xu & Jaggars, 2011). They claim that these students possess time-management, multitasking and critical thinking skill which enable them to be self-disciplined, self-motivated, responsible, organized and goal-oriented learners (Kiely, et al., 2004; Johnson & Berge, 2012; Kerr et al., 2006; Neuhauser, 2002; Rovai, 2004; Kenner & Weinerman, 2011; Wojciechowski & Palmer, 2005). These students possess the potential to take responsibility for their own learning experiences and work independently. According to Shea & Bidjerano (2014), when students participate in online learning during their first year in university, they have higher rate of completing their degrees than those that did not engage in online education during their first year in college. In addition, Oye, et al., & Keshaverz (2012) claim that online education impacts positively on students' academic performance due to reduced costs, time saving and increased accessibility to learning materials which increases academic achievement (Oye N. A., et al., 2012; Maleki, Shahab, & Zohre Sanisales, 2015).

Most students need the flexibility offered by online education so they can balance school with family demands, but others struggle with online education due to low levels or lack of self-directed learning skills (Jaggars & Smith, 2014). Despite these benefits, most studies suggest contrarily that online learning negatively affects students' academic performance, they claim that students become isolated, those with language deficiency become disadvantaged in text-laden circumstances and parents fear for the children's social development. The opposers of online learning report that students cannot develop motivation skills when they are to complete a task on their own under the pressure of time (Ruiz, Jorge, Mintzer, & Leipzig, 2006; Bernard, Robert M., et al., 2004; Jahng, Namsook, Don Krug, & Zhang, 2007). Opponents of online learning are concerned if the method can provide the same face-to-face interaction between students-instructors and students-students as found in the traditional classroom setting (Roblyer & Ekhaml, 2000).

The opposers believe that students need to attend real classrooms and be physically present in a classroom with a teacher to guide their learning activities. Hence, they argue that the major disadvantage of online learning is the lack of interpersonal skills development, lack of student motivation and lack of memory and learning development, (Cantoni, Virginio, Cellario, & Porta, 2004; Al-Alawneh & Muhammad 2014). These researchers believe that face-to-face classroom learning provides live interactions between the students and the teachers, which helps the learners become organized with

their studies (Berge, Zane, Muilenburg, & Haneghan, 2002; Fann, & Lewis, 2001).

Opposers of online education are concerned about the quality of learning instruction delivered to the students, because instructors would simply transfer their traditional classroom pedagogy to the online format, missing out on the advantages of computer-mediated education (Cox, 2005). Other skeptics argue that there is limitation on student-teacher and student-student interactions and relationships (Bambara, Harbour, Davies, & Athey, 2009). These opposers argue that online education is bound to cause non-completion of courses; this contradicts the view of the supporters of online education who claim that it leads to superior learning outcomes and that the high rate of online dropouts is attributed to the characteristics of individual students and not due to the method of delivering instruction (Howell, Laws, & Lindsay, 2004). Bennett et al., (1999) suggest that one major disadvantage of online education is that both learners and teachers do not receive immediate feedback (Bennett, & Maniar, 1999). Ross & Schulz add that online education requires students to be self-disciplined for them to succeed academically (Ross & Schulz, 2009).

Learner Characteristics and Academic Performance

Learner characteristics refer to numerous aspects of the learners' psychological, social, behavioral, and natural attitudes towards learning. It is broad and comprised of situational, affective, and demographic characteristics that cut across the population of learners. Research has demonstrated that earlier online learner, who were engaged in distance education shared common broad demographic and situational characteristics, such as adults and active workers, but no data findings showed that they were homogeneous or unchanging (Thompson, 1998). The profile of earlier online learners was based on classic distance education settings, such as home study or correspondence, where majority of the learners are adults with family, social and occupational responsibilities (Hanson et al., 1997). Hence, the archetypal profile of a learner has not been converged, but its specific elements can be operationally defined as the constructs that forecast the probability of learners' success under a given condition (Cronbach & Snow, 1977). The groups were largely characterized by the constructs of independence, adulthood, self-motivated, self-disciplined, self-starters and goal-oriented learners (Anderson & Garrison, 1998; Dabbagh & Bannan-Ritland, 2006).

The process of globalization has changed the range of online learners' population from profile of homogeneous adults, who are employed, geographically bound at a place, goal oriented and self-motivated to heterogeneous youths, who are dynamic and responsive to technological advancement. According to Swan (2004), the several constructs of learner's characteristics, for instant, motivation, learning style, attitude, study habit,

ethnic and cultural background influence online learning and academic performance. Although academic success of online learners is not determined by their perceived skills, characteristics, and educational needs, but the knowledge will enable teachers, administrators, and instructional planners to understand the behaviors of online learners, how they can be motivated and potential barriers that hinder online learners from successfully completing their program (Galusha, 1997).

According to Song et al., (2004) there are several factors that influence students' online learning experiences (Song, Singleton, Hill, & Koh, 2004). These factors affect students' perception of online lectures through their difficulty understanding the online learning goals, technical problems associated with use of technology, and lack of community interaction. Additionally, the learners' characteristics and the design of learning environment affect students' perception of online lectures, which in turn influence their academic performance (Howland & Moore, 2002; Clark, 2002; Dwyer, 2003; Song et al., 2004).

Learners' online learning experiences are heavily influenced by the individual characteristics of the learners (Howland & Moore, 2002). The key characteristic that affects online learners is the learner's perception of themselves. When the learner is positive about their online learning, they become constructivist learners. Positive learners are highly independent, proactive and they take responsibility for their learning. On the other hand, students with negative self-perceptions about their online lectures have the same goals, expectations, structures, and information as they did with the face-to-face classroom learning. These students needed more feedback and structure from the lecturers (Howland & Moore, 2002).

Students' academic self-concept has been proposed as one of the key determinants of academic success for online learners (Dille & Mezack, 1991). The researchers investigated the locus of control of students enrolled in distance education, focusing on internal and external attribution of academic successes and failures and the students' learning style (verbal, visual, and kinesthetic). They concluded that students' locus of control significantly influenced the success and persistence of online students (Dille & Mezack, 1991). When online students attribute their academic success and failure to internal locus of control, they were more likely to get a C grade or better and they persevered longer on tasks than students with external locus of control, who attributed success and failure to externally uncontrollable factors like task difficulty and luck.

Self-directed learning is another key characteristic of online learner; it refers to the learners' skill and ability to "learn how they learn" or to be metacognitively aware or their own learning (Olgren, 1998). According to Cheurprakobkit et al., (2002), students engaged in online lectures need to exhibit "self" behaviors, such as self-starter, self-motivated, self-discipline,

self-monitoring, self-initiative, and self-management, these are components of self-regulated and self-directed learning.

These behaviors of self are vital for online learning given that an instructor will be absent, and the learner needs to critically monitor and regulate his own learning.

Numerous studies investigated other aspects of online students' attitudes, personality, study habits, rate of completing program, psychological, academic, and social integration factors that hinder persistence in online learning and predict academic success (Stone, 1995; Laube, 1992; Bernt et al., 1995; Fjortoff, 1995; Garland, 1993; Pugliese, 1994). Generally, the studies concluded that when online learner are intrinsically motivated, and they possess internal locus of control, coupled with high positive attitude towards the online instructor, and a high expectation for academic success, they were more likely to earn higher academic performance (Dille & Mezack, 1992).

5. Methodology

Research Design
Descriptive survey design was used in this study. The survey method was used to collect information on existing data without manipulation. The technique adopted the use of a questionnaire to collect data from respondents. The dependent variable is students' academic performance, while independent variables are online lectures and learner characteristics.

Population and Sample of the Study
The study's target population comprised undergraduate students of Faculty of Education in University of Lagos. The study involved a total number of 200 respondents. They included 115 male and 85 female students, randomly selected from different areas of specialization in the department. A simple random sampling technique was used to determine the respondents, where every participant had an equal chance of being selected.

Validity of the Instrument Reliability of the Instrument
The study used a researcher-constructed questionnaire. It measured quality of online lectures, learner characteristics, and students' academic performance. Construction of the questionnaire emerged from reviewed literature. A portion of each questionnaire dealt with the personal data of respondents such as gender, age, class, etc., and it employed a Likert-type of 4 rating scales. The instrument was validated with content validity and a table of specification displayed the items gathered. A pilot study was conducted to establish the degree of reliability, consistency, stability, and accuracy of the measurement. It was to ensure the consistency and reliability of test scores. A pilot study was carried out using randomly selecting 40 students from a senior

secondary school in Surulere Local Government Area of Lagos State. A test-retest method was conducted after a week by re-administering the same test to the same 40 respondents. The two tests' scores were correlated, and the reliability value was determined to give 0.72 using Statistical Software for Social Sciences (SPSS). The questionnaires were administered personally by the researcher. The support of the students was employed to facilitate quick retrieval—the students selected at random comprised both males and females from high, moderate, and low socio-economic status.

Data Analysis

The study made use of descriptive and inferential statistics in the analyses of the data. The generated hypotheses were tested with Pearson Product Moment Correlation coefficient (PPMC) in other to determine the magnitude and direction of the relationship between the variables in the hypotheses. One-way ANOVA was used to compare the mean effects of the existing groups in the variable. The analysis was used to determine the mean and the standard deviation and all hypotheses were tested at a significant level of 0.05 using the Statistical Software Package for Social Sciences (SPSS).

6. Results and Discussion

Description of data (Respondents)

Sex	Frequency	Percentage
Male	85	42%
Female	115	58%
Total	**200**	**100**

Table 1. Distribution of Respondents by the Gender

From the above table, the percentage of the respondents was 42% male and 58% female.

This means that female students participated more in the research than their male counterparts.

Religion	Frequency	Percentage
Islam	77	38%
Christianity	118	59%
Others	5	3%
Total	**200**	**100%**

Table 2. Religious Background of Respondents

The above shows that the number of respondents who participated in the research process was majorly Christians with 59%. In comparison, 38% of participants were Muslims, and 3% belonged to other religions apart from Islam and Christianity.

Age group	Frequency	Percentage
Below 20 years	43	21%
20– 23years	109	55%
23 – 26years	34	17%
Above 26years	14	7%
Total	**200**	**100%**

Table 3. Distribution of Respondents by Age

Concerning age bracket, participants below 20 years of age constituted 21%; those between the ages of 20 – 23years were 55%; those between the ages of 23 and 26 were 17%, while those above 26years old were 7%. Hence, most of those who participated in this research were between the ages of 20 – 26 years.

Departments	Frequency	Percentage
Science Tech. Edu	30	15%
Adult Edu.	28	14%
Edu. Admin.	34	17%
Human Kinetics & Health Edu.	25	12%
Edu. Foundations	38	19%
Arts & Social Sciences	45	23%
TOTAL	**200**	**100**

Table 4. Distribution of Respondents by Department

Testing of Hypotheses

Hypothesis one- The hypothesis states that there is no significant relationship between *online lectures and students' academic performance*. This hypothesis was tested using Pearson's Product Moment Correlation coefficient (PPMC), and the result is presented in the table below.

Variables	Mean	SD	Df	r-cal
Online Lecture	16.19	4.07		
			199	0.58
Stud. Acad. Perf.	14.27	2.76		

$P < 0.05$. R-critical = 0.195

Table 5. An r-test showing the relationship between online lectures and students' academic performance.

Evidence in the above table has indicated a relationship between online lectures and students' academic performance. The calculated r-value of 0.45 is positive and more significant in magnitude than r-critical (r-crit. = 0.195) at 0.05 significance level and 199 degrees of freedom. It has further indicated a positive relationship between online lectures and students' academic performance because both variables are correlated positively. That is, the more often the students are exposed to online lectures, they become more conversant and comfortable with online learning, and will begin to gain all the benefits associated with online education, such as refined critical thinking and technical skills. These skills enable students to study effectively. The calculated value (r-cal) is greater than the critical value (R-cri), therefore the relationship between the two variables is significant. It can be concluded that there is a meaningful relationship between online lectures and students' academic performance because the null hypothesis was rejected.

Hypothesis two- The hypothesis states that there *is no significant relationship between learner characteristics and students' academic performance.* This hypothesis was tested using Pearson's Product Moment Correlation coefficient (PPMC), and the result is presented in the table below.

Variables	Mean	SD	Df	r-cal
Learner charact.	16.04	3.35		
			189	0.36
Stud. Acad. Perf.	15.57	3.76		

P < 0.05. R-critical = 0.195

Table 6. An r-test showing the relationship between learner characteristics and students' academic performance

Evidence in the above table has indicated a relationship between learner characteristics and students' academic performance. The calculated r-value of 0.36 is positive and more significant in magnitude than r-critical (r-crit. = 0.195) at 0.05 significance level and 189 degrees of freedom. It has further indicated a positive relationship between learner characteristics and students' academic performance because both variables are correlated positively. That is, positive learner characteristics portrayed by students positively influenced their academic performance. Moreover, the calculated value (r-cal=0.36) is greater than critical value (R-critical=0.195), hence there is a significant relationship between the two variables. Therefore, it can be concluded that there is a substantial relationship between learner characteristics and students' academic performance because the null hypothesis was rejected.

Summary of findings
The findings of the research conducted are summarized as follows:
- There is a significant relationship between online lectures and students' academic performance.
- There is a significant relationship between learner characteristics and students' academic performance.

Discussion of Findings

Hypothesis one
This hypothesis states that there is no significant relationship between online lectures and students' academic performance. The result showed that there is a meaningful and positive relationship between online lectures and students' academic performance because both variables are correlated positively. The findings concur with the view expressed by Olaussen et al., (1999), they argued that electronic integrated learning is self-regulatory and purposeful because the learner strategically generates and directs their own learning rather than wait for the teacher to externally control their learning (Olaussen & Barten, 1999). It follows the findings of several researchers who

concluded that online or electronic learning scales up students' individual learning experiences. Online education positively affects students' academic performance due to reduced costs, time saving and increased accessibility to learning materials which increases academic achievement (Oye N. A., et al., 2012; Maleki, Shahab, & Zohre Sanisales, 2015). Student's academic achievement increases when they use electronic support to enhance learning opportunities and independently construct new knowledge through self-regulated learning (Yizengaw, 2007; Mayer, 2003; Descamps, 2006; Couco & Goldenberg, 1996).

The education system that harmonizes learning with the changing needs of the technological world will support and promotes learner's creativity and academic achievement (Young, 2009). The ICT infused education system improves the learner's thinking skills, ability to understand the world and their need for constructive innovations (Payne, 2009). The purpose of education is to nurture individuals with high academic ability, who are creative and thoughtful; this can only be achieved with the implementation of online learning process (Zare et al., 2014). Mothibi (2015) concluded that the effective application and use of ICT techniques to facilitate learning helps to improve and enhance students' learning and overall academic achievement. Therefore, the use of electronic techniques in teaching and learning substantially influence online lectures and students' academic performance positively.

Hypothesis two

This hypothesis states that there is no significant relationship between learner characteristics and students' academic performance. The result showed that there is a meaningful relationship between the two variables. Positive attitudes portrayed by students influence their academic performance positively because both variables are correlated positively. This finding concurs with Adeolu's (2010) view that developing positive learner characteristics are crucial in achieving academic excellence. It conforms to Moore and Flick (2007) that showed that the students' characteristics are closely correlated to their academic success in higher institutions. The finding is in line with the view of Kimberlie et al., (1996) that students with positive characteristics were more successful than the students who had negative learner characteristics in achievement tests at the beginning of the year. The present finding also supports Mendine's (2013) report that students who have positive characteristics successfully complete their online courses than their counterparts who exhibited negative attitudes towards online learning.

7. Conclusions

Based on the result obtained the researcher was able to deduce that university lecturers are more familiar with the use of technological tools because most lecturers and students have a smart phone which they used for banking transactions, access to social media sites among other things. Also it was deduced that technological tools have a significant effect on the students because they were able to learn from home through other means of learning and it also equipped them with usage of electronic gadgets for learning.

In relation to the findings obtained, we can make the following recommendations: (a) There is need to introduce online learning to classroom teaching, so that the students will be used to both learning method; (b) Government and education ministries should work together to introduce other online applications that will facilitate smooth learning for the students; and (c) The government as well as school owners should provide alternative means of learning for the students, so that issues with epileptic power supply, service interruption by service providers and high rate of data consumption for classes will not be a barrier to online classes.

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