



## E-Learning Facilities and Education Students' Performance in Online Delivered Courses at University of Ilorin, Ilorin, Nigeria

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### Abstract

*This study examined influence of e-learning facilities on the academic performance of education students in online delivered courses in University of Ilorin, Ilorin. The study adopted a descriptive research design of correlation type. The population of the study comprised all the 2428 400 level students across the nine departments in the Faculty of Education. Research Advisors (2006) table was used to select a sample of 333 students, comprising 37 students from each of the departments. Availability and Utilization of E-learning Facilities Checklist (AUEFC) and Students' Academic Performance Pro-forma (SAPP) were used to collect data for the study. The AUEFC was found reliability at a coefficient of 0.76. Percentage was used to answer the research questions while Pearson product-moment correlation statistic was used to test the hypothesis. The findings revealed a significant relationship between e-learning facilities availability and education students' academic performance in online delivered courses. Hence, it was concluded that most of the investigated e-learning facilities in this study were fairly available and there was effective utilization of e-learning facilities in University of Ilorin, Ilorin. Based on the findings and conclusion of the study, it was recommended that alternative sources of energy should be provided for the university to address energy problem, also lecturers should adopt online teaching for departmental courses because of the benefits recorded in its use for faculty wide courses.*

**Keywords:** E-learning, Online Courses, Information and Communication Technology, Bandwidth

### Introduction

E-learning refers to the use of Information and Communication Technology (I.C.T) to enhance and support teaching and learning process. E-learning ranges from the way student use e-mail and accessing course work online while following a course on campus to programs offered entirely online. Advances in ICT have revolutionized higher education in many ways like increasing access to post-secondary instruction, improving



the availability of educational resources and facilitating meaningful interaction among learners (Smedlley, 2010). E-Learning has become an increasingly popular learning approach in higher educational institutions due to vast growth of internet technology. Nowadays e-learning has a competitive advantage and many universities have implemented it and this has impacts on students' performance (Rodgers, 2008).

The use of worldwide web started in university of Ilorin in 1990 with the introduction of the internet which change the way information is being disseminated. In 2002, internet service distribution was made possible across the university through the donation of a VSAT and bandwidth subscription for a year by Education Trust Fund for the faculty of health sciences. The bandwidth and the network infrastructure have allowed the following internet dependent services in university of Ilorin: e-mail services (all members of staff have been registered on a staff domain server as [staffname@unilorin.edu.ng](mailto:staffname@unilorin.edu.ng)) while students are on [matricno@unilorin.edu.ng](mailto:matricno@unilorin.edu.ng), discussion groups: lecturers have developed e-learning web pages for courses like engineering mechanics (CVE 253 & CVE 254), statistics (STA 201, STA 202), education (EDU 212, EDU 316) and the generic course (GNS 312) course materials and assignments are done on the site, Distance learning, online schooling, examination for a class more than 500.

University of Ilorin website ([www.unilorin.edu.ng](http://www.unilorin.edu.ng)) has been hosted at the ICTP, Italy since it was launched in 2004 and it is maintained and updated by COMSIT Directorate. A student portal was deployed in 2007/2008 academic session which enables students and lecturers interaction for registration and uploading of examination score. Ogunlade and Olafare (2011) identified students and lecturers reasons for visiting the website respectively as follows: Announcement 80%, student portal 77% and general news 71%, and university publications 74%, general news 70% and academic publications and research work 66%. A major outcome from launching the website has been the assessment by various international organizations such as web metrics.

The adoption of online delivered courses/paperless classroom comes with some incredible advantages including the electronic dissemination of class notes and reference materials to delineate accurately the information the lecturer wants to impart on the students and reduce the stress involved in oral dissemination thereby removing the space for errors and in cases where a student missed out on some lines he won't have to bother the people around him/her for clarification. Also, the issues of students having to submit assignments or group works in hardcopies with the lecturers having to go through a lot of paper work, use pens to peruse and append marks on the multiple papers are eliminated by the paperless classroom/online learning (such as the use of Google classroom). But with the courses delivered online/paperless classroom such as the use of Google classroom, when students submit their respective individual and group works, the lecturers can easily



run a plagiarism test on these works, it is less expensive to deliver, e-learning is self-paced, provides consistent content, faster and works anywhere and at anytime for learners. The instructional materials are easily updated and permit the use of multimedia which leads to reinforced learning through the use of video, audio, quizzes and other forms of interaction. E-learning can improve retention, provide immediate feedback and allow learners to customize learning materials to meet their individual needs (Kirsh, 2002; Turk & Robertson, 2000).

In recent times, greater attention has been given to e-learning in the area of teaching and learning in Nigerian Universities, therefore it has been assumed that e-learning may have positive influence on academic performance of education students in online delivered courses at university of Ilorin.

The level of e-learning adoption in some Nigerian universities is very low, most Nigerian universities have not fully embraced e-learning in teaching and evaluation. Those that are using it centered mainly in conducting Computer Based Test (CBT) but they are yet to leverage on the gains of e-learning classroom facilities like the Google Classroom which is a form of virtual learning. However, university of Ilorin with long years of using electronic platform to conduct examinations, have recently embraced Google Classroom to teach some courses, mostly generic courses online. These courses include GNS 312 (Digital Skill Acquisition), EDU 316 (Research Method and Statistics), and EDU 212 (Test and Measurement). The goal of this research is therefore to examine how the online delivery of these courses has been doing, the problems encountered by both the university and the students and finally, it is to examine its influence on students' performance in these courses.

Specifically, the study sought to:

1. Investigate the available e-learning facilities in University of Ilorin, Ilorin.
2. Examine the level of e-learning facilities utilization for teaching education students in online delivered courses at University of Ilorin.
3. Identify problems encountered by lecturers and students in the teaching and learning of these courses.
4. Examine the relationship between the availability of e-learning facilities and education students' academic performance in online delivered courses in University of Ilorin



### **Meaning of E-learning**

E-Learning involves: engaging with online learning material either individually or as part of a group communicating with your teacher and fellow students via email, chat sessions, or forums. The European Commission (2001) describes e-Learning to be the use of new multimedia technologies and the Internet to improve the quality of learning by facilitating access to facilities and services as well as remote exchanges and collaboration.

Stockley (2005) defines E-Learning as the delivery of a learning, training or education program by electronic means, e-learning involves the use of a computer or electronic device (e.g. a mobile phone) to provide training, educational or learning material. Oblinger and Hawkins (2005) suggest that e-learning has morphed from a fully-online course to the use of technology to deliver some or all of a course independent of fixed time and place. E-learning is the use of electronic media for a variety of learning purposes that range from add-on functions in conventional classrooms to full substitution for the face-to-face meetings by online encounters (Guri-Rosenblit, 2005).

### **The Use of E-Learning in Education**

The development of multimedia and information technologies, as well as the use of internet as a new technique of teaching, has made radical changes in the traditional process of teaching (Wang, 2007). Development in information technology, according to Yang and Arjomand (1999) has generated more choices for today's education. Schools and educational institutions have recognized e-learning as having the prospect to transform people, knowledge, skills and performance (Henry, 2001). Also according to Love and Fry (2006), colleges, universities, and other institutions of higher learning race to advance online course capability in a speedily developing cyber education market. E-learning has come to be more and more important in institutions of higher education. The introduction and expansion of a range of E-learning tools has been initiating several changes in higher education institutions, particularly when it comes to their educational delivery and support processes (Dublin, 2003).

Just as there are different types of e-learning, there are also different ways of employing the technique in education. Algahtani (2011), in his evaluation of e-learning effectiveness and experience in Saudi Arabia, discovered three distinct models of using e-learning in education including the "adjunct, blended e-learning and online".

The adjunct e-learning is the situation which e-learning is employed as an assistant in the traditional classroom providing relative independence to the learners or students in the blended e-learning, Algahtani (2011) and Okiki (2011) explained that, in this way of using e-learning, the delivery of course materials and explanations is shared between traditional learning method and e-learning method in the classroom setting. The third one



which is the online is devoid of the traditional learning participation or classroom participation. In this form of usage, the e-learning is total so that there is maximum independence of the learners or students (Algahtani, 2011) has gone further to explain that the online model is divided into the individual and collaborative learning, where the collaborative learning also consist of the synchronous and asynchronous learning (Okiki,2011).

The adoption of E-learning in education, especially for higher educational institutions has several benefits, and given its several advantages and benefits, e-learning is considered among the best methods of education. Several studies and authors have provided benefits and advantages derived from the adoption of e-learning technologies into schools (Klein & Ware, 2003; Algahtani, 2011; Marc, 2002). Some studies give advantage of e-learning as its ability to focus on the needs of individual learners. For example Marc (2000) in his book review on e-learning strategies for delivering knowledge in digital age noted that one of the advantages of e-learning in education is its focus on the needs of individual learners as an important factor in the process of education rather than on the instructors', or educational institutions' needs.

### **Methodology**

The research design to be adopted for this study is descriptive survey of a correlation type. The research population is all the 400level students in the nine departments of Faculty of Education. The total is 2428. The researcher used Research Advisors (2006) which recommends a sample of 333 students for a population size of 2428. Thirty seven (37) students will be selected from each of the nine departments across the Faculty of Education using convenience sampling technique.

Two instruments titled Availability and Utilization of E-learning Facilities Checklist (AUEFC) and Students' Academic Performance Pro-forma (SAPP) will be used to collect data needed for the study. Validity was done by three lecturers in the Department of Educational Management they made suggestions and corrections that were effected on the final copy before administration. The reliability of the instrument was conducted in faculty of Arts and social sciences with 50 students in each faculty. Chronbach's Alpha was used to analyze the data and reliability coefficient of 0.76 was realized.

The research questions raised were answered using descriptive statistic of frequency percentage, while the hypothesis was tested with the use of Pearson product moment correlation statistics at 0.05 level of significance.



## Results

**Research Question 1:** What are the available e-learning facilities in University of Ilorin, Ilorin?

**Table 1: Available E-learning Facilities in University of Ilorin, Ilorin**

| S/N | Items                                                                        | Adequately Available | Fairly Available | Not available  |
|-----|------------------------------------------------------------------------------|----------------------|------------------|----------------|
| 1.  | Desktop computers                                                            | 58<br>(17.4%)        | 201<br>(60.4%)   | 74<br>(22.2%)  |
| 2.  | Laptop computers                                                             | 108<br>(32.4%)       | 183<br>(55%)     | 42<br>(18.6%)  |
| 3.  | Photocopying machine                                                         | 45<br>(14.7%)        | 157<br>(47.1%)   | 121<br>(38.2%) |
| 4.  | Printers                                                                     | 25<br>(83.3%)        | 182<br>(54.6%)   | 81<br>(24.3%)  |
| 5.  | Laminating machine                                                           | 66<br>(19.8%)        | 176<br>(52.9%)   | 91<br>(27.3%)  |
| 6.  | Computers free of technical fault                                            | 35<br>(10.5%)        | 223<br>(67%)     | 75<br>(22.5%)  |
| 7.  | Internet connectivity                                                        | 44<br>(13.2%)        | 241<br>(72.4%)   | 48<br>(14.4%)  |
| 8.  | Smart boards                                                                 | 61<br>(18.3%)        | 45<br>(13.5%)    | 227<br>(68.2%) |
| 9.  | Scanning machine                                                             | 27<br>(8.1%)         | 87<br>(26.1%)    | 219<br>(65.8%) |
| 10. | Software packages (e.g Microsoft Word, Excel, Powerpoint and Graphic Design) | 232<br>(69.7%)       | 67<br>(20.1%)    | 34<br>(10.2%)  |

Table 1 shows the availability of e-learning facilities in University of Ilorin, Ilorin, Nigeria. As shown on the Table, 17.4% of the respondents believed that desktop computers are adequately available, 60.4% opined that they are fairly available while 22.2% maintained that they are not available. 12.6% of the respondents agreed that laptop computers are adequately available, 55% posited that they are fairly available while 22.4% asserted that they are not available. 14.7% of the respondents maintained that photocopying machines are adequately available, 47.1% stated that they are fairly available while 38.2% opined that they are not available.

21% of the respondents opined that printers are adequately available, 54.7% stressed that they are fairly available while 24.3% believed that they are not available. 19.8% of the respondents believed that laminating machines are adequately



available, 52.9% opined that they are fairly available while 27.3% maintained that they are not available. 10.5% of the respondents agreed that computers free from technical fault are adequately available, 67% posited that they are fairly available while 25.5% asserted that they are not available. 13.2% of the respondents maintained that internet connectivity is adequately available, 72.4% stated that they are fairly available while 14.4% opined that they are not available. 18.3% of the respondents opined that smart boards are adequately available, 13.5% stressed that they are fairly available while 68.2% believed that they are not available. 8.1% of the respondents believed that scanning machine is adequately available, 26.1% opined that it is fairly available while 65.8% maintained that it is not available. 69.7% of the respondents agreed that software packages (e.g. Microsoft word, Excel, PowerPoint & Graphic Design) are adequately available, 20.1% posited that they are fairly available while 10.2% asserted that they are not available.

**Research Question 2:** What is the level of e-learning facilities utilization in University of Ilorin, Ilorin?

**Table 2: Level of E-learning Facilities Utilization in University of Ilorin, Ilorin**

| S/N | Items                                                                                                                                                         | Strongly Agree | Agree          | Disagree       | Strongly Disagree |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|----------------|-------------------|
| 1.  | The available facilities in my department are effectively utilized by lecturers                                                                               | 147<br>(44.1%) | 135<br>(40.5%) | 30<br>(9%)     | 21<br>(6.3%)      |
| 2.  | E-learning facilities are just one more distraction in the classroom, so lecturers don't always use it                                                        | 51<br>(15.3%)  | 73<br>(22%)    | 131<br>(39.3%) | 78<br>(23.4%)     |
| 3.  | Class time is too limited to allow the use of e-learning facilities in teaching                                                                               | 166<br>(49.8%) | 93<br>(27.9%)  | 29<br>(9.3%)   | 45<br>(13.5%)     |
| 4.  | Many of the lecturers perceive e-learning facilities have not been able to help students retain and sustain attention during a lesson, so they dislike it     | 21<br>(6.3%)   | 45<br>(13.5%)  | 222<br>(66.7%) | 45<br>(13.5%)     |
| 5.  | Many of the lecturers perceive teaching with e-learning facilities offers a real advantage over traditional methods of instructions, they use it all the time | 209<br>(62.8%) | 58<br>(17.4%)  | 43<br>(12.9%)  | 23<br>(6.9%)      |

Table 2 shows e-learning facilities utilization in University of Ilorin, Ilorin, Nigeria. As shown on the Table, 44.1% of the respondents strongly agreed with the item 1 "the available facilities in my department are effectively utilized by lecturers", 40.5%



agreed, 9% disagreed while 6.3% strongly disagreed. 15.3% of the respondents strongly agreed with the item 2 "e-learning facilities are just one more distraction in the classroom, so lecturers don't always use it", 22% agreed, 39.3% disagreed while 23.4% strongly disagreed. 49.8% of the respondents strongly agreed with the item 3 "Class time is too limited to allow the use of e-learning facilities in teaching", 27.9% agreed, 9.3% disagreed while 13.5% strongly disagreed. 6.3% of the respondents strongly agreed with the item 4 "many of the lecturers perceive e-learning facilities have not been able to help students retain and sustain attention during a lesson, so they dislike it", 13.5% agreed, 66.7% disagreed while 13.5% strongly disagreed. 62.8% of the respondents strongly agreed with the item 5 "many of the lecturers perceive teaching with e-learning facilities offers a real advantage over traditional methods of instructions, they use it all the time", 17.4% agreed, 12.9% disagreed while 6.9% strongly disagreed.

**Research Question 3:** What are the problems militating against e-learning teaching at the university of Ilorin?

**Table 3: Problems Militating against E-learning Teaching at the University of Ilorin, Ilorin**

| S/N | Items                                                                                                                        | Strongly Agree | Agree          | Disagree       | Strongly Disagree |
|-----|------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|----------------|-------------------|
| 1.  | Funds are sufficient for the development of e-learning facilities                                                            | 254<br>(76.3%) | 45<br>(13.5%)  | 21<br>(6.3%)   | 13<br>(3.9%)      |
| 2.  | Poor power supply affects the use of electronic devices for teaching and learning                                            | 237<br>(71.2%) | 51<br>(15.3%)  | 19<br>(5.7%)   | 26<br>(7.8%)      |
| 3.  | Unavailability of time affects lecturers' tendency to develop educational computer applications to aid teaching and learning | 204<br>(61.3%) | 67<br>(20.1%)  | 28<br>(8.4%)   | 34<br>(10.2%)     |
| 4.  | Lack of manpower to maintain e-learning facilities affects their use                                                         | 187<br>(56.2%) | 73<br>(21.9%)  | 33<br>(9.9%)   | 40<br>(12%)       |
| 5.  | There is insufficient e-learning facilities                                                                                  | 209<br>(62.8%) | 58<br>(47.4%)  | 62<br>(18.6%)  | 4<br>(1.2%)       |
| 6.  | Students' population is large/over population of students to use available resources                                         | 239<br>(69.4%) | 27<br>(8.1%)   | 51<br>(15.3%)  | 24<br>(7.2%)      |
| 7.  | The internet connection is not always available, due to high cost of internet connectivity                                   | 132<br>(39.6%) | 168<br>(54.5%) | 11<br>(3.3%)   | 22<br>(6.6%)      |
| 8.  | Most of the available e-learning facilities are not functional                                                               | 43<br>(12.9%)  | 61<br>(18.3%)  | 130<br>(39.1%) | 90<br>(29.7%)     |



Table 3 shows the problems encountered by lecturers and students in the teaching and learning of GNS, EDU 316 and EDU 212. As shown on the Table, 76.3% of the respondents strongly agreed with the item 1 “funds are sufficient for the development of e-learning facilities”, 13.5% agreed, 6.3% disagreed while 3.9% strongly disagreed. 71.2% of the respondents strongly agreed with the item 2 “poor power supply affects the use of electronic devices for teaching and learning”, 15.3% agreed, 5.7% disagreed while 7.8% strongly disagreed. 61.3% of the respondents strongly agreed with the item 3 “unavailability of time affects lecturers” tendency to develop educational computer applications to aid teaching and learning”, 20.1% agreed, 8.4% disagreed while 10.2% strongly disagreed. 56.2% of the respondents strongly agreed with the item 4 “lack of manpower to maintain e-learning facilities affects their use” tendency to develop educational computer applications to aid teaching and learning”, 21.9% agreed, 9.9% disagreed while 12% strongly disagreed. 62.8% of the respondents strongly agreed with the item 5 “there is insufficient e-learning facilities” tendency to develop educational computer applications to aid teaching and learning”, 17.4% agreed, 18.6% disagreed while 1.2% strongly disagreed. 69.4% of the respondents strongly agreed with the item 6 “students’ population is large/over population of students to use available resources” tendency to develop educational computer applications to aid teaching and learning”, 8.1% agreed, 15.3% disagreed while 7.2% strongly disagreed. 39.5% of the respondents strongly agreed with the item 7 “the internet connection is not always available, due to high cost of internet connectivity”, 54.5% agreed, 3.3% disagreed while 6.6% strongly disagreed. 12.9% of the respondents strongly agreed with the item 8 “most of the available e-learning facilities are not functional”, 18.3% agreed, 39.1% disagreed while 29.7% strongly disagreed.

**Ho:** There is no significant relationship between e-learning facilities availability and education students’ academic performance in online delivered courses in University of Ilorin



**Table 4: Relationship between E-Learning Facilities Availability and Education Students' Academic Performance in Online Delivered Courses**

| Variable                           | N   | $\bar{X}$ | SD   | Cal. r-value | p-value | Decision                |
|------------------------------------|-----|-----------|------|--------------|---------|-------------------------|
| E-learning facilities availability | 333 | 2.93      | 0.74 | .509         | 0.024   | H <sub>0</sub> Rejected |
| Students' academic performance     | 333 | 3.72      | 1.46 |              |         |                         |

p-value < 0.05

As presented in Table 4, the calculated r-value is .509 while the p-value (0.024) is less than the significance level (0.05). Therefore, the hypothesis which stated that there is no significant relationship between e-learning facilities availability and education students' academic performance in online delivered courses in University of Ilorin is rejected. This signifies that there is a significant relationship between e-learning facilities availability and education students' academic performance in online delivered courses in University of Ilorin.

### Discussion of Findings

The finding of the study revealed that desktop computers are fairly available, laptop computers are fairly available, photocopying machines are fairly available, printers are fairly available, laminating machines are fairly available, computers free from technical fault are fairly available, internet connectivity is fairly available, smart boards are not available, scanning machine is fairly available and software packages (e. g. Microsoft word, Excel, PowerPoint & Graphic Design) are adequately available.

The finding of the study revealed that the available facilities are effectively utilized by lecturers; e-learning facilities are not just one more distraction in the classroom, so lecturers always use it; class time is too limited to allow the use of e-learning facilities in teaching; many of the lecturers do not perceive e-learning facilities have not been able to help students retain and sustain attention during a lesson, so they like it; and many of the lecturers perceive teaching with e-learning facilities offers a real advantage over traditional methods of instructions, they use it all the time.

As revealed in the finding of the study, poor power supply affects the use of electronic devices for teaching and learning; unavailability of time affects lecturers' tendency to develop educational computer applications to aid teaching and learning; lack of manpower to maintain e-learning facilities affects their use; there is insufficient e-



learning facilities; students' population is large/over population of students to use available resources; and the internet connection is not always available, due to high cost of internet connectivity. This finding agrees with the finding of Ohieweri (2020) that the challenges militating effective use of e-learning of e-learning for teaching in higher institutions in Nigeria include inadequacy of computers, inadequate funds, inadequacy of knowledge of lecturers on the utilization of e-learning facilities, lack of internet or slow connectivity and poor attitudes of students towards the usage of e-learning facilities indicate that ICT has a statistically significant positive impact on e-learning based students' academic achievements.

This finding of this study reveals that that there is a significant relationship between e-learning facilities availability and education students' academic performance in online delivered courses in University of Ilorin. This finding agrees with the finding of Mothibi(2015) that ICT availability has a significant positive impact on students' educational overall academic achievements in higher institutions. This finding also agrees with the report of Holley (2012) that university students who are taught with through e-learning learning achieve far better amounts compared to those students who were taught with traditional methods.

### **Conclusion**

The study concluded that:

- i. e-learning facilities were fairly available, except smart boards that were not available;
- ii. there was effective utilization of e-learning facilities in University of Ilorin, Ilorin;
- iii. poor power supply; unavailability of time, lack of manpower to maintain e-learning facilities affects their use, insufficient e-learning facilities; students' population is large/over population and internet connection were challenges militated against the use of internet facilities for teaching in University of Ilorin, Ilorin;
- iv. moderately positive but significant relationship exist between online delivered courses and students performance in hem.

### **Recommendations**

Based on the conclusion of the study, it was recommended that:

- i. adequate smart boards should be made available in lecture rooms
- ii. lecturers should sustain the present level of e-learning utilization to include classes with low registration as found in departmental courses.



- iii. alternative source of power supply such as solar energy should be considered for powering the university ICT facilities to ensure stable energy source
- iv. the challenges face by the students and the university in delivering the online courses should be adequately attended to so that the moderate positive relationship between online teaching and student performance in the courses can be sustained and improved upon.

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