**BUSINESS EDUCATION STUDENTS’ AWARENESS AND UTILIZATION OF E-LEARNING**

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**ABSTRACT**

The study investigated the awareness of e-learning and its utilization by business education students in Anambra State tertiary institutions. Four research questions were posed and four hypotheses formulated. A total of 1603 business education students in four tertiary institutions in Anambra State made up the population of the study, out of which 320 students were used as sample. The research instrument was a structured questionnaire titled “Awareness and Utilization of E-learning by Business Education Students”. Five experts validated the instrument and a reliability test using split-half method yielded correlations of tttt0.86, 0.58, 0.62 and 0.97 for sections B, C, D and E respectively. Mean rating was used to answer Research Questions 1, 3 and 4. Research Question 2 was answered using frequency counts and percentages while t-test, at 0.05 level of significance, was used to test the hypotheses. The major findings of the study were as follows: respondents were very aware of checking results online and searching for academic information on the internet; they were fairly aware of partaking in video conference and getting academic support and advice from a teacher by e-mail. Respondents were competent in computer usage and they often utilized e-learning facilities for searching for educational materials, checking results online and processing assignments. Respondents did not often send feedback to lecturers through e-mail. To encourage the utilization of e-learning by business education students, it was recommended, among others, that the management of tertiary institutions in Anambra State should provide e-learning infrastructure like digital libraries, and free wireless internet connections on the campus. Learning Management Systems (LMS) that allow online interaction between lecturers and students should be introduced. Videoconferencing should be introduced through collaboration with foreign institutions and some course content should be restructured using e-learning modules that can be recorded on CD/DVD which students can use.

**CHAPTER ONE**

**INTRODUCTION**

**1.1 Background to the Study**

The recent advancement in scientific discoveries has made the world a global village. New technologies are invented today that would have never been thought of a few years ago. Tinio (2003) noted that globalization, once thought as a concept, has become a reality. This has led to the advancement in Information and Communication Technologies (ICT) which is also revolutionizing business as well as the educational institutions across the globe. Globalization and technological change have created a new global economy powered by technology, fueled by information and driven by knowledge.

The drive for more information within the shortest period of time has led to the development of modern technologies. Examples include the advent of the computer in the 1950’s and the Internet in the 1990’s, which paved the way for the current revolution in information and communication Technology. Okereke (2005) observed that modern computers have the capability of reading, processing and storing millions of instructions per second. The Internet, usually called the “Information Super-highway” has also caused an indescribable expansion in the way information is transferred from one place to another.

Today, people can get information about anything just with a click of the mouse. The difficulties experienced by the old means of message transfer (Telegrams, mails by post, etc.) have been removed as the Internet provides ‘one-touch-one- delivery’ service to users anywhere in the world.

The impact of ICT to education is enormous. The Information and communication Technologies are potentially powerful enabling tools for educational change and reform. When used appropriately, different ICT gadgets help expand access to education, strengthen the relevance of education to the increasingly digital work place, and raise educational quality by helping to make teaching and learning an engaging active process that is connected to real life.

The introduction of ICT in the educational system has led to the development of e-learning. E-learning literally means electronic learning, i.e. learning by electronic means and through electronic devices. Tinio (2003) observes that e-learning encompasses learning at all levels, both formal and non-formal, that uses an information network – the internet, and intranet (Local Area Network) or extranet (Wide Area Network)- whether wholly or in part, for course delivery, interaction and/or facilitation. E-Learning actually goes beyond the mere usage of the internet. For the purpose of this research, the definition of e-Learning will be restricted to that of Allen (2003) who views e-learning as a structured, purposeful use of electronic system or computer in support of the learning process.

The integration of e-learning in tertiary institutions is witnessing rapid growth in developed countries. Most tertiary institutions in developed countries have websites from which students can take online lectures and participate in other educational activities. Omo-Ettu (2001) in Okereke (2005) reports that in developed countries, electronic mail, real time text conferencing, and online tutorials have been used in the teaching and learning process for several years. Schools use the internet to provide homework, assignments and other information for students stuck at home due to bad weather or sickness. Some schools allow students to retrieve textbook information, check and complete assignments from their personal computers. Students get 24 hours access to classroom assignments, study guides, daily worksheets and their teachers through e-mail.

In Nigeria, the integration of e-learning in our tertiary institutions has witnessed slow growth which may be as a result of mass unawareness. Manir (2011) noted that awareness to ICT in Nigeria started gathering momentum two decades ago. The early exposure came through lecturers, researchers, academics and students who studied abroad and had opportunities of attending conferences on ICT. However, Manir posited that a large number of people are still not aware of the use of these ICTs in education. This is because Nigeria had no specific policy on e-learning until February 2007 when the ICT department of the Federal Ministry of Education was created (Manir, 2011).

Awareness means having knowledge of the existence and usefulness of something. Business education students cannot utilize e-learning except they are aware of the different e-learning activities. Teachers and students need to be aware of available e-learning tools that can be utilized in the teaching/learning process. Ipaye (2011) listed some of these tools to include websites, wikis, blogs, Second Life, e-mail, twitters, Course Management systems, video/audio podcasts, facebook, threaded discussion lists, video/audio text chat, videoconferences software etc. Awareness of the usefulness of these e-learning tools should aid a business education teacher to organize his/her course content in such a way that will enhance the e-learning experience of the students. Business education students in tertiary institutions seem not to be aware of e- learning applications and as such there seems to be underutilization of ICT gadgets in education. It appears that the unavailability of e-learning infrastructure, like digital libraries, computer studio, etc, in the tertiary institutions of Anambra State has affected students’ awareness and utilization of such e- learning tools. Some students have access to e-learning through personal computers, computers owned by friends or family members, mobile phones, cyber café, etc. There seems to be a disparity in how students utilize e-learning as a result of what means of access to e-learning tools they have.

Access to e-learning facilities should facilitate wide spread awareness of the existence and usability of technology in education. Where students do not have access to e-learning facilities like computers and internet connection, the issue of utilization will be a mere tale. Some business education students have personal computers and internet connection. Some others rely on the e-learning facilities provided by their institution. The importance of having access to these e- learning facilities cannot be overemphasized. Kinley (2010) pointed out that the provision of computer laboratories, digital libraries and access to the Internet, will lead to better teaching and learning processes.

The utilization of e-learning by business education students is pivoted by their level of computer literacy. Computer literacy has to do with the degree of proficiency of students in basic computer oriented operations. Olusegun, Oluwafemi and Sushil (2006) noted that the utilization of e-learning is affected by the level of computer literacy of the students. Students who are not competent in the general use of computers will not be able to utilize them for educational purposes, and hence they will discourage the new phenomenon of utilizing electronic devices for education.

Gender can be an influencing factor to the awareness and utilization of e- learning by business education teachers and students. Murphy and Greenwood (1998) reported that age and gender effects could be the factors in determining the extent of the low student teacher ICT uptake. Summer (1990) in Agboola (2006) suggested that male students experience less anxiety about ICT and make more frequent use of it. Also, female students are assumed to show lower confidence or knowledge ability than males about using computers (VanBraak, 2001).

Similarly, type of institution and the ownership of the tertiary institution could influence the success of e-learning integration. Wagner, Hassanein and Head (2008) pointed out that the success of the utilization of e-learning is influenced by the stakeholders. As noted by Wagner et. al. (2008) one of the stakeholders is the educational institution; others include the student, the instructor, content providers, technology providers, accreditation bodies and employees. They also noted that budgetary factors in a country could make the procurement of e-learning facilities by these institutions difficult or easy, as the case may be. The utilization of e-learning facilities in colleges of education and universities might differ and as such the awareness of e-learning in the various institution types may also differ. It is possible that the management of tertiary institutions can view the utilization of e-learning from different perspective. The federal government-owned, state government-owned and private-owned institutions may differ in the e-learning facilities provided to their students (Leem and Lim, 2007). Eke (2011) and Okiki (2011) also noted that the use of e-learning facilities has begun in some federal government owned tertiary institutions. This may not be the case in state-owned or private-owned institutions, hence this study.

Business education, as a program of study, equips students with the knowledge and skills needed to make them self-reliant and self-employed. It is education “for” and “about” business, and as such, should be concerned with the modern trends in business. The modern trends in business which include the digitalization of business operations; e-banking; e-commerce; Management Information Systems (MIS) etc., form the basis for encouraging the use of e- learning in today’s business education training program. Students who undergo the business education program should therefore be aware of e-learning and its utilization in education. This is rather not the case in some tertiary institutions in Nigeria. This drive to find out how aware business education students in Anambra state tertiary institutions are of e-learning and how they utilize e- learning, necessitated this research.

**1.2 Statement of Problem**

As indicated in the background of the study, though the importance of e-learning is enormous, it seems that its level of awareness and utilization in instruction and learning in Nigerian tertiary Institutions is rather unknown. This is so because research in this area is either scanty or non-existent.

Furthermore, there appears to be lack of computer culture among business education students in tertiary institutions in Anambra State which, according to Manir (2011), tends to impede the rapid diffusion of the new technologies. There is also the issue of shortage of skilled manpower among lecturers and computer technology literacy among students. These are part of the challenges that the growth of e-learning in Nigerian tertiary institutions, and particularly business education students, faces. When students are not computer literate, they would find it difficult to adapt to the use of computers in education.

Though authors such as Manir (2009), Eke (2011) and Okiki (2011), have conducted studies on various aspects of e-learning, there has been no study, to the best of the researcher’s knowledge, on business education students’ awareness of e-learning as well as their utilization of e-learning facilities in Anambra State tertiary institutions. This reason prompted the researcher to undertake this study.

**1.3 Purpose of the Study**

The main purpose of this study was to determine business education students’ awareness of e-learning, as well as their utilization of e-learning in Anambra State tertiary institutions. Specifically, the study sought to:

1. Determine the level of awareness that business education students have of e-learning in Anambra State tertiary institutions.

2. Determine the means by which business education students have access to e-learning facilities in Anambra State tertiary institutions.

3. Determine how often business education students in Anambra State tertiary institutions utilize e-learning facilities in their learning process.

4. Determine how competent business education students in Anambra State tertiary institutions consider themselves in the use of computers.

5. Determine the differences that may exist in business education students’ awareness and utilization of e-learning as a result of demographic profile (gender, type of institution and ownership of institution).

**1.4 Research Questions**

The following research questions were posed to guide the study:

1. To what extent are business education students in Anambra State tertiary institutions aware of e-learning?

2. By what means do business education students in Anambra State tertiary institutions get access to e-learning facilities?

3. How often do business education students in Anambra State tertiary institutions utilize e-learning facilities in their learning process?

4. How competent do business education students in Anambra State tertiary institutions consider themselves in the use of computers?

**1.5 Research Hypotheses**

The following hypotheses were formulated and tested at 0.05 level of significance:

1.There is no significant difference in the mean ratings of business education students in Anambra State tertiary institutions on their awareness of e-learning as a result of their type of institution (university or college of education).

2.There is no significant difference in the ratings of business education students in federal government owned tertiary institutions in Anambra State and their counterparts in other tertiary institutions on the means of access to e-learning.

3.There is no significant difference in the mean ratings of business education students in Anambra State tertiary institutions in how often they utilize e- learning as a result of gender.

4.There is no significant difference in the mean ratings of business education students in Anambra State tertiary institutions in their computer competence level as a result of the type of institution.

**1.6 Significance of the Study**

The outcome of this study could be of benefit to business education teachers in Anambra State tertiary institutions could benefit from this study by knowing the level of students awareness to e-learning applications. This could enable them plan their course content to suit students’ knowledge and ability.

Also, the findings and recommendations of this study could be of benefit to business education students in Anambra State tertiary institutions as they could show students’ level of awareness of e-learning, computer competence and utilization of e-learning devices. Students could be aided to know how they can synchronize the use of electronic devices in the educational process.

Additionally, the management of tertiary institutions in Anambra State could benefit from the findings of this study as it will show the access to e- learning that students have. They could be aided to know the role they play in providing free or low cost e-learning facilities to students and how access to these facilities influence their utilization.

The outcome of this study could also profit business education curriculum planners. By knowing how aware of e-learning students are and how often these e-learning devices are been utilized, business education curriculum planners could be aided to plan the business education curriculum to suit present ICT innovations. They could also be aided to introduce e-learning experiences and perhaps e-learning courses into the business education curriculum. This study could contribute significantly to current literature on e-learning, showing how electronic devices can be used in tertiary institutions in Anambra State.

**1.7 Scope of the Study**

The focus of this study is to determine business education students’ awareness and utilization of e-learning in Anambra State tertiary institutions. However, the study is limited to business education students in tertiary institutions in Anambra State of Nigeria. The views or perceptions of other students will not be considered in this study.

E-learning in this study does not exclusively mean 100% online course delivery or distance education. It rather includes the use of electronic devices like telephone, radio, television, projectors, videophones, mobile phones, computers, internet, intranet etc, for education.

**1.8 Limitations of the Study**

This study was limited by several factors. In the first instance, business education students in some of the institutions were resistant to filling the questionnaire. Many of them felt it was a waste of their time and this led to the researcher pleading with them that the questionnaire was for research purpose only. More so, some students did not fill some of the items of the questionnaires correctly while a few others left some sections unfilled.

The irregularity in timing of the various institutions was also a limiting factor. The institutions did not resume from their long vacations at the same time. This therefore delayed the analysis of the data as the researcher had to wait until all the institutions had resumed.

Finally, the study was limited to accuracy of information got from the respondents, as indicated by their objectivity in completing the questionnaire items.

**CHAPTER TWO**

REVIEW OF RELATED LITERATURE

In this chapter, the views of other authors as they relate to this study are reviewed under the following headings:

Conceptual Framework

Theoretical Framework

Empirical Studies

**2.1 CONCEPTUAL FRAMEWORK**

**E-learning**

E-learning means electronic learning, i.e., learning with the aid of electronic gadgets. That is, gaining knowledge and experience through the use of electronic devices such as computers, television, internet, etc. Otuka (2010) defined e-learning as all forms of electronically supported learning and teaching which are procedural in character and aim to effect the construction of knowledge with reference to individual experience, practice and knowledge of the learner. This definition points to the use of electronic medium in fostering learning and teaching. It also considers the individual learner’s involvement in the learning process.

Tinio (2003) sees e-learning as learning at all levels, both formal and non- formal, that uses an information network - the internet, an intranet (LAN) or extranet (WAN) – whether wholly or in part, for course delivery, interaction and/or facilitation. Tinio noted that e-learning could be used wholly or in part for course delivery. This means that all aspects of a course can be delivered only by electronic medium as in the case of web-based training course, online mentoring sessions etc. On the other hand, learning models can combine traditional classroom practice with e-learning solution (Nichols, 2003; Eke, 2011). For example, students in a traditional class situation can be assigned both print- based and online materials; they can have online mentoring sessions with their teacher through chat; and they can be subscribed to a class email list.

The above definition agrees with the views of Homan and Macpherson (2005), and Hall and Snider (2000) who defined e-learning as the process of learning via computers over the internet and intranet. It covers any electronic learning material ranging from CD-ROMs on stand-alone PCs to intranet/internet networked systems with downloadable and interactive materials. E-learning includes mediums where the students interact with the teacher or instructor, especially via the internet (Jackson, 2001).

Smith (2008) defines e-learning as a term used to refer to computer-based learning, i.e. e-learning uses web-based training teaching materials, CD-ROMs, learning management software, discussion boards, email, computer-aided assessment, simulation, online conferencing and other related methods. E-learning can also be seen as the use of electronic means to facilitate learning (Al-khashab, 2007). Al-khashab defined e-learning as the acquisition and use of knowledge distributed and facilitated primarily by electronic means. He posits that e-learning can take the form of courses as well as modules and smaller learning objects. Wentling, Waight, Fleur, Wang and Kanfer (2000) and Al-khashab (2007) are in harmony on the idea that e-learning may incorporate synchronous or asynchronous access and may be distributed geographically with varied limits of time.

Nichols (2003) defines the concept of e-learning as the use of various technological tools that are either web-based, web-distributed or web-capable for the purposes of education. Nichols sees the internet and web technologies as the main component of the phenomenon of e-learning because they allow the transfer of information at anytime, to any location, and to as many people possible. Tinio (2003:4) argued that the above view is narrow. To Tinio, e- Learning comprises:

*…more than just these technologies (i.e. computer and internet); older technologies such as the telephone, radio and television, although now given less attention, have a longer and richer history as instructional tools. For instance, the radio and television have for over forty years, been used for open and distance learning, although the print remains the cheapest, most accessible and therefore most dominant delivery mechanism in both developed and developing countries.*

This is supported by Agboola (2006) and Eke (2011) who opine that e-learning is simply a kind of learning that is enables by electronic technology. It could be web-based learning, computer-based learning, or virtual classrooms and content delivery via networks, audio or video tape, satellite TV, video conferencing, CD- ROM, i-pods, emails, wireless and mobile technology.

It should be noted that e-learning and distance education are not synonymous. Eke (2011) noted that e-learning was once synonymous with distance education but has so evolved that they can no more be synonymous. Distance education has to do with learning that happens when the instructor and student are in different physical location (Bill & Duren, 2010). Commonwealth of Learning cited by Tinio (2003:4) defined distance learning as:

*a way of providing learning opportunities that is characterized by the separation of teacher and learner in time or place, or both time and place; learning that is certified in some way by an institution or agency; the use of a variety of media, including print and electronic; two-way communications that allow learners and tutors to interact; the possibility of occasional face-to-face meetings; and a specialized division of labour in the production and delivery of courses.*

From the above, one can deduce that e-learning is one of the media of instruction used in distance education. Traditional correspondence is also used in distance education. Aranda (2007) argued that the basic thing that distinguishes distance education is the physical separation of the students from the instructor and the classroom. This means electronics may not be necessarily used in distance education. E-learning on the other hand has to do with learning enabled by technology, i.e. electronics.

Some writers, like Otuka (2010) and Tinio (2003), have posited that the following terms are synonymous to e-learning: Computer Based Training (CBT), Internet Based Training (IBT), Web Based Training (WBT), and online learning.

**Evolution of E-Learning**

The evolution of e-learning can be traced to the beginning of distance education. The roots of e-learning can be traced back to the correspondence course model of learning (Aranda, 2007; Al-khashab, 2007). One of the first correspondence programs in the United Staes was developed at Pennyslyvania State University in 1892, where the main mission was to provide higher education access to remote and rural areas (Banans & Emory, 1998 in Al- khashab, 2007). In later years, the correspondence model was further developed into a more robust distance education program with the integration of technology. During its heyday in the 1920’s and 1930’s, schools such as Penn State experimented with the use of radio to broadcast their correspondence course lessons nationally.

In England, in 1840, shorthand classes were being offered by correspondence courses through the mail. The improvement to the postal service made this method of distance learning popular in the early part of the last century (Aranda, 2007). This led to a large number of “through the mail” type of educational programs. Television, video recorders and radio (which are recent electronic advancement) have all made a contribution to distance learning. The advent of the computer only made distance learning a lot easier and better.

In recent years, the knowledge based economy has exhibited a pervasive and ever increasing demand for innovative ways of providing education and this has led to dramatic changes in learning technology. As the new economy requires more and more people to acquire new knowledge and skills in an appropriate and effective manner, the advancement of computer and networking technologies are providing a diverse means to support learning in a more personalized, flexible, portable and on-demand manner. These radical and sweeping changes in learning needs and technology have catapulted a revolutionary transition in modern learning tools in the backdrop of the internet, commonly referred to as e-learning.

E-learning evolved gradually through the phase of time. Computers and internet have major roles in bringing e-learning to what it is today. Al-khashab (2007) discussed the history timeline of e-learning in four era:

1. Instructor Led training (Pre 1983)

b) Multimedia Era (1984 to 1993)

c) Introduction to Web (1994 to 1999)

d) The next Generation Web (2000 to now)

Prior to the availability of computers everywhere and with everyone, Instructor Led Training (ILD) was the primary training method. During the multimedia era, most people started to understand the importance of computers which started to become a need rather than a luxury product. Various operating systems like windows and macintosh were developed and used. Multimedia applications were used to make training transportable and visually engaging. Al-Khashab (2007) stated that Computer Based Training (CBT) courses were delivered via CD-ROM during this period.

The introduction of the Internet and the World Wide Web (www) in the 90’s gave insights into training providers to explore its potentiality and find ways to improve training. The introduction of e-mail, web browsers, html, media players, low fidelity streamed audio/video and simple JAVA began to change the face of multimedia training.

Since the year 2000, various technology advancements have enhanced the status of e-learning. Applications like JAVA, Macromedia Flash and other Internet protocol applications help streamlining rich media. The internet has evolved with high bandwidth line enabling users to access large files easily and with speed. Teachers can currently use Instructor Led Training (ILT) via the web combined with real-time mentoring, improved learner services and feedback mechanisms.

In Nigeria, Olaniyi (2006) posited that e-learning evolution can be traced to the development of telecommunications which started in 1886 when a telephone line connecting London and Lagos was established. To Olaniyi, though the telephone lines increase as the years passed, communication was still restricted until the introduction of GSM (Global System Mobile) in 1999. The internet service providers then enhance the accessibility of internet facilities to the public. Though the internet facilities were very expensive initially, the cost reduced as the years passed and as more telecoms companies invested in Nigeria. In Olaniyi (2006:6)’s words:

Improved Internet diffusion has been achieved, due to increased awareness; access, skills, technical manpower and gradual fall in charges for access. With cafés providing cheaper alternatives to home based connection. It is also interesting to note that, the licensing of more ISP brought stiff competition to the market. Where companies with better technology and cheaper access has greater share of the market.

With the introduction of the internet, many people now opened e-mail boxes, visit news sites, download materials from the internet. Educational institutions also took the advantage of the internet super-bloom. Some universities now have websites where information about the institution can be gotten. E-learning still has great prospects in Nigeria though there are many confronting factors (Manir, 2011).

**Awareness of e-Learning among Teachers and Students**

Awareness means having knowledge of the existence and usefulness of something. According to Folorunso, Ogunseye and Sharma (2006), awareness in an information systems context means the knowledge of the existence and importance of a computer based technology. Reimer and Haines (2008) see awareness as knowing who is ‘around’, what activities are occurring and who is talking with whom. Awareness of the recent information and communications technological development will aid the educational system. Agboola (2006) noted that an educational system has to be suited to the demands of the technological age so as to maintain a competitive edge. Learning institutions will have to constantly change and adapt to their environments if they are not going to lag behind.

It is commonly said that, ‘what you do not know is greater than you’. That means that you cannot manipulate what you are not aware of. Vovides, Sanchez-Alonso, Mitropoulou, and Nickmans (2007) and Agboola (2006) observed that though e-learning and ICT devices have the potential of improving learning and also developing “students’ and educators’ metacognitive skills”, they have been underutilized. Agboola outlined the reasons for this underutilization as: scarcity of opportunity to use the computers, lack of experience and training in ICT usage, and lack of confidence in computing skills. Folorunso, Ogunseye and Sharma (2006) added that mass unawareness is a contributing factor to the underutilization and acceptability of e-learning in Nigeria.

Manir (2011:66-67) pointed out that e-learning awareness in Nigeria started gathering momentum two decades ago and yet there is still a lot about e- learning many do not know. In his own words:

*In Nigeria, and most of the countries in Africa, awareness to ICTs started gathering momentum two decades ago. The early exposure came through lecturers, researchers, academics and students who studied abroad and had opportunities of attending conferences on ICTs. This situation is similar to other universities in most of the developing countries. This position is not a surprise, because Nigeria and other countries in Africa have no specific policy for ICT in education. It was only in February 2007 that the Federal Ministry of Education in Nigeria created its ICT Department… So far, people’s awareness of the importance of ICT in Nigeria is not well-known. Some reasons behind this problem can be: understood as low computer literacy, lack of computer resources as well as the limited access to Internet in prime cities only and slow connection.*

In concordance with Manir (2011), Folorunso, Ogunseye and Sharma (2006) noted that one factor that contributed to Nigeria’s unawareness of and slow uptake of e-learning is her inadequate education finance policy. This was also supported by Oye, Salleh and Iahad (2011) who carried out a study to compare the challenges of e-learning in Nigerian universities based on the experience of four developed countries namely UK, Australia, Korea and France. They noted that the difference between these developed countries and Nigeria is that:

1. They have vision and action plans for e-learning.
2. They have good government policies and financial support.\
3. They earmark action programs and set committees with sufficient funds to pursue it goals.
4. They believe in research as a fundamental part of e-learning strategy.
5. They embark on awareness, training and motivational programs.

The above views of Nigeria’s mass unawareness of e-learning are opposed by Okiki (2011) who noted that currently there is increasing awareness of the use of Information and Communication Technologies (ICTs) in teaching and learning. Also there is increased government policy on e-learning integration. According to Okiki, the country has a number of initiatives such as;

\* National Policy on Computer Education;

\* National Policy on Information Technology;

\* Establishment of National Information Technology Development Agency (NITDA).

The key players in the development of ICT in Nigeria are:

\* Nigeria Communication Commission (NCC)

\* National Space Research and Development Agency (NASRDA)

\* The private telecommunication companies/firms such as MTN, Globacom, Zain , Etisalat, etc.

These show that the country is making efforts to upgrade her status to that of the developed countries of the world. The various forms of e-learning will be reviewed ranging from online to off-line, synchronous and asynchronous forms.

**Forms of E-learning**

E-learning can take various forms but all driving at one point - the use of electronics in learning. For Link and Marz (2006), e-learning is understood as an umbrella concept for learning methods supported by information and communication technologies (ICT) in general. It incorporates all educational activities that are carried out by individuals or groups working online or offline, and synchronously or asynchronously via networked or standalone computers and other electronic devices. Naidu (2006) proposed four types of e-learning modalities which are shown in Figure 1 below:

**Individualized Self-**

**paced E-learning Online**

**Individualized Self-**

**paced E-learning Offline**

**Group Based E-learning**

**Synchronously**

**Group Based E-learning**

**Asynchronously**

Individualized self-paced e-learning online: this refers to situations where an individual learner is accessing learning resources such as a database or course content online via an Intranet or the Internet. A typical example of this is a learner studying alone or conducting some research on the Internet or a local network. This kind of e-learning is common in Nigeria except for the aspect of taking whole course content online.

Individualized self-paced e-learning offline: refers to situations where an individual learner is using learning resources such as a database or a computer- assisted learning package offline (i.e., while not connected to an Intranet or the Internet). An example of this is a learner working alone off a hard drive, a CD or DVD. The use of other electronic devices like the television and the radio can be classified here.

Group-based e-learning synchronously: under this situation, groups of learners work together in real time via an Intranet or the Internet. Naidu (2006) exemplified this with learners engaged in a real-time chat or an audio- videoconference. Real-time chat or conference is a new phenomenon gathering momentum in Nigeria. With the introduction of 2Go mobile Chat, Facebook, twitters etc, subscribers can communicate in real time. Group-based e-learning asynchronously: This occurs when a group of learners are working over an intranet or the Internet where exchanges among participants occur with a time delay (i.e., not in real time). Typical examples of this kind of activity include on-line discussions via electronic mailing lists and text-based conferencing within learning management systems.

The views of Naidu (2006) preclude classroom integration of e-learning. Tinio (2003) noted that e-learning means the use of electronic devices either wholly or partly for course delivery, interaction and/or facilitation. The partial use of ICT in classroom instruction is called blended-learning.

Blended-Learning, as defined by Tinio (2003), refers to learning models that combine traditional classroom practice with e-learning solutions. For example, students in a traditional class can be assigned both print-based and online materials, as well as have online mentoring sessions with their teacher through chat and can be subscribed to a class email list. Or a web-based training course can be enhanced by periodic face-to-face instruction.

**E-learning Devices**

An e-learning object is a digital educational resource which is granulated into units that are reusable, adaptive, and can be re-purposed to different learning styles, knowledge levels and conditions. These resources can be used in varied forms that suits the individual user. Bassey, Umoren, Akuegwu, Udida, Ntukidem and Ekabua (2007:62) highlighted the e-learning devices that are been used to include:

*… personal computers, CD ROMs, television, personal digital assistants (PDAs – handheld devices that were originally designed as personal organizers, but became much more versatile over the years), MP3 players and mobile phones, internet, e-mail, discussion forums, collaborative software, classroom management software, team learning systems, intranet, extranet, Local Area Network (LAN), Wide Area Network (WAN), audio and videotape, satellite and interactive television lectures, satellite-delivered learning, virtual educational networks, satellite downlinks, computerized diagnostic assessment, competency certification and electronic portfolios.*

Others include websites, wikis, blogs, Second Life, Twitter, course management systems, video/audio podcasts, facebook, threaded discussion lists, video/audio/text chat, video conferencing software, etc. (Ipaye, 2011).

The utilization of some of these tools is hereunder reviewed.

**Use of Radio and TV Broadcasting**

Radio and television have been used widely as educational tools since the 1920s and the 1950s respectively (Tinio, 2003). Uvaweblearn (2007), Tinio (2003) and The Communication Initiative Network (2007) outline three general approaches to the use of radio and TV broadcasting in education:

a) Direct Class teaching, where broadcast programming substitutes for teachers on a temporary basis. 20 – 30 minutes direct teaching and learning exercises can be provided to students. The lessons should be developed around specific objectives. This kind of instruction is called Interactive Radio Instruction (IRI). Tinio (2003) gave examples of IRI usage in Asia, Indonesia, Pakistan, and Nepal.

b) School broadcasting, where broadcast programming provides complementary teaching and learning resources not otherwise available. This does not substitute for the teacher but, rather, enriches traditional classroom instruction (particularly where resources would not otherwise be available). Often deployed with print materials, cassettes and CD-ROMs, school broadcasting is geared to national curricula and developed for a range of subject areas (The communication Initiative Network, 2007). The teacher can now decide how to integrate the materials into their class instruction.

c)General Educational Programming: This involves providing non- formal educational opportunities for all types of learners over community, national or international stations. This programming could include news programmes, documentary programmes, quiz shows, educational cartoons and so on (Uvaweblearn, 2007). Teachers can use general educational programmes as learning experiences for students.

**The Use of Telephones: Teleconferencing**

Telephones can be used for teleconferencing which can aid educational activities. Teleconferencing refers to interactive electronic communication among people located at two or more different places (Tinio, 2003). Teleconferencing refers to telephone calls where more than two people can discuss at the same time. Teachers can group students into groups to perform certain educational activities during the holidays. The group can discuss and plan out their assignment through teleconferencing (United States Department of Transportation, n.d.).

**The Use of Computers and Internet**

Computers are often viewed as tools that can be used to achieve diverse educational ends similar to the way that textbooks, laboratory equipment, curricula, or other educational technologies can be used to enhance eduation (Rusten, 2003). Rusten also stated that computers and reference CD-ROMs, electronic journals and periodicals and communication tools can provide affordable access to current research and reference resources that cannot be obtained from conventional libraries and paper-based systems.

Wikieducator (2009) outlined the uses of computers in education as follows:

1. Instructing the students using PowerPoint slides, word documents or web pages and using hyperlinks for better concept clarity.

2. Helps in improving pronunciation of students by using microphones, headphones, speeches, specially prepare software, and special dedicated websites.

3. Current syllabus can be viewed through website of the concerned school board and made available to students.

4. Inspiring students to express their imagination using paint brush, Corel draw and other software packages.

5. Encouraging the students to surf web pages and gather relevant information through web pages.

6. Ready-made software could give practice material to students

7. Collecting notes/pictures/video from web pages for assignments and projects

8. Saving the documents as soft copy for future use.

9. Learning through animations which attract the students more

10. E-books, online libraries and online encyclopedias are educational resources to students which can be used for research.

11. Creating videos using images, albums for better Power Point slides.

Teachers and lecturers can organize and design their lessons into units or sections that can be recorded on a CD-ROM and given to the students especially when the lecturer is not available for direct classroom instruction (Olaniyi, 2006). An example of this is the Maxis Beacon typing software. Students undergoing a course in typewriting can be given this typewriting tutor to support classroom instruction.

Tinio (2003) noted that there are three approaches to the instructional use of computers and the internet, namely:

a) Learning about computers and the internet, in which technology literacy is the end goal.

b) Learning with computers and the internet, in which the technology facilitates learning across the curriculum; and

c) Learning through computers and the internet, integrating technological skills development with curriculum applications.

**Web Services**

Web services are e-learning applications on the internet that are used for online learning and which can aid classroom synchronization. Kinley (2010) noted that new web services such as social networks, blogging and search engines are being used while learning management system (LMS) such as Blackboard and Sakai and technology advanced hardware such as Smart Board3, are also being used for learning and teaching. These applications are discussed below.

**Learning Management Systems**

A learning management system (commonly abbreviated as LMS) is a software application for the administration, documentation, tracking, and reporting of training programs, classroom and online events, e-learning programs, and training content (Wikipedia, 2011A). Learning Management Systems are also called Virtual Learning Environment (VLE) or Course Management System (CMS) (Moodle, n.d.). As described by Ellis (2009), a robust LMS should be able to do the following:

* centralize and automate administration
* use self-service and self-guided services
* assemble and deliver learning content rapidly
* consolidate training initiatives on a scalable web-based platform
* support portability and standards
* personalize content and enable knowledge reuse.

LMSs range from systems for managing training and educational records, to software for distributing courses over the Internet with features for online collaboration. Dimensions to Learning Management System include student self- service (e.g., self-registration on instructor-led training), training workflow (e.g., user notification, manager approval, wait-list management), the provision of on- line learning (e.g., Computer-Based Training, read & understand), on-line assessment, management of continuous professional education (CPE), collaborative learning (e.g., application sharing, discussion threads), and training resource management (e.g., instructors, facilities, equipment).

Some LMSs are Web-based to facilitate access to learning content and administration. LMSs are used by regulated industries (e.g. financial services and biopharma) for compliance training. They are also used by educational institutions to enhance and support classroom teaching and offering courses to a larger population of learners across the globe (Wikipedia, 2011a).

Learning Management systems are common in developed countries but are gaining recognition in Nigeria though at a slow pace. Okiki (2011) and Eke (2011) noted the introduction of LMS by University of Lagos and University of Nigeria Nsukka. In the University of Nigeria Nsukka, for instance, Eke (2011) pointed out the Learning Management system adopted was Moodle because it offers such features as class activities, forums, chats, blogs, wikis, and quizzes. It also offers an opportunity for students to obtain username and password in order to log in and participate in the activities. News and important/interesting sites could be uploaded and automatically updated on the Moodle platform with the tool of Real Simple Syndication (RSS) feed. Other examples of Learning Management Systems include Moodle, Sakai, Blackboard, Makau etc.(Ellis, 2009).

**Blogs**

A blog is a type of website or part of a website that is interactive and allows visitors to leave comments and even messages via widgets on the blogs. Most blogs are interactive, and it is this interactivity that distinguishes them from other static websites. The term ‘blog’ is a blend of the term web and log (Blood, 2000). Blogs are usually maintained by an individual with regular entries of commentary, descriptions of events, or other material such as graphics or video. Entries are commonly displayed in reverse-chronological order. Blog can also be used as a verb, meaning to maintain or add content to a blog.

Many blogs provide commentary or news on a particular subject; others function as more personal online diaries. A typical blog combines text, images, and links to other blogs, Web pages, and other media related to its topic. The ability of readers to leave comments in an interactive format is an important part of many blogs. Most blogs are primarily textual, although some focus on art (art blog), photographs (photoblog), videos (video blogging), music (MP3 blog), and audio (podcasting). Microblogging is another type of blogging, featuring very short posts (Wikipedia, 2011b). Blogs can be used by teachers to communicate with their students. By posting topical issues and allow students to react to the issue by posting their comments, the teacher can evaluate the students understanding. This can be done from anywhere provided the students and the teacher is connected to the internet.

**Videoconferencing**

A video conference (also known as a video teleconference) is a set of interactive telecommunication technologies which allow people in two or more locations to interact via a two-way video and audio transmissions simultaneously. Anissimov (2011) defines videoconferencing as a communications technology that integrates video and voice to connect remote users with each other as if they were in the same room. Each user needs a computer, webcam, microphone, and broadband internet connection for participation in video conferencing. Users see and hear each other in real-time, allowing natural conversations not possible with voice-only communications technology. Videoconferencing has also been called 'visual collaboration' and is a type of groupware. Videoconferencing differs from videophone calls in that it is designed to serve a conference (many people) rather than individuals.

Videoconferencing can be considered when:

* a live conversation is needed;
* visual information is an important component of the conversation;
* the parties of the conversation can't physically come to the same location; or

the expense or time of travel is a consideration.

Videoconferencing provides students with the opportunity to learn by participating in two-way communication forums. Furthermore, teachers and lecturers worldwide can be brought to remote or otherwise isolated educational facilities. Students from diverse communities and backgrounds can come together to learn about one another. Such students are able to explore, communicate, analyze and share information and ideas with one another.

Through videoconferencing students can visit other parts of the world to speak with their peers, and visit museums and educational facilities. Such virtual

field trips can provide enriched learning opportunities to students, especially those in geographically isolated locations, and to the economically disadvantaged. Small schools can use these technologies to pool resources and provide courses, such as in foreign languages, which could not otherwise be offered.

A few examples of benefits that videoconferencing can provide in the tertiary institution includes:

1. faculty members keeping in touch with classes while attending conferences;

2. guest lecturers brought into classes from other institutions;

3. researchers collaborating with colleagues in other institutions on a regular basis without loss of time due to travel;

4. schools with multiple campuses collaborating and sharing professors;

5. faculty members participating in thesis defenses in other institutions;

6. administrators on tight schedules collaborating on budget preparation from different parts of campus;

7. faculty committee auditioning scholarship candidates;

8. researchers answering questions about grant proposals from agencies or review committees;

9. student interviews with an employers in other cities, and

10. Tele seminars.

The implementation of videoconferencing will be properly articulated when the kinds of videoconferencing system is discussed;

There are basically two kinds of videoconferencing systems:

1. **Dedicated systems** have all required components packaged into a single piece of equipment, usually a console with a high quality remote controlled

video camera. These cameras can be controlled at a distance to pan left and right, tilt up and down, and zoom. The console contains all electrical interfaces, the control computer, and the software or hardware-based codec. Omni directional microphones are connected to the console, as well as a TV monitor with loudspeakers and/or a video projector. There are several types of dedicated videoconferencing devices:

1. Large group videoconferencing is non-portable, large, more expensive devices used for large rooms and auditoriums.

2. Small group videoconferencing is non-portable or portable, smaller, less expensive devices used for small meeting rooms.

**Fig 2: Small group videoconferencing**

Source: <http://www.gipscorp.com>

3. Individual videoconferencing are usually portable devices, meant for single users, have fixed cameras, microphones and loudspeakers integrated into the console.

**Fig 3: Individual videoconferencing**

**Access to E-learning Devices**

The availability of e-learning devices is a crucial factor to integration and sustainability of e-learning in Nigerian Universities. Ajadi, Salawu and Adeoye (2008) noted that e-learning integration is still a mere dream because of the inadequate ICT infrastructure in Nigerian institutions and educational system. When teachers and students do not have access to computers and the internet, e-learning becomes an impossible task. Abubakar (2010) also pointed out that there is poor, limited and erratic internet connectivity as well as high cost of bandwidth access. This limits the access teachers and students have to the internet.

However, efforts have been made by various institutions to create better access to e-learning facilities. According to Okiki (2011), the University of Lagos have polices that support the integration of ICT in the University.

The university's broad objectives on ICT development are:

* To ensure that every student has access to a computer system and internet connectivity when required to enhance the learning process.
* To provide computer facilities and internet connectivity to every academic staff and facilitate and support teaching, learning and research.
* To ensure that information technology infrastructure is very reliable, accessible and responsive.
* To ensure that management information systems are fully integrated, user friendly, timely and accurate to support informed decision-making. etc.

Okiki (2011) also noted that the university’s general objective on IT infrastructure is to acquire, install and maintain reliable and up-to-date and globally accessible information technology infrastructure while the specific objectives are:

* Set up computer laboratories in each faculty.
* Acquire and install computers in each faculty.

Develop a comprehensive network design to cover academic and administrative units, student hostels and staff quarters with consideration for wired connectivity and distance learning options.

Train all staff of academic departments and programmes to possess the ability to use multimedia teaching workstations.

* Equip lecture halls for multimedia instruction.
* Develop and select virtual learning software.
* Increase the current internet bandwidth.

To encourage staff and students on the use of e-learning, the University of Lagos, as reported by Okiki (2011) subscribed to three learning management systems (LMS) and these are: Moodle, Blackboard and Makau. Learning Management Sytems (LMS) will be discussed in a subsequent section. Eke (2011) also explored the access to e-learning facilities in the University of Nigeria Nsukka. Eke noted that the University started to adopt e-learning in 2008 when sixty staff were selected for the training on the adoption of a Learning Management System (Moodle). The system was geared towards reaching the students and learners in another dimension that could offer more interactiveness, friendliness and closeness in a seemingly far environment.

**Students’ Utilization of E-learning**

Technology provides a platform that facilitates learning anytime and anywhere. It also enables teachers and students with “possibilities” that can be explored uniquely to boast the educational process. To Oystein, Hallgeir, Vebjorn and Roar (2009), the utilization of possibilities inherent in a new technology is a key to implementation success, and teachers’ willingness to utilize e-learning possibilities in the long run is essential for realization of long- term benefits from investments in e-learning technology.

In Nigerian tertiary institutions, there is gross underutilization of e-learning (Ajadi et.al., 2008; Abubakar, 2010). The commonest type of e-learning adopted is in form of lectures note on CD-ROM which can be played as at when the learners desires. The challenge of this method is that the numbers of students per computer in which these facilities are available are un-interactive as compared to when lectures are been received in the classroom. Ajadi et. al (2008) reported that some institutions adopted the use of intranet facilities; however, this is not well maintained because of incessant power problem and high cost of running generating set. Most students in Nigeria go to the cyber café but because there are people of diverse intension on the net at the same time, and the bandwidth problem, a multimedia interactive cannot be done.

Although the problems of e-learning utilization are many ranging from slow internet connection to poor electricity power supply (Kinley, 2010), Manir (2009) still argues that there is tremendous growth of computer equipment and internet utilization by academic staff in the Nigerian Universities.

**2.2 THEORETICAL FRAMEWORK**

A theory can be described as a set of hypotheses that apply to all instances of a particular phenomenon, assisting in decision-making, philosophy of practice and effective implementation through practice (Nichols, 2003). Theories act as a touch-stone against which decisions – political, financial, educational, social – when they have to be taken, and can be taken with confidence. A theory provides a yard stick for evaluating practice, though it in turn may be adjusted by findings from practice that show the theory to be inadequate (Khun,1962). In this section, the theories e-learning will be reviewed.

**Theories of e-Learning**

Many authors have written about e-learning practice but not much has been done to theorize e-learning. As noted by Beard, Wilson and Mccarter (2007), e- learning is frequently technology-led than theory-led. Nichols (2003) also noted that the vast bulk of literature in e-learning is practice-based and is typically presented in a descriptive format. It is unlikely that e-Learning practice will continue to evolve unless the theoretical underpinnings of e-learning are explored and debated, providing a wider platform and a common philosophy for e-learning development. To this, Nichols (2003) outlined ten (10) hypotheses for e-learning which form fundamental principles for e-learning. These hypotheses were debated on and modified into ten theoretical foundations for e-learning practice. Nichols’ ten e-Learning theoretical statements are hereunder presented:

1. *E-learning is a means of implementing education that can be applied within varying education models (for example, face to face or distance education) and educational philosophies (for example behaviourism and constructivism)*.

This principle sets e-learning as a means of education as opposed to a mode of education. In other words, e-learning involves the use of a number of technological tools that can be applied in various contexts; it is not a distinctive educational system in itself. Therefore e-learning cannot be compared with face to face delivery or distance education because it can be used within either of these models. Instead, e-learning is a means by which these education models can be implemented. This hypothesis is confirmed by institutions such as the Open University, which uses e-learning as an adjunct to its “supported open learning” model (Eisenstadt & Vincent, 2000).

1. *E-learning enables unique forms of education that fits within the existing paradigms of face to face and distance education.*

Nichols (2003) pointed out that e-learning enables new expressions of education that can potentially combine the strengths of face to face and distance forms of education in various ways using various technologies such as bulletin boards. It is acknowledged that e-learning changes the role of the instructor, particularly in online environments and in blended modes (Coppola, Hiltz & Rotter, 2002).

1. *Whenever possible the choice of e-learning tools should reflect rather than determine the pedagogy of a course; however as a general rule how technology is used is more important than which technology is used.*

Since e-learning is a means to education, then it can be applied in accordance with varying pedagogies. Weller (2002) lists the following as pedagogies: constructivism, resource based learning, collaborative learning, problem based learning, narrative based learning, and situated learning. Nichols (2003) explained that technology is pedagogically neutral and can therefore be applied quite merrily to all of the pedagogies listed above. It follows then that the poor implementation of technology must reflect poorly implemented pedagogy, or an over-estimation in technology’s potential (or a blend of the two). The selection of education approach or philosophy is therefore more important than the selection of the technology itself. This then means that the responsibility for e-learning failure rests on those who chose the technology tools to use and how they were implemented.

1. *E-learning advances primarily through the successful implementation of pedagogical innovation.*

Nichols (2003) explained that it will be breakthroughs in teaching practice that will make e-learning more useful and not breakthroughs in technology, though the latter can provide opportunities for the former. As noted by Laurillard (2002), instructional designers should drive e-learning, not technologists. Those who are innovative educators will be those who maximize e-learning and ensure its further development.

*5. E-learning can be used in two major ways; the presentation of education content, and the facilitation of education processes.*

To Nichols (2003), the fundamental applications of eLearning include digital materials storage and distribution (presentation) and synchronous and asynchronous communication, simulative interactivity, multimedia, and access tracking (processes) – each of which is subject to multiple applications of use and innovation. In other words e-learning can both make information available and play a part in students’ self-construction of knowledge. This affirms that technology is not content, and technology is not process; rather, it can be used to provide access to both.

1. *E-learning tools are best made to operate within a carefully selected and optimally integrated course design model.*

Nichols explained that it is not sufficient to simply add e-learning tools on to an existing course if e-learning’s true benefits are to be realized. Instead, attention must be given to the contribution e-learning can make to learning so that any use of e-learning becomes a seamless component of the overall course design and delivery package. This means that the teacher should ensure that the e-learning tool he wants to integrate should consider the content, learner support and learning activities.

1. *E-learning tools and techniques should be used only after consideration has been given to online vs offline trade-offs*.

This emphasizes the need for teachers to consider the cost effectiveness of online-offline e-learning tools. Practically teachers should ensure that file sizes are appropriate, students are able to continue their studies if they are away from a computer, the family phone line is not continuously tied up for dial-up Web access, etc. Nichols (2003) added that it may be more appropriate to provide certain materials on paper or CD-ROM rather than over the Web in many cases. In general, the Web is best used for communications such as notices, updates, asynchronous and synchronous discussion, and for content that is frequently updated or only becomes available during the actual course. This means that it is prudent to make other materials such as Word documents, slideshows and relatively static content offline, either on CD-ROM or paper (or both). It is also possible to make video and audio materials available on CD-ROM or tape (or both).

*8. Effective e-learning practice considers the ways in which end-users will engage with the learning opportunities provided to them.*

This theoretical statement shows that understanding the end-user’s behavior is an important step toward effective eLearning. The consequences of making materials or learning opportunities available through e-learning should be carefully considered. Nichols (2003:5) exemplified thus:

*As an example some institutions do not provide any printed materials, preferring instead to make all things available on a CD-ROM or online. For many students who do not like to read from a screen or cannot take their desktop computers away on holiday with them for the weekend, such a move requires them to print the materials out. Distributing online activities throughout a one hour study session will also require a student studying from home to either frequently dial up to the Internet or else stay online for the entire period; better practice would be to anticipate such activities and instead combine all online activities in one section.*

*9. The essential process of education, that is, enabling the learner to achieve planned learning outcomes, does not change when e-learning is applied.*

This means that pre-planned learning outcomes (i.e. the curriculum) is the priority in the educational process and not technology. As such, elearning usage should not divert the learner from achieving the pre-planned objective. Nichols (2003) emphasized that the curriculum is the king and ‘e-learning tools can certainly be used to encourage students to further explore topics on their own and take ownership of their learning.’ However, the curriculum, not the use of technology, is the standard.

10.Only pedagogical and access advantages will provide a lasting rationale for implementing e-learning approaches.

Nichols theorized that institutional, social and political expediencies may be helpful to justify e-learning investment, but they are not sufficient on their own. There must also be a conviction that technological tools improve teaching and learning to ensure long-term commitment to their use, and to ensure appropriate implementation.

**2.3 EMPIRICAL STUDIES**

In this section, related empirical studies that have some relationship with this present study are hereunder reviewed.

Leem and Lim (2007) carried out a study to examine the current status of e-Learning in Korean higher education and to find ways to encourage the further use and development of e-Learning systems that aim to enhance Korea's academic competitiveness. A total of 201 universities in Korea (27 national and public, 163 private, and 11 national universities of education) were examined in the study. A survey questionnaire was used to establish whether or not individual universities had existing e-Learning programs; collaborative relationships with other universities; and specific support organizations in place. In addition, the current state of the e-Learning system and problems in e-Learning programs used on campus were also investigated. Findings from the study revealed that both teachers and learners alike, lacked meaningful support systems and opportunities to actively participate in e-Learning programs. Although such lack of support was found to be endemic, such lack of support and opportunity was found to be more accute in private universities, private colleges, universities of education, than mid-sized, small-sized, and provincial universities and colleges. Except for a few mid- and small-sized universities and colleges, most large universities and colleges were equipped with technical support such as infrastructure and operational platforms. There is a relationship between Leem and Lim (2007) study and the current research in that they both seek to examine the usage of e-learning by tertiary institutions. Leem’s study differs from the current study in that it focuses majorly on e-learning platforms and software and does not consider other forms of e-learning.

Agboola (2006) carried out a study to assess the awareness and preparedness of academic staff in using e-learning tool for instructional delivery in a post secondary institution (International Islamic University Malaysia). Two sets of questionnaire were used to collect data from 324 academic staff and 26 Deans or Heads of Department. The findings revealed that the majority of the respondents were males, whose age range was within 25-44 years old. The majority of the respondents had a high level of teaching experience that ranged between one and ten years, and many of them were majoring in human sciences and pure science. The majority of the respondents were skilled in the required computer software skills such as: word processor, spreadsheets or excel, databases, statistics package, presentation software, copy and transferring of files, document scanning and creating PDF files. Respondents indicated that they acquired their computer and Internet training through formal training. The majority of the respondents indicated that they accessed the Internet for 10 hours or more per week. The results showed two strong influences of e-learning confidence and e-learning training on both e-learning adoption and e-learning readiness, and a somewhat lesser influence of gender on e-learning adoption and e-learning readiness. Agboola’s study is related to this current study in that they both examine the computer competence of the respondents, the access to computers and internet facilities that staff and students possess, and the influence of gender on the usability of e-learning. They differ in the sense that Agboola’s study did not consider students awareness or utilization of e-learning as a variable.

Inal, Karakus, and Cagiltay (2008) carried out a study on Turkish high school students to investigate their considerations, expectations and awareness related to distance education, especially e-learning, and its implementations. 1224 students studying at 8 different high schools from 6 cities in 4 different regions of Turkey were used for the study. For collection of data, the researchers used a questionnaire that contained seven demographics, eleven multiple-choice, two open-ended, and ten Likert-type questions. The questions investigated students’ use of computers and the Internet, use of the Internet for educations purposes, their future thoughts about taking university degree via e- learning. The data collected from the questionnaires were analyzed by calculating frequencies of responses for the demographics and multiple-choice questions. The open-ended questions were subjected to content analysis. Results of the study showed that students associated distance education to e- learning. Additionally, although students have technological competencies which are critical factors for e-learning applications, they did not prefer taking their university education through distance education programs. However, they had huge tendency in terms of taking some courses via the Internet. The findings also showed that the main purpose of the Internet use differed among males and females. 885 of the students (481 males and 402 females) use the Internet to find information, 868 students (434 males and 431 females) use the Internet for doing homework, and 604 students (381 males and 223 females) use Internet for chatting. In addition, 486 students (303 males and 183 females) use the Internet for playing online games, and 402 students (260 males and 140 females) use the Internet for communicating with e-mail.

Inal et. al.(2008)’s study is related to this present research in that they both examine the usage of the computers and internet. However, their study focused mainly on students and also included students’ perception of e-learning and distance education which are not variables in this present research.

**Summary of Review of Related Literature**

The review explored the theory of e-learning and the ten theoretical statements that form the basis for the practice of e-learning were discussed. The review went on to discuss the concept of e-learning and several definitions by various writers were reviewed. In that line, the difference between e-learning and distance education was also unveiled. The evolution of e-learning was also examined and narrowed down to how e-learning started in Nigeria.

The review went on to discuss the awareness of e-learning among teachers and students, explaining what awareness means and the current level of e-learning awareness among teachers and students. The forms of e-learning were then explored and discussed. This has to do with individualized self-paced e-learning online, individualized self-paced e-learning offline, group based e- learning synchronously, and group based e-learning asynchronously.

Access to e-learning facilities was discussed. The state of e-learning in a few Nigerian universities was highlighted and this revealed the great need for e- learning infrastructure in Nigerian tertiary institutions. The Usage of e-learning by teachers and students was also discussed. The different e-learning tools and applications and how they can be used in classroom or online delivery were extensively discussed. The tools and applications include radio, television, telephones, computers, CD ROM, video-conferencing, internet applications like learning management systems, blogs, wikis etc.

Generally, while the previous studies conducted by other researchers and authors have been helpful in the organization of this research, none has focused on the awareness and utilization of e-learning by business education students in Anambra State. This gap therefore has further strengthened the rationale for the present study.

**CHAPTER THREE**

**RESEARCH METHODOLOGY**

This chapter presents the procedure used in the study. The presentation is made under the following sub-headings: research design, area of the study, population of the study, instrument for data collection, validation of the instrument, reliability of the instrument, method of data collection and method of data analysis.

**3.1 Research Design**

The study adopted a survey design. A survey design was adapted for this study because it is oriented towards ascertaining and establishing the status quo, facts or pieces of information concerning the population. Nwogu (1991) states that survey method is appropriate, especially for seeking individuals’ opinions, attitudes and perceptions in their natural setting. The survey research design is appropriate for this study because it is a very valuable tool for assessing opinions and trends (Shuttleworth, 2008).

**1.2 Area of the Study**

The study was conducted in Anambra State which is located in the south eastern part of Nigeria. Anambra State has boundaries with Delta State to the west, Imo State and Rivers State to the south, Enugu State to the east and Kogi State to the north. Anambra State is not only known for her success in commercial activities but also for her academic prowess. The presence of several tertiary institutions (government, private and missionary-owned) is a well known fact.

**1.3 Population of the Study**

The population for this study consisted of all the business education students in the four tertiary institutions offering business education. The institutions are Nnamdi Azikiwe University Awka, Madona University Okija, Nwafor Orizu College of Education Nsugbe, and Federal College of Education (Technical) Umunze. Records from the business education departments of the four institutions for 2010/2011 academic year indicated that there were 1603 students in the four institutions. See Table 1

### Table 1:

**Population Distribution by Institutions**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S/N | Institution | Male | Female | Total |
| 1. | Nnamdi Azikiwe University | 57 | 192 | 249 |
| 2. | Madona University | 35 | 46 | 81 |
| 3. | Federal College of Education |  |  |  |
|  | (Technical) Umunze | 63 | 618 | 681 |
| 4. | Nwafor Orizu College of |  |  |  |
|  | Education Nsugbe | 137 | 455 | 592 |
|  | **Total** | **292** | **1311** | **1603** |

Therefore, 1603 business education students (made up of 292 males and 1311 females) formed the population for this study.

**3.4 Sample and Sampling Technique**

A sample of 320 students was used for the study. This was judged to be representative of the total population. The 320 students were selected using the proportionate random sampling technique. The proportion was based first on the population size in each institution and then on gender. This sampling technique ensured greater representativeness of the sample relative to the population and guaranteed that minority constituents of the population were represented in the sample. Nworgu (1991) stated that using the proportionate random sampling technique ensures that elements are drawn randomly from each stratum in such a way that the relative proportions of the strata in the resultant sample are the same as exist in the parent population.

### Table 2:

**Sample Distribution by Proportion**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **S/N** | **Institution** | **Population** | **Proportion to the total population** | **Sample** | **Male** | **Female** |
| 1. | Nnamdi Azikiwe University | 249 | 15.53% | 50 | 11 | 39 |
| 2. | Madona University | 81 | 5.06% | 16 | 7 | 9 |
| 3. | Federal College of |  |  |  |  |  |
|  | Education (Technical) Umunze | 681 | 42.48% | 136 | 13 | 123 |
| 4. | Nwafor Orizu College of |  |  |  |  |  |
|  | Education Nsugbe | 592 | 36.93% | 118 | 27 | 91 |
|  | **TOTAL** | **1603** | **100%** | **320** | **58** | **262** |

**3.5 Instrument for Data Collection**

The data for this study was collected through the use of questionnaire constructed by the researcher from the review of literature. The questionnaire, titled Awareness and Utilization of E-learning by Business Education Students, contained five sections. Section A required the demographic data of the respondents. Section B, titled Awareness of E-learning, contained 14 e-learning applications to which the respondents were to indicate their level of awareness. The responses were structured on a four point scale of Very Aware, Aware, Fairly Aware and Not Aware.

Section C, titled Access to e-Learning Facilities, contained eight (8) items, which were several means of access to e-learning facilities. The students were to tick either Yes or No to indicate which means of access applies to them. Section D, titled Utilization of E-learning, contained 10 e-learning applications to which the respondents were to indicate how often they utilized them. The responses were structured on a four point scale of Very Often, Often, Fairly often, and Rarely.

Section E, titled Computer Competence, was adapted from Wayne State University (2006) and it was aimed at determining how competent the respondents were in computer usage. The responses were structured on a four point scale Very Competent, Competent, Fairly Competent and Not Competent.

**3.6 Validation of the Instrument**

The instrument was subjected to face and content validity. Two experts from Department of Vocational Education, Nnamdi Azikiwe University, Awka, two from Department of Business Education, Rivers State University of Science and Technology, and one ICT expert from KP Computers Ltd Awka were given the instrument to validate. To aid the validation exercise, the statement of the problem, purpose of the study, research questions and the hypotheses were also given to the experts. The experts were selected based on the fact that they have knowledge and experience in test construction. Their inputs were harmonized and taken into account in preparing the final version of the instrument, which was edited and approved by the researcher’s supervisor.

**3.7 Reliability of the Instrument**

In order to establish the reliability of the instrument, the instrument was tested through the split-half method using twenty randomly selected business education students, other than those for the same population, in Rivers State. Spearman rank order correlation coefficient was used to determine the degree of linear relationship between the two halves (odd and even items). The reliability coefficient was computed using the Spearman Brown’s prophecy formula which yielded the score of 0.86, 0.58, 0.62 and 0.97 for sections B, C, D, and E respectively. See Appendix B.

**3.8 Method of Data Collection**

The researcher and two research assistants administered the questionnaire to the business education students of the four tertiary institutions in Anambra State. The business education students were given the questionnaires to fill in their lecture halls. The filled questionnaires were collected back immediately.

**3.9 Method of Data Analysis**

The data collected were analyzed using mean ratings and z-test. To answer the first research question, the mean responses of respondents for Section B, Awareness of e-Learning, were gotten. The mean ratings were interpreted using the real limits shown below:

|  |  |  |
| --- | --- | --- |
| **Response** | **Rating Scale** | **Real Limits of Numbers** |
| Very Aware | 4 | 3.50 – 4:49 |
| Aware | 3 | 2.50 – 3.49 |
| Fairly Aware | 2 | 1.50 – 2.49 |
| Not Aware | 1 | 0.50 – 1.49 |

To answer the second research question, frequency counts and percentages were used to describe the means of access to e-learning facilities that students had. To answer the third research question, the mean responses of the respondents for Section D, Utilization of e-Learning, were used. The mean ratings were interpreted using the real limits shown below:

|  |  |  |
| --- | --- | --- |
| **Response** | **Rating Scale** | **Real Limits of Numbers** |
| Very often | 4 | 3.50 – 4:49 |
| often | 3 | 2.50 – 3.49 |
| Fairly often | 2 | 1.50 – 2.49 |
| Rarely | 1 | 0.50 – 1.49 |

To answer the fourth research question, the mean ratings of the respondents were used. The mean scores were interpreted thus:

|  |  |  |
| --- | --- | --- |
| **Response** | **Rating Scale** | **Real Limits of Numbers** |
| Very competent | 4 | 3.50 – 4:49 |
| Competent | 3 | 2.50 – 3.49 |
| Fairly competent | 2 | 1.50 – 2.49 |
| Not competent | 1 | 0.50 – 1.49 |

The four hypotheses were tested using z-test. The decision rule was to reject the null hypothesis where the calculated value of the z was greater than or equal to the table value of z (z-tabulated). The null hypothesis was retained where the calculated value of t was less than the table value of z.

**CHAPTER FOUR**

**PRESENTATION AND ANALYSIS OF DATA**

This chapter presents the data and the statistical analysis of the study. The presentation of data was based on the questionnaire return of 301 out of 320 representing 94 percent. Analysis and presentation of data and results are ordered according to research questions raised and hypotheses postulated in chapter one. See Appendix C for results of demographic data collected.

**Research Question 1**

To what extent are business education students in Anambra State tertiary institutions aware of e-learning?

To answer Research Question 1, the mean of the data were computed from the frequency distribution of the responses. The result of the computation is shown in Table 3 below:

**Table 3: Respondents’ Mean Rating of Awareness of E-learning**

**N = 301**

|  |  |  |
| --- | --- | --- |
| **E-Learning Applications** | **Mean** | **Remark** |
| Undertaking a course on the internet with interactive features | 2.77 | Aware |
| Partaking in online discussion forum  | 2.69 | Aware |
| Tele-conferencing with classmates during a group work | 2.72 | Aware |
| Partaking in video-conferencing | 2.34 | Fairly Aware |
| Getting academic support and advice from a teacher by e-mail | 2.48 | Fairly Aware |
| Listening to educative programs on the radio | 3.39 | Aware |
| Undertaking online examinations | 2.89 | Aware |
| Getting educational information from television programs | 3.44 | Aware |
| Searching for academic information on the internet | 3.51 | Very Aware |
| Chatting online with classmates and teachers | 3.00 | Aware |
| Presenting assignments using Power Point and Projectors | 2.65 | Aware |
| Using electronic books (e-books) to support learning | 2.54 | Aware |
| Accessing online libraries for research materials | 3.10 | Aware |
| Checking results online | 3.56 | Very Aware |

The data in Table 3 indicate the levels of business education students’ awareness to e-learning. Checking results online ranked first with a mean of 3.56, followed by searching for academic information on the internet with a mean of 3.51. The students indicated that they were aware of 10 out of the 14 e- learning applications. Getting educational information from television programs ranked 3rd with a mean of 3.44; this was followed by listening to educative programs on the radio which had a mean of 3.39. Accessing online libraries for research materials ranked 5th with a mean of 3.10 while chatting online with classmates and lecturers ranked 6th with a mean of 3.00. The e-learning application that ranked 7th was undertaking online examination which had a mean of 2.89 while undertaking a course on the internet with interactive features ranked 8th with a mean score of 2.77. More so, teleconferencing with classmates during a group work ranked 9th with a mean of 2.72. The 10th and 11th ranked items were partaking in online discussion forum and presenting assignments using Power Point and projectors whose mean score were 2.69 and 2.65 respectively. Using electronic books (e-book) to support learning was ranked as 12th item with a mean score of 2.54. The data indicate that the students were fairly aware of two out of the 14 e-learning applications. These applications are getting academic support and advice from a teacher via e-mail (with a mean score of 2.48) and partaking in video conferencing which ranked 14th with a mean score of 2.34.

**Research Question 2**

By what means do business education students in Anambra State tertiary institutions get access to e-learning facilities?

To answer Research Question 2, the frequency distribution of the responses and the percentages were computed. The result of the computation is shown in Table 4 below:

**Table 4:** Number and Percentage of Respondents that Access E-learning by Identified Means.

|  |  |  |
| --- | --- | --- |
| **Means of Access to E-learning** | **Number** | **Percent** |
| I have a personal computer | 135 | 44.9% |
| A family member has a computer which I can access anytime I want | 200 | 66.4% |
| A close friend has a computer accessible to me  | 179 | 59.5% |
| My computer is connected to the internet | 154 | 51.2% |
| There is free internet access in my institution | 204 | 67.8% |
| There is a computer studio/laboratory in my institution | 249 | 82.7% |
| There is a digital library in my school which Ihave access to | 172 | 57.1% |
| I can access the internet through my mobile phone at little or no cost | 260 | 86.4% |

As shown in Table 4, more than 50% of the respondents had access to seven out

of the eight identified means of access to e-learning. Less than half of the respondents (44.9%) indicated that they had a personal computer. This was the lowest identified means of access to e-learning the respondents had. The highest identified means of access to e-learning was through mobile phones (which recorded 86.4%). This was followed by the availability of a computer studio/laboratory in the institution (82.7%). 67.8% of the respondents indicated that there was free internet access in their institution while 51.2% indicated that the computers they had access to were connected to the internet.

**Research Question 3**

How often do business education students in Anambra State tertiary institutions utilize e-learning facilities in their learning process?

To answer Research Question 3, the mean of the data were computed from the frequency distribution of the responses. The result of the computation is shown in **Table 5 below:**

**Table 5:** Respondents’ Mean Rating of Utilization of E-learning Facilities (N = 301)

|  |  |  |
| --- | --- | --- |
| **E-learning Processes** | **Mean** | **Remark** |
| Reading e-books and e-journals | 2.40 | Fairly Often |
| Searching for educational materials online | 3.09 | Often |
| Processing assignments with the computer | 3.28 | Often |
| Teleconferencing with classmates during a | 2.28 | Fairly Often |
| group work |  |  |
| Sending feedbacks to lecturers via e-mail | 1.86 | Fairly Often |
| Undertaking a course on the internet with interactive features | 2.09 | Fairly Often |
| Listening to educative programs on the radio | 3.36 | Often |
| Undertaking online examinations | 2.47 | Fairly Often |
| Chatting online with classmates and teachers | 2.27 | Fairly Often |
| Checking results online | 3.19 | Often |

The data in Table 5 indicate how often business education students in Anambra State tertiary institution utilize e-learning for educational purposes. The results indicate that four out of the ten items were ranked as being used often while the remaining were ranked as being used fairly often. The item that ranked 1st is listening to educative programs on the radio, having a mean score of 3.36; this is followed by processing assignments with the computer with a mean score of

3.28. Checking results online ranked 3rd with a mean score of 3.19 while 4th in the ranking is searching for educational materials online with a mean score of

3.09. The e-learning operations that were indicated as being used fairly often include: undertaking online examinations (mean score of 2.47), reading e-books and e-journals (mean score of 2.40), teleconferencing with classmates during a group work (mean score of 2.28) and chatting online with classmates and teachers (mean score of 2.27). The two lowest ranked items were undertaking a course on the internet with interactive features and sending feedback to lecturers via e-mail whose mean scores are 2.09 and 1.86 respectively. In all, students indicated that they often utilized e-learning in the educational process.

**Research Question 4**

How competent do business education students in Anambra State tertiary institutions consider themselves in the use of computers?

To answer Research Question 4, the mean of the data were computed from the frequency distribution of the responses. The result of the computation is shown in Table 6 below:

**Table 6:**  Respondents’ Mean Rating on their Computer Competence (N = 301)

|  |  |  |
| --- | --- | --- |
| **Computer Operations** | **MEAN** | **REMARK** |
| Resizing, moving, closing and scrolling windows | 3.07 | Competent |
| Creating, deleting and renaming files and folders | 3.15 | Competent |
| Formatting a disk | 2.80 | Competent |
| Installing a software | 2.58 | Competent |
| Opening and closing word document | 3.09 | Competent |
| Highlighting, italicizing, underlining and bolding text | 3.05 | Competent |
| Setting tabs, line spacing, margins and page layout | 3.02 | Competent |
| Inserting pictures and objects from other files | 2.94 | Competent |
| Merging cells | 2.60 | Competent |
| Inserting and deleting cells, rows and columns | 2.72 | Competent |
| Creating formulas | 2.50 | Competent |
| Modifying the orientation of the worksheet | 2.41 | Fairly Competent |
| Creating and modifying charts | 2.50 | Competent |
| Adding and deleting slides using different layouts | 2.39 | Fairly Competent |
| Changing slide background | 2.63 | Competent |
| Entering and modifying text | 2.74 | Competent |
| Setting up the presentation for manual delivery | 2.75 | Competent |
| Opening and closing a browser | 3.04 | Competent |
| Refreshing a webpage | 2.98 | Competent |
| Composing and sending an e-mail | 2.98 | Competent |
| Attaching documents | 2.76 | Competent |
| Using a search engine | 2.69 | Competent |
| Finding a specific information on a web site | 3.09 | Competent |
| Downloading information from the web | 3.01 | Competent |
| Uploading information to the web. | 2.85 | Competent |

 The data in Table 6 indicates how business education students consider themselves competent in computer usage. Out of the 25 computer operations, the respondents indicated that they were fairly competent in two operations. The two operations are modifying the orientation of the worksheet, and adding and deleting slides using different layouts. These two items had means of 2.41 and 2.39 respectively. The data indicates that the students considered themselves competent in the other 23 basic computer operations. This indicates that business education students considered themselves competent in the use of computers for both offline and online activities. Students considered themselves competent in all the online operations (items 50-57) and this indicated that they could easily adapt to any e-learning activity, online or offline.

**TEST OF HYPOTHESIS**

The four hypotheses formulated are tested in this section. The t-test statistic was used for analyzing data relating to the four hypotheses. All the four hypotheses were tested at 0.05 level of significance.

**Hypothesis 1**

There is no significant difference in the mean ratings of business education students in Anambra State tertiary institutions on their awareness of e-learning as a result of their type of institution (University or college of education).

This null hypothesis was tested using z-test and at 0.05 level of significance. The results are indicated in Table 7.

Table 7: The z-test result of the difference between the mean ratings of business education students on their awareness of e-learning as a result of type of institution (University or college of education).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Type of Institution | N | X | S | z-cal | α | df | z-crit | Remark |
| Universities | 66 | 2.85 | 1.19 |  |  |  |  |  |
|  |  |  |  | 0.68 | 0.05 | 299 | 1.97 | Retained |
| Colleges of Education | 235 | 2.96 | 1.04 |  |  |  |  |  |

As shown in Table 7, business education students in universities in Anambra State recorded a mean score of 2.85 on their awareness of e-learning. On the other hand, the business education students in the colleges of education had a mean score of 2.96 on their ratings of their level of awareness of e-learning. The z-calculated value of 0.68 is less than the z-tabulated value of 1.97 at 299 degree of freedom and 0.05 level of significance and this suggests that there is no significant difference between the mean ratings of business students in Anambra State tertiary institutions on their awareness of e-learning as a result of type of institution (university or college of education). This therefore means that the null hypothesis is retained.

**Hypothesis 2**

There is no significant difference in the responses of business education students in federal government owned tertiary institutions in Anambra State and their counterparts in other tertiary institutions on the means of access to e- learning.

This null hypothesis was tested at a 0.05 level of significance using z-test. The results are presented in Table 8.

**Table 8:** The z-test result of the difference between the ratings of business education students in federal government owned institutions and their counterparts in other tertiary institutions in Anambra State on the means of access to e-learning.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Type of Institution | N | X | S | z-cal | α | df | z-crit | Remark |
| Universities | 174 | 5.29 | 1.19 |  |  |  |  |  |
|  |  |  |  | 0.21 | 0.05 | 299 | 1.97 | Retained |
| Colleges of Education | 127 | 4.98 | 1.04 |  |  |  |  |  |

Business education students in federal government-owned institutions in Anambra state, as shown in Table 8, recorded a mean score of 5.29 in their access to e-learning while those in other tertiary institutions recorded a mean score of 4.98. The z-calculated is 0.12 which is less than the z-critical value of 1.97 at 299 degree of freedom and 0.05 level of significance. The null hypothesis is therefore retained meaning that there is no significant difference in the means of access to e-learning of business education students in federal government-owned tertiary institutions in Anambra State and their counterparts in other tertiary institutions.

**Hypothesis 3**

There is no significant difference in the mean ratings of business education students in Anambra State tertiary institutions in how often they utilize e-learning as a result of gender.

This null hypothesis is tested at 0.05 alpha level using z-test. The results are presented in Table 9.

**Table 9:** The z-test result of the difference between the mean ratings of business education students on how often they utilize e- learning as a result of gender.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Type of Institution** | **N** | **X** | **z-cal** | **α** | **df** | **z-crit** | **Remark** |
| Universities | 55 | 2.58 |  |  |  |  |  |
|  |  |  | 0.614 | 0.05 | 299 | 1.97 | Retained |
| Colleges of Education | 246 | 2.65 |  |  |  |  |  |

As shown in Table 9, the z-calculated value (0.614) is less than the critical z-value (1.97) at 299 degree of freedom and 0.05 level of significance. The results indicate that male business education students in Anambra state tertiary institutions with a mean score of 2.58, and female business education students with a mean score of 2.65 do not differ on how often they utilize e-learning. The null hypothesis is therefore retained that there is no significant difference in the mean ratings of business education students in Anambra State tertiary institutions in how often they utilize e-learning as a result of gender.

**Hypothesis 4**

There is no significant difference in the mean ratings of Business education students in Anambra State tertiary institutions in their computer competence level as a result of the type of institution.

This null hypothesis is tested at 0.05 level of significance using z-test. The results are presented in Table 10.

**Table 10:** The z-test result of the difference between the mean ratings of business education students in their computer competence level as a result of type of institution (University or college of education).

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Type of Institution | N | X | S | z-cal | α | df | z-crit | Remark |
| Universities | 66 | 2.58 |  1.029 |  |  |  |  |  |
|  |  |  |  | 1.7 | 0.05 | 299 | 1.97 | Retained |
| Colleges of Education | 235 | 2.83 | 1.128 |  |  |  |  |  |

Data in Table 10 indicate that business education students in universities in Anambra State had a mean score of 2.58 in their computer competence level while those in the colleges of education had a mean score of 2.83. The z-calculated of 1.7 is less than the z-critical value of 1.97 at 299 degree of freedom and 0.05 level of significance. Since the z-calculated is less than the z-critical, the null hypothesis is retained. This implies, therefore, that there is no significant difference between the mean ratings of business education students in Anambra State tertiary institutions on their computer competence level as a result of type of institution.

**Discussions Of The Findings**

The findings from all the items in the questionnaire in general, and the summary of the findings in particular are discussed in this section. The discussion is presented according to the four research questions posed and the four hypotheses formulated in chapter one.

Findings of the study in Research Question 1 which was analyzed and presented in Table 3, reveals that business education students in Anambra State tertiary institutions are aware of e-learning and that they have knowledge of various aspects of e-learning. This is in line with Okiki (2011) who opposed the idea that there was mass unawareness of e-learning in Nigeria. Okiki noted that there is an increasing awareness of the use of information and communication technologies (ICTs) in the teaching and learning process. In agreement with this, Manir (2011) pointed out that e-learning awareness in Nigeria is gathering momentum. More students, teachers and educational institutions are beginning to appreciate the advantage of e-learning above the traditional classroom delivery methods.

The students rated checking results online, searching for academic information on the internet and getting educational information from television programs as the first three e-learning applications to which they were aware. This could be because these applications have been made part of educational process. For instance, students must have to check for their results (O’ level, Matriculation examinations etc.) on the internet. More so, television programs have some educative content that can be used by students and almost every home has a television set. Students are therefore aware of e-learning. This contradicts the views of Folorunso, Ogunseye and Sharma (2006) who noted that there was mass unawareness of e-learning by students in Nigerian universities which had led to the unacceptability of e-learning.

However, students were fairly aware of getting academic support and advice from lecturers and teachers via e-mail and partaking in video conferencing. Okereke (2005) pointed out that these aspects of e-learning are common in developed countries where schools allow students to retrieve textbook information, check and complete assignments from their personal computers, get 24 hours access to classroom assignments, study guides, daily worksheets and their teachers through e-mail. Video conferencing is a new concept to students in Anambra State and hence the low mean rating. Video conferencing is popular in the industrialized countries where there is high broadband internet connection.

Findings of the study in Research Question 2 which was analyzed and presented in Table 4, revealed the various means of access to e-learning that business education students in Anambra State tertiary institutions had. The findings show that less than 50% of the respondents had a personal computer. 135 students, out of 301, had a personal computer and this is just 44.9% of the respondents of the study. Also only about 51.2% of the respondents had access to a computer that is connected to the internet. This low percentage proves that a majority of the students did not have free and easy access to e-learning. This is in line with Abubakar (2010), and Ajadi, Salawu and Adeoye (2008) who pointed out that, students do not have access to computers and the internet. This therefore makes e-learning an impossible task.

A majority of the respondents (82.7%) indicated that there was a computer studio/laboratory in their institution accessible to them and 172 students affirmed that there was a digital library in their institution which could be accessed easily. This confirms the arguments of Okiki (2011) and Eke (2011) who posited that efforts have been made by various institutions to create better access to e- learning facilities. Tertiary institutions should have as a general policy on the acquisition, installation and maintenance of up-to-date information technology infrastructure.

The findings also showed that business education students could access the internet from their mobile phones. This confirms the new phenomenon of M-learning, that is, mobile learning. M-learning is considered as the next generation of e-learning using mobile technologies. Students’ awareness of such technology is one of the most factors for successful adoption of M-learning in Nigeria. Naji and Abdul (2011)’s study also concords to this as they found out that students are aware of the use of mobile devices for education purposes and to access the internet. This connotes that mobile phones can be used to facilitate the learning process but there has to be consideration for those students who do not have phones that can access the internet.

Findings of the study in Research Question 3, which was analyzed and presented in Table 5, revealed that business education students often utilize e- learning in the educational process. This finding partly contradicts the findings of Ajadi et.al. (2008) who argued that there is gross underutilization of e-learning in Nigerian tertiary institutions. Students utilize some e-learning facilities often while some others are utilized fairly often. The results show that students listened to educational programs often and this is in line with Tinio (2003) who pointed out the importance and ease of access of the radio for educational purposes.

More so, the findings also show that students often checked their results online and get academic information from the internet. Students also process their assignments using the computer and this supports findings of Manir (2009) that there is tremendous growth of computer equipment and internet utilization by staff and students of Nigerian tertiary institutions. This shows that to some extent, e-learning is being often utilized by business education students in tertiary institutions which contradicts the views of Abubakar (2010).

However, students fairly often utilized some e-learning applications. These include: undertaking online examinations, reading e-books and e-journals, teleconferencing with classmates during a group work and chatting online with classmates and teachers. These e-learning applications appear not to be commonly utilized in Nigeria tertiary institutions because of the attending challenges accompanying its usage. As pointed out by Kinley (2010), the problems of e-learning utilization range from slow internet connection to poor electricity power supply. It is therefore clear that the utilization of e-learning in Nigerian tertiary institutions is still in its infancy stage as argued by Eke (2011).

Findings of the study in Research Question 4, which was analyzed and presented in Table 6, revealed that the business education students in Anambra State tertiary institutions considered themselves competent in the usage of computers. This is in contrast with the views of Okiki (2011) who pointed out that there is shortage of skilled manpower among lecturers and computer technology illiteracy among students. The results show that the respondents had the knowledge and competence in basic computer operations and as such would not find the integration of e-learning as a difficult thing. As pointed out by Olusegun, Oluwafemi and Sushil (2006), the utilization of e-learning is affected by the level of computer literacy of the students. Students who are not competent in the general use of computers will not be able to utilize them for educational purposes. The results show that students would be able to adapt to e-learning processes introduced to them since they had the basic computer competence needed.

Result in Table 7, which is for Hypothesis 1, reveals that there is no significant difference in the mean ratings of business education students in Anambra State tertiary institutions on their awareness of e-learning as a result of the type of institution they attend (university or college of education). This means that the institution type does not affect the level of awareness of e-learning that business education students have. Business education students in the universities and those in the colleges of education were equally aware of e-learning. No one was disadvantaged in knowing about the benefits of e-learning as a result of the type of institution. This is in contrast with the findings of Leem and Lim (2007) who discovered differences in support and opportunity to actively participate in e-learning programs among Korean tertiary institutions.

Results in Table 8, which was for Hypothesis 2, revealed that there was no significant difference in the ratings of business education students in federal government- owned tertiary institutions in Anambra State and their counterparts in other tertiary institutions on their means of access to e-learning. This means that business students in federal government tertiary institutions in Anambra State do not have more access to e-learning facilities than those in state-owned and private-owned institutions. As a result, ownership of institution does not significantly determine the access to e-learning that business education students have. This finding is in line with the propositions of Okiki (2011) that there is increased government policy on e-learning integration which cuts across all tertiary institutions in Nigeria irrespective of the ownership structure of those institutions. Okiki (2011) opines that with the establishment of the National Information Technology Development Agency (NITDA) and the National Policy on Information Technology, policies governing the integration e-learning were made. These policies were to be followed by all institutions to meet up with the government regulation. In line with this, the result of this study shows that business education students in the federal government-owned tertiary institutions in Anambra State do not differ significantly from their counterparts in other tertiary institutions.

Findings of the study presented in Table 9, which is for Hypothesis 3, reveals that there is no significant difference in the mean ratings of business education students in Anambra State tertiary institutions in how often they utilize e-learning as a result of gender. This means that male business education students in Anambra State tertiary institutions do not differ from the female students in how often they utilize e-learning facilities. Gender, therefore, is not a factor in the effective integration of e-learning in the educational process. This contradicts the views of Murphy and Greenwood (1998) who reported that age and gender effects could be factors in determining the extent of the low student ICT uptake. The result of this study is also in contrast with the views of Agboola (2006) who suggested that male students experience less anxiety about ICT and make more frequent use of it. VanBraak (2001) posited that female students are assumed to show lower confidence or knowledge ability than males about using computers. However, the result of this current study shows that male and female business education students do not differ in how often they utilize e-learning in Anambra State tertiary institutions.

Result in Table 10, which is for Hypothesis 4, reveals that there is no significant difference in the mean ratings of business education students in Anambra State tertiary institutions in their computer competence level as a result of the type of institution they attend. Computer literacy and competence is not conditioned on the type of institution a student attends. This results show that business education students in the universities do not significantly differ from those in the colleges of education on how competent they consider themselves in the use of computers. This result contradicts the findings of Olatunji (2011) who noted that the computer literacy level differed among teachers in various tertiary institutions in Nigeria. It was noted that some institutions offer more computer literacy programmes than others and as such these institutions ought to have more students who are competent in computer usage than other institutions. This current study showed that business education students in universities and in the colleges of education in Anambra State do significantly differ in their computer competence level.

**CHAPTER FIVE**

**SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

This chapter presents the concluding part of the study under the following subheadings: summary of results, conclusions, implications of the study, recommendations, and suggestions for further studies.

**5.1 Summary of Major Findings**

The following major findings emerged from the analysis of data collected from the study:

1. The respondents indicated that they were aware of e-learning applications in Anambra State tertiary institutions.

2. The respondents indicated that they had access to e-learning via several means. The highest-rated means of accessing the internet was shown to be through mobile phones of the students.

3. Business education students in Anambra State tertiary institutions indicated that they often utilize e-learning facilities and processes for educational purposes.

4. Business education students in Anambra State tertiary institutions consider themselves competent in the use of computers.

5. Business education students in Anambra State tertiary institutions do not differ significantly in the mean ratings of their awareness of e-learning as a result of the type of institution they attend.

6. Business education students in federal government-owned tertiary institution in Anambra State do not differ significantly from their counterparts in other tertiary institutions in Anambra State on the means of access of e-learning.

7. Business education students in Anambra State tertiary institutions do not differ significantly in how often they utilize e-learning as a result of gender.

8. Business education students in Anambra State tertiary institutions do not differ significantly in their computer competence level as a result of the type of institution they attend.

**5.2 Conclusions**

Based on the findings of the study, it has been concluded that business education students in Anambra State tertiary institutions are aware of e-learning applications and often utilize them for learning purposes. Also, students can access the internet and other e-learning facilities via their personal computers, computers of family members or close friends, digital libraries and computer studios provided by the institution, mobile phones and cyber café.

**5.3 Implications of the Study**

The findings of the study then imply that:

1. Business education students in Anambra State are basically aware of e- learning applications and they will not need so much orientation before introducing any e-learning application in the education process.
2. The management of the tertiary institutions in Anambra State have a responsibility to provide certain e-learning facilities that students can easily access.
3. Business educations students have the ability to utilize all forms of e-learning processes provided they are accessible to them and properly designed.
4. Teachers and lecturers of business education will have to arrange the course content to suit the current computer knowledge of the students. Business education lecturers will have to advance above the students in computer knowledge so that their students can benefit from the integration of information and communication skills in the educational process.

**5.4 Recommendations**

Consequent upon the findings of this study, discussions and conclusions drawn there from, the researcher proffers the following recommendations, which could be beneficial to the managements of tertiary institutions, business education lecturers and students.

1. Management of tertiary institutions in Anambra State should provide e-learning infrastructure in their institutions to which students will have easy and cheaper access. Such infrastructure may include digital libraries, computer studios, free wireless internet connection on the campus premises, among others.
2. Institutions should introduce Learning Management Systems (LMS) into the educational system. LMS are software applications that aid the administration, documentation, examination, feedback giving and reporting of classroom and online events. When the LMS are introduced, both students and lecturers should be given orientation on its benefits and procedure.
3. There should be collaboration with other institutions, especially foreign institutions, from where lectures, seminars and other activities could be relayed via video conferencing.

4. Business education students should have the e-mail addresses, facebook accounts and phone numbers (if possible) of all their lecturers as this will aid teleconferencing and other e-communications with them.

5. Lecturers of business education should structure all courses into modules that could be taught through e-learning. Some course contents can be prerecorded on a VCD or DVD and given to students especially where the lecturer is always not available.

6. Lecturers of business education should open blogs and wikis on the internet on which students can access and leave comments that can serve as feedback to the lecturer. This will make the learning process interactive.

7. Government of Anambra State should come up with policies that will ensure every student in the tertiary institutions is provided with a laptop (at little or no cost) especially on gaining admission to the institution.

**5.5 Suggestions For Further Studies**

With regards to the research and recommendations made, the researcher suggests the following:

1. Studies could be carried out to ascertain if business education students in other states are aware of e-learning and what extent of e-learning is being utilized.
2. Business education lecturers’ awareness and utilization of e-learning can also be studied.
3. Experimental studies on the benefit of e-learning over traditional teaching in business education can be carried out.
4. Studies could also be carried out to experiment the use of M-learning in the Business Education program.

**REFERENCES**

Abubakar, M.B. (2010). E-learning in Nigerian higher education: The perceived role of academic libraries. Retrieved on June 28, 2011 from http://202.44.43.230/prachyanun/iec2011/document/4\_Day%202/F2\_1.pdf

Agboola, A.K. (2006). Assessing the awareness and perceptions of academic staff in using e-learning tools for instructional delivery in a post-secondary institution: A case study. The Public Sector Innovation Journal, 11(3), 1-6.

Ajadi, T.O., Salawu, I.O. & Adeoye, F.A. (2008). E-learning and distance education in Nigeria. Turkish Online Journal of Educational Technology, 7(4), 1-7.

Al-Doub, E., & Goodwin, R., & Al-Hunaiyyan, A. (2008). Student’s attitude toward e-learning in kuwait’s higher education institutions. Retrieved on June 23, 2010, from www.hunaiyyan.com/resume.html

Al-Khashab, H.M. (2007). Attitudes towards e-learning: An empirical study in kuwait. (Unpublished Masters thesis) Maastricht School of Management, Masstricht, the Netherlands.

Allen, M. V. (2003). Michel allen’s guide to e-learning. Hoboken, New Jersey: John Wiley & Sons, Incorporated.

Amanda, N. (2007). A brief history of e-learning and distance education. Retrieved on September 15, 2010, from http://EzineArticles.cm/?expert=NatalieAranda

Anissimov, M. (2011). What is video conferencing? Retrieved on February 28, 2011, from http://www.wisegeek.com/what-is-video-conferencing.htm

Avwokeni, J. A. (2005). Practical project writing and oral presentation. Nigeria: Unicampus Tutorial Services.

Bassey, U.U., Umoren, U.G., Akuegwu, A.B., Udida, A.L., Ntukidem, E.P., & Ekabua, O.O. (2007). Nigerian graduating students’ access to e-learning technology: implications for higher education management. Sixth international internet Education conference & exhibition, September 2-4, Ramses Hilton, Cairo, Egypt, pg 59- 76.

Beard, C., Wilson, J.P., & McCarter, R. (2007). Towards a theory of e-learning: experiential e-learning. Journal of Hospitality, Leisure, Sport & Tourism Education, 6 (2). Available at www.heacademy.ac.uk/hlst/resources/johlste

Bem, J.D. (1967). Self-perception: An alternative interpretation of cognitive dissonance phenomena. Psychological Review, 74(3), 183-200.

Bertea, P. (2009, April 9th – 10th). Measuring students’ attitude toward e- learning: A study. Proceedings of 5th International scientific conference on e-learning and software for education, Bucharest.

Bill, M., & Duren, T. (2010). Contemporary best practices in distance education technology with implications for adult education. Retrieved on September 10, 2010, from http://tech.cls.utk.edu/ppt/Best%20pract%20DE.ppt

Blood, R. (2000). Weblogs: A history and perspective, Rebecca's pocket. Retrieved on July 12, 2011, from http://www.rebeccablood.net/essays/weblog\_history.html"

Buzzetto-more, A. N. (2008). Student perceptions of various e-learning components. Interdisciplinary Journal of E-learning and Learning Objects, 4, 113-135.

Cheng, K. (2006). A research study on students’ level of acceptance in applying e-Learning for business courses – A case study on a technical college in Taiwan. Journal of American Academy of business, 8(2), 265 – 270.

Coppola, N., Hiltz, S., & Rotter, N. (2002). Becoming a virtual professor: pedagogical roles and asynchronous learning networks. Journal of Management Information Systems, 18 (4), 169-189.

Eisenstadt, M., & Vincent, T. (2000). The knowledge web: Learning and collaborating on the Net. UK: Kogan Page.

E-Learning: the next level of learning. (n.d.). Retrieved on September 23, 2010, from http:/www.scribd.com/doc/90770198/The-Importance-of-Elearning

Ellis, R. K. (2009). field guide to learning management systems. Retrieved on July 20, 2011, from http://www.astd.org/NR/rdonlyres/12ECDB99-3B91- 403E-9B15-7E597444645D/23395/LMS\_fieldguide\_20091.pdf

Folorunso, O., Ogunseye, O.S., & Sharma, S.K. (2006). An exploratory study of the critical factors affecting the acceptability of e-learning in Nigerian universities. Information Management & Computer Security,14(5), 496- 505.

Hall, B., & Snider, A. (2000). Glossary: The hottest buzz word in the industry.

Learning, 44(4), 85-104.

Homan, G., & Macpherson, A. (2005). E-learning in the corporate university.

Journal of European Industrial training, 29 (1), 75 -99.

Hovland, C.I., Janis, I.L., & Kelley, H.H. (1953). Communications and persuasion: Psychological studies in opinion change. New Haven, CT: Yale University Press.

Inal, Y., karakus, T., & Cagiltay, K. (2008). Turkish high school students’ considerations, expectations and awareness on distance education. Turkish Online Journal of Distance Education, 9(4), 1-7

Ipaye, B. (2011). E-Learning in a Nigerian open university. Retrieved on June 16, 2011, from http://linc.mit.edu/linc2010/proceedings/session1Ipaye.pdf

Jackson, R.H. (2001). Defining e-learning – different shades of online web-based Learning resources. Retrieved on October 10, 2010, from http://www.outreach.utk.edu/weblearning/

Jennings, S.E., & Onwuegbuzie, A.J. (2001). Computer attitudes as a function of age, gender, math attitude, and developmental status. Journal of Educational Computing Research, 25(4),367 – 384.

Keller, C., & Cernerud, L. (2002). Students’ perceptions of e-learning in university education. Journal of Educational Media, 27(1-2), 55-67.

Keller, C., Hrastinski, S., & Carlsson, S. A. (2007). Students’ acceptance of e-learning environments: A comparative study in Sweden and Lithuania. Retrieved on October 21, 2010, from http://is2.lse.au.uk/asp/aspecis/20070083.pdf

Khun, T. (1962). The structure of scientific revolutions, Chicago: Chicago University Press.

Leem, J., & Lim, B. (2007). The current status of e-learning and strategies to enhance educational competitiveness in Korean higher education. The International Review of Research in Open and Distance Learning, 8(1). 1-6

Link, M.T., & Marz, R. (2006). Computer literacy and attitudes towards e- learning among first year medical students. Retrieved on October 21, 2010, from http://www.biomedcentral.com/1472-6920/6/34

Manir, K. A. (2009). Problems, challenges and benefits of implementing e- learning in Nigerian universities: An empirical study. International Journal of Educational Technology, 4(1), 66-69.

Manir, K. A. (2011). Implication of ICT’s in libraries of higher education institutes: A panacea catapulting library development in Africa. DESIDOC Journal of Library & Information Technology, 31(1), 65-71.

Mital, M., & Luthra, R. (2006). No age correlation in the effectiveness of corporate e-learning in India. Asian Journal of Distance education, 4(1), 85-89.

Moodle. (n.d.). What is moodle. Retrieved on July 21, 2011 from http://moodle.org/about/

Naidu, S. (2006). E-learning: A guidebook of principles, procedures and practices

(2nd ed.). New Delhi: Aishi Creative Workshop.

Naji, S. A., & Abdul, R. Y. (2011). Students’ awareness and requirements of mobile learning services in the higher education environment. American Journal of Economics and Business Administration, 3(1), 95-100.

Nichols, M. (2003). A theory for e-learning. Retrieved on September 16, 2010, from http://www.ifets.inf/journals/6\_2/1.pdf.

Nworgu, B. G. (1991). Educational research: Basic issues & methodology.

Ibadan: Wisdom publishers Limited.

Okereke, E.C. (2005). Strategies for integrating information and communications technology in the business teacher education curriculum. Journal of Vocational and Adult education, 4(1), 95 – 105.

Okiki, C.O. (2011). Information communication technology support for an e- learning enviroment at the university of lagos, Nigeria. Retrieved on June 20, 2011 from http://www.faqs.org/periodicals/201102/2296746331.html

Olaniyi, S. S. (2006). E-Learning Technology: The Nigeria experience. Shape the change XXIII FIG congress, munich Germany. Retrieved on October 19, 2010, from http://www.fignet/pub/fig2006/papers/ts84/ts84\_03\_salawudeen\_0593.pdf

Olatunji, O. S. (2011). Comparative assessment of public-private universities’ computer literacy contents of English language teacher preparation curricula in Nigeria. European Journal of Scientific Research 53(1), 108 - 116

Otuka, J.O.E. (2010). E-Learning in Nigeria: Problems and prospects. Being a keynote address presented at the 2010 Annual conference of Faculty of Education, Nnamdi Azikiwe University, Awka.

Oye, N.D., Salleh, M., & Iahad, N.A. (2011). Challenges of e-learning in Nigerian university education based on the experience of developed countries. International Journal of Managing Information Technology (IJMIT), 3(2), 1-10.

Oystein,S., Hallgeir, H., Vebjørn, F. G,, & Roar, K. (2009). The role of self- determination theory in explaining teachers’ motivation to continue to use e-learning technology. Computers & Education, 53, 1177–1187.

PLS Ramboll Management. (2004). Studies in the context of the e-learning initiative: Virtual models of European universities (LOT 1). Retrieved on October 16, 2010, from http://www.elearningeuropa.info/extras/pdf/virtual\_models.pdf

Riemer, K., Haines, R. (2008). "Pools and streams: A theory of dynamic, practice-based awareness creation in mediated-communication," proceedings of JAIS theory development workshop. Sprouts: Working Papers on Information Systems, 8(12). Available at http://sprouts.aisnet.org/8-12

Rusten, E. (2003). Using computers in schools. Digital opportunities for development. Retrieved September 10, 2021, from http://learnlink.aed.org/publications/sourcebook/chapter4/computers\_in\_sc hools\_modelfuse.pdf

Shuttleworth, M. (2008). Survey research design. Retrieved on September 18, 2010, from http://www.experiment-resources.com/survey-research- design.html

Smith, M. (2008). The importance of e-learning. Retrieved on September 23, 2010, from http://www.articlealley.com/article\_690018\_45.html

So, K.K.T., & Swatman, P. (2010). The diminishing influence of age and gender on e-learning readiness of teachers in Hong kong. Lecture Notes in Computer Science, 6248, 477-488.

Streight, S. (2004). Evaluating computer skills level: What level are you? And help improve this test! Retrieved on October 22, 2010, from http://www.geek.com/forums/topic/evaluating-computer-skills-level-what- level-are-you-and-help-improve-this-test

The communication Initiative Network. (2007). How have radio and TV broadcasting been used in education? Retrieved on October 19, 2010, from http://www.comminit.com/en/node/265337

Tinio, L.V. (2003). ICT in education. E-primers for the information economy, society and polity. Retrieved July 22, 2010, from http://www.apdipinet/publications/iesprimers/ICTineducation.pdf

United State Department of Transportation (n.d.). Public involvement techniques for transportation decision-making. Retrieved on October 19, 2010, from http://www.fhwa.dot.gov/reports/pittd/teleconf.htm

Uvaweblearn. (2007). How can ICTs help transform the learning environment into one that is learner-centred? Retrieved on October 19, 2010,from http://uva- weblearn.net/radio\_and\_tv\_in\_education.asp

Venkatesh, V., & Morris, M. G. (2000). Why don’t men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior. MIS Quarterly, 24,115-139.

Vrana, V., Fragidis, G., Zafiropoulos, C., & Paschaloudis, D. (2005). Analyzing academic staff and students’ attitudes towards the adoption of e-learning. Retrieved on June 24, 2010, from www.vgtu.lt/upload/leid\_konf/zafiropoulos\_33-46.pdf

Wagner, N., Hassanein, K., & Head, M. (2008). Who is responsible for e-learning success in higher education? A stakeholders' analysis. Educational Technology & Society, 11 (3), 26-36.

Wayne State University. (2006). Basic computer competency - objectives. Retrieved on July 19, 2011 from www.testing.wayne.edu/complit.pdf

Weller,M. (2002). Delivering learning on the Net. UK: Kogan Page.

Wentling, T., waight, C. L., Fleur,J.L., Wang, C., & Kanfer, A. (2000). E- learning: A review of literature. Retrieved on September 10, 2010, from http://learning.ncsa.uiuc.edu/papers/elearnlit.pdf

Wikieducator.(2009). Computers in education. Retrieved on October 19, 2010, from http://wikieducator.org/computers\_in\_Education

Wikipedia. (2011a). Learning management systems. Retrieved on July 20, 2011, from http://en.wikipedia.org/wiki/Learning\_management\_system

Wikipedia. (2011b). Learning management systems. Retrieved on July, 21, 2011 from http://en.wikipedia.org/wiki/Blog

Williams, J.B., & Goldberg, M. (2005). The evolution of e-learning. Retrieved on September 17, 2010, from http://www.ascilite.org.au/conferences/brisbane05/blogs/proceedings/84\_ Williams.pdf

Zool, F.B.A. (2007). Awareness of e-learning drawbacks among FTMSK students. Thesis submitted in fulfillment of the requirements for Bachelor of Science (Hons) Business Computing Faculty of Information Technology And Quantitative Science Universiti Teknologi MARA.

**QUESTIONNAIRE**

**Section A:** Demographic profile

Please tick the option that applies to you.

1) Gender: Male [ ] Female [ ]

|  |  |  |
| --- | --- | --- |
| 2) **Type of Institution**: College of Education | [ | ] |
| University | [ | ] |
| 3) **Ownership of Institution:** Federal Government | [ | ] |
| State Government | [ | ] |
| Private | [ | ] |

**Section B: Awareness of E-Learning**

Listed below are item statements on students’ awareness of e-learning. Please tick [√] in the column that best describes your level of awareness of the following e-learning applications

|  |  |  |
| --- | --- | --- |
| **S/N** | **E-Learning Applications** | **Level of Awareness** |
| **Very Aware** | **Aware** | **Fairly Aware** | **Not Aware** |
| 1. | Undertaking a course on the internet with interactive features |  |  |  |  |
| 2. | Partaking in online discussion forum |  |  |  |  |
| 3. | Tele-conferencing with classmates during a group work |  |  |  |  |
| 4. | Partaking in video-conferencing |  |  |  |  |
| 5. | Getting academic support and advice from a teacher by e-mail |  |  |  |  |
| 6. | Listening to educative programs on the radio |  |  |  |  |
| 7. | Undertaking online examinations |  |  |  |  |
| 8. | Getting educational information from television programs |  |  |  |  |
| 9. | Searching for academic information on the internet |  |  |  |  |
| 10. | Chatting online with classmates and teachers |  |  |  |  |
| 11. | Presenting assignments using Power Point and Projectors |  |  |  |  |
| 12. | Using electronic books (e-books) to support learning |  |  |  |  |
| 13. | Accessing online libraries for research materials |  |  |  |  |

**Section C: Access to E-Learning Facilities**

Listed below are item statements on student access to e-learning facilities. Please tick [√ ] the option that shows whether or not each of the following relates to you:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 15. I have a personal computer. | Yes | [ | ] | No | [ | ] |
| 16. A family member has a computer which I can access anytime I want. | Yes | [ | ] | No | [ | ] |
| 17. A close friend has a computer accessible to me. | Yes | [ | ] | No | [ | ] |
| 18. My computer is connected to the internet. | Yes | [ | ] | No | [ | ] |
| 19. There is free internet access in my institution. | Yes | [ | ] | No | [ | ] |
| 20. There is a computer studio/laboratory in my institution. | Yes | [ | ] | No | [ | ] |
| 21. There is a digital library in my school which I I have access to. | Yes | [ | ] | No | [ | ] |
| 22. I can access the internet through my mobile phone at little or no cost. | Yes | [ | ] | No | [ | ] |

**Section D: Utilization of E-Learning Facilities**

Listed below are item statements on utilization of e-learning. Please indicate how often you engage in the following e-learning processes by ticking the appropriate boxes:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S/N** | **E-learning Processes** | **Very Often** | **Often** | **Fairly Often** | **Rarely** |
| 23. | Reading e-books and e-journals |  |  |  |  |
| 24. | Searching for educational materials online |  |  |  |  |
| 25. | Processing assignments with the computer |  |  |  |  |
| 26. | Teleconferencing with classmates during a group work |  |  |  |  |
| 27. | Sending feedbacks to lecturers via e-mail |  |  |  |  |
| 28. | Undertaking a course on the internet with interactive features |  |  |  |  |
| 29. | Listening to educative programs on the radio |  |  |  |  |
| 30. | Undertaking online examinations |  |  |  |  |
| 31. | Chatting online with classmates and teachers |  |  |  |  |
| 32. | Checking results online |  |  |  |  |

**Section E: Computer Competence**

Listed below are basic computer operations. Please tick the option that best describes how competent you are in the following computer operations. Use the following:

VC: Very competent

C: Competent

FC: Fairly competent

NC: Not competent

|  |  |  |
| --- | --- | --- |
| **S/N** | **Computer Operations** | **Level of competence** |
| **VC** | **C** | **FC** | **NC** |
| 33. | Resizing, moving, closing and scrolling windows |  |  |  |  |
| 34. | Creating, deleting and renaming files and folders |  |  |  |  |
| 35. | Formatting a disk |  |  |  |  |
| 36. | Installing a software |  |  |  |  |
| 37. | Opening and closing word document |  |  |  |  |
| 38. | Highlighting, italicizing, underlining and bolding text |  |  |  |  |
| 39. | Setting tabs, line spacing, margins and page layout |  |  |  |  |
| 40. | Inserting pictures and objects from other files |  |  |  |  |
| 41. | Merging cells |  |  |  |  |
| 42. | Inserting and deleting cells, rows and columns |  |  |  |  |
| 43. | Creating formulas |  |  |  |  |
| 44. | Modifying the orientation of the worksheet |  |  |  |  |
| 45. | Creating and modifying charts |  |  |  |  |
| 46. | Adding and deleting slides using different layouts |  |  |  |  |
| 47. | Changing slide background |  |  |  |  |
| 48. | Entering and modifying text |  |  |  |  |
| 49. | Setting up the presentation for manual delivery |  |  |  |  |
| 50. | Opening and closing a browser |  |  |  |  |
| 51. | Refreshing a webpage |  |  |  |  |
| 52. | Composing and sending an e-mail |  |  |  |  |
| 53. | Attaching documents |  |  |  |  |
| 54. | Using a search engine |  |  |  |  |
| 55. | Finding a specific information on a web site |  |  |  |  |
| 56. | Downloading information from the web |  |  |  |  |
| 57. | Uploading information to the web. |  |  |  |  |