2011

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Introduction

Many individuals today are in real pursuit of literacy. This is characteristic of students in higher level of education that is the University level. University students are in great pursuit of information; they are willing to learn new things, ideas, technologies and also learn new way of acquiring information. This obviously occurs now that the world in turning into a global village. This is the world of information and communication technology (ICT). In education, computer has made tremendous impacts to enhance learning. Information and communication technology and its use have impacted the way learners and educators acquire and deliver information (Eke, 2009). These technologies have been applied in so many ways in the learning pursuit. They can come in electronic formats which are, learning via electronic means for learners. This becomes e-learning. E-learning (electronic learning) involves use of electronic media (the Internet, DVD, CD-ROM, Videotape, television, cell phones, etc.) for teaching and learning at a distance. (Engelbrecht, 2005). An e-learning unit at University of Nigeria Nsukka to promote and encourage the use of e-learning in teaching and learning, through a variety of academic activities. E-learning at the University of Nigeria is clearly seen to be at its infancy stage, and that gives relevance to the present study which is to investigate the factors that affect LIS students' intentions to adopt e-learning. Specifically, there are two research questions, viz:

- to what extent do LIS students in UNN intend to adopt e-learning?
- What is the best group of factors that can be used in predicting students' intentions to adopt e-learning?

The following sections introduce relevant information about: E-learning in general, e-learning in UNN, e-learning adoption, and an investigation of the factors that affect students' intention to adopt e-learning.

An Overview of E-Learning

Electronic learning or e-learning as popularly called has been variously defined by different authors. It goes like the name sounds. The prefix 'e' stands for electronic, and electronic learning is learning via electronic means. It is a web-based kind of learning. Web here entails learning online; learning via the world wide web. This is actually another side of e-learning. Once synonymous with distance learning, e-learning has quickly evolved to include not only courses that are taught online and over a distance, but also to include traditional "brick and mortar" courses that have been enhanced with electronic elements (McLean, N. and Sander, 2003). E-learning is simply a kind of learning that is enabled by electronic technology. It could be web-based learning, computer-based learning, or virtual classrooms and content delivery via e-networks, audio or video tape, satellite TV, video conferencing, CD-ROM, i-pods, e-mails, wireless and mobile technology.

Electronic learning is considered to be adequate method for the training of human resources of contemporary organizations and enterprises; due to the advantages it offers (Cantoni et.al; 2004; Driscoll, 2002; Kruse, 2004; Rosenberg, 2000a). E-learning is learner-controlled, in which case the individual has authority over the learning environment; it is self-faced giving chance for students to work with their own time-table and learners can assess training when it is convenient for them, at home or in the office. Added by Horton (2001), e-learning gives learners an opportunity to broaden their knowledge because they can learn on their own and that increases learners' level of confidence and independence. Moses (2001) noted that:

e-learning offers a powerful alternative to a traditional form of learning that has worked for many centuries. Perhaps as importantly, it has forced us to rethink our working environments, what we need to learn, why we need that learning, and how we go about measuring success. In some ways, that process may be as important as the new form of learning implementation. Just as changes in Commerce have forced corporations to evaluate how they convey and add to their core capabilities to produce goods and services, so e-learning now offers a chance to rethink learning in many other sectors of society.(p.)

Despite the benefits of e-learning can offer, there are some preconditions for learners to benefit from technology-based learning, especially in developing countries. E-learning can only build on a set of basic computer literacy skills. Gunawardana (2005) built on this by stating that learners should go through an introductory session for each programme that focuses on professional development in the use of technology in the classroom. In developing countries, e-learning has been on a shaky ground.

E-Learning in Developing Countries

The Japan International Corporation Agency (JICA) sponsored a study of distance learning in Africa and fond an abundance of distance learning programs being initiated and managed, even in some of the world's most destitute countries (Fillip, 2002). Some devices are used for distance education are TV, Internet/CD-ROM, Radio, though Abdel-Wahab (2005) remarked that radio sometimes is cumbersome to use in distance education without adequate recording systems. Most African countries, for example have several hundred radio receivers per 1000 inhabitants but less than a third of that for TV (UNESCO). According to Ruth and Shi (2001), CD-ROM has the advantage of combining the best of WWW and radio, but the disadvantage of requiring computers and computer skills. Table 1 reveals the severe difficulty that is entailed by attempting to implement an Internet-based distance learning approach in a developing nation.

Table 1: Internet Hosts and Users by Region:

http://www.internetworldstats.com/stats.htm

Region	Internet Users (2007)
Africa	44,361,940(3.4%)
Asia	510,478743 (38.7%)

Europe	348,125,847(26.4%)
Oceania/Australia	19,175,836(1.5%)
North America	238,015,529(18%)
Latin America/Caribbean	126,203,714(9.6%)
Middle East	33,510,500(2.5%)
World Total:	1,319,872,109(100%)

Table 1 vividly reveals that the Internet connectivity is a problem in developing countries like Africa, Middle East, Oceania/Australia. To investigate the state of e-learning in Africa, a survey was carried out by Unwin (2008) on E-learning in Africa and the study was carried out on forty-five (45) countries that participated in the e-learning Africa survey. The countries that had the greater number of respondents are: Kenya (46 respondents), South Africa (38), Nigeria (35), Ethiopia (28), Uganda (25), Ghana (12), and Cameroon (10).

According to Unwin (2008), typical responses thus include the following:

- *Our institutions e-learning developments are still at an infancy stage in that we are still working on trying to identify a suitable e-learning platform to adopt for our content development and learner management (Botswana).*
- *The Ethiopia Federal conjunction with the State TVET Authorities and representatives of the ICT sector are currently developing an appropriate strategy for the further development of ICT and blended learning (including e-learning), addressing the issues of e-module development, development of distance education in TVET, necessary human resource development and other factors influencing the availability of ICT in the TVET sector (Ethiopia)*
- *We don't use any eLearning even though we are a distance learning centre. Only distance training in VC and the satellite-based ones were thought about from the beginning. But when people call us, they always hope to be able to follow courses without having to move. At the time we have a lot of demands for distance learning, particularly for the ones with a diploma, but we don't have any platform for this (Senegal).*

E-learning in Africa is at its infancy stage. Unwin (2008) in his survey of e-learning in Africa, concluded that:

This snap shot of e-learning in Africa is based on a relatively small sample of Africans who by their very presence on the e-Learning Africa database are already actively interested in e-learning..Relatively few of these are based on comprehensive Learning Management Systems, and most rely primarily on the use of the Web for gaining access to information, and on e-mail for communicating with colleagues and students. This confirms that e-learning is in its infancy in Africa, but the evidence from those consulted in this survey is that there is nevertheless considerable enthusiasm for the potential that it offers across the educational spectrum..(p.9)

Infrastructure like the availability of electricity, computers and the Internet is not yet fully in place to enhance the e-learning project. For instance, in the survey, respondents were asked about the availability of computers in their places of work, 96 respondents which constituted 30% of the population, indicated that there was more than one computer lab in their place of work, and as many as 30 people (9%) claimed that there was one laptop computer available per student or worker. At the other extreme, only 6% (20) of respondents said that there were no computers available where they worked, and only 4% (14) commented that there was only one computer per class available.

E-Learning in University of Nigeria, Nsukka (UNN)

The e-Learning project in UNN commenced in 2008 and a squad (E-Learning Squad) was formed to execute the programme. A total of sixty staff was selected for the initial training on the adopted Learning Management System (LMS) chosen – Moodle.

The squad was initiated in a bid to further education and raise it up to the next level – a higher platform. It was intended to reach students and learners in another dimension that could offer more interactiveness, friendliness and closeness in a seemingly far environment. Moodle offers such features as class activities, forums, chats, blogs, wikis, quizzes and it 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 daily on the moodle platform with the tool of RSS (Real Simple Syndication feed). This extracts information from different websites and gets them updated daily depending on the mode of setting. The first E-learning course to be launched was the MITT Course (Management and Information Technology Training). This course was designed for students to have a grasp of information technology as a basic tool to knowledge in order to master the basics of ICT which would help them further in other courses. Some students, especially the final year students had already commenced the course online including the LIS students, but the question is: have the students opened up to this e-Learning technology? Are they willing to adopt it, especially for other courses?

E-Learning Adoption - Readiness of Learners

Despite the wide use of information and communication technology in university teaching, research on e-learning adoption suggests that it has not reached its full potential (Zemsky et al., 2004). This entails that a lot more need to be done in order for University teaching to be improved via the ICT technology. E-learning adoption is hampered when there is absence of improved technology in any university system. As noted by Psycharis (2005), the successful implementation of e-learning by an educational system should fulfill certain criteria, such as the acquisition of adequate technological infrastructure and adequate educational content of persons with the university skills and a developed culture which encourages learning and sharing of knowledge. These factors can affect learners' readiness and adoption of e-learning. Adoption of e-learning by students in an educational system is a function of their readiness for it, especially if they are satisfied with the terms of service of the e-learning programme/platform. This will in turn, determine the extent to which e-learning reaches its full potential.

The UK-based observatory on Borderless Higher Education (OBHE), carried out a survey of online learning on commonwealth universities. The results revealed that (OECD, 2005):

- Student take p of e-learning is growing in general
- Fully online whole programs account for fewer than 5% of total enrolments
- The number of student enrolled in at least one course with a high online presence would be much higher, and sometimes from 30% to 50% of total enrolments
- In most institutions, cross-border enrolments (overseas students' enrolments) for e-learning are a small scale, peripheral activity
- Whole award programs with relevant online presence were more common at postgraduate level
- IT and business/management emerged as the most commonly cited disciplines making significant use of some form of e-learning, particularly in the mixed mode and fully online categories

The results of the observatory support the claim that e-learning has not reached its full potential. The e-learning providers might as a result, be faced with a host of challenges in predicting the degree of acceptability of their e-learning program among potential users. Some models guide the adoption and readiness of e-learning and, or ICT/other technologies by learners and organizations, but before then, a brief summary of theories of innovation adoption will be considered.

Theoretical Models of Innovation Adoption

A number of models have been developed to investigate and understand the factors affecting the acceptance of computer technology in organizations. The theoretical models employed to study user acceptance, adoption, and usage behavior include:

- Theory of Reasoned Action – TRA (eg. Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975),
- Technology Acceptance Model – TAM (eg. Davis, 1989; Davis et al; 1989),
- Theory of Planned Behavior – TBP (eg., Ajzen, 1991; Mathieson, (1991),
- Decomposed Theory of Planned Behavior (Taylor and Todd, 1995),
- Innovation Diffusion Theory (eg., Agarwal and Prasad, 1997; Rogers 1995),
- Integrated Technology Adoption and Diffusion Model (Sherry, 1998), and recently, the
- Moguls Model of Computing (Ndubisi, et al., 2004).

The current effort focused on the Technology Adoption Model (TAM). TAM was the first model to mention psychological factors affecting computer acceptance. TAM deviated from TRA from the start by excluding subjective norm out of the model (Raiij and Schepers, 2006).TRA model hypothesizes that a person's behavioral intention to perform (or not to perform) a behavior is determined by that person's attitude and subjective norms

Assumption of TAM (Technology Acceptance Model)

TAM assumes that both perceived usefulness (U) and perceived ease of use (EOU) of the new technology are central in influencing the individual's attitude towards using that technology. An individual attitude is hypothesized to influence the behavioral intention to use a technology, finally relating to actual use. Perceived usefulness (U) as described by Davis (1989) is the belief that ICT adoption leads to augmented workplace activity. The perception of ease of use (EOU) is described as a belief that an IS system is effortless in use.

In various studies (Mathieson, 1991; Pavri, 1998), it was discovered that technology acceptance model (TAM) yields high explained variance for why users choose to utilize systems (Abdel-Waha, 2008). In the follow-up model TAM2 (Venkatesh and Davis, 2000), the attitude component was not included anymore, and the perceived technology characteristics directly influenced the individual's intention to use the new technology under consideration. Additionally, social influences (operationalized norm) re-entered the model (Abdel-Waha, 2008).

Both TAM and TAM2 have been applied in different forms to explain technology adoption model in a wide variety of contexts ranging from consumer to intra-organizational technology acceptance (Raaij and Schepers, 2006).

In the present study, two more independent variables are added to the original technology adoption model, namely, the pressure to use and resources availability. The strategy was adapted from the method applied by Raiij and Schepers (2006) stating that the rationale behind the use of these two factors is that, in addition to usefulness and ease of use, there must be some pressure on the decision maker to use a particular innovation (accelerated product innovation by all competitors is an example of such a pressure), and decision maker must have the resources to adopt such an innovation.

In relation to the models of adoption of innovations described, what then is the current state of adoption of e-learning by LIS students in UNN? Some factors have been perceived to influence the adoption of e-learning by students such as:

- Attitude towards e-learning: Attitude is defined as an individual's positive or negative feeling (evaluative effect) about performing the target behavior (Fishbein and Ajzen, 1975). This, as noted by Ndubisi (2004) is related to behavioral intention because people form intentions to perform behaviors towards which they have positive feeling. The attitude-behavioral relationship is fundamental to TRA, TAM and related models presented by other researchers such as, Triandis

(1977) and Bagozzi (1981). With regards to e-learning, attitude towards this learning model will be positively influenced by its perceived system's usefulness, ease of use, and security.

- Perceived Usefulness of e-learning: This s defined as the extent to which a person believes that using a particular technology will enhance his/her job performance.
- Perceived Ease of Use: Is the degree to which using IT is free of effort for the user (Davis et al; 1989). A significant body of studies has shown that perceived usefulness and perceived ease of use are determinants of usage (eg. Igbnaria et al, 1997; Szanja, 1994)/
- Pressure to Use e-Learning: Pressure could come from stress, living in remote areas, distance from home to school.
- Availability of resources needed to use e-learning: This is related to infrastructure availability – their readiness.

Evidence from Other Studies

A number of NZ (New Zealand) studies on e-learning adoption confirm their findings, although Zemskey and Massy's study (2004) only considered the US context. One example is a 2005 report on e-learning maturity in the NZ tertiary sector (Marshall, 2005), which is based on the data collected from six of the eight NZ universities and three polytechnics. Marshall's study evaluated the institutional capability to sustain and deliver e-learning.

Another NZ university research study (Butson, 2005) on the use of web-based technologies suggests that e-learning adoption may be driven by the technology itself as, according to the survey data, teachers see no significant advantage in using web-based technologies and there are no institutional or faculty drivers for web-based teaching. If this hypothesis is correct, and the technology (LMS, in this case) does, in fact, drive e-learning adoption, poor quality of e-learning is to be expected (Elgort, 2005).

Rogers (1995) indicates that providing incentives for adoption of an innovation may change the patterns of adoption; the use of incentives may lead to adoption by individuals different from those who would have adopted it otherwise, and may negatively affect sustainability of adoption. It may increase the rate of adoption, but lead to a reduction in quality.

Work done by Elgort (2005) on E-learning adoption clearly shows that the e-learning adoption decision is frequently motivated by student pressure. Elgort noted that "like organizational incentives, student pressure may facilitate the rate of adoption of e-learning at the expense of its quality, resulting in a 'surface' approach to e-learning".

Abdel-Wahab (2005) wrote on "modeling students' intention to adopt e-learning: a case from Egypt", and the results of the study suggested that the best subset of predictors that can be used in modeling a student intention to adopt e-learning includes: attitudes towards e-learning, usefulness of e-learning, ease of e-learning use, pressure to use e-learning, and the availability or resources needed to use e-learning.

Ndubisi (2004) also found out from his study that 'attitude has an important direct influence on intention to adopt e-learning'. Attitude is anchored usefulness, ease of use, and system's security. Perceived behavioral control was also noted another important determinant of interaction. Ndubisi concluded that "in order to enhance e-learning adoption intention and in turn acceptance among Malaysian students, interested parties to this learning arrangement must try to build favorable attitude through enhanced usefulness and ease of use perceptions, as well as security.

Method

In this section the items discussed are: 1) the design of the survey instrument,

2) Survey population and sample selection, 3) data analysis and the results.

Designing the Instrument

To accomplish the objectives of the study, the survey instrument was developed to gain as much information as possible regarding the factors that affect students' intentions to adopt e-learning. There are two sections in the questionnaire.

Section one was used to collect demographic data about the distance between the university and the student's home.

Section two was adapted from Abdel-Wahab (2008). Twenty four (24) items was used in the questionnaire, four of which refer to the following dimensions: 1) *Attitude towards e-learning,* 2) *Intention to adopt e-learning*, 3) *Availability of Resources,* 4) *Pressure to Use e-learning*, 5) *Usefulness.* Respondents were asked to rate their opinion about each item using 4-point Lickert scale. The values assigned to the different scaling statements were as follows:

SA – Strongly Agree 4

A – Agree   3

D – Disagree 2

SD – Strongly Disagree 1

Survey Sample

The sample subjects were selected to participate in the survey through purposive sampling. A total of fifty (50) students were sampled from a population of one hundred and fifty students (150) from the department of Library and Information Science Department.

Results and Analysis

The respondents were asked the distance from their home to the University. Table 2 shows the responses and analysis.

Table 2: Distance from student home to the university:

S/N	Distance(Km)	F	%
1	5km	8	16%
2	11-15km	12	24%
3	21-30km	25	50%
4	41-50km	5	10%

It can be drawn from table 2 and pie chart below that 16% of the students indicated that the distance form their home to school is 5km; 24% indicated 11-15km; 50% said their home is 21-30km from their school while 10% indicated 41-50km.
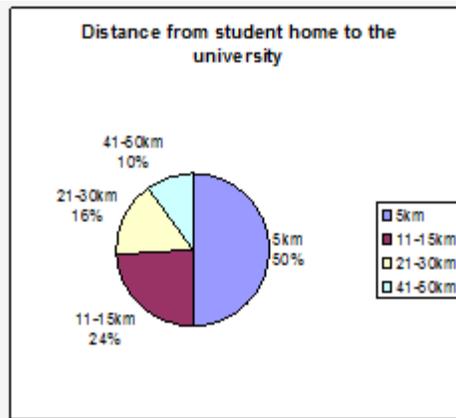
Pie chart representing table 2 (*distance from student home to the university*)

Table 3: Attitudes towards e-learning

S/N	Attitude	SA	A	D	SD	Mean(X)
1	I am not in favor of full time e-learning as it lacks the face-to-face interaction between students and educators					
2	I am not in favor of e-learning as it leads to social isolation					
3	I am not in favor of e-learning as it is a complex process for students with beginner-level computer skills					
4	I am in favor of e-learning as it will narrow the digital divide between Egypt and other developed nations					

Table 4: Intention to adopt e-learning

S/N	Intention to adopt e-learning	SA	A	D	SD	Mean(X)
1	I think positively about e-learning	32	11	7	-	
2	I plan to participate in future e-leaning courses	40	7	3		
3	I plan to buy a computer to be able to follow lecture notes online	23	16	9	2	
4	I intend to advise my friends to use the Internet for reading lecture notes online	6	31	12	1	

Table 5: Availability of Resources

S/N	Availability of resources	SA	A	D	SD	Mean(X)
1	My university has got the technology needed for the delivery of e-learning	4	5	21	20	
2	My university has a web site	45	5	-	-	
3	My university has training professionals available to carry out e-learning training programs	39	10	1	-	
4	I can't spare the time required to attend e-learning training programs that are arranged for the university students	38	9	2	1	

Table 6: Pressure to Use e-learning

S/N	Pressure to use e-learning	SA	A	D	SD	Mean(X)
1	E-learning should be offered fully online to reach students who live in remote areas.	46	4	-	-	
2	E-learning should be used to reduce travel related stress	35	9	6		
3	E-learning should be adopted to allow married students balance family and study demands	21	16	9	4	
4	E-learning should be adopted to allow working students to study from home	35	10	5	-	

Table 7: Ease of E-Learning Use

S/N	Ease of E-Learning Use	SA	A	D	SD	Mean(X)
1	I cannot read the lectures and notes through the web	16	29	4	1	
2	It is easy to learn how to use the internet in reading	15	17	9	9	
3	The e-learning allows for off-campus interaction between students and educators	19	20	9	2	
4	E-learning systems are easy to master	13	17	11	9	

Table 8: Usefulness

S/N	Usefulness	SA	A	D	SD	Mean(X)
1	Reading the lecture's notes through the web clarifies some points and improves my understanding of the lecture	10	9	27	4	
2	Using full time e-learning is useful as it decreases travel expenses	37	9	3	1	
3	Adopting fully online e-learning allows for reduced costs.	18	23	5	4	
4	Adopting e-learning allows for increased students' satisfaction	17	24	6	3	

Discussion

This study improves on the existing knowledge about modeling students' intention to adopt e-learning as an approach to facilitate and enhance learning through both computer and communications technology. It can be drawn from the research analysis that many of the LIS students have the intention to adopt e-learning as the result in table 4 shows this. That goes a long way in supporting e-learning in University of Nigeria, Nsukka as students have recognized that e-learning has become essential for their success. It can also be drawn from the analysis that the best subset of predictors that can be used in modeling a student intention to adopt e-learning includes: attitudes toward e-learning, usefulness of e-learning, ease of e-learning use, pressure to use e-learning, and the availability of resources needed to use e-learning. This goes as an opener to program providers as they could focus on these factors that are expected to affect potential users' intention to enroll with e-learning programs when offered by the university.

As already noted that students are ready to adopt e-learning, it is therefore recommended that more courses should be integrated in e-learning so as to cover all the courses offered by students. There is also need for students to enroll in practical classes for computer training. This will enable the less net savvy students to brace up so as to avoid being left behind by others. There is no doubt that a lot of pressures are facing our students when it comes to e-learning adoption, especially distance barrier. There is therefore, need for e-learning to be fully put in place to enable the group of students that their homes are far away from the school to participate in classes even when they are not able to make it to school.

Finally, there should be availability of ICT infrastructure, the absence or inadequacy of which will totally hamper the idea of e-learning adoption in universities. There should be provision of computers and high bandwidth to enable the easy flow of classes online. This goes in line with the recommendation given by Abdel-Wahab (2008) that 'if the high ICT infrastructure for e-learning is unavailable, the sequential use of predecessor distance learning technologies from correspondence courses to radio, TV, CD-ROM, Internet and World Wide Web is recommended. Such a sequential use of predecessor distance learning technologies is poised to leverage the experience into a significant use of learning.

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