

Perceived Ease of Use and Utilization of E-Learning Technologies by Academic Staff in Federal College of Education, Zaria (FCE, Zaria)

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Abstract: *The primary objective of any educational institution is to teach so that the students can learn. The paper discusses the concept of e-learning explaining that “as learning facilitated and supported through the utilization of information and communication technologies” This study addresses the issue of utilization of the available e-learning technologies by the academics of the college and provided answers to the following “To what extent do Academics find it easy to learn how to use e-learning technologies for teaching? To what extent do the Academics understand how the e-learning technologies work? To what extent do the Academics use e-learning technologies in the college? Survey research method was used for the study. The population of study comprises of 200 Academics across the Federal college of Education Zaria. The study discovered that was revealed the availability of some of the e-learning technologies in the college and most of the academics do not know how to use the e-learning technology for teaching, and learning and only few of the academics use the e-learning technologies for teaching, they mostly use the technologies for entertainment. The study recommended that Regular workshops should be organized to the Academics on how to make use of e-learning technologies for teaching and learning and also technical experts should be allocated to the faculties in order to monitor the e-learning technologies in their respective places of allocation.*

I. Introduction

ICT revolution has given rise to ‘learning economy’ wherein the capability to learn how to create new knowledge and adapt to changing conditions determines the performance of individuals, institutions, regions, and countries (Lundvall & Borrás 1999). This has fuelled the demand for e-learning both at organizational and educational sector. E-learning is defined as learning facilitated and supported through the utilization of information and communication technologies (Jenkins and Hanson 2003). Thus, e-learning includes use of ICTs (viz. Internet, computer, mobile phone and video) to support teaching and learning activities.

The primary objective of any educational institution is to teach so that the students can learn. This statement presupposes that learning is a function of how good what is taught is. Therefore, if teaching is ineffective learning will be ineffective. The best option is to have effective teaching so that there can be effective learning. It is no longer news that different people learn through different sense organs. While some learn best through hearing, and others learn best through sight, most would learn best when sight and hearing are involved. For teaching to be effective and have the right attitudinal change on students they must understand what is being taught, and to do that adequately, the teachers must employ the use of e-learning technologies.

From preliminary observation by the researcher, Graduates of Federal College of Education, Zaria and indeed the students performance is on the decline, this is evident on the fact that many of the graduates of the College that were offered admission in Ahmadu Bello University were rejected during the Screening exercise because their graduation points were grossly inadequate. Perhaps this could be attributed to the fact that teaching in the College is not effective and this is premised on the fact that students are too many in classes in the College and so do not hear and understand the academics as they deliver their lectures. Perhaps if the academics utilize the available e-learning tools this state of affair could be remedied. This study therefore addresses the issue of utilization of the available e-learning technologies by the academics of the college and will provide answers to the following questions:

1. To what extent do Academics find it easy to learn how to use e-learning technologies for teaching?
2. To what extent do the Academics understand how the e-learning technologies work?
3. To what extent do the Academics use e-learning technologies in the college?

The objectives of the study

The general objective of this study is to determine how perceived ease of use of e-learning technologies influences the utilization of the technologies in teaching by academics in FCE, Zaria. The specific objectives will include:

1. To ascertain the extent to which academics in FCE, Zaria find it easy to learn how to use e-learning technologies.
2. To determine the extent to which academics understand how the technologies work.
3. To ascertain the extent to which academics use e-learning technologies in the College.

Significance of the study

This study will be significant in the following ways:

It will sensitize the management of the college on ways to tackle the falling standards of education in the college, by proffering ways of adequately utilizing the existing e-learning tools and technologies for better pedagogy in the college. The result from this study will act as a buffer to the implementation of distant learning program in the College and this will increase the student enrollment figure and the global visibility of the College and its activities.

II. Literature Review

The Technology Acceptance Model (TAM), introduced by Davis (1989), is an adaptation of social psychology theory of reasoned action, specifically tailored for modelling user acceptance of information systems. The TAM, as shown in Figure 1, considers perceived usefulness and perceived ease of use as major determinants of intention to use a technology. The former refers to the extent to which a person believes that using the system will enhance task performance, while the latter refers to the degree to which the user expects the target system to be free of effort. Across studies, perceived usefulness is highlighted as the most significant determinant of behavioral intention to the technology (Horst et. al. 2007; Venkatesh et. al. 2003). The TAM explains user behaviour across a broad range of end-user computing technologies (e.g., text editor, spreadsheet, e-mail) and user population (e.g., students, software professionals, physicians). The predictive power of TAM varies according to the cultural context. Its power of prediction is higher in the West (45–70%) than the East (10–35%). Perceived usefulness emerges as important across all the cultures studied, whereas subjective norm is more important for the East than the West (Rose & Straub 1998; Straub 1994). Subjective norm has been of particular interest in Asian and African research, and cultural factors are highlighted to explain its relevance in determining behavioral intention to use computers (Dinev et. al. 2004; Mao & Palvia 2001).

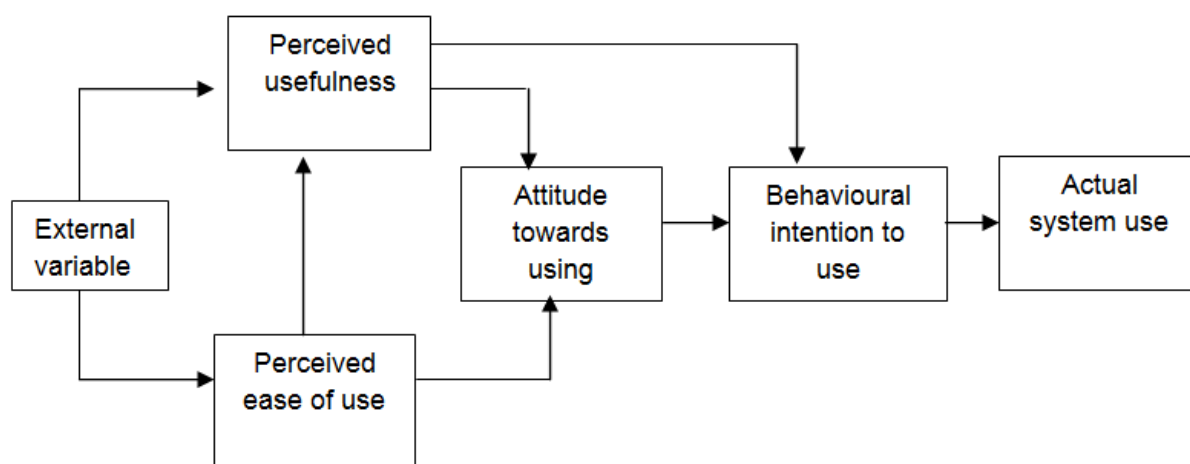


Figure 1: Technology Acceptance Model

Source: Davis, F. (1989) Perceived Usefulness, Ease of Use, and User Acceptance of Information Technology, MIS Quarterly, 13 (3), 319- 339.

Venkatesh and Davis (2000) extended the original TAM model and proposed TAM2. They explain perceived usefulness and usage intentions in terms of social influence process and cognitive instrumental processes. The social influence process highlights the impact of three inter-related social forces impinging on an individual facing the opportunity to adopt or reject a new system --- subjective norm, voluntariness and image. The cognitive instrumental process highlights the individual's job relevance and output quality. Results demonstrability and perceived ease of use are other fundamental determiners of user acceptance.

E-learning has been defined by researchers in various ways. According to Sims (2008), e-learning opens new ways of learning and these new models change the essence of teaching and the dynamics of learning. He defines e-learning as, “forms of technology-enhanced learning that are efficient, effective, and engaging. E-learning, as explained by Safran, Helic and Gutl, (2007), supports communities of practice where learners interact and learn together. Interaction typically occurs through discussion, commenting, collaborative writing, or working together on projects. In a study of secondary education teachers and college professors in Scotland, Davidson and Elliot (2007), defined e-learning as “any learning that is electronically mediated or facilitated by transactions software”).

The new computer-based learning technologies will have their greatest impact when we start to realize their unique advantages. Some of these advantages include the following:

- High speed computation
- Interactivity – especially for games and simulations
- Networking with global reach, allowing worldwide collaboration
- Digital representations/transformations
- Algorithms – repeatable procedures
- Storage and retrieval – extending our memories
- Individualization/customization/ flexibility resulting in personalized content
- Constant availability - 24/7
- Simulation of complex processes

To realize these advantages, we need to break from the *page metaphor* that has dominated the first decade of Web development (Alexander, 2006). The Web is about producing and distributing a variety of content formats. Rather than pages, we are beginning to speak about posts or streams of content, sometimes gathered from multiple sources, and then integrated into a unique online mix of information, sometimes referred to as a mashup (Woodill and Oliveira, 2006).

E-learning refers to the use of ICTs to enhance and support teaching and learning processes. It is the instructional content or learning experiences delivered or enabled by electronic technologies and it incorporates a wide variety of learning strategies and technologies. E-learning ranges from the way students use e-mail and accessing course work online while following a course on campus to programmes offered entirely online (Commission on Technology and Adult Learning, 2001; OECD 2005). It is thus an alternative solution, which enlarges accessibility to training and becomes essential to complement the traditional way of teaching (i.e. face-to-face).

E-learning encompasses a continuum of integrated educational technologies. At one end are applications like PowerPoint, which have little impact on learning and teaching strategies or the organization. At the other end are virtual learning environments (VLEs), and managed learning environments (MLEs), which can have significant impact upon learning and teaching strategies, and upon the organization (OSU, 2003; Julian *et al.*, 2004). Broadly, OSU (2003) views the continuum of e-learning as the educational technology from the supplemental use of technology in the classroom, through blended or hybrid uses comprising a mix of face-to-face and fully online instruction, to fully online synchronous and asynchronous distance learning environments delivered to remote learners.

Functionally, e-learning includes a wide variety of learning strategies and ICT applications for exchanging information and gaining knowledge. Such ICT applications include television and radio; Compact Discs (CDs) and Digital Versatile Discs (DVDs); video conferencing; mobile technologies; web-based technologies; and electronic learning platforms. The following are e-learning tools and technologies and their pedagogical implications.

Analysis

This study employed a survey research method and 200 students were used for the study. The following are the analysis of the data collected for this study.

Extent to which Academics understand how e-learning Technologies work

e-learning technologies	Completely understand	Fairly Understand	Not at all
Computers	100(80%)	10(8%)	15(12%)
Learning Management Systems	10(8%)	10(8%)	105(84%)
Projectors	50(40%)	15(12%)	60(48%)
Internet	100(80%)	20(16%)	5(4%)
Software (Powerpoint)	50(40%)	20(16%)	55(44%)
Television	50(40%)	15(12%)	60(48%)

The Table shows the extent to which academics in FCE, Zaria understand how the e-learning technologies work. It could be seen from the table that 100(80%) of the respondents indicated they completely understand how Computers work, 105(84%) of the respondents indicated they do not understand how Learning Management Systems work at all, 60(48%) of the respondents indicated they do not understand how Projectors work at all, 100(80%) indicated they completely understand how the Internet works, 55(44%) indicated they do not understand how Software(Powerpoint) works at all, while 60(48%) of the respondents indicated they do not understand how televisions are used for teaching at all. This means even with the availability of some of the e-learning technologies in the college, academics do not know how to use them for teaching, Projectors and the Learning Management Systems for example are available but academics do not know how to use them for teaching.

Extent to which Academics find these e-learning technologies easy to learn

The respondents were asked to indicate the extent to which they find e-learning technologies easy to learn. Their responses are shown in table below:

Extent to which Academics find these e-learning technologies easy to learn

e-learning technologies	Very easy	Fairly easy	Not easy at all
Computers	125(100%)		
Learning Management Systems	10(8%)	15(12%)	100(80%)
Projectors	50(40%)	15(12%)	60(48%)
Internet	100(80%)	20(16%)	5(4%)
Software (Powerpoint)	50(40%)	20(16%)	55(44%)
Television	50(40%)	15(12%)	60(48%)

This table shows the extent to which academics find these e-learning technologies easy to learn. It could be seen from the table that all the respondents indicated computers are very easy to learn. 100(80%) of the respondents indicated LMS are not easy to learn at all, 60(48%) indicated Projectors are not easy to learn at all, 100(80%) indicated the Internet is very easy to learn, 55(44%) of the respondents indicated software are not easy to learn at all, while 60(48%) of the respondents indicated televisions are not easy to learn at all. This implies that academics find computers and the Internet easy to learn but not LMS, Projectors, Software (Powerpoint) and television easy to learn. These are the major constituents of e-learning technology and the finding here shows academics do not fully utilize e-learning technologies in their teaching.

Extent of use of e-learning technologies by academics in FCE, Zaria

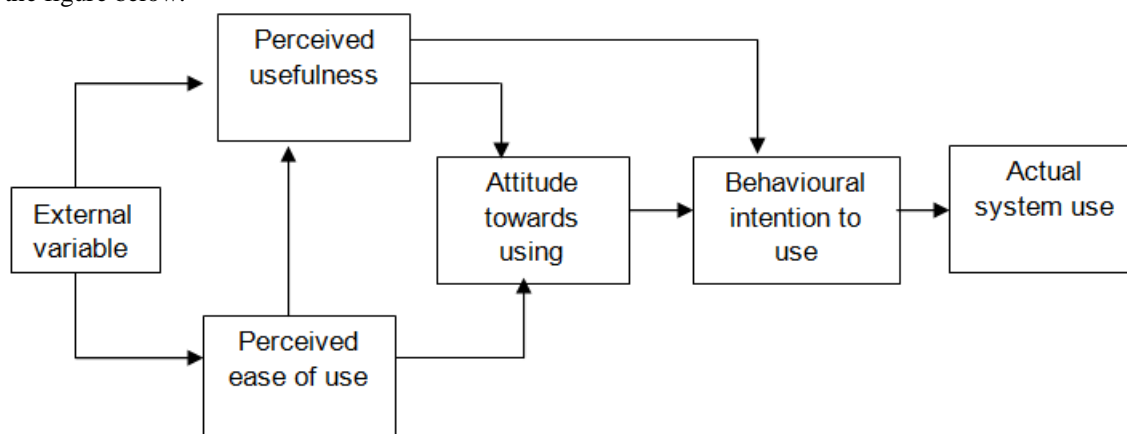
e-learning Technologies	Very Frequently	Frequently	Not at all
Computers	100(80%)	25(20%)	
Learning Management Systems	13(10.4%)	17(13.6%)	95(76%)
Projectors	19(15.2%)	21(16.8%)	85(68%)
Internet	107(85.6%)	18(14.4%)	
Software (Powerpoint)	57(45.6%)	23(18.4%)	45(36%)
Television	105(84%)	10(8%)	10(8%)

Table 4.6 shows the extent of use of the available e-learning technologies by academics in FCE, Zaria. It could be seen that 100(80%) of the respondents indicated they use computers very frequently, 95(76%) of the respondents indicated they do not utilize LMS at all, 85(68%) indicated they do not use Projectors at all, 107(85.6%) of the respondents indicated they use the Internet very frequently, 57(45.6%) indicated they use software (Powerpoint) very frequently while 105(84%) of the respondents indicated they use television very frequently. This implies that academics use computers, the Internet and television very frequently, and do not utilize LMS LMS and Projectors.

III. Discussion

The study used the Theory of Acceptance and Use of Technology (Venkatesh, et. al. 2003) and ELAM (e-learning acceptance model) Nanayakkara 2007; Yuen & Ma 2008) or students (Keller, et. al. 2008; Masrom 2007) that identifies the key factors in acceptance of e-learning as measured by behavioural intention to use the technology and actual usage. The study used one of the four determinants of the e-learning acceptance (i) performance expectancy, (ii) effort expectancy, (iii) social influence and (iv) facilitating conditions. Effort expectancy is based on beliefs about ease of learning, perceived ease of use and self-efficacy and the objectives of the study were designed around this determinant. The result shows that the academics in FCE, Zaria are yet to fully accept and utilize the available e-learning technologies that the university has provided. The findings also show that the Zaria has provided e-learning technologies to include Projectors and the Internet. But academics are yet to start utilizing these technologies for teaching.

Perceived ease of use affects utilization in the sense that if academics perceive that e-learning technology is easy to use for teaching they will gladly accept and use it. This point is buttressed by Davis (1989) opined that perceived ease of use is one of the components that leads to utilization of any technology as shown in the figure below:



This study revealed that even with the availability of some of the e-learning technologies in the college, academics do not know how to use them for teaching, Projectors and the Learning Management Systems for example are available but academics do not know how to use them for teaching. It was also discovered that a few of the academics use the e-learning technologies for teaching, they mostly use the technologies for entertainment.

IV. Recommendations

Based on the findings of this study, the following recommendations are proffered:

1. Sensitization workshops should be organized for academics with a view to bringing to their notice the availability of the e-learning technologies that the college/university has provided. Flyers and posters could also be posted in the various faculties to notify the academics of the availability of these technologies.
2. Regular workshops should also be organized on how these e-learning technologies should be used in teaching, learning and research activities
3. The technical experts could be allocated to the Department/faculties so as they take care of the e-learning technologies in their respective places.

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