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To meet the demands and deadlines, the SITE 2008 reviewers did an outstanding job reviewing in excess of 1500 proposals over a very short period of time. Each submission was evaluated by at least two reviewers, to ensure the quality and distinction that is the standard of the Society for Information Technology and Teacher Education.

The SITE 2008 Annual Editorial Team consists of some of the finest professionals in our field, who come together to support our conference colleagues. Included on this team is one of our SITE founders and Senior Editor, Karen McFerrin of Northwestern State University of Louisiana, and all-encompassing support system Roberta Weber of Florida Atlantic University, the communications authority Roger Carlsen from Wright State University of Ohio, and Dee Anna Willis of Northwestern State University of Louisiana. The SITE 2008 Annual Editorial Board also offers our continued appreciation to Florida Atlantic University and Dee Anna's mother, Mrs. Blode, in West Palm Beach, Florida, for hosting the intensive November retreat where the editorial team comes together in our cooperative endeavor.

The Annual Editorial Board is focused on supporting the SITE conference and annual, and looks forward to expanding opportunities for members to share ideas and expertise related to "the creation and dissemination of knowledge about the use of information technology in teacher education and faculty/staff development" (http://site.aace.org/) while maintaining the welcoming and supportive foundations at each conference.

Exceptional appreciation and thanks are offered to all those mentioned, to those who sustain their endeavors, and to Gary Marks, Executive Director of SITE.

SITE Annual, General Editors

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Analysis of graduate students' access and utilization of e-learning technology in a Nigerian university

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Abstract

Nigeria is a third world country where access and utilization of e-learning technology are generally low. This study investigated through empirical methods the extent to which a randomly selected sample of 406 graduate students had access to and utilized the e-learning technology. It adopted the survey research design, using a checklist type of questionnaire with a reliability co-efficient of 0.86. Percentages, Pearson Product Moment Correlation and multiple regression were used for data analysis at 0.05 level of significance. The findings revealed that graduate students had adequate access to available e- learning technologies, but their literacy and utilization rates were very low. The incorporation of application of e-learning technologies to the curricula was recommended, with the view that this will compel learners to improve both their literacy and utilization levels.

Background to the Study

The electronic learning (e-learning) technology is being embraced all over the world. The global education community is faced with a unique problem: that of acquisition of computer and on-line literacy skills. The e-learning technology is computer-based. It enables the learner to access the required literature from all over the world via the internet at very low costs and within a short range of time. Different types of learning technologies have been in existence for long. The traditional learning technologies include paper, audio and video broadcast.

Results of studies have concluded that this form of education is effective for well-motivated students. More importantly, it is clear that one should not simply take a traditional course and place it on any form of educational network (Schrum, 1998; Wagner, 1993). The recent developments in network and communication technologies have provided the ability to learn through the on-line procedure. Several educational institutions provide on-line courses to large number of individuals. The manuals of these institutions and other publications provided by several scholars can be accessed through the internet. Even laboratory resources can be accessed through the internet.

The innovation of the internet facility or e-learning technology is a boost to university education. Hence more and more universities are embracing this technology with a view to providing a robust learning platform for learners, thus making learning easy for them. The Nigerian universities are not left behind. The University of Ibadan, for instance, has embraced the e-learning technology. Virtually all the departments are linked to the internet. The university library has established an e-learning class that can accommodate up to 30 users at a time. There is also an Information and Communication Technology (ICT) centre where e-learning services are being

provided to users. This development is a challenge to both the teachers and learners, who have to catch up with the new technology.

In spite of this development, both faculty and learners still use the traditional learning technologies. Most of them stick to the traditional technologies on account of poverty, inability to operate the computer and ignorance. Some of them, particularly the students cannot afford the user charges. A few are yet to acquire the computer literacy which they need for effective use of the e-learning technology. The value of this technology seems not to be known to all. To worsen the situation, the university is yet to adopt the web-based course management technology, which enables on-line teaching of courses by faculty members, unlike the situation in the advanced countries, such as the United States, where most universities run on-line degree programs.

Statement of the Problem

Inadequate provision of e-learning technologies in the university has hindered adequate access to the facility, and thus hampered individuals' utilization rates. Hence, this study investigated the extent to which the e-learning technologies are provided and used in the University of Ibadan, Ibadan, Nigeria.

Research Questions

The following research questions would guide the study:

1. What are the different types of e-learning technologies available in the university?
2. What is the extent of availability of e-learning technologies?
3. How accessible are the available e-learning technologies?
4. What are the e-learning literacy levels of the learners?
5. What is the utilization rate of the e-learning technologies?
6. What is the relationship among literacy level, availability, accessibility, interest and utilization of e-learning technologies?
7. What is the magnitude of relative influence of literacy level, availability, accessibility and interest on graduate students' utilization of e-learning technologies in the university?
8. What is the magnitude of the composite influence of literacy level, availability, accessibility and interest on graduate students' utilization of e-learning technologies in the university?

Research Design and Study Population

This study adopted the survey research design. This design was used because it is an appropriate and efficient way of studying large populations as only a sample population will be used. The target population for this study was the graduate students of the University of Ibadan, Ibadan, Nigeria. They are spread across the different faculties, departments, institutes and centres in the university. They have been chosen as participants for this study, because they are research students whose major responsibility is to source for knowledge independently. The traditional source being the physical library, through the manual method. However, with the invention of computer and internet facility, the on-line or electronic source has become an easier and richer source of literature.

The multi-stage random sampling technique was adopted for this study. Three out of the thirteen faculties in the university were selected for the study, but only 20 percent of the departments in each Faculty was randomly selected. About 90 percent of graduate students in each sampled department were also randomly chosen, thus given 406 out of the 450 students in the sampled departments.

The main instrument used for data collection is a checklist type of questionnaire designated E-learning Technologies Access and Utilization Questionnaire (ETAUQ). It comprises four sections (A – D). Section A sought for background information of the respondents, such as age, sex, course of study, level of computer literacy and names of departments, institutes, centres and faculties. Section B elicited information on availability of e-learning technologies, while Section C gathered information on learners' extent of access to e-learning technologies. Section D sought for data on learners' extent of utilization of e-learning technologies.A pilot study was conducted to pre-test the instrument in order to establish its consistency in measuring what it was designed to measure, using the test-retest method. Sixteen graduate students from a department that was not used for the major study participated in the pilot study. The test scores of the pre-tests were correlated, using the Cronbach alpha. An exercise which yielded a reliability co-efficient of 0.86.406 copies of the instrument were administered through three field assistants. The exercise took a period of one week to complete. The retrieved copies of the questionnaire were arranged according to the faculties before assigning numeric number to them. This is essential for the purposes of comparison and easy reference. The numeric values assigned to options in each item range from 0 to n. Percentage,

Pearson Product Moment Correlation and multiple regression are the statistical methods that were used for data analysis. The 0.05 level of significance was chosen as the decision point.

Results and discussion

This section is discussed under the research questions.

Research Question One: What are the different types of e-learning technologies available in the university?

S/No.	e-learning technologies	N	Those to whom available	%
1.	Internet	400	400	100.0
2.	e-class	400	384	96.0
3.	CD-ROM	400	378	94.0
4.	Video-conferencing	400	140	35.0
5.	e-journal	400	368	92.0
6.	On-line manuals	400	372	93.0

Table 1: Available e-learning technologies

Table 1 shows that most respondents agreed that all e-learning technologies were available with internet having a lead with 100.0 percent, while video conferencing had 35.0 percent. This confirms the availability of different forms of e-learning technologies in the university.

Research Question Two: What is the extent of availability?

S/No.	e-learning technologies	N	Hours per week	Hours available	%
1.	Internet	400	67,200	67,200	100.0
2.	e-class	400	67,200	16,000	23.8
3.	CD-ROM	400	67,200	16,000	23.8
4.	Video conferencing	400	67,200	16,000	23.8
5.	e-journal	400	67,200	67,200	100.0
6.	On-line manuals	400	67,200	67,200	100.0

Table 2: Extent of availability of e-learning technologies

Table 2 reveals the extent to which the e-learning technologies were made available in the university. Internet, e-journal and on-line manuals were the most available, while e-class, CD-ROM and video conferencing were less available. There were private cyber cafés providing internet, e-journal and on-line manuals 24 hours a day. Hence, they were made available for the 400 respondents in 24 hours in each of seven days in a week (i.e. 24x7x400 = 67,200 hours). However, e-class, CD-ROM and video conferencing were made available only during the official hours for patronage. Hence, they had 23.8 percent availability rate.

Research Question Three: How accessible are the available e-learning technologies?

S/No.	e-learning technologies	N	Hours per week	Hours available	%
1.	Internet	400	67,200	67,200	100.0
2.	e-class	400	67,200	16,000	23.8
3.	CD-ROM	400	67,200	16,000	23.8
4.	Video conferencing	400	67,200	16,000	23.8
5.	e-journal	400	67,200	67,200	100.0
6.	On-line manuals	400	67,200	67,200	100.0

Table 3: Accessibility of e-learning technologies

Table 3 indicates that internet, e-journal and on-line manuals were more accessible than e-class, CD-ROM and video conferencing. Private cyber cafes that provided their services every time had only internet, e-journal and on-line manuals. Hence, they had 100 percent accessibility rate. E-class, CD-ROM and video conferencing which were only provided at official centres had 23.8 percent. Copper (1999) observed the rapid growth in e-learning technologies. This observation is true of developed world. Most third world countries are just introducing the use of this technologies.

Research Question Four: What are the e-learning literacy levels of the learners?

S/No.	Literacy Levels	Respondents	Percentage of total
1.	High	69	17.25
2.	Average	126	31.25
3.	Low	206	51.50
	Total	400	100.00

Table 4: Literacy levels

Table 4 shows that 51.5 percent of the respondents had very low e-learning technologies literacy level, 31.25 percent were average, while 17.25 percent had high literacy level. This is due to the fact that the university has just introduced these technologies.

Research Question Five: What is the utilization rate of the e-learning technologies?

S/No.	e-learning technologies	N	Hours available per week	Hours used per week	%
1.	Internet	400	67,200	12,008	17.87
2.	e-class	400	16,000	514	3.21
3.	CD-ROM	400	16,000	8,691	54.32
4.	Video conferencing	400	16,000	189	1.18
5.	e-journal	400	67,200	1,874	2.79
6.	On-line manuals	400	67,200	1,960	2.92

Table 5: E-learning technologies utilization rate

Table 5 reveals the rate at which the respondents utilized e-learning technologies. The rates are generally low, except that CD-ROM had a rate of 54.32 percent.

Research Question Six: What is the relationship among literacy level, availability, accessibility, interest and utilization of e-learning technologies?

		LITERACY	AVAILA-BILITY	ACCESS	INTEREST	UTILIZA-TION
LITERACY	Pearson Correlation	1.000	-259**	-308**	-026	-329**
	Sig. (2-tailed)		.000	.000	.603	.603
	N	400	400	400	400	400
AVAILABILITY	Pearson Correlation	-259**	1.000	.736**	-334**	.246**
	Sig. (2-tailed)	.000		.000	000	.000
	N	400	400	400	400	400
ACCESS	Pearson Correlation	-308**	.736**	1.000	-264**	.085
	Sig. (2-tailed)	.000	.000		000	.088
	N	400	400	400	400	400
INTEREST	Pearson Correlation	-026	.344**	-264**	1.000	.024
	Sig. (2-tailed)	.603	.000	.000		.634
	N	400	400	400	400	400
UTILIZATION	Pearson Correlation	-329	.246**	-085	.024	1.000
	Sig. (2-tailed)	.000	.000	.088	.634	
	N	400	400	400	400	400

**Correlation is significant at the 0.01 level (2-tailed).

Table 6: Test of Relationship

The multiple regression analysis yielded a low positive and significant correlation co-efficient of 0.423. The R Square of 0.179 shows that the independent variables e-learning literacy, availability, access and interest contributed 17.9 percent which is insignificant to the occurrence of the dependent variable utilization of e-learning technologies. Table 6 shows that literacy is negatively correlated with all the variables, availability and access were positively correlated, while there was no correlation among utilization, access and interest.

Research Question Seven
What is the magnitude of relative influence of literacy level, availability, accessibility, interest and utilization of e-learning technologies?

Model		Unstandardized Coefficients B	Standardized Coefficients Std. Error	T	Sig.
1	(Constant)	13.059	2.755	4.740	.000
	LITERACY	-5.405	.843	-6.414	.000
	AVAILABILITY	2.860	.491	5.824	.000
	ACCESS	-.162	.039	-4.182	.000
	INTEREST	5.179E-02	.032	1.615	.107

a. Dependent Variable: UTILIZATION

Table 7: Test of Relative Influence

Table 7 reveals that each of the variables except interest had significant influence on utilization. This is due to the fact that most of the respondents have interest, but they were not able to devote enough time to the utilization of e-learning technologies.

Research Question Eight

What is the magnitude of the composite influence of literacy level, availability, accessibility and interest on graduate students' utilization of e-learning technologies in the university?

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0899.160	4	2474.790	21.548	.000[a]
	Residual	45366.537	395	114.852		
	Total	55265.697	399			

a. Predictors: (Constant), INTEREST, LITERACY, ACCESS, AVAILABILITY
b. Dependent Variable: UTILIZATION

Table 8: Test of Composite Influence

Table 8 indicates that all the variables had significant composite or joint influence on the utilization of e-learning technologies. This implies that if literacy, availability, access and interest are improved, the utilization of e-learning technologies will also improve.

Conclusion and Recommendation

The study established that in the University of Ibadan, graduate students had adequate access to the e-learning technologies, but their utilization rates were very low. However, whenever the curriculum shifts to incorporate the use of e-learning facilities for teaching these facilities will be grossly inadequate. The University authority should initiate the review of all the curricula, as there is a need to incorporate application of e-learning technologies. This will compel learners to improve their literacy and utilization levels.

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