Status of E- Learning in Higher Education-A Case Study in Botho University

Dr. Bujingan Natarajan#*, Dr. Aparna Kadiyala^ and Stegi Shine[l]

#Fellow in Faculty of Business & Accounting, ^Fellow in Health Information Management, [l]Lecturer in Faculty of Business & Accounting Botho University, Francistown campus

Department of Mechanical Engineering, College of Engineering and Technology, Benin

Abstract

The purpose of the study was to find out the role of E-Learning among graduates students of Botho University. The objectives are specifically to find out the level of usage of E-Learning in degree programs. In this study the authors intend to study the time spend by students with E-Learning tools and challenges faced by students in using E- Learning tools. Further investigation made to find the difference in means of Utilization of E-learning resources, Area of use of E learning, Quality of E-learning usage and Opinion about E-learning based on gender. The study was descriptive study with survey method. The stratified random sampling method was used to select a sample size of 92 third year students out of 184 third year students from the departments of Accounting, Business, Computing and Health Information Management in Botho University, Francistown campus. The collected data were analyzed by using SPSS version 20 and Microsoft Excel. The formulated hypotheses were tested by using inferential statistics.

Keywords: *E-Learning, E-Learning Usage, Internet*

Introduction

The integration of information and communication technologies is more important to achieve high results in learning in the educational system. As defined in Economic times a learning system based on formalized teaching but with the help of electronic resources is known as E-learning. While teaching can be based in or out of the classrooms, the use of computers and the Internet forms the major component of E-learning. E-learning can also be termed as a network enabled transfer of skills and knowledge and the delivery of education is made to a large number of recipients at the same or different times.

With the rapid progress in technology and the advancement in learning systems, it is now embraced by the masses. The introduction of computers was the basis of this revolution and with the passage of time, as we get hooked to smartphones, tablets, etc. these devices now have an importance place in the classrooms for learning. Books are gradually getting replaced by electronic educational materials like optical discs or pen drives. Knowledge can also be shared via the Internet, which is accessible everywhere and all the time.

Tatiana, S (2011) has stated that E-Learning became an important instrument in the new Higher Educational Environment in the digital age which creates student-centered learning and educational practice, offering new more flexible learning methods.

Nowadays universities are using ICT approaches to handle large number of students in different geographic location simultaneously (US department of education, (1996). Today with the development and increased availability of lower-cost personal computer, the use of ICT's in education has broadened to encompass the use of general- purpose tools such as word processors and spreadsheets. E- learning is now beginning to make it way into classrooms across the world propelled by the power of the Internet and the world Wide Web.

The primary advantage in the case of E-learning is students can access module content anywhere at any time. They can download their lesson from Blackboard and post their assignments whenever they wish. Similarly the teachers can also post their assignment questions and e mail to their students other than their class hours.

All are not feeling comfortable learning in a bigger size group, particularly if they find something difficult to understand that co-workers have no problem with. E-learning permit each individual to tackle the subject at their own pace, with interactive tasks being set in place to make sure a good understanding throughout each course. A large number of people are enrolling for university education today than any other time in the recent past (Nyerere, Gravenir & Msc, 2012; Boit & Kipkoech, 2012).

Thus the demand for University education continues to surpass the supply. Among the measures public universities are pulling in place to cope with increasing demand for higher education and enroll more students is a change in the method of delivery of content from the Face-to–face to E- learning, which involves the use of computer and network enabled transfer of skills and knowledge.

Definition of E-Learning

E Learning is learning utilizing electronic technologies to access educational curriculum outside of a traditional classroom. In most cases, it refers to a course, program or degree delivered completely online.

Derek Stockley (2003) defined E-learning as delivery of learning, training or education Program by electronic means. E-learning involves the use of a computer or electronic device   (eg. A mobile phone).

E- Learning can involve a great variety of equipment than online training or education, for as the name implies, "online" involves using the Internet or an Intranet. CD-ROM and DVD can be used to provide learning materials An e- journey is one type of e- learning. Blended learning is e- learning combined with other training methods.

As stated in http://edutechwiki.unige.ch/en/E-learning there are 3 kinds of definition, E-Learning can refer to:

1) A conceptually simple form of content-based computer-based training (and that shows in "e-instruction standards" like SCORM) plus the addition of some e-tutoringcomponents.
2) Distance education or similar forms of formal open learning (flexible learning, blended distance learning) making use of technology. See also open and distance learning
3) Any form of pedagogical model that makes use of information and communication technology, i.e. what is called "digital learning" in the 2010's and what is covered by the field of educational technology.1

DSchneider believes that there is no commonly accepted definition of e-learning. Most definitions include a subset of existing learning technologies and instructional design principles.

There are many terms used to describe learning that is delivered online, via the internet, ranging from Distance Education, to computerized electronic learning, online learning, internet learning and many others. We define eLearning as courses that are specifically delivered via the internet to somewhere other than the classroom where the professor is teaching. It is not a course delivered via a DVD or CD-ROM, video tape or over a television channel. It is interactive in that we can also communicate with our teachers, professors or other students in our class. Sometimes it is delivered live, where we can "electronically" raise our hand and interact in real time and sometimes it is a lecture that has been prerecorded. There is always a teacher or professor interacting /communicating with us and grading our participation, our assignments and our tests. eLearning has been proven to be a successful method of training and education is becoming a way of life for many citizens in North Carolina.2

As per UNESCO (2005) statement "The eLearning term includes a wide range of uses of such technologies, starting from working with computers and editing with distance education, to which already is drawn more attention. It includes the use CD/DVD-based (offline), network – Intranet or Internet-based (online). The documents of UNESCO highlights that the practices of e – learning offers personalized monitoring coupled with flexibility in the management of learning and greater autonomy in the acquisition of knowledge".

Not everybody feels comfortable learning in a large group, especially if they find something hard to understand that co-workers have no problem with. E-learning allows each individual to tackle the subject at their own pace, with interactive tasks being set in place to ensure a thorough understanding throughout each module.

Stephen, M Mutula (2002) stated after the advent of the Internet and the World Wide Web, universities have used ICTs for:

e-mail communications;
Web surfing;
e-commerce;
internal networking for communications;
sharing resources; and
mobile communications for faster communications, etc.

Research Problem

The Internet infrastructure has rapidly improved in Botswana. The Botho University encourages staff and students to use the Blackboard by providing Lap top to staff members and Tablet to students. There is still a need to investigate level of usage of computers and Tab. by students.

Research Questions

This study has been formulated with following questions in mind:
a. What is the preferred mode of Learning by students?
b. How much time spends in E-Learning tools by students?
c. Is there any challenges faced by students in E-Learning?
d. What is the student's opinion regarding Lecturer's training on E-technology?
e. Is there any difference in means of Utilization of E-learning resources, Area of use of E-learning, Quality

of E- learning usage and opinion about E-learning based on gender?

Objectives

The general objective of the study is to find out the role of E-Learning among graduates students of Botho University. The specific objectives are:

1) To find out the preferred mode of Learning by students in their degree programs.
2) To determine the time spend by students with E-Learning tools
3) To study the challenges faced by students with E-Learning.
4) To find the students opinion on Lecturer training on E-technology.
5) To find out the difference in means of Utilization of E-learning resources, Area of use of E-learning, Quality of E- learning usage and opinion about E-learning based on gender.

Literature Review

A study of this nature requires the support of literature in order to bring the variables and constructs that are being investigated into sharp focus. Literature review also delineates the scope of the study while identifying gaps in the knowledge of the phenomena understudy.

Stephen, M. Mutula (2002) E-learning is the appropriate use of ICTs in teaching and learning towards student oriented, active, open and life-long learning (University of Botswana, 2001). Currently, the University of Botswana is in the process of integrating e-learning strategy into the education process. E-learning initiative at the University of Botswana was borne out of the education, democracy and development initiative (EDDI) project which was initiated by the former US President Bill Clinton as a result of his visit to Africa in 1999. Through EDDI, the University of Botswana has partnered with a consortium of US universities from which it is expected to learn from their experience in implementing e-learning. Through this project a videoconferencing link from the university will be established to Maun which is about 1,000km to the north of the country. It is expected that this project will create an interactive learning environment for all students (University of Botswana, 2001).

Tony, B (2009) has stated in his paper regarding his participation in a workshop held in Bonn, Germany. There were about 30 participants from about a dozen sub-Saharan African countries participated in a workshop in Bonn, Germany for senior African higher education leaders in Integrating e-learning. It was organized jointly by the United Nation's University's Bonn campus, DAAD (The German academic Exchange service) Common Wealth of Learning.

Professor Mama Foupouagnigni, Universit'e Yaound'e 1: Cameroons presented a paper on description of multi-

disciplinary team of professors and support staff developing a strategic plan for e-learning at Universit'e Younde 1.

Speranza Ndege described e-learning activities at Kenyatta University, Kenya Jessica Aguti and Sam Siminyu described e learning activities at Makerere University, Uganda.

Philise Rasugu described recent developments in e-learning at the African Virtual University.

Sekiwu, D and Naluwemba, F studied the role of E-learning in university effectiveness. According to them with the impact of globalization, universities have become competitive in terms of providing quality and flexible educational service. They have also stated that the demand for skilled workforce, with technological to cope with the ever-changing responsibilities at the work place, warrants universities to adjust their teaching strategies beyond face-to face instruction in class.

Tatiana, S (2011) aimed to discuss the role of E-Learning in the new Higher Educational Environment in the digital age which creates student-centered learning and educational practice, offering new more flexible learning methods. According to him in the digital 21st century cannot be achieve high results in learning and educational process without integrating new information and communication technologies in the education system. The development of European higher education, part of which is Bulgarian, is connected with the comprehensive modernization in all areas of learning, research and innovations, and improving the coordination, flexibility and adaptation to the needs of society.

After defining the e-Learning, Tatiana focused on issues related to ICT in Higher Education and new innovative approaches to teaching, learning and assessment based on the use of software applications, multimedia products and web-based information.

The use of enormous integrated set of computer and internet tools and resources in the new learning environments allows us to achieve more efficient and effective training. The students are no longer passive consumers of the educational programs and services, but active participants in the educational process. Their skills and competencies to work effectively with digital technologies are prerequisite for successful and responsible solving and presentation of scientific problems and case studies.

The paper highlights the key role of South-West University in Bulgaria for improvement and development of the educational process supported by modern technology; for facilitating e-learning to help students develop and enrich their learning skills in IT environment.

Emily, B and Billy, K (2015) examine the nature and extent of e learning activities in South African (SA) Universites. This paper findings show that the level of e learning usage and adoption varies in different universities due to several challenges such as those of

technology and institutions. The authors gave an over view of studies conducted in e learning in South African Universities, highlighting challenges and best practices. They also recommended management involvement of faculties in policy decisions and investment in technological innovations to address these challenges issues.

George, L et.al. (2016) assessed the status of e-learning in public universities in Kenya. Data were collected using questionnaires administered to both students and lecturers randomly sampled from seven public universities. Questionnaire responses were triangulated with interviews from key informants and focus group discussions (FGDs). Data were analyzed qualitatively and through use of descriptive statistics. Findings revealed that e-learning is at its infant stage in universities in Kenya. Majority of universities lacked senate approved e-learning policies to guide structured implementation. A few lecturers (32%) and students (35%) used e-learning and few courses (10%) were offered online. Majority of online uploaded modules (87%) were simply lecture notes and not interactive. Again, universities in Kenya lacked requisite ICT infrastructure and skills. The study recommends that universities partner with the private sector to improve ICT infrastructure, build capacity, and standardize e-learning programs in the country.

Methodology

As stated earlier in the introduction, this study was conducted at Botho University at the Francistown campus among the faculties of Accounting, Business and Computing and Health Information Management.

Population and sampling

According to the university's Management Information System (MIS) there are 184 third year students for the academic year 2016-17 who are pursuing degree programs in Accounting, Business, Computing and Health Information Management. Stratified sampling was used to select participants for the study. The four areas of study served as strata for sampling where by one class were picked randomly from each strata. Consequently, 92 students participated in the study. Out of the 92 students 36 (39.13%) majored in Accounting, 16 (17.39%) in Business, 6 (6.52%) majored in Computing and 34 (36.96 %) majored in Health Information Management. The other characteristic of this sample was that there were 68 female and 24 male students.

Instrument

A questionnaire was used to collect data. It went through several stages of development which involved piloting and peer editing. Although the original questionnaire consisted of 54 close-ended and three open-ended questions, after piloting and peer editing, the questions were trimmed down to 50 close-ended and two open-ended items. The items were distributed in five parts of the questionnaire as follows: Part A had five items that gather information about participants' general characteristics such as gender and study discipline and time spends in different modes of E- learning. Part B had thirteen items on utilization of E- resources for learning. Part C had thirteen items on Areas of use E- learning consisted of 5-point Likert scale with items rated from Always to Never. Part D had eight items on the Quality of E-learning usage consists of 5 point Likert scale rated from Very good to Very poor. Part E had eleven items on areas of Belief about E- learning consists of 5 point Likert scale rated from Strongly agree to Strongly disagree.

The questionnaire also contained two open-ended items to gather information on module mostly refer to E-learning and biggest challenges faced by students related to E learning.

Piloting

The instrument was piloted by requesting five students who were not part of the final sample to complete the questionnaire. Based on their responses some questions were modified and edited to improve clarity. A member of staff who was not part of the research team was also asked to look at the questionnaire and edit it, as well as comment on its structure, language use and clarity of concepts. The comments and suggestions were also incorporated in the final questionnaire that was administered to respondents.

Ethical Considerations

The confidentiality of information gathered through the survey was guaranteed since individual responses were not reported. Respondents were also informed that their participation in the study was voluntary. Permission to conduct the study was also sought from the Campus Manager of Botho University, Francistown Campus.

Data Collection Procedure

One member of the research team distributed the questionnaire to the respondents. The respondents completed the questionnaire in the researcher's presence to avoid sharing ideas among the respondents. The respondents took 20 to 30 minutes to complete the questionnaire. The questionnaire was administered over a period of one week in April which is in the second semester.

Data from questionnaire was compiled, sorted, edited, classified and coded into the coding sheet of Statistical Package for Social Sciences (SPSS) version 20. Standard data entry and quality control procedures were used including double entry, range and consistency checks, and manual review of outliers. The positive statements on the Likert scale were coded as "1" Strongly disagree, "2" Disagree, "3" undecided, "4"Agree and "5" Strongly Agree.

Data Analysis

Data collected were coded and the response from the questionnaire arranges and grouped according to individual questions. The data were then entered into appropriate categories in computer work sheets using the Statistical Package for Social Science (SPSS version 20 and Microsoft Excel. Descriptive statistics including means, frequencies and percentages were used to analyze the data. The results were presented in the form of pie charts, graphs and tables.

Results and Discussion

Table 1: Frequency and Percentage of responses based on the variable Gender and Subject

Variable	Frequency	Percent
Gender		
Male	24	26.1
Female	68	73.9
Subject		
Accounting	33	35.9
Business management	20	21.7
Computing	9	9.8
Health Information Management	30	32.6

It is revealed from the Table 1 that 26% males and 74% female students were participated in this study. The information was gathered from these respondents. Respondents among the sample constitute 36%, 22%, 10 % and 33% respectively from departments of Accounting, Business management, Computing and Health Information Management.

The results are presented according to the three research questions underpinning the study.

Research question 1: What is the preferred mode of Learning by students?

In response to this question, the percentage of response to preferred mode of learning has been indicated through pie chart (Fig. 1)
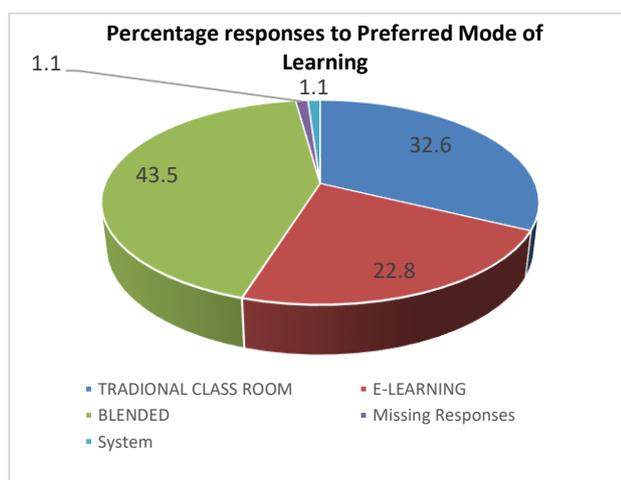

Figure 1 Preference of responses to Preferred Mode of Learning

It is evident from the chart that 43.5% of the learners preferred Blended learning mode followed by 32.6% to traditional classroom learning. 22.8% only preferred E-learning as their mode learning.(See Figure 1)

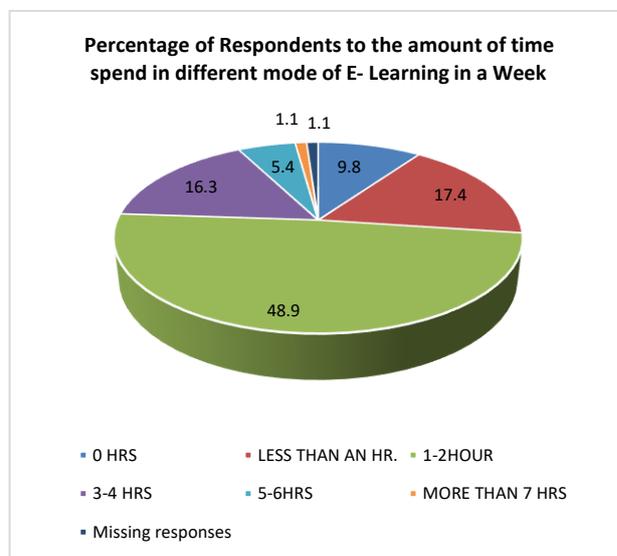Research Question 2: How much time spends in E-Learning tools by students?

Figure: 2 Percentage of responses to amount of time spends in different modes of E- learning

Regarding percentage of responses to amount of time spent in different mode of E-Learning, 48.9% of learners spent 1-2 hours of time followed by 17.4 % spent less than an hour. 16.3% spent 3-4 hours of time and 9.8% spent more than 7 hours. Only 5.4% spent 5-6 hours of time in different modes of E- learning (See Figure 2)

Research question 3: Is there any challenges faced by students in E- Learning?

Regarding challenges faced by students in E- Learning, out of 92 respondent's 40 respondents reported that poor internet connection is a primary issue. Only 5 and 3 respondents reported that down loading and poor audios are an issue. Regarding usage among Business management students, 12 students are using E- Learning for Economic module and 14 students are using E- Learning for E-business module. Among accounting students 9 students are using E- Learning for their accounting module. In computing invariably all the students are using E- Learning. In Health Information Management 16 students are using E- Learning for Medical Terminology and Medical transcript modules.

Research question 4: What is the student's opinion regarding Lecturer's training on E-technology?
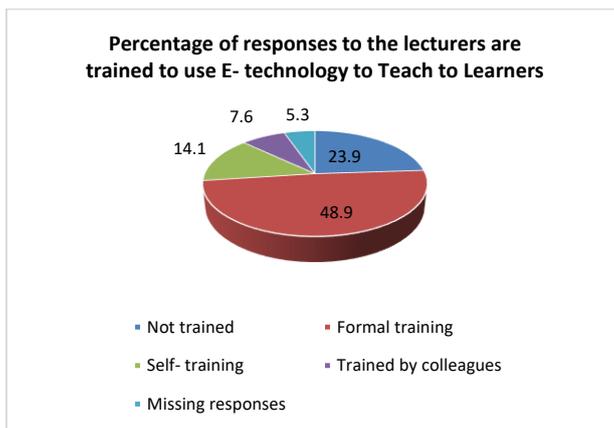
Figure 3 Percentage of responses of Students opinion on Lecturer training on E- technology

According to the students opinion 48.9% of the learner's lecturers are trained whereas 23.9% of lecturers are not trained. Further 14.1% of the students felt that lecturers are self-trained. Only 7.6% felt that lecturers are trained by colleagues (See Figure 3)

Research question 5: Is there any difference in means of Utilization of E-learning resources, Area of use of E-learning, Quality of E- learning usage and opinion about E-learning based on gender?

Table 2 Independent t-Test analysis of Gender, on Utilization of E- learning resources, Area of Use of E- learning , Quality of E- learning usage, opinion about E- learning

Variable	Male (n= 28)		Female (n= 68)				t(688)	
	M	SD	M	SD	Mean difference	SED	value	Sig.
Utilization of E- learning resources	27	8.84	29.87	8.94	-2.86	2.11	-1.35	0.179
Area of Use of E- learning	42.04	8.86	45.96	8.48	-3.91	2.04	-1.92	0.058
Quality of E- learning Usage	27.04	6.1	27.91	6.62	-0.87	1.54	-0.565	0.574
Opinion about E- learning	38.79	5.88	38.71	7.94	0.085	1.77	0.048	0.796

Note. M = mean, SD = standard deviation, SEM = Standard error of mean, *t* = calculated t value, SED = standard error difference, n = number of pre-service teachers.
*p<.05

Table 3 Analysis of variance for Influence of subject specialization on Utilization of E- learning resources, Area of Use of E- learning, Quality of E- learning usage, opinion about E- learning

		Sum of Squares	df	Mean Square	F	Sig.
Utilization of E- learning resources	Between Groups	33.71	3	11.24	.136	.938
	Within Groups	7265.98	88	82.57		
	Total	7299.68	91			
Area of Use of E- learning	Between Groups	380.76	3	126.92	1.714	.170
	Within Groups	6516.85	88	74.06		
	Total	6897.61	91			
Quality of E- learning Usage	Between Groups	590.45	3	196.82	5.393	.002*
	Within Groups	3211.41	88	36.49		
	Total	3801.86	91			
Opinion about E- learning	Between Groups	323.00	3	107.67	2.016	.117
	Within Groups	4699.21	88	53.40		
	Total	5022.21	91			

*. The mean difference is significant at the.05 level.

There is no statistically significant mean difference (see Table 2) on Utilization of E- learning resources male (*M*=27, *SD*=8.84) and female (*M*=29.87, *SD*=8.94), *t* (90) = .-1.35, *p*=0.179. There is no statistically significant mean difference (see Table 2)on Areas of use of E- learning between male (*M*=42.04, *SD*=8.86) and female (*M*=45.96,*SD*=8.48), *t* (90) = .-1.92, *p*=0.058. There is no statistically significant mean difference between male (*M*=27.04, *SD*=6.1) and female (*M*=27.91, *SD*=6.62), t(90)= 0.565, *p* = .574 on quality of E- learning usage . There is

no statistically significant mean difference between male (*M*=38.79, *SD*=5.88) and female (*M*=38.71, *SD*=7.94), t(90)= .048, *p* =0.796 on Opinion about E- learning.

The results of ANOVA analysis shows that the subject specialization shows no mean difference on Utilization of E- learning resources *F* [3,88] = .136, *p*=.938; Areas of use of E- learning *F* [3,88] = 1.714, *p*=.170; and Opinion about E- learning *F* [3,88] = 2.016, *p*=.117. At 95% level of confidence the there is no mean difference on Utilization of E- learning resources, Area of usage of E- learning and Opinion about E-learning. (See Table 3). The results of ANOVA analysis shows that the mean difference on quality of E- learning resources *F* [3,88] = 2.016, *p*=.117; based on subject specialization . Therefore At 95% level of confidence there is mean difference on opinion about E-learning based on Opinion about E- learning based subject specialization.

Discussion

It is true E learning is a familiar concept among students. However the outcome of the study indicated that E learning in Botho University is emerging as an alternative and complimentary pedagogy. The sample size reveals that in Francistown campus of Botho University three fourth of the students are female. Regard to preferred mode of learning only 23 percent of the students prefer E-Learning next to Blended learning and Traditional class room method. In response to amount of time spend in different mode of E-Learning nearly half of the respondents spend 1 – 2 hours of time only. The rest of them spend more than 2 hours. Regard to response of student's opinion on lecturer training on E-technology around 50 percent of learner's lecturer is trained. Among gender there is no difference in means of Utilization of E-learning resources, Area of Use of E- learning, Quality of E- learning usage and Opinion about E- learning. With reference to usage for modules almost 80 percent of the students are using E-Learning for different modules. Particularly the usage of E-Learning is more among Computing and Health Information Management students.

Limitations

The factors examined in this study were not exhaustive. This study was conducted at only one of the campus of a single university on one year batch. Hence the sample may not be representative of students in other tertiary institutions. However despite these limitations, this research has provided insight into the student's response to preferred mode of learning and amount of time spent in different mode of E-Learning in a week.

Conclusion

In this study discussion made on E-Learning usage and amount of time spend in E- Learning, extent of usage among different faculties in different modules, response of student's opinion on lecturer training on E-technology, challenges faced by students and difference in means of Utilization of E- learning resources, Area of Use of E-learning, Quality of E- learning usage and Opinion about E- learning among gender.

With the impact of globalization, universities have become competitive in terms of providing quality and flexible educational services. Creating an enduring vision and a strategic implementation framework to implement technological innovations and E-learning seems critical.

In Botho University has provided tablets for all the students with the primary objective of promoting E-Learning among students. Our teaching mode and assessment mode also mostly oriented to enhance E-Learning method. So still there is a need emphasize usage of E- Learning among our students. Further to avoid students complaints the technical department could focus more in internet connection improvement.

Further Research

Based on the limitation and findings of this study, the author recommends carrying out this study in large scale in different campus of Botho University.

References

[1]. Boit J.M., & Kipkoech, L.C. (2012). Liberalization of higher education in Kenya: Challenges and prospects. International Journal of Academic Research in Progressive Education and Development, 1(2), 33- 41.
[2]. Emily, B. and Billy, K (2015) Evaluation of e learning usage in South African Universities: A critical review. International Journal of Education and Development using Information and Communication Technology
[3]. *(IJEDICT), 2015, Vol. 11, Issue 2, pp. 168-183*
[4]. George L. M. and Dorothy N. M; (2016), Status of E-Learning in Public Universities in Kenya. International Review of Research in Open and Distributed Learning. Vol: 17, No. 3
[5]. Retrieved from www. irrodl.org/ index. Php/irrodl/article/ view/2235/3700
[6]. Nyerere, J.K.A., Gravenir, F.Q., & Mse, G. S. (2012). Delivery of open, distance and e learning in Kenya, International Review of Research in open and distributed Learning*, 13(3), 185- 205.*
[7]. Retrieved from http: // www.irrodl.org.index. Php/ irrodl/ article/view/1120
[8]. Sekiwu, D and Naluwemba, Francis; (2014) E- learning for University Effectiveness in the Developing World. Global Journal of Human Social Science G Linguistic and Education. Vol: 14, Issue 3 Version 1.0 Year 2014.
[9]. Retrieved from http:globaljournals.org/GJHSS_Volume14/10-E-learning-for university-Effectiveness.pdf
[10]. Stephen M. Mutula, (2002) "E-learning initiative at the University of Botswana: challenges and opportunities", Campus-Wide Information Systems, Vol. 19 Issue: 3, pp.99-109, https://doi.org/ 10.1108/10650 740210431916
[11]. Tony, Bates (2009): 4 Comments, Integrating e-learning in African Universities.
[12]. Retrieved from http://www.tony bates. Ca/2009/10/04/ integrating e-learning-is-African university/
[13]. UNESCO (2005): Towards Knowledge Societies. World Report, ISBN 92-3-204000-X.p.84, received from http//www.unesco.org/publications