The current state of e-learning at universities in Zimbabwe: Opportunities and challenges

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ABSTRACT

E-learning is gaining some ground in University education throughout the world. Currently, a large number of universities world–wide support e-learning in different forms. Despite this wide spread adoption of e-learning in university education, research on e-learning adoption suggests that it has not reached its full potential. This paper discusses the opportunities that exist and challenges that hinder the successful adoption of e-learning technology as a medium of instruction at selected universities in Zimbabwe. The findings and comments provided are expected to help universities develop their e-learning strategies. The participants of this study are university lecturers who are beginning to use e-learning. The results indicate that e-learning at most of the universities is still at its infant stage. This research exposes a number of reasons for the limited successes, which are related to infrastructural development, support and pedagogical considerations for e-learning. Universities are investing more and promoting administrative software at the expense of Learning Management Systems (LMS) software that supports teaching and learning. This study recommends that professional development programs with emphasis on e-learning pedagogies as well as the establishment of e-learning support structures should be promoted.

Keywords: *Current state of E-learning, Opportunities and challenges, e-learning and University Education, Universities in Zimbabwe*

INTRODUCTION

Information Communication Technology (ICT) is increasingly becoming more wide spread throughout University education worldwide. This is in line with UNESCO's policy paper for Change and Development in Higher Education which urges Higher Education institutions to make greater use of the advantages offered by the advancement of communication technology to improve the provision and quality of their education. Many universities around the world are turning to the use of ICT, now generally referred to as e learning, as a complement to teacher led tuition on campus (Hazemi and Hailes, 2002).

Although the e-readiness report of 2005 reported a significant trend of concentrating resources towards e-learning, the same noted that the use of new technologies for learning and teaching in Zimbabwe is still at a developmental stage. Only a few institutions of Higher learning were investing in the implementation of virtual learning environments. A focus on blended learning and using technology for efficiency were reported.

However, developments in the use of ICT in teaching and learning have been moving at a fast pace in higher education in the period of less than two years since that report was published, although not all developments have been successful. A policy framework has been put in place

geared towards the support of the utilization of ICTs as a teaching and learning tool. In an endeavor to improve the quality education in Zimbabwe universities are turning to Information Communication Technology (ICT) to develop alternative delivery methods. Findings from the e-learning Readiness Survey (2005) identified the emerging priorities for e-learning and examples of e-learning in Zimbabwe. Many universities in Zimbabwe have recognized the use of e-learning programmes as one of the essential alternative delivery methods for education and training (MSU Strategic Plan, 2006, NUST Strategic Plan, 2006). It has been observed that e-learning has the potential to transform the organization and structure of schooling and may promote the development of higher cognitive processes (Byron and Gigliadi, 2002). It is felt that ICT can increase not only the effectiveness of the educational process, but also its overall efficiency both in terms of classroom activities and administration.

Purpose of the Study

This study explored the use of e-learning universities in Zimbabwe. Its purpose was to provide an overview of the current position of e-learning in Universities in Zimbabwe. The study identified the range of e-learning activities and barriers to its use in Zimbabwean universities.

Research Questions

The study sought to answer the following research questions;

- What e-learning infrastructure and resources are available in universities in Zimbabwe?

- What e-learning activities were engaged in, or are being engaged in universities in Zimbabwe?

- What are the challenges faced by universities as they implement e-learning in teaching and learning?

WHAT IS E-LEARNING: A THEORETICAL FRAMEWORK

The term e-learning has generated many different definitions. It was therefore, part of this study to arrive at a view in every Zimbabwean University as to what is meant by the term e-learning and its practical application.

The concept of e-learning is described in a lot of literature sources to the extent that some authors and e-learning strategies have debated whether there is need to adopt a specific definition of e-learning at all, since it might curb exploration and restrict diversity. It is, therefore, important that we have a definition that is sufficiently broad to incorporate all aspects of e-learning, and that is not rendered obsolete through the introduction of further new technologies.

E-learning in its broadest sense can be defined as instruction delivered via an electronic media including the Internet, Intranets, extranets, satellite broadcast, audio/videotapes, interactive TV and CD-ROM (Rosenberg, 2001, Garrison & Anderson 2000, Carry & Willis, 2001, Hall and Snider, 2000). Similarly, Challis, Lidgey and Robertson (2003) see e-learning as using information and communication technology (ICT) in teaching and learning.

In recent years, computer programs for e-learning consisting of tools such as text, graphics, video, three dimensional objects and animation, have been developed. Virtual classrooms can also be used to broaden education provision. In order to delimit the scope of this research, for it to

be sufficiently focused, Carry and Willis (2001)'s definition is adopted. Carry and Willis (2001) define e-learning as any form of learning that utilizes a computer or technological network for delivery, interaction or facilitation.

The basis of these definitions of e-learning are combination, implementation and relationship of the activities for learning and teaching via different electronic media, whether online or offline. The definitions cited above are potentially relevant to the range of e-learning activities carried out in Zimbabwe.

METHODOLOGY

This study attempted to estimate the current level of practice of e-learning in Zimbabwean Universities. The study allowed the collection of useful information and data in relation to this new mode of teaching and learning. Our considerations are based on questionnaire responses from 86 lecturers, who were randomly selected, as well as interviews with IT directors from four leading universities in Zimbabwe. The sample distribution is shown in Table 1.

Table 1: *Distribution of the sample of the study*

Sex	Number	Percentage
Female	24	36%
Male	46	66%

The questionnaire was designed to collect data on their level of computer expertise, their level of preparedness to adopt e-learning as well as the challenges they faced. The questionnaire had both closed and open end questions. The face validity of the questionnaire was established by giving the questionnaire to experts to comment on its validity.

The questionnaire was administered in person to 86 university lecturers by the researchers. Interviews with IT directors were contacted to clarify certain issues raised in the questionnaire. The results are presented in the next section.

RESULTS

E-Learning Infrastructure: hardware and software

The data collected shows that limited developments have been made in relation to e-learning infrastructure in the universities. The number of network points compared to the numbers of users at each university shows that there is a low computer-user ratio. The bandwidth size is too small for university needs. A summary of the network infrastructure in the four universities is shown in Table 2.

Table 2: *Network Infrastructure*

Network Service	University of Zimbabwe	Midlands State University	Chinhoyi University of Technology	National University of Science and Technology
No. of Network Points	3000	1000	350	4000
No. of Users	12 000	10 000	1 560	6 000
Size of Bandwidth	2Mbps	1 Mbps	2 Mbps	2 Mbps
Cost of Bandwidth per Month	(Z$)140 million	(Z$)120 million	(Z$)130 million	(Z$)10 million
Type of Internet Link	Leased line	Leased line/ Fiber Optics	Leased line	Radio Link Dial-Up

As regards access to computers (Table 3), 77% of the respondents indicated that they had access to computers in their offices. Sixty-nine percent (69%) indicated that they used computers to plan their lectures. As shown in Table 3, a considerable number of respondents, (34%), indicated that they had access to computers for teaching with their students.

Table 3: *Lecturers' Access to Computers*

No.	Question	Yes	No
1	Do you have access to a computer in your office?	66(77%)	20(23%)
2	Do you have access to computers for teaching your students?	29(34%)	57(66%)

(N= 86)

Table 4: *Use of computers by Lecturer*

No.	Question	Yes	No
3	If, yes do you use the computer for planning and developing your lectures?	59(89%)	7(11%)

(N= 66)

As regards software, results show that two universities use open source Learning Management Systems, that is, Claroline and for the National University of Science and Technology (NUST) and the University of Zimbabwe (UZ) as their e-learning platforms. One university has developed its own in-house learning management system (CHANGAMIRE) software. All the universities were providing students with access to online library facilities such as e-journals, e-books, online catalogues and databases. However, it was sad to note that when asked whether there was e-learning management software at the universities, a few lecturers indicated that they were aware there was one (see Table 5). A significant number of lecturers (42) indicated that they had no idea of the availability of LMS platforms at their universities (see Table 5).

Table 5: E-learning software

Software	Number	Percentage
Claroline	9	14%
Moodle	5	8%
Blackboard	0	0%
Any other(CHANGAMIRE)	20	30%
No Idea	42	64%

The level of E-learning practice and activities

The data collected indicate that there is limited utilisation of e-learning resources in teaching and learning at universities in Zimbabwe. As is shown in Table 6, only 26% of the lecturers indicated that they were using the e-learning management software available at their university.

Table 6: E-learning activities

No.	Question	Yes	No
5	If there is an e-learning management software, do you use the software in your teaching	17(26%)	49(74%)

N= 66

The results of the study show that the types of e-learning offered by universities in Zimbabwe are limited to a narrow range of the e-learning spectrum. Interviews with IT directors revealed that most e-learning activities are limited to administrative functions, such as, placement of time tables, semester results, and announcements on the internet. Teaching and learning usage is limited to placement of course outlines, hand outs, website links at the expense of utilisatisation of interactive tools like discussion forums, chat rooms and other interactive activities. The e-learning activities carried out reflect its use as a support tool to the traditional face to face teaching. As shown in Table 6, only 26% of the lecturers indicated that they were using the e-learning management software available at their university.

Lecturer's preparedness

The collected data show that the majority of lecturers at universities in Zimbabwe have a satisfactory level of computer competency. Thirty-eight percent (36%) of the lecturers indicated that they could perform basic functions and could use the computer independently. A further 59% of the lecturers indicated that they were advanced users of computers and could do a number of tasks with the computer. As regards the use of the Internet, the majority of the lecturers (65%) indicated that they were advanced users who could use the Internet to search for information as well as being able to download and upload files on to the Internet. Of the remaining 35%, thirty-one percent (30%) indicated that they had basic skills required to browse and use e-mail independently and 5% indicated that they could not use the Internet independently. The findings are shown in Tables 7.

Table 7: Lecturers' level of computer expertise

No.	Question	Novice	Intermediate	Advanced
6	What is your level of expertise in using computers?	3(5%)	24(36%)	39(59%)
7	What is your level of expertise in using the Internet?	3(5%)	20(30%)	43(65%)

N= 66

Although the majority of lecturers indicated that they had the basic skills required to use computers as teaching and learning resources, a significant number of them lacked confidence in the use of e-learning platforms. As shown in Table 8, 47% of the lecturers expressed some doubt on their level of preparedness to use e-learning platforms available at their universities. Only 30% of the lecturers indicated that were well prepared to assist students in using the e-learning platforms. Of the remaining 70%, 38% indicated that they were not at all prepared and 32% were somewhat prepared. It is, therefore, not surprising that almost all the lecturers (94%) expressed the need for professional development in the use of e-learning platforms (see Table 9).

Table 8: Lecturer's familiarity with the e-learning platform

No.	Question	Not prepared	Somewhat prepared	Very much prepared
8	How prepared do you feel you are to use the e-Learning platform at your university?	16(24%)	31(47%)	19(29%)
9	How prepared do you feel you are to assist students in using the e-Learning Management Software at your university?	25(38%)	21(32%)	20(30%)

N= 66

Table 9: Professional Development needs

No.	Question	Yes	No
10	Do you feel the need for professional development in the use of the e-Learning platform?	62(94%)	4(6%)

N= 66

As shown in Table 9, the majority of the lecturers (95%) expressed the need for professional development in the use of e-learning in their work.

Challenges

Lecturers indicated that they are facing a number of challenges in adopting e-learning resources. As shown in Table 9, the most commonly faced challenges are lack of access to computer laboratories with students (77%), inadequate training for lecturers (76%), problems with Internet access (69%) and lack of computer access in the lecturers' offices(51%). Other significant challenges are: lack of technical support (51%), lack of administrative/initiative at Faculty level (52%) and lack of awareness regarding ways of integrating the software into teaching (52%).

Table 10: Challenges faced by lecturers

No. 11	Challenge	Number (%)
i	Lack of computer access in lecturer's offices	44(51%)
ii	Inadequate training for lecturers	65(76%)
iii	Lack of comfort using computers	16(19%)
iv	Lack of students interest	5(6%)
v	Lack of lecturers' interest	19(22%)
vi	Problems with internet access	59(69%)
vii	The software is too complicated to use	7(8%)
viii	Lack of technical support/advice	44(51%)
ix	Lack of administrative support/initiative at faculty level	45(52%)
x	Lack of awareness regarding ways to integrate the software into teaching	43(50%)
xi	Lack of access to computer lab with your classes	66(77%)

N= 86

Other challenges reported include heavy teaching loads, lack of confidence in e-learning systems by both lecturers and students, old and slow computers and lack of pedagogical support.

DISCUSSION

Although e-learning is proving slow in terms of its adoption in universities, it is clear that all universities feel that they should be offering it to all their students. Universities in Zimbabwe are now interested in improving in their teaching and student learning through the use of e-learning, although the results of this study show that this is being done at a slow pace. Although e-learning has not yet revolutionalised university teaching and learning, it has changed how some businesses are carried out in the universities as well as providing easier access to administrative information, an achievement that should not be downplayed. E-learning has had some impact on administration services such as admissions, registration and fee payment. However, it is clear that this is a limited approach to the adoption of e-learning, since e-learning is supposed to benefit the student in the teaching and learning process. This administrative emphasis is marginalizing its academic use hence making academics shun adopting the innovation.

A university cannot successfully implement e-learning without proper attributes of its infrastructure. It turns out, in this study, that only 20% of the lecturers have access to computers together with their students in the lecture room. The computer-student ratio is very low at all the universities. As Cuban (2001) observes, limited computer access results in limited computer aided learning application. Furthermore, the scarcity of bandwidth impacts negatively on the access to network resources which include access to online journals, databases and other e-resources to which a university subscribes. Given the average bandwidth size available to universities in Zimbabwe, access to these resources is rendered ineffective, with the result that the investment is not used as efficiently as it should.

The slow take up of e-learning by lecturers may partly be due to their lack of awareness of e-learning facilities and their reported lack of preparedness. This can be a result of poor coordination of stakeholders in the universities during the launch and implementation of e-learning programmes. It can also be explained by lack of training as evidenced by the lecturers' expression for the need for professional development. The results indicate that no university in Zimbabwe is offering training and continuing professional development for learning and teaching

staff to enhance their skills, knowledge and competencies for the provision of high quality e-learning.

Results show that e-learning is being implemented haphazardly. Although there is no fixed recipe for successful implementation of e-learning, innovative strategies provide useful guidelines that can assist in the creation of an effective e-learning strategy. A centralized policy-making, or administrative structure, in Universities is critical to implementing an e-learning program in a consistent, effective, and efficient manner. Although almost all the universities have some form of a central strategy for e-learning or are in the process of developing one, there is lack of guidance for lecturers as to how they could implement the strategies. It is clear that universities should align their strategies to incorporate e-learning infrastructure. The results of the study show that the adoption of e-learning programmes in Zimbabwean universities is characterized by a lack of vision, leadership and sound management of the numerous variables that form a part of change within this context. This observation was made by Green (1996) who noted that less than half (43.4%) of American colleges and universities have a strategic plan "identifying institutional goals, objectives, or implementation priorities for the role of information technology in instruction and scholarship", which could prove fatal to future success of educational institutions. In Zimbabwe, although all the universities strategic plans have room for the adoption of e- learning in their teaching programmes, they do not have strategies in terms of who is responsible for what during implementation.

CONCLUSIONS AND RECOMMENDATIONS

The findings of this research seem to indicate that there is a slow rate of adoption of e-learning by university lecturers. The use of e-learning in universities in Zimbabwe has not been fully embedded into the University's teaching culture and practice.

If the provision of e-learning is to become a key element of University education, authorities will need to provide a major program for staff development and training (Copeland, 2001). As Inglis et al (1999) observe, academic staff is appointed on the basis of their subject expertise rather than any proficiency in the areas of pedagogical design and Information Communications Technology (ICT). As has been argued in this paper, the introduction of e-learning technologies should always be driven by pedagogical considerations, not by the demands of the technologies themselves. Considering the results of this research, it seems unnecessary to argue for specific computer skills for lecturers, as a solution to the problem experienced by lecturers in the implementation of e-learning in university education. Although ICT skills are necessary for implementation of an e-learning program, the move towards e-learning delivery should put special emphasis on pedagogical techniques. This calls for a well prepared professional development program to be established to support lecturers in the effective implementation of e-learning (Ellis & Phelps, 2000). The professional development training required is one that facilitates and ensures that e-learning technology is successfully integrated into the daily routines as well as ensuring that its use will be efficient and effective (Wilson, 2001).

Professional development, as Taylor (2003:75) describes it, is "the catalyst which allows the evolutionary process to move forward less catastrophically…". Indeed, if a move towards online learning is to be seen as strategically important, then policies and practices regarding professional development have to be a leading area of concern (Taylor, 2003; Maguire, 2005) and one that should be coordinated at university top management levels. Given the discipline-based needs of e-learning development and the need to root these pedagogical requirements into the particular Faculty's teaching and learning activities , link-staff should be hired to work in each Faculty to facilitate the adoption of e-learning. Lecturers should be offered training and support through their Faculties alongside that for ICT skills.

University development seems to work best when supported by a range of strategies (Bates, 2000). An institutional strategic plan is essential as the first step in the development of e-learning. To enable the University to manage its e-learning developments, it is recommended that an e-learning strategy has to be developed with wide consultation. The strategic plan should seek, among other things, to:

- identify the university curricular areas where e-learning methods could be employed to best effect, and promote use of e-learning in these areas;

- establish mechanisms to support academic staff in using e-learning facilities and tools to best effect in the development and delivery of courses;

- ensure that the quality of course delivery is maximised by using a blended approach that uses the best of traditional and e-learning methods; and

- review the types of support needed by students, and ensure that these are provided in a timely and effective manner.

It is recommended that an e-learning development and support team including IT members, Faculty and/or department based staff be established. The e-learning support strategy should emphasise the importance of partnership between Faculties and Universities' ITS department in providing e-learning infrastructure and support to lecturers and students. Resistance to change is therefore likely to be overcome if academic staff is fully involved or have full ownership in the design, development and implementation of these changes. Academic staff has to have an understanding of their new roles and the results eventually produced are truly ascertainable (Welsh & Metcalf, 2003; Rockwell et al., 2000; Lewis, 1998).

The e-learning development and support team would have the mandate to establish an e-learning strategy, which would facilitate the:

- provision of an e-learning infrastructure and a range of e-learning tools that have high quality specifications;

- collaboration among faculties and departments in the provision of information, training and support required by lecturers and students in the use of e-learning tools and facilities;

- establishment and use of appropriate standards and specifications in e-learning development, including conformance with accessibility guidelines and standards; and,

- provision of support to lecturers in their evaluations of e-learning developments and where appropriate, carry out such evaluations, especially at institutional level.

- establish collaboration with other universities and outsource expertise.

It is further recommended that partnerships and networks be established across the universities as a possible way forward for the development and diffusion of e-learning in university education in Zimbabwe. Partnership and network building are useful for allowing access to new knowledge, to learn from others experience and exchange of information about the latest developments in e-learning. Such partnerships can also provide a channel for sharing material, joint technology and software development, joint research and development, joint training and connectivity among other things.

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