THE ADOPTION OF E-LEARNING AT MIDLANDS STATE UNIVERSITY: OPPORTUNITIES AND CHALLENGES

By

Lockias Chitanana[1]
Midlands State University
Department of Educational Technology
Zimbabwe

Abstract

This paper discusses the opportunities and the challenges that hinder the successful adoption of e-learning technology as a medium of instruction at the Midlands State University. The respondents of this study were university lecturers who are beginning to use e-learning. The results indicate that e-learning at the Midlands State University is still in its infancy. The use and exploitation of e-learning has been slower than what is expected, especially measured against its potential as a medium of instruction. This research suggests that there are a number of reasons for the limited successes, which are related to infrastructural development, support and pedagogical considerations for e-learning. This study recommends that the university initiates professional development programs with emphasis on e-learning pedagogies as well as the establishment of e-learning support structures.

Introduction

The use of e-learning to deliver high quality teaching and learning is becoming a critical component of university education, and is seen as key to excellence in modern higher education. Research suggests that universities that fail to embrace this technological progress will be unable to meet the needs of a knowledge-based society and as a result will not survive the increasing demand for university education. Volley and Lord (2000) argue that universities that do not embrace the opportunities presented by technological development will be left behind in the race for excellence in education. The traditional academic model of university lecturers as 'the source of knowledge' with a mission to transmit this knowledge through lectures and publications is undergoing profound change. E-learning is bringing about new approaches in content creation and delivery. Learning and teaching are changing as we explore the possibilities presented by new technologies, for example through the creation and use of databases and other digital learning and teaching resources.

In keeping with these global trends in university education, the Midlands State University has committed itself to the use of e-learning technologies and the virtual classroom as a principal

---

[1]*Lockias Chitanana is a Lecturer in the Department of Educational Technology, Midlands State University, P Bag 9055, Gweru, Zimbabwe. Email* ***chitananal@msu.ac.zw***

mode of teaching and learning (MSU Strategic and Business Plans 2005). As one of its key result areas, the university aims at taking advantage of the opportunities presented by the information technology revolution to enhance teaching and learning as well as research output and dissemination of knowledge. In order to achieve this goal, the Midlands State University is rapidly bringing e-learning into the mainstream of its educational programs. Over the last few years there has been a phenomenal expansion in Information Communication Technology (ICT) infrastructure, and support structures. The University has moved rapidly to acquire the relevant ICT infrastructure and support systems necessary to enter the e-learning market place. In some areas this has involved setting up of new structures, while in others it has involved upgrading the existing infrastructure. For example, the University has set up a state of the art Virtual University computer laboratory as well as developing a highly interactive and easy to use e-learning platform called Changamire. The Changamire platform allows lecturers to upload learning materials for students. Through its communication tools, that is, the discussion forums and email, Changamire increases the possibility to expand student/ lecturer interaction beyond the classroom. In order to tap the opportunities offered by ICT the University has expanded its local network to include lecturers' offices and selected lecture rooms. To facilitate the smooth adoption of e-learning, additional computer laboratories have been set up at other university sites outside the main campus, including the Hellenic Computer Centre which has been established at the heart of the Gweru city. The University has also established a fibre network and increased its bandwidth to 512 bits/sec.

In order to ensure that students obtain maximum benefits from the information communication development, all students in their first year do a compulsory module on Introduction to Information Technology. This module prepares students in the use of computers as research and communication tools among other things. In addition, the electronic library section of the University Library, gives students special lectures on how to use the Internet to carry out educational research. The challenge now is to support university lecturers in the new teaching and learning environment characterised by easy access to information.

What Is E-Learning?

It should be noted that there is no one universal definition of the term e-learning. The concept of e-learning began decades ago with the introduction of television and over-head projectors in classrooms and has expanded to include interactive computer programmes, 3D simulations, video and telephone conferencing and real-time online discussion groups comprising of students from all over the world. In literature, the term has been defined in various ways. Romiszowski (2004) found more than 50 different definitions of the term. One of the reasons for the multiplicity of meanings offered for e-learning has to do with the confusion arising from the convergence of older traditions, as well as the newness of the underlying technology. For example, the merging of television and computers in products like Web-TV as well as the delivery of web content to devices like the new generation of mobile phones and PDAs (giving rise to talk of "m-learning"), all of which means that e-learning itself is constantly

changing as new opportunities are created by the increasing sophistication and popularity of the underlying technology.

One of the most widely used definitions of e-learning describes it as 'the use of digital technologies and media to deliver, support, and enhance teaching, learning, assessment and evaluation' (HEA/LTSN Generic Centre, 2003). Another relevant definition is the one given by the Commission of the European Communities (2001), which sees e-learning as "the use of new multimedia technologies and the Internet to improve the quality of learning by facilitating access to resources and services as well as remote exchanges and collaboration". Thus, in the broadest sense e-Learning could be viewed as the employment of technology to aid and enhance learning. In this sense e-learning would encompass activities ranging from the most basic use of ICT for example, use of PCs for word processing of assignments, through to more advanced adoption, such as the use of specialist disciplinary software, learning management systems, artificial intelligence devices, simulations etc. with a presiding interest in more advanced applications. This could be as simple as High School students watching a video documentary in class or as complex as an entire university course provided online. As technology advances, so does e-learning, thus making the possibilities endless. Thus, the concept of e-learning has evolved with the advancement in technology to what it is today. Today e-Learning has become an all-inclusive term for using information communication technology to deliver learning and training programs electronically. Based on the above we may have to satisfy ourselves by saying that e-learning is an area of learning practice which has to do with the use of the emerging and merging information communication technologies (ICT) for learning/teaching purposes.

Research objectives

The aim of the study is to assess the opportunities and challenges for the adoption of e-learning at Midlands State University. The study examines the effort made by the University to introduce e-learning as a principal mode of teaching and learning. In particular, the study seeks to assess the lecturers' readiness to take up e-learning as well as identifying some logistical problems that are being encountered.

The rationale behind e-learning

Literature on the subject of e-learning suggests many reasons for introducing new technologies in education. Appropriate use of e-learning approaches can enhance the existing teaching and learning strategies and can enable lecturers to develop new strategies which were not previously possible without e-learning technology. Furthermore, e-learning has the potential to increase the efficiency of interaction between lecturers and students. According to Bates (2000) the main motives for establishing e-learning are to improve the quality of learning, to provide learners with information technology skills needed for their professional development, to widen access to education, to respond to the 'technological imperative', and to reduce

costs and improve cost-effectiveness. These correspond very closely with the reasons identified by Uys (2000), which are flexibility, links to the emerging culture of post-modernism, cost-effectiveness of delivery, improvements in the quality of learning, and addressing the increase in demand for higher education.

The major advantage of e-learning to students is its easy access. E-learning can provide a student with information that can be accessed in a setting that is not constrained by time and place. The student can go through the lessons or content at his or her own pace. This global reach offered by e-learning, allows learning institutions to offer a wide variety of learning options regardless of the learner's location. E-learning can be delivered anywhere in the world as long as the appropriate equipment and infrastructure are present. For many universities, increasing flexibility of learning is the most common reason for introducing e-learning methods. For the Midlands State University, e-learning has the potential to increase access to university education for the different types of students who include conventional, parallel, visiting and block release students. Furthermore, e-learning could enhance the University's policy of flexible packaging by adding an element of flexible delivery of learning material.

With the massification of university education going on in Zimbabwe, e-learning could help universities meet the increasing demand for university education using the dwindling resources. Other benefits, such as just-in-time delivery, reduced travel, lower costs, and increased variety, are added to the appeal of e-learning. E-learning, especially when the content is delivered on a CD-ROM or the web, can provide learning material in a media-rich format, including such multimedia forms as audio and video. Furthermore, e-learning can provide instant feedback to students. The student's progress and achievement can be assessed and feedback provided in an interactive environment.

Methods

The participants of this study were lecturers at the Midlands State University. A total of 80 lecturers were selected using a stratified random selection method. During the determination of the sample demographic factors such as age, educational experience and gender were considered. This was done to ensure that the full picture of e-learning activities and concerns were represented.

The selected lecturers were asked to complete a questionnaire which 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 was pilot tested on a few lecturers who were not going to participate in the study. The administration of the instrument was personally handled by the researchers and in some areas with the aid of research assistants. A total of 80 copies of the questionnaire were administered to the sampled lecturers and returned. This gave a 75% percent return rate. Data collected were subjected to statistical analysis using descriptive statistics.

Results

Lecturer Access and Use of Computers

As regards access to computers, 70% of the respondents indicated that they had access to computers in their offices while 30% did not have. Of those respondents who had access, only 57% indicated that they used the computers to plan their lectures, 43% used computers for other purposes. A considerable number of respondents 27% indicated that they had access to computers for teaching with their students compared to 73% who indicated otherwise. It was encouraging to note that 85% of the lecturers were aware that there was e-learning software that had been developed for them to implement e-learning in their teaching. However, it was disheartening to note that only 47% of the lecturers indicated that they could use the MSU e-learning platform to enhance their teaching. The results are summarised in Tables 1.

Table1: Lecturers' access to computers

No.	Question	Yes	No
1	Do you have access to a computer in your office?	42(70%)	18(30%)
2	If yes; do you use the computer for planning and developing your lectures?	34 (57%)	26 (43%)
3	Do you have access to computers for teaching your students?	16 (27%)	44 (73%)
4	Are you aware that MSU has an e-learning platform (Changamire)?	51 (85%)	9 (15%)
5	Can you use the MSU e-learning platform to enhance your teaching as well as your students' learning?	28 (47%)	32 (53%)
10	Do you feel the need for professional development in the use of the MSU e-learning platform?	57 (95%)	3 (5%)

Lecturer's Perceived Competence in Computer Operation Skills

The collected data shows that the majority of lecturers at the Midlands State University have some satisfactory levels of computer expertise. Fifty percent (50%) of the lecturers indicated that they could perform basic functions and could use the computer independently. A further 45% 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 (63%) indicated that they were advanced users who could use the Internet to search for information as well as transferring and attaching files on e-mail. Of the remaining 37%, thirty-two percent (32%) indicated that they have basic skills required to browse and use e-mail independently and 5% indicated that they could not use the computer independently. The results are shown in Tables 2.

Table 2: Lecturers' level of computer expertise

(n= 60)

No.	Question	Novice	Intermediate	Advanced
6	What is your level of expertise in using computers?	3(5%)	30 (50%)	27(45%)
7	What is your level of expertise in using the Internet?	3 (5%)	19 (32%)	38 (63%)

Level of lecturer preparedness to adopt e-learning

Although the majority of lecturers indicated that they had the basic skills required to use computers as teaching and learning resources, a majority of them indicated that they are not well prepared to use the MSU e-learning program. As shown in Table 3, the majority of the lecturers (67%) expressed some doubt on their level of preparedness to use the MSU e-learning program. Only a minority (27% of the lecturers) indicated that they are well prepared to assist students in using the e-learning programme. The majority (73%) either doubted their preparedness (30%) or were not at all prepared (43%) to assist students in using the e-learning programme (see Table 3). It is therefore not surprising that almost all the lecturers (95%) expressed the need for professional development in the use of the MSU e-learning programme.

Table 3: Lecturers' level of preparedness to use the MSU e-learning software

(n= 60)

No.	Question	Not prepared	Somewhat prepared	Very much prepared
8	How prepared do you feel you are to use the MSU e-learning platform?	13 (22%)	27(45%)	20(33%)
9	How prepared do you feel you are to assist students in using the MSU e-learning platform?	26 (43%)	18 (30%)	16 (27%)

Challenges Faced by Lecturers Using the MSU e-learning Platform

Lecturers indicated that they are facing a number of challenges in adopting the MSU e-learning program. As shown in Table 4 the most commonly faced challenges are lack of access to computer laboratories with together with their students (75%), inadequate training for lecturers (72%), problems with Internet access and lack of computer access in the lecturers' offices. Other significant challenges are: lack of technical support (47%), lack of administrative/ initiative at Faculty level (45%) and lack of awareness regarding ways of integrating the software into teaching (43%).

Table 11: Challenges faced by lecturers **(n=60)**

No. 11	Challenge	Number	Percentage
i	Lack of computer access in lecturer's offices	32	53%
ii	Inadequate training for lecturers	43	72%
iii	Lack of comfort using computers	7	12%
iv	Lack of students' interest	3	5%
v	Lack of lecturers' interest	11	18%
vi	Problems with internet access	37	62%
vii	The software is too complicated to use	6	10%
viii	Lack of technical support/advice	28	47%
ix	Lack of administrative support/initiative at faculty level	27	45%
x	Lack of awareness regarding ways to integrate the software into teaching	26	43%
xi	Lack of access to computer lab with your classes	45	75%

In addition to the challenges shown in Table 4, some lecturers (45%) pointed out that some offices, especially those located out of the main campus, were not connected to the local area network. A significant percentage of lecturers (64%) indicated that the Internet speed was very slow. A substantial number of lecturers (62%) indicated that they were sharing computers. Commenting on this issue, one lecturer wrote that: "Limited access to computers in the office makes one spend days without accessing it as the computer which is available may be occupied by colleagues the time one wants to use it." Some lecturers (20%) mentioned that they had problems with old computers which were not functioning well. Other challenges reported included lack of office space (16%), lack of student access to computers (17%) and lack of student awareness to e-learning (17%).

Discussion

The findings of this research confirm Harris (2002)'s observation that the problem of implementing e-learning in higher education seems to be mainly a planning problem. Academics just cannot be expected to embrace new learning initiatives merely because of verbal encouragement (Dooley & Murphrey, 2000) or through the "build it and they will come" approach (Bower, 2001). Like in the adoption of any new curriculum innovation, the sustainable implementation of e-learning requires careful planning which has to consider the strategic, organizational, and pedagogical dimension within the University, otherwise e-learning will remain an innovation without change. A critical factor in introducing e-learning programmes is the readiness of lecturers to adopt such an approach. According to Kember (1997) the reason for the way e-learning is adopted in tertiary education lies, most likely, in the adopters' approaches to teaching, in general, which are often the result of their conceptions about teaching and learning. Recent research by Robertson (2004) also indicates that university teachers use ICT tools only if they are aligned with their beliefs about teaching and learning,

and in the way that aligns with these beliefs. If potential adopters do not realise that they have a need for e-learning, the role of professional developers, as change agents, is to help them evaluate and assess their needs. A good professional development program is one that builds awareness in the lecturers about the strengths, weaknesses, potential, and effective strategies of implementing e-learning as well as enabling them to construct better e-learning environments.

Another critical feature to the success of any initiative is the backing it receives from what Rogers (1995) classifies as the mainstream early and late majority innovator adopters, who normally make up 68% of the total staff. Although the majority of lecturers indicated they were comfortable with using the computer and the Internet, a majority of them felt that they were not adequately prepared to embrace e-learning in their teaching. The findings indicate that only 47% of the lecturers could use the MSU e-learning platform. These fall short of the critical mass of users needed for e-learning innovation to succeed.

This result confirms earlier research findings which suggest that use of e-learning in teaching practice is not only about mastery of the computer skills but also about adopting new pedagogical approaches to meet the new demands of virtual learning. For example, Bates (2000) and Rodriguez and Wilson (2000) argue that knowing how the technology works is not sufficient. Instead, teachers must become knowledgeable about technology and self-confident enough to integrate it effectively in the classroom. Lectures, in short, must become "fearless in their use of technology" and empowered by the many opportunities it offers (Rodriguez and Wilson, 2000). For technology to become a core component of teachers' instructional repertoire, they require not only familiarity with the equipment or medium but recognition of and skill in exploiting the most productive ways of using it to promote learning. This is confirmed by the results which show that although 95% of lecturers indicated that they had the required level of competence to use computers and the Internet effectively but only a few of them (33%) indicated that they were prepared to use the Changamire e-learning platform. Many lecturers do not have the knowledge or skills to recognize the potential for technology in teaching and learning. The result that 95% of the lecturers indicated that they needed professional development in the use of the e-learning platform confirms other research findings which suggest that e-learning technology has been virtually thrown at teachers with provision of little or no training or support (Zemsky and Massy, 2004), lending little motivation for them to use the technologies. Zemsky and Massy's (2004) report on the failed uptake of e-learning in America, suggests that the promised boom in e-learning did not eventuate as expected because e-learning took off before people really knew how to use it. When a new technology is introduced, such as e-learning, it creates the opportunity to innovate and change existing processes. However, e-learning adoption research evidence indicates that the implementation stage has been introduced before educators were prepared for the changed teaching and learning environment.

Earlier research has shown that lack of pedagogical adaptation is one of the more compelling reasons for technology's lack of success (Detweiler, 2004; Zemsky and Massy, 2004). Along

with the use of technology in the classroom must come a new approach to teaching. Piskurich (2004) stated that key skills required for the e-learning include the ability to set learning goals, develop a learning plan, identify resources for learning (both human and material), implement the plan and evaluate the learning. The effective use of e-learning in university education places the lecturer in a position of having to learn and implement new skills and pedagogical strategies. The way in which e-learning is delivered is new and different, and lecturers must be trained to make the most of updated teaching methods. For effective e-learning to take place lecturers should understand how the technology can be applied to their own context (Bennett, Priest & Macpherson, 1999). Instructional methods that work for students sitting in the back row of a science lab may not reach students at the far end of a cable-modem line. Laurillard (2001) also argues that innovation in course design is conditional on staff development and up-skilling and new kinds of pedagogy require new knowledge. For e-learning to be viewed as an educational innovation it requires reconceptualisation of traditional teaching and learning paradigms, especially in relation to the roles of teachers. For e-learning to realise its potential, university lecturers need to be able to construct effective environments that facilitate learning. In addition, lecturers need to know why it is important to use the technology in teaching. If these conditions are not met, e-learning will continue to have only a modest impact on teaching and learning due to the lack of training in pedagogical skills for those seeking involvement in e-learning.

Another essential element to the smooth running and development of e-learning is the provision and maintenance of adequate infrastructure. Central to the smooth running and development of e-learning is the provision and maintenance of an adequate ICT infrastructure. Although the results of the research show that the majority of lecturers (70%) have networked computers in their offices some of them indicated that they were sharing computers, a situation which they said was very inconvenient. Furthermore, the results show that lecturers face a number of challenges which hinder the smooth adoption of e-learning in the University (see Table 11). Earlier studies have shown that academics are reluctant to get involved with e-learning initiatives if there is inadequate equipment and facilities to tackle new approaches; poor technical and administrative support; a perceived lack of time; the pressure of research activities; feelings that it might lower quality of courses; a general resistance to management-imposed approaches; as well as a scarcity of appropriate professional development (Butler & Sellbom 2002, Hanson 2003, Kirkpatrick 2001, Lee 2001, McKenzie et al. 2000, Williams 2002). The University will need to strike an appropriate balance in planning for the provision of e-learning infrastructure and support facilities. The central provision of facilities and support by the University will be an essential precondition for successful adoption and development of e-learning programs. Adequate pedagogical and technical support is indispensable for e-learning to succeed. It is important to note, as the lecturers themselves suggested, that for e-learning to be successful every lecturer must have his/her own computer and unlimited access to the Internet.

Conclusion and Recommendation

The use of e-learning at the Midlands State University has not been fully embedded into the University's teaching culture and practice. The findings of this research seem to indicate that there is a slow rate of adoption of e-learning by lecturers. This is why research in e-learning adoption discussed above indicates that the roots of the problems with e-learning are primarily associated with teaching and learning processes, rather than with the use of technology per se. If the provision of e-learning is to become a key element of University education, authorities will need to provide a major programme for staff development and training (Copeland 2001). 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 co-ordinated at university top management level. Professional development, as Taylor (2003:75) describes it, is "the catalyst which allows the evolutionary process to move forward less catastrophically…"

However, considering the results of this research, it is not enough 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 in addition put some special emphasis on pedagogical skills. Professional development training has to focus both on the development of technical skills (e.g. how to use a specific package) and the pedagogical aspects of utilising e-learning (i.e. the development and delivery) of e-learning. Amirian (2003) found that, in fact, lecturers need ongoing development in order to integrate technologies successfully by adapting teaching methods to technologies they have learned how to use well. She suggested that professional development can help lecturers to do two things: firstly to feel comfortable with the hardware and using the technologies and secondly to create learning opportunities that are designed to take advantage of the capabilities of the technology. As Ellis & Phelps (2000) argues, this calls for a well prepared professional development program to be established to support lecturers in the effective implementation of e-learning. 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 pedagogical training and support through their Faculties alongside that for ICT skills.

It is also important that the University enhances the capacity for e-learning research activities; to pursue new aspects within the area; and add an e-learning dimension to existing teaching and learning processes as well as the research interests among lecturers. This work can be supported by the e-learning Fellows who, operating at Faculty level can enable the development and co-ordination of e-learning activities in a way that is tailored to the needs of each Faculty.

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 curricula 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 the Faculties and the University's 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 are fully involved or have full ownership in the design, development and implementation of these changes; they have to have an understanding of their new roles; and the results eventually produced are truly ascertainable (Welsh & Metcalf, 2003; Rockwell, Schauer, J., Fritz, & Marx, 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 conformity 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.

It is important to note that, although e-learning may represent a powerful tool to support university teaching and learning, successful implementation of this mode of learning requires careful planning and consideration of a number of important factors. Recognition of each of the conditions essential for the effective use of e-learning will be helpful in guiding the planning and implementation process. It is also critical to involve all of the stakeholder groups in the process of developing a shared vision of the role of e-learning for university education.

References

Amirian, S. (2003). *Pedagogy and Videoconferencing: A review of recent literature.* Presented at the First NJEDge.NET Conference, Plainsboro, NJ, October 31, 2003. Retrieved December 12, 2006 from the World Wide Web: http://www.iclassnotes.com/amirian_megacon.pdf.

Bates, A.W. (2000). *Managing Technological Change. Strategies for College and University Leaders*. San Francisco: Jossey-Bass.

Bennett, S., Priest, A. & Macpherson, C. (1999). Learning about online learning: An approach to staff development for university teachers. *Australian Journal of Educational Technology*, 15(3), 207-221. [Online] Available: http://cleo.murdoch.edu.au/ajet/ajet15/bennett.htm

Butler, D. & Sellbom, M. (2002). Barriers to Adopting Technology for Teaching and Learning. *Educause Quarterly*, 2002(2). Retrieved 5 April, 2007, from http://www.educause.edu/irlibrary/pdf/EQM0223.pdf

Bower, B.L. (2001). Distance education: facing the faculty challenge. The Online *Journal of Distance Learning Administration*. *IV (II)*. Retrieved October 30, 2006, from http://www.westga.edu/~distance/ojdla/summer42/bower42.html.

Commission of European Communities (200 1) Communication from the Commission to the Council and the European Parliament, The eLearning Action Plan: Designing tomorrow's education, COM (2001) 172, Brussels, 28.3.2001 retrieved on 30 April 2007 from http://europa.eu.int/comm/education/elearning/index.html

Copeland, R. (2001). The usual rules apply online, times, Higher Education supplement.
Detweiler, R. (2004). At last, we can replace lectures. *The Chronicle of Higher Education,* Section: The Chronicle Review, 50(44), B8.

Dooley, K.E. & Murphrey, T.P. (2000). How the perspectives of administrators, faculty and support units impact the rate of distance education adoption. Retrieved on October 26, 2006 from http://www.westga.edu/~distance/ojdla/winter34/dooley34.html.

Ellis, A. & Phelps R. (2000). Staff development for online delivery: A collaborative, team based action learning model. *Australian Journal of Educational Technology (AJET)*, *16*(1), 26-44. Retrieved 5 April, 2007, from http://www.ascilite.org.au/ajet/ajet16/ellis.html

Hanson, J. (2002). Developing a strategic approach to using online learning in vocational higher education. In: The New Educational Benefits of ICT in Higher Education, 2-4 Sept 2002, Rotterdam, pp. 214-220.

Harris, K.(2002). E-learning: An application whose time has come, in Lundy, J & Logan, D (eds) *Elearning content: a web content management challenge*. (Online) Gartner Research. Research Note number M-18-3798, 24 October 2002. Retreaved 31 October 2006 from: http://gartner.unisa.ac.za/research/111000/111041/111041.html

Inglis, A., Ling, P. & Joosten, V. (1999). *Delivering Digitally: Managing the Transition to the Knowledge Media*. London: Kogan Page.

Kember, D. (1997). A reconceptualisation of the research into university academics. conceptions of teaching. *Learning and Instruction, 7*(3), 255.275.

Kenny, J. (2001). Where academia meets management: A model for the effective development of quality learning materials using new technologies. In G. Kennedy, M. Keppell, C. McNaught, & T. Petrovic (Eds.)*, Meeting at the Crossroads.*

Proceedings of the 18th Annual Conference of the Australian Society for Computers in Learning in Tertiary Education. (pp 327-334). Melbourne, Biomedical Multimedia Unit, The University of Melbourne.

Kirkpatrick, D. (2001). Staff development for flexible learning. *The International Journal for Academic Development*, *6*(2), 168-176.

Laurillard, D. (2001). The E-University: What have we learned? *The International Journal of Management Education*. 1(2), 3-7.

Lee, J. (2001). Instructional Support for distance education and faculty motivation, commitment, satisfaction. *British Journal of Educational Technology*, *32*(2), 153-160.

Lewis, R. (1998). Staff Development in Conventional Institutions moving towards Open Learning. In C. Latchem & F. Lockwood (Eds.), *Staff Development in Open and Flexible Learning*. London: Routledge.

Maguire, L. L. (2005). Literature Review–Faculty Participation in Online Distance Education: Barriers and Motivators. *Online Journal of Distance Learning Administration*, *VIII* (I). Retrieved 30 May, 2007, from http://www.westga.edu/%7Edistance/ojdla/spring81/maguire81.htm

McKenzie, B. K., Mims, N. Bennett, E. & Waugh, M. (2000). Needs, Concerns and Practices of Online Instructors. *Online Journal of Distance Learning Administration*, *III*(III). Retrieved 6 February, 2007, from http://www.westga.edu/~distance/ojdla/fall33/mckenzie33.html

MSU 2005-2015 Strategic and Business Plans.

HEA/LTSN Generic Centre, (2003). A Guide for Learning Technologists - LTSN Generic Centre, E-Learning Series 4 in Lancaster e-learning strategy (2006). Retrieved on 20 April 2007 from http://www.lancs.ac.uk/celt/celtweb/files eL%20Strategy%20Final%202006.pdf

Piskurich, G. (2004). Getting the most from online learning. San Francisco: Pfeiffer.
Robertson, I. (2004). *Teachers at the interface: A model of implementation.* Paper presented at the AARE conference, Melbourne. Retrieved 30 April 2007 from http:// www.aare.edu.au/04pap/rob04192.pdf

Rockwell, K., Schauer, J., Fritz, S.M. & Marx, D.B. (2000). Faculty Education, Assistance and Support Needed to Deliver Education via Distance. *Online Journal of Distance Learning Administration*, *III*(II). Retrieved 30 April, 2007, from http://www.westga.edu/ ~distance/rockwell32.html

Rodriguez, F. & Wilson, E. (2000). *Are poor countries losing the information revolution?* InfoDev Working Paper, World Bank.

Rogers, E. M. (1995*). Diffusion of Innovation* (4th ed.). New York, NY: The Free Press.
Romiszowski A. J. (2004). How's the E-learning Baby? Factors Leading to Success or Failure of an Education Technology Innovation. *Education Technology* Jan-Feb 2004 pp 48.

Taylor, J.A. (2003). Managing Staff Development for Online Education: A situated learning model. *Journal of Higher Education Policy and Management*, 25(1), 75-87.

Voley, T. & Lord, D. (2000). Critical success factors in online education. *The International Journal of Educational Management*, 14 (5), 216-223.

Welsh J. F. & Metcalf, J. (2003). Cultivating Faculty Support for Institutional Effectiveness Activities: benchmarking best Practices. *Assessment & Evaluation in Higher Education*, *28*(1), 33-45.

Williams, P. (2002). The Learning Web: The development, implementation and evaluation of Internet-based undergraduate materials for the teaching of key skills. *Active Learning in Higher Education*, 3, pp. 40-53.

Wilson, G. (2001). The promise of online education: EL Dorado or Fool's Gold? *The Educational Technology Journal*, 11 (1).

Uys, P. (2000). Towards the Virtual Class: On-line Hypermedia in Higher Education. In R. Hazemi, S. Hailes & S. Wilbur (Eds.), *The Digital University, Reinventing the Academy*. (pp.55-72). London: Springer.

Zemsky, R. & Massy, W. F. (2004). Thwarted Innovation: What Happened to elearning and Why, a Report from The Learning Alliance, University Pennsylvania. [Accessed 10th August 2004] Available on-line from: http://www.irhe.upenn.edu/WeatherStation.html