Conquering the Barriers to Learning in Higher Education Through e-Learning

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ICTs have brought benefits to business as well as to Higher Education Institutions (HEIs), where an unprecedented demand for tertiary education has seen students enrolling for courses, some doing so through distance education. This has made the internet a very significant and indispensable teaching/learning, communication, and marketing tool for information dissemination for both education purposes and business transactions. The Internet possesses the propensity to change not only the way society retains and accesses knowledge but also to transform and restructure traditional models of higher education, particularly the delivery and interaction in and with course materials and associated resources. Universities have been faced with the daunting task of having to grapple with the inevitable change by re-adjusting and re-organising themselves in preparation for the incorporation of e-learning within their institutions. Institutional leaders have also been faced with the challenge of having to align their institutional objectives to meet the needs and demands of the e-learning demand. This article explores the central theme of attempts by HEIs in the South African context: to exert "attitudinal" changes in current "traditional" educational delivery practices by universities in order to fully utilize e-learning strategies for improved delivery of courses for its students.

Utilising the Internet to deliver eLearning initiatives has created expectations both in the business market and in higher education institutions (Singh, O'Donoghue and Worton, 2005:3). Indeed, e-learning has enabled universities to expand on their current geographical reach, to capitalise on new prospective students, and to establish themselves as global educational providers. This has made the internet an indispensable teaching and learning tool. Consequently, e-learning has also become an indispensable learning and teaching tool. Many Institutions of Higher Education and Corporate Training Institutes are resorting to e-Learning as a means of solving authentic learning and performance problems, while other institutions are hopping onto the bandwagon simply because they do not want to be left behind (Govindasamy,200:287). Despite the different reasons for adopting e-learning within HEIs across the globe, the underlying end-result has been that in the HEIs, e-learning has helped to transform education and has become associated with and construed in a variety of contexts such as distance learning, online learning, and networked learning (Wilson 2001). In the context of this paper, all of these instances will be considered to describe learning that utilises information communications technology (ICT) to promote educational interaction between students, lecturers, and learning communities (Holley 2002:). Volery (2000:35) argues that the fast expansion of the Internet and related technological advancements, in conjunction with limited budgets and social demands for improved access to higher education, has produced a substantial incentive for universities to introduce eLearning courses. Volery (2000:36) concurs that if universities do not embrace eLearning technology that is readily available, they will be left behind in the pursuit of globalisation. Ribiero (2002:23) argues that if universities are to maximise the potential of eLearning as a means of delivering higher education, they must be fully aware of the critical success factors concerned with introducing online models of education.

Despite the desire to implement e-learning within HEIs, the roles of the academic staff and students are significant. Therefore, preparatory work should be done to incorporate these roles by creating a conducive environment for the adoption of e-learning. O'Hearn (2000:7) contends that university structures are rigid and unproven regarding the incorporation of technological advancements. Holley (2000:35) states that eLearning is difficult to implement without the full cooperation and support of lecturers, as the degree of interaction between lecturers and students is still predominant in eLearning environments (Volery 2000:37). Traditional universities should be able to compete with other independent education providers in relation to social demands for 'lifelong learning' and globalised education services (O'Hearn 2000).

This paper draws from a wealth of relevant literature by proponents of the use of e-learning in HEIs, but towards the end the authors take a position on the extent to which the application of technology in HEIs has impacted information dissemination and delivery of courses to students.

Institutional Leadership

One of the most crucial prerequisites for successful implementation of e-Learning is the need for careful consideration of the underlying pedagogy, or how learning takes place online (Govindasamy, 2002:287).

This is the prerogative of institutional leaders to ensure that the right approach is adopted and the appropriate infrastructure and attitude are inculcated in those whose task it is to implement e-learning. Leadership and management are seen as key to effective e-learning implementation. *"Lack of leadership"* among people in senior positions throughout the education system (principals, finance officers, learning directors and local authority officers) can be considered one of the most important barriers to effective e-learning implementation (Thorpe, 2007:67). Poor planning and lack of foresight by institutional leaders would create problems emanating from a lack of understanding (and vision) of what e-learning could do for their particular organisation, with insufficient recognition of the resources required (KI 24); as well as poor understanding of what e-learning can offer more generally, resulting in *"strategies, plans, and funding arrangements"* that do not exploit e-learning (Harris et al, 2007:5).

The role of institutional leaders should therefore be explored because they are the implementation arm of HEIs, and their decisions impact the adoption or non-adoption of e-learning, as well as attitudes towards the adoption of e-learning in their institutions. In the implementation of such programmes as e-learning within HEIs, institutional leaders are a determinant factor given their decision-making roles, which could make or break the e-learning projects by either facilitating or impeding its implementation within their institutions. The modus operandi of HEIs entirely rests with the attitude of these institutional leaders and the institutional structures and organisations that they implant within their institutions for the execution of policy. Research has shown that institutional leaders and administrators who have keen interest in adopting new technology have shown the desire to inculcate the same to their respective institutions by providing a supportive environment through '…their recognition of the [institutions'] *in loco parentis* role in protecting their institutions from inappropriate material' (Levin and Arafeh's, 2002 :66). Such leaders would devote or channel many more resources (expertise/personnel, infrastructure and financial) for the subsequent implementation of e-learning and e-pedagogy within their institutions, especially given the large number of students questing for tertiary education. Fry (2001:36) expresses the view that if universities are to compete in a global higher education market, they must embrace technological advancements and use them as a strategic tool capable of transforming educational and business practices. Fry (2001:29) considers that eLearning initiatives will not only give universities a new channel of educational deployment, they will also support strategic objectives by assisting asynchronous discussion consortiums and networked communities.

The success of e-learning implementation depends on the institutional structures that institutional leaders create within their institutions in preparation for the incorporation of any new technological innovations for improving the efficiency of their lecturers and the effectiveness of the pedagogical methods that lecturers use in disseminating educational material to learners. It is therefore necessary to explore HEI organisational structures that enable the adoption of e-learning.

The Changing Organisational Structure of HEIs

Debates have raged about the importance of changing organisational structures in preparation for the incorporation of technological innovations within HEIs. The last decade has experienced structural changes of higher educational institutions in preparation for the introduction of technological initiatives. This has been supported by Scott (2000:36), who contends that as eLearning is now facilitating a more flexible learning approach, contemporary institutional structures are less robust than in previous years. In addition, Shaba (2000:7) states that technology in general has not only improved knowledge storing methods and learning techniques but has also acted as a catalyst to combat the barrier of inflexible organisational structures. Singh,et al,2005:9) concur by pointing out that this view suggests that to fully experience the benefits of technological advancements such as eLearning in higher education, universities must have flexible organisational structures. According to Scott (2000:37), the structure of today's universities must be 'changeable' in order to integrate distance learning courses, and those institutions that will not or cannot change their structure to incorporate this technology may be bypassed by other educational providers such as virtual universities and independent educational services. It might well be the case that corporate universities, which hitherto only offered training to their employees, will be in competition with the higher education sector. Darling (2002:43) argues that such a wide acceptance of eLearning methods in higher educational institutions will create broader repercussions regarding organisational structure. This point is illustrated by Shaba (2000:65), who suggests that universities are currently inexperienced concerning the acceptance and incorporation of eLearning and other technological changes into their organisational structures. Shaba (2000:31) considers that this lack of experience will initiate a number of reactions within universities, such as ambiguity towards future technology strategies and how to incorporate new technological advancements into organisational structure, and how to cope with the diverse range of teaching courses and learning programmes ongoing within a university comprised of full time and part time students. Shapiro (2000:45)

suggests one of the challenges facing traditional universities intending to transform organisational structure to incorporate technological innovations is coming to terms with the process design for distance learning courses without ignoring the organisational, managerial, and financial constraints. Many universities in developing countries have been the worst hit by technological innovations given their deeply entrenched traditional pedagogical experiences based on the talk-and-chalk teaching methods. Shortage of resources has been a stumbling block in the implementation and adoption of e-learning both in developing and under-developed countries. Such shortages have been overcome through devoting more financial resources for the procurement of technology to enhance learning and teaching.

Although advocates of traditional approaches to higher education may argue that courses should be taught in fixed locations using somewhat rigid organisational structures, the opinions of many writers suggest that eLearning methods will greatly change future higher educational systems. Volery (2000:65) suggests the broadening geographic distribution, flexible learning environments, and variety of educational models that are offered by distance learning facilitate improved education, and he points out that if universities do not embrace this technology, they will be left behind in the pursuit of globalisation and technological development and excellence.

The impact of eLearning initiatives will have direct effects on the future structure of universities on both strategic and tactical levels (Shaba 2000:34). Strategically, universities will experience issues concerning face-to-face versus virtual environments, the number of buildings to keep, and most importantly, whether to maintain the existing organisational framework. On a tactical level, the changing role of lecturers, the changeable learning environment, and the design of eLearning facilities will all contribute to a potentially more flexible organisational structure. Despite the apparent dysfunctional effects the implementation of distance learning techniques can assert on university structure, O'Hearn (2000:29) adds that contemporary university structures must be changeable and adaptable, able to embrace new learning and communications technology offered through eLearning, or face the consequence of limiting student's direct access to global knowledge repositories that have the ability to extend higher education. In addition to the organisation and structural organisation of HEIs, the lecturing staff plays a pivotal role in the implementation of e-learning within HEIs. Therefore, their role as pacesetters and implementors, as well as determinants of e-learning in HEIs, should be explored.

The Need for Training of Teaching Staff as a Determinant Component in Adopting e-Learning

The teaching staff forms a policy-implementation arm of any HEI through acceptable pedagogic dispatches to students. Educational material should be transmitted to students through the teaching staff, who are tasked with the dissemination of educational material to students. Debates on the pivotal role of lecturers have ensued, with the bottom-line indicating the indispensable nature of the teaching staff in education. Volery (2000:57) maintains that technical expertise on its own is not of great value unless lecturers conceive effective ways to utilise it. Lecturers will always play a key role in the effective delivery of eLearning initiatives, as it is the lecturer, not the technology, that facilitates the students learning experience. Wilson (2001:8) suggests that three characteristics of the lecturer will control the degree of learning: attitude towards technology, teaching style, and the control of technology.

The availability of lecturers alone does not suffice in successful adoption and implementation of e-learning within HEIs. Attitudinal aspects should be considered as well. Commitment and a positive attitude towards e-learning by lecturers help to create a conducive environment for the successful implementation of e-pedagogy, which would subsequently yield positive results for students as well. In support of this view, Holley (2002:117) concludes that students will experience a more positive learning experience if guided by a lecturer who retains a positive attitude towards traditional learning whilst promoting eLearning methods. This has been referred to as 'Blended Learning,' which is "an important building block of the new schoolhouse that offers students both flexibility and convenience, important characteristics for working adults who decide to pursue postsecondary degrees," (*Singh, O'Donoghue and Worton, 2005:12*). Blended learning is a hybrid of traditional face to face and online learning so that instruction occurs both in the classroom and online, and where the online component becomes a natural extension of traditional classroom learning (Colis and Moonen 2001:28).

However, despite the possession of positive attitudinal attributes, the dynamic nature of the IT industry in conjunction with evolving eLearning technologies has created challenges and, in some cases, tension for lecturers in higher education. ELearning initiatives have reportedly created new educational issues for lecturers, such as changing work patterns or the reluctant integration of technology. Serwatka (2002:49) argues that sometimes student success can be achieved simply by preventing student withdrawals from eLearning programmes. The teaching techniques used by lecturers in traditional courses may also have to

be reviewed and modified, as they do not always prove effective or necessarily transferable in eLearning environments (Serwatka 2002:49). Lecturers in networked learning environments modify their courses as they go along, meaning the longer a course is taught in a particular format, the more effective it is (Volery 2000:22).

Given the pivotal role that lecturing staff play in the adoption and execution of e-pedagogy, it becomes necessary to continuously equip them with more knowledge through training and refresher courses as a way of creating confidence in them. It has been observed that most lecturers are not impervious to learning new skills. Many are more than prepared and receptive to new ideas. Recent studies indicate that the success of eLearning methods in higher education can only be measured according to the effectiveness of delivery; training staff may be regarded as a major challenge in the adoption of eLearning initiatives (Singh, et al 2005:528). However, given the different experiences and ideologies among the lecturers, it is acknowledged that some academics working in higher education are reluctant in accepting aspects of technology in their teaching and learning because of lack of understanding and confidence in the new technological innovations. Charlesworth (2002:179) adds that contemporary lecturers are not resistant to training in the use of technological applications; they are simply confused as to how to implement such into lectures or more formal teaching methods. Lecturers that enter the profession in today's information age are much more likely to have used computers and have significant access to the Internet than those in previous years and are more likely to accept technological advances in teaching methods. (Wilson 2001:24). Academics are often encouraged by their institution to "go online" by either moving or supplementing teaching in an online environment. This could simply be attempting to replicate face to face teaching, in effect changing nothing; enhancing face to face teaching with the available technology; or transforming face to face teaching by the available technology. The approach chosen will be determined by several factors, one of which will be existing knowledge of the technological environment being used (Coldwell 2003:185).

The pivotal and determinant nature of lecturers is further shown by the fact that they should be involved in the whole process of the education dissemination continuum. (Shank 2002:56) concurs with this argument by asserting that "educators must therefore be involved in all stages of eLearning course development, including determining the prospective audience, the purpose of the learning programme and the best format". This view highlights the requirement for lecturers not only to be trained to apply eLearning technology in higher education but also be attentive of the theories behind distance based learning. Proficient training includes both technical and conceptual issues and if executed correctly will generate increased support for the merits of eLearning (Shapiro 2000). Lecturers must possess the appropriate facilitation skills if eLearning courses are to be successful. Shank (2002:65) argues that facilitation skills fall into three sections: facilitating real time events, moderating online discussions, and coaching students. Shank (2002:66) continues that if lecturers do not maintain a high level of facilitation skills, even the most effectively designed eLearning courses will be unsuccessful due to inattention by the lecturer. The evidence suggests that staff training is a central concern for universities implementing any form of learning methods. It is essential that the opportunity to redesign and improve university teaching practises through eLearning is not usurped by a focus on training lecturers how to use the hardware and software (Shapiro 2000:56). Inadequately trained lecturers using eLearning in educational environments can become an obstacle that can, in the perception of students, lead to more problems in the application and use of ICTs (Volery 2000:8). The most conspicuous obstacle is the lack of confidence among academic staff who may envisage the collapse of the system during class. In contrast to traditional teaching skills (such as the talk-and-chalk and rote teaching methods), eLearning requires lecturers to be committed to a constant and changing learning curve, which may involve a mixture of formal training in conjunction with conferences and other less formal techniques, if they are to acquire and develop the skills needed to be an effective eLearning tutor (Shank 2000:19).

Lecturers in HEIs work in a unique educational environment given that they are expected to implement technological changes within their respective working environments. It therefore becomes incumbent upon the lecturing fraternity to be receptive to changes in technology and to be prepared to embrace and impact the same skills to students. Lecturers in higher educational institutions must accept and embrace technological advancements offered by eLearning. Holley (2002:119) explains that lecturers have to adopt new educational approaches in order to maintain the quality of courses. Collectively, the evidence offered on the role of lecturing staff in contemporary eLearning courses suggests that online learning should not be regarded as an alternative to a traditional tutor. Effective eLearning programmes use lecturing staff combined with the appropriate technology to deliver effective learning. In addition, the lecturer is not only the knowledge source but is also a knowledge navigator using the Internet as a teaching tool. This enables lecturers to transfer their skills in other business areas such as developing training and corporate courses (Ribiero 2002:85).

Creating a Conducive Learning Environment

Students form the epi-centre of the learning continuum and as such form the principal clientele for HEIs. It therefore becomes compulsory that institutions create conducive learning environments for their students. A good learning environment has a bearing on the provision of an improved learning experience. Singh, et al (2005:526) suggest that an eLearning environment offers students an improved learning experience when compared to a more traditional learning environment. Holley (2002:120) found that students in eLearning university courses using techniques such as virtual lectures and bulletin boards achieved better grades than students who studied in traditional learning settings. Hartley (2000:37) maintains that the constraints of conventional university teaching practises with regards to group work are removed in eLearning environments, as students can participate in group activities without actually being situated in the same location. Indeed, alternative relationships are developed within the context of an online community (O'Donoghue and Singh, 2001:525). This supports the view that eLearning environments loosen the time and space restrictions associated with traditional university practises.

The infusion of modern and traditional teaching methods has been espoused by many educators who argue that there is no one method that is all-encompassing and effective. Serwatka, (2002:62) concluded that although eLearning environments overcome the traditional time and space constraints, universities must be cautious when deciding if modern distance learning environments should replace the traditional methods, as students recognise the benefits of the eLearning environments but only when combined with traditional formats.

However, there have been debates about the environment as a determinant factor in elearning. Many writers have proposed that the current significant limitations of eLearning environments are not exposed by contemporary research (Singh, et al 2001:527). O'Connell (2002:15) proposes that those students from non-technical backgrounds or those who are more accustomed to traditional face to face learning environments experience problems absorbing course material in eLearning environments. Similarly, Holley (2002:118) suggests that even undergraduate students who are perhaps more assertive and motivated should be given focused training on how they can take full advantage of eLearning environments. IT skills can prove problematic for students on distance learning courses, and if the requirement for training is not addressed, students will not experience the full benefits of the eLearning environment (Holley 2002:119). Furthermore, a lack of IT skills is one of the main reasons for student non-participation in eLearning courses (Wilson 2001:17). Whilst not looking to replace 'real' paper with technology based resources, it is the process of augmentation and enhancement of the 'traditional' resources that enables reflection, encapsulation, consolidation and extension of the written word (Wilson, 2001:18).

Benefits Derived from e-Learning by Students

E-Learning as a pedagogical issue has brought many benefits to students. it has been found to be convenient and can enable students to access educational material with ease. It can facilitate enhanced communication between and among students and lecturers. Among the most visible and valuable attributes of eLearning techniques and delivery is greater access for students to education, in comparison to more traditional, less flexible educational methods (Singh, 2001:528). Other proponents of e-learning such as Hemsley (2002:27) have expressed the view that full time and part time students can now partake in their chosen degree courses from any location, giving people who travel or who are relocated a transferable and easily accessible learning resource and experience. Through the use of advanced technology, students who have previously not had access to higher education now have the opportunity to study at the location that best suits their needs (Sadler-Smith 2000:32). ELearning offers people with disabilities the opportunity to further their education from home (Brown, Cromby and Staden 2001:294). Although these views propose the positive aspects of home working, there is still evidence to suggest that students who learn from their most convenient location will not engage in a positive learning experience (Singh, 2001:529). Working from home may, at first sight, seem a positive way forward, but the learning process is often disrupted as the surroundings are not necessarily conducive to study (Shaba 2000:6) due to the household chores and interruptions from family members.

Accessibility to educational technology has been identified as vital for acquition of knowledge and information dissemination to students, as well as interaction between lecturers and students. If eLearning is to benefit students by offering students greater access to higher education, it is necessary to consider not only access to education but also the access to technology where computers become an indispensable element of effective eLearning courses (Ribiero 2002:85). Students who have access to networked computers may have the opportunity to experience a more flexible learning process but students and indeed higher educational institutions could fail to benefit from this opportunity, due to students not being able to afford or gain access to a computer (Shaba 2002:19). Therefore, students

with no computer at home are maybe disadvantaged in eLearning environments. In addition, as a major consequence of an increased participation in higher education, a large number of students originate from low income backgrounds and will have little disposable income to purchase computers (Holley 2002:116), therefore increased reliance on technology to deliver higher education may potentially lead to further divisions in society (Shaba 2002:26). In such cases, deprived home backgrounds militant against the acquisition of technological skills which further impedes on acquisition of knowledge through e-learning.

HEIs have encountered problems where students lack the confidence to use technology and interaction with lecturers. Students need to be prepared to adapt to advances in technology, especially for learning and communication purposes. Untimely eLearning initiatives create unproductive learning environments in which students encounter difficulties with course material, are unsure how to prepare for online assessments and are reluctant to contact lecturers for assistance (Serwatka 2002:27). A major challenge for contemporary universities is to offer students a more client orientated educational programme (Hartley 2000:48) and this requires an educational understanding of the students need for a more flexible, easily accessible learning environment, which can be offered through distance learning (Fry 2001:236). Moreover, contemporary learners need to communicate and require the ability to share knowledge and skills from distance, therefore networked initiatives that are technically satisfactory and are highly personal offer students and universities the opportunity to customise the learning environment (Hemsley 2002:28).

Prospects for E-Learning in HEIs

E-Learning in education HEIs is experiencing unprecedented usage and development. Despite challenges faced by HEIs, e-learning has successfully managed to bring education to the doorstep of all those who seek it. The need to create more conducive environment for learners has proved to be a requirement for the attainment of good results. Lecturers, to be able to conduct themselves confidently, should receive continuously training and upgrading of their pedagogical skills in accordance with the dynamic nature of technology. Students, being the central focal point for HEIs, should have access to internet and e-learning facilities if they are to prove themselves and attain their goals. Institutional leaders should continuously adapt themselves to changing technological environments and inculcate a positive attitude to adoption and implementation of e-learning within their institutions. Attitudinal aspects have been cited as determining the success or failure of adopting e-learning in institutions. The prospects for e-

learning in HEIs remain bright, especially given the receptive nature that numerous HEIs and institutional leadership have and the optimism that students and lecturers hold of the future of e-learning in educations. This has been compounded by the preparedness of lecturers to meet challenges posed by the continuous technological innovations and their preparedness to learn new skills.

Conclusion

Despite the various debates on the adoption and implementation of e-learning as well as the accompanying challenges, elearning remains an indispensable pedagogical phenomenon n the 21st century and beyond. Its ability to cater for a myriad of students seeking educational opportunities have made it the best conduit through which lecturers can interact with students anytime anywhere. The utilisation of e-learning has also cut distances which students in conventional learning institutions would have covered to access lecturers and learning materials. Incentives should therefore be accorded to HEIs to enhance e-learning facilities within their institutions. More financial resources should be devoted to the acquisition of resources and infrastructure for the promotion of e-learning facilities and infrastructure in HEIs. Attitudinal change should also be inculcated in institutional leaders to keep abreast of technological innovations for their respective institutions for the advancement of both their lecturers and students.

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