

The development of electronic mediated initiatives in the delivery of library service to remote students

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ABSTRACT

The application of electronic networks and other communication technologies provide extensive opportunities for the enhancement and improvement of access to education and training for people who could not make themselves available for the traditional face-to-face system. In particular, the new technology has demonstrated to be of immense benefit to people in remote and isolated locations that lack direct access to education and training facilities at higher/tertiary level. Besides, in today's world of open and distance learning learners are found anywhere and everywhere. Distance education enforces that learning is not restricted to any particular place or time. There has therefore been an incredible change at all levels of education with respect to the application of ICT.

It is now not uncommon to note that the process of teaching and learning in this environment is conducted online. Conversely, as a way of extending library and information support service to these remote learners, libraries of distance teaching institutions have extensively embraced the use of electronic systems and other communication media. The paper notes the extensive use of the computer mediated communication systems to reach out to the remote learners by distance teaching libraries in advanced countries of the world. To some extent, developing countries are also striving not to be completely left behind. Of course, a lot of obstacles recline on the way of these libraries.

This paper also gives an insight into the adoption of this system in some developing countries. It narrows the discussion to the development and application of electronic mediated initiatives in aid of learning at the University of Botswana where the operational system is dual-mode. The paper elaborates on the significance of staff development training effort in the use of technologies for student support.

BACKGROUND INFORMATION

In the traditional system, education and training takes place within the four walls of classroom in school, college or university campus. The learners would then have to make themselves available before the teacher in a face-to-face fashion in order to access knowledge and information and, therefore, be part of the learning process. In the modern or non-conventional world a learner no longer has to be in any classroom situation to access education, training and information to be part of the learning process.

The development and increase in the variety of media has been identified as one of the remarkable gifts presented to us by the modern world. Digital media, undoubtedly, has been revolutionising the compartment in which the society goes about its daily activities as every sphere of human existence is touched. In the educational scene, the media advances inexorably make a great deal of impact in the teaching and learning process. In particular, the new technology has demonstrated to be of immense benefit to people in remote and isolated locations that lack direct access to education and training facilities at higher/tertiary level. It is therefore a common phenomenon to see many educational institutions today exploiting the advantages of ICT to enhance the quality of teaching and learning and extend learning beyond the confines of the conventional environment.

Not only have many educational institutions constructed websites [even at primary school level] to give publicity to their programmes, they are also developing Web-based course delivery capability often referred to as electronic learning [elearning] or online education. At higher level, the use and application of ICT has enabled education to be liberalised with the effect that a learner does not have to be in a classroom with the teacher in a face-to-face contact to receive his education and training. Indeed a learner does not even have to be in the country where his university is located. Through elearning, education and training can be delivered to a learner in any part of the world so long as there is the capability to access learning materials by means of ICT.

As education programmes are now being mounted internationally on the Internet without regard to any geographical barriers; learners are increasingly getting attracted to these programmes from various parts of the world. Thus the application of electronic networks and other communication technologies provide extensive opportunities for the enhancement and improvement of access to education and training for people who could not make themselves available for the face-to-face system. The corollary of the application of this system is the

big boom that continues to be witnessed in open and distance learning systems as the providers of education by distance delivery mode have embraced the use of the new communication networks and media.

Undoubtedly, much as the ICT continues to guarantee increased access to education itself for those disadvantaged by distance or circumstance, evidence abound that it also ensures improved access to the vast and rich resources of on-campus education. Library and information support service is one particular area that ICT has demonstrated its prowess. Traditionally, the library discharges its duties and, or services within the confines of its four walls. It consults or is consulted within the same place. With the dawn of a new era that is assisted by electronic technologies, the library services like the teaching/learning process, can now be accessed or received in a much better and dynamic way at homes and offices of remote users.

ELECTRONIC MEDIATED INITIATIVES IN TEACHING AND LEARNING

Basically elearning has become a celebrated pedagogical means of extending education and training to the masses. It is a new learning model that can probably be described as a weapon of mass instruction. It is worthy of note to say that elearning, virtual, web- or Internet-based or online learning are often used interchangeably. In order for the institutions of learning to show more responsiveness to the dictate of new and modern times, a new pedagogy with a better application of the potentials of ICT is now developed. This is now adopted by many institutions for purposes of enhancing teaching and learning process. As against the traditional face-to-face method of delivering learning content through the use of such materials like chalkboard, books etc with teachers present, e-learning prides itself in the delivery of learning content over the web or the Internet. The interaction between the tutor/instructor and student is basically via the Internet and or e-mail. As this delivery mode is useful for the on-campus students, it is probably more useful for the off-campus, distance or remote learners. Through this system, opportunities are availed for students who registered for the same course to also interact with one another, as well as with their tutors, online. Evidence of the use of these applications in teaching and learning process abound all over the world particularly in developed countries.

Writing about the importance of elearning, Knight (2003) opines that elearning “is the catalyst that is changing the whole model of learning in this century – for

school pupils, university students, for employees, for the ongoing training and development of professionals like doctors, nurses and teachers - in fact for just about anyone who wants to find out something on either a formal or casual basis". She then listed eight ways she thought the e-learning is revolutionising learning. These are summarised thus:

- e-Learning means that one does not need to spend long periods travelling to a location to attend a course any longer
- e-Learning means that learning no longer needs to be a passive but active experience since emphasis will be on interactivity
- e-Learning makes learning exciting, engaging and compelling
- Through e-learning, learners are encouraged to communicate, collaborate and share knowledge. Hence, e-learning can support "learning through reflection and discussion".
- Since we learn in different ways e-learning empowers learners to manage their own learning and *in the most appropriate way for each learner*.
- e-learning also helps to embed learning within work processes, as organisations now recognise that learning is not something that only takes place in a classroom.
- Learning has moved from the classroom onto the desktop and now into the pocket with the use of mobile phones now christened m-learning.
- e-Learning has helped organisations with their bottom line by helping to keep them agile and competitive in their market.

Shepherd (2001) hinted at what he perceived as the advantages of e-learning application in teaching and learning process. He declares that "With e-learning, delivery cost is reduced substantially". He also notes that "learners saved on travel time and expenses and employers could cut back on training centres and trainers".

Whilst writing on the early trends in implementing e-learning in the UK Higher Education, Souleles (2004) says that "Virtual Learning Environments (VLEs) are widely implemented in the UK Higher Education (HE) sector and many institutions are engaged in implementing e-learning". Bolton (2002) also notes

that “the development of the Internet, and new cost-effective technologies has promoted an astounding growth of distance education courses”. He notes that “Provinces across Canada, ... are implementing an infrastructure to increase bandwidth”. He remarks that “High speed Internet access coupled with more sophisticated compression technologies will improve web-based distance education courses”.

Speaking on the developments of e-learning and virtual education in the universities in Europe during the 2003 annual conference of the European Association of Distance Teaching Universities (EADTU), the association’s President, Bang (2003), maintains that “e-Learning and virtual higher education evolved in Europe”. According to him, “By nature, *open and distance learning universities* were forerunners in this process, certainly in the context of lifelong learning”. He maintained that at the institutional level, virtual education/e-learning will support the ...goals and objectives essentially through the following, among others:

- *Giving broader access* to educational and training for larger numbers of students from anywhere in a lifelong learning context. This includes an international outreach, as well as social inclusion at the regional level or access from home and work through internet/broadband;
- *Diversifying courses and programmes* according to niches/strengths, and *diversifying educational methods*;
- Creating new learning opportunities for students and a broader offer of courses by the institutions through *virtual mobility*;
- Reconciling *mass higher education and personalisation* through *flexibility* in terms of content, pedagogical approach, combination learning and work/home, and study planning;
- *Building on the unique potential/added value of e-learning through new pedagogical models* (peer to peer learning, learning communities, personalisation; learning with multiple values) that enhance the quality and effectiveness of learning;
- Linking *research and learning* better through a constructivist educational approach, using multiple/distributed resources and more individualised interactions (peer to peer, peers to staff)
- Creating *international programmes* and attracting *international students* (incl. distance learning, blended learning); and
- Developing distance learning for mainstream and continuing education students in a *lifelong learning context*.

ELECTRONIC MEDIATED INITIATIVES IN THE LIBRARY

As the impact of the modern technology is continuously felt in the classrooms pedagogy, various homes and offices where learners access their education and training, the wind of change continues to be experienced in the library too. As if taking a leaf from the application of technologies that enhances the teaching/learning process, libraries, the world over, have now largely embraced the application of the new system in their operations. The acceptance of the new technologies has invigorated the library to give a wide range of and better services, hitherto unknown in the library world to its customers. In the light of these developments, the library continues to witness radical change as a distinct line of departure from the past library operations is now seen to be drawn. Good enough, the use of these electronic systems and other communication media in the operations of the library has not only been of tremendous advantage to the traditional students, it is particularly gratifying to note that remote learners benefit from the invaluable services offered by the ICTs.

Apart from employing the ICTs capability to take library and information service to the doorsteps of learners, librarians are now seen undertaking the role of training students on the operations of ICTs. This probably prompted Poulter, Tseng and Sargent (1999) to assert that “in an increasingly technological society, providing Internet access is seen by many as a natural extension of the library’s remit to provide information, educational and leisure services to users”. Oladokun (2004) sums this up when he opines that “it will ... not be a surprise if the performance of the librarians is to be judged on their ability to integrate ICT within the operationalization of the library practice and the effectiveness of cascading the acquired knowledge of ICT to their clientele”.

More and more libraries are now involved in developing web-accessible databases for their users. It therefore poses not much problem for libraries to extend their services to the students irrespective of where they are located. So long as they have computers and Internet facilities, the possibilities are there for the students to access the services that any library could offer. Such library services open to students include online reference service, electronic communication through email, telephone (mobile and toll-free), facsimile, video and audio-conferencing, online full-text retrieval, and seamless document delivery system, among others.

Writing on the creation of Virtual Academic Library of the North West (VALNOW), Brophy (1997) states that VALNOW was “located at the University of Central Lancashire, but serving users across the whole of northwest England”. Catering for over 20,000 students, Brophy observes that library and learning resources services “are delivered through a total of nineteen service points in northwest England” combining traditional delivery with electronic library services. In a report based on a European Commission funded study called “Libraries without walls” Brophy writes, “VALNOW delivers materials, offers videoconference sessions with subject experts, provides access to remote and local datasets--all through a cooperative network involving librarians from a dozen different institutions”.

Provision of library services online to university students through vendors is another device. Barnard observes that services such as access to library resources are provided through “vendors with established track records”. Barnard provides an example of the model adopted by the University of Phoenix. According to him “this publicly held, for-profit company, has an enrolment of approximately 55,000 students who are nearly all working adults”. He declares that “they have no physical library collection, so all of their library services are offered online or through document delivery”. He also indicates the claim of the University that “its online library collection provides access to millions of articles from thousands of business and professional journals”. Besides, it permits users to request and receive articles from nearly 4,000 journals, in addition to a free bibliographical search service. Students, in this case, are required to use a password to log in, as they are charged for delivery.

The online learning environment offers a host of new opportunities to increase access to the library and digital materials for both on-campus and remote students. One particular area that the library has been able to reach out to its remote users is the opportunity to teach information and literacy skills. Hitherto, there has been an increased feeling among librarians and information practitioners that students in higher institutions should have adequate training in information literacy skills. Today, evidence abound that there is an extensive use of the computer mediated communication systems to reach out to the remote learners by distance teaching libraries in advanced countries of the world. A typical example is the Library of Queensland University of Technology, Australia, which operates the teaching of Information literacy skills (ILS) to its students, online. On the webpage of the university library, there are courses on ILS including Information literacy framework, Information literacy syllabus and Information literacy standards as endorsed by the Council of Australian

University Librarians in Canberra 2001. The site gives a description of a series of online tutorials, which provide guidance and practical exercises on how to find, use and evaluate information. It also includes such courses coded LIB101, which provides students "with access to information literacy related assessment activities, discussion forums and chat facilities". Besides, there are links to a number of resources which help to develop students' information literacy skills.

Basically, the goal of any library that operates elearning services is to provide the students and other users with services and resources equivalent to what is offered to on-campus students and staff. At the Open University of United Kingdom, apart from supplying the information skills tutorial online, other online resources, which the library can supply include:

- Collections of full-text journal
- Individual full-text journals
- Individual full-text journal articles
- Images
- Newspapers
- Electronic books
- Electronic reference works (e.g. encyclopaedias)
- Databases for tracking down journal articles
- Databases of subject specific material e.g. company data, chemical structures, standards, statistics
- ROUTES for selections of open access web sites
- RefWorks – a tool for managing references
- Signposts to external resources licensed nationally for use by the HE community.

It is however heartwarming to note that libraries in the developing world are also gearing up to ensure they are not completely left behind in the area of electronic mediated services to their users, particularly, those in remote locations. Hence, a number of initiatives are being put in place not only by the parent institutions, but also the libraries to deliver services to their on-campus, as well as their not-easy-to-reach remote users. Most institutions of higher learning in Southern Africa have developed a number of electronic initiatives to assist and ease the problem of their students getting in touch with their institutions. For instance, the University of South Africa has a student online (SOL) programme which enables students to browse the library catalogue system. Through SOL, it is also possible for the students to have online learning opportunities among

other resources. Another institution of note in the development and application of elearning programme is the University of Botswana discussed below.

E-learning Initiatives at the University of Botswana

At the University of Botswana, plans are already afoot for the commencement of electronic class delivery. Already there is a clear institutional strategy for on-line teaching of students, combined with the introduction of interactive video conferencing, e-learning and other educational technologies, to create virtual classroom learning experiences for them. Since the university operates a dual-mode system, there is no doubt that these initiatives will be deployed towards the service of distance learners, as time goes on. In order to ensure proper handling of the implementation strategy of elearning programme, an Educational Technology Unit (EDUTECH) was created at the Centre for Academic Development (CAD) of the university. This Unit is headed by a Deputy Director. Having installed a number of equipment and software and put some human resources in place, the unit began organising series of pilot training for the take off of elearning programme. The outlined rationale for the pilot project comprises:

- Testing and developing best-practice models (including development models) and approaches in the University and wider Botswana context.
- Building up successful representative role models across the campus
- Creating an experiential awareness of the issues and advantages of elearning
- Creating a written analysis of our collaborative learning

The Unit set up elearning pilot project teams from each of the faculties and major departments in the university including the library and gave appropriate training to them. The readiness of the library to get involved, among other reasons, borders on the teaching of information (literacy) skills by the librarians to the first year students of the university. The general education courses (GEC) 121 and 122 which comprise Information and Computer skills are presently made compulsory for the first year students of the university. The library team of the University of Botswana electronic learning (UBel) has been working hard to put the course contents (Information skills component) in WebCT for online delivery.

It is instructive to say that in the meantime, the UB Library database is accessible via the Internet. The library systems also have the self-help/service function, where individual borrowers can, at a distance, carry out book renewal from any computer with an Internet connection, anywhere within or

outside the university campus. On the OPAC page of the University Library, it is possible to access several thousands of full text journals. The list consists of full text journals from EbscoHost, Emerald, SA ePublications, Annual Reviews, Elsevier Web editions, etc. Besides, past examination question papers in various courses have been digitized and are accessible on the library web page.

The significance of training in the operation of elearning cannot be over-emphasized. The coordinating unit - EDUTECH, of the elearning programme has organized and continues to organize series of workshops and seminars to train staff of the university on the development of elearning skills. Some of the training workshops lead to the award of certificates to staff who successfully complete the training. Some of these workshops according to EDUTECH in the advertisement sent to the staff mailgroup include:

- Teaching in the SMARTClassroom. This workshop provides participants with the knowledge and skills required to teach in UB's SMART classroom. Participants also learn how to operate/use hardware and software in the SMART Classroom.
- Information Management Techniques. The participants are provided here with hands-on skills necessary to deal with increased information flow common to eLearning environments. They learn how to manage information using Files, Folder and Filters.
- Scanning (developing digital images). This provides participants with the knowledge and skills required to use graphic design to instructional purposes. The participants are trained on how to scan text and graphics.
- Creating a Website. Training here provides participants with the knowledge and skills required to create and post a basic instructional website using MS FrontPage.

In another schedule sent to the mail group, the following workshops were announced.

- eModeration and Online Management. This workshop provides participants with the knowledge and skills required to support and manage an Online Community with special regard to the WebCT eLearning platform used by UB.
- Video Conferencing. This is particularly considered more appropriate for distance education than for traditional on campus teaching.
- Presentation Techniques. These focus on PowerPoint presentations and are in 2 parts. Part I is for the Beginners and Part II for Advanced Users.

Part 1 - (Beginner) comprises:

- **Creating a POWERPOINT presentation from scratch (using a blank template)**
- **Adding ClipArt and pictures**
- **Applying and modifying formatting Masters (creating your own template e.g. backgrounds)**
- **Animating slides (Animating text, objects and adding transitions)**
- **Saving and naming a presentation**

PowerPoint II – (Advanced) includes:

- **Adding sound and video clips to presentation**
- **Creating a self-run Kiosk presentation**
- **Printing your presentation**
- **Converting your PowerPoint presentation into WebPages**
- **Converting your PowerPoint presentation to Video and transferring it to videotape.**

Other workshops announced include:

- **Instructional Design Principles.** This deals with the Principles of Instructional Design, including Instructional Design theories, the development of learning objectives and sound assessment strategies.
- **Introduction to eLearning.** This gives an overview about critical components of eLearning, like content, communication, support, collaboration, assessment with a particular focus on the use of eLearning at UB.

With these training workshops arranged, the staff (including the librarians) of the university appear to have been prepared and equipped with appropriate skills and competencies for the challenges of the new globalised and elearning world. It is also important to say that there is also a comprehensive range of training programmes on electronic use and application lining up for the students as well.

CONCLUSION

The delivery of library and information service to the learners, has no doubt assumed a new dimension with the dawn of new development in electronic technology. Probably the reapers of greater advantage of this development are the distance learners who had been at the cutting edge of information delivery system. The new age calls for maintenance and provision of access to library resources in a variety of formats reflecting the advances not only in technical and professional knowledge but also in modern information and communication technologies. For obvious reasons, the distance learners in advanced countries of the world have early exposure to the benefits of the new development. Fortunately enough, as we have noted, the libraries of distance teaching institutions in some developing countries are not completely lagging behind. We have seen the effort of the University of Botswana in responding to the demand of modern technology. Of course, it should be noted that a number of problems recline on the way of this development, particularly in developing countries. These, among others, include:

- The apparent inability of most of the learners to have their own personal computers and afford the “luxury” of the Internet at home.
- The grant or subvention received by institutions of higher learning from governments who still own most of the institutions of higher learning, continue to dwindle. The poor funding may not be unconnected to the continuous downturn of the economies of these countries.
- In their apparent bid to make ends meet, some of these institutions attention is now diverted from providing education and training to establishing foundations whose duty it is to source for funds outside government subventions. The funds so realized to augment their budgets can hardly be diverted to catering for the capital intensive ICT programmes.

- Most of the developing countries still have unreliable infrastructures including erratic electricity supplies and poor telecommunication system. These are necessary ingredients to effective application of information and communication technology. It is beyond doubt that these poor infrastructures continue to hinder the development and adequate application of electronic mediated initiatives in institutions of higher learning in developing countries.

Irrespective of the drawbacks currently being experienced in the developing countries, it could be seen that some efforts are being made and giant strides taken in some places. Suffice it to state that in the new dispensation, training and re-training of staff and students who are to use these facilities is very salient. In their discussion of staff development in the use of Communication and Information Technology, Maier and Warren (2000) recommend that “all institutions should ... review the changing role of staff as a result of Communications and Information Technology, and ensure that staff and students receive appropriate training and support to enable them to realize its full potential”.

In the new globalised world where education is provided to not just remote learners within the country but indeed internationalized, all hands should be on deck to ensure that necessary infrastructures are put in place. An environment where limitation is not imposed by unreliable power supply and inadequacy of telecommunication infrastructures should be ensured. In addition, governments which are in most cases owners of these institutions should pump in more funds to enable the institutions survive and meet the demand of modern times. Institutions should also not entirely depend on the inadequate subventions received from their owners. Establishment of consultancy services and other income generating ventures should be considered to enable them be at par with their counterparts elsewhere. Provision of electronic mediated (communication) system has justified itself as a viable means of enabling learners and potential learners in remote locations to have access to education and library services. As efforts are made along this direction, training of staff and students (including those in remote locations) should not be relegated to the background.

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