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RESEARCH ARTICLE

The challenges of establishing digital library services in an Open and Distance Learning (ODL) environment and the potential benefits: The road towards the integration of digital and traditional library services, the case of Zimbabwe Open University (ZOU)

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Manuscript Info	*Abstract*
	The information age is the zeitgeist of the twenty first century with the pervasive use of computers transcending across all sectors such as education, health and library and information departments. Of crucial importance is the ability of ICTs to break the barriers of time and distance that makes them an asset in the provision of library and information services .More so in Open and Distance Learning (ODL) institution's library services as it provides electronic information and knowledge in support of various study programmes and researches to a geographically spaced clientele. The paper highlights challenges librarians face in integrating traditional information delivery based on print with modern computerised and networking delivery of digital information. Noting however the pervasiveness of print media in providing literature and knowledge and also administrative functions such as applications and registration to support various ODL programmes albeit with the handicap of limited geographical reach of the distant student. The discussion addresses the issues of ICT duality capacities as a basic infrastructure for information and communications, highlighting the dual challenge of ICT development and ICT for development. The survey noted accessibility challenges experienced by ZOU Mashonaland east library in accessing e-resources and their preference for print resources.

Introduction

The information age is the zeitgeist of the twenty first century with the pervasive use of computers transcending across all sectors such as education, health and library and information departments. Of crucial importance is the ability of Information and Communication Technologies (ICTs) to break the barriers of time and distance that makes them an asset in the provision of library and information services. More so in Open and Distance Learning (ODL) institution's library services as it provides electronic information and knowledge in support of various study programmes and researches to a geographically spaced clientele. The virtual library services compliment traditional library services such as book lending and manual card catalogues literature searches helping overcome the limitations of providing library services within the confines of the brick and mortar edifices of library buildings typical of traditional library services. ICTs are seen as enablers as in the case of electronic document delivery in the form of emails or electronic forums and e-resources thus e-books and e-journals as those utilized by ODL institutions. The paper focuses on highlighting the challenges librarians face in integrating traditional information delivery based on print with modern computerised and networking delivery of digital information. Noting however the pervasiveness of print media in providing literature and knowledge and also in facilitating administrative functions such as applications and registration to support various ODL programmes albeit with the handicap of limited geographical reach of the distant student. The discussion looks at the issues of ICT duality capacities as a basic infrastructure for

information and communications, highlighting the dual challenge of ICT development and ICT for development. The discussion looks at ways in which the distance education library may harness ICTs and traditional services in enhancing information access for the distant student.

Definition of key terms
Digital divide
The digital divide refers to the gap that exists between those who have access to the Internet and computers and those who do not. This may also be viewed at a global level as is in the technological gap that exists between the developing and the developed nations that is the north and the south. (Kalichman 2006,523-537)

Library
The word "Library" comes from the Latin word "Libri" which means books. In its current use the term Library can refer to three things: a collection of books for reading and borrowing, a room or building where books are kept, read or borrowed and a collection of records films and computer routines. Thus a library may be defined as an organized collection of general information and literature. In this definition "collection" equates with "storehouses" and "organized" (for use that is) equates with "dissemination" Thus the term library always refers to two aspects 1. the collection of books for reading and borrowing and 2.the room or building in which the books are kept. The library is the natural place for resort for information for instruction and for recreational reading. A librarian is a person in charge of or assisting in a library. The librarian's two main duties involve storage and dissemination of knowledge.
(http://www.answers.com/topic/library)

Distance Education
According to Portway and Lane (1994) the term distance education refers to teaching and learning situations in which the instructor and the learner or learners are geographically separated, and therefore, rely on electronic devices and print material for instructional delivery. Thus distance education entails the separation of teacher and learner which sets it apart from conventional face to face lecturing. It may also involve to way communication so that the student may benefit or even initiate dialogue.

Information literacy
According to the American library association (2006) information literacy refers to a set of competences that an informed citizen of an information society might possess to participate actively and intelligently in that society. It is a new liberal art that extends from knowing how to use computers and access information to critical reflection on the nature of information itself and its technical infrastructure and its social cultural and philosophical context and impact. Zimbabwe has one of the highest literacy rates in Africa with 96% of the population being literate. However, the impact of the high literacy has been limited because of a backward and poor library services system. This has resulted in the creation of information illiterate, literates. This essentially means most people do not know how to identify when they have information needs and if they do realize it they do not know where and how to search for information sources to answer their information needs. Poor information literacy has resulted in the limited impact of digital library services in enhancing access to information.

ICTs
Any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance and distance learning. ICTs are often spoken of in a particular context, such as ICTs in education, healthcare, or libraries .According to the European Commission, the importance of ICTs lies less in the technology itself but in its ability to create greater access to information and communication in underserved populations.(http://searchcio-midmarket.techtarget.com/definition/ICT)

An Overview of Open and Distance Learning (ODL) in Zimbabwe
The narration of library support for distance education clients in Zimbabwe goes back to 1993 when University distance education was first offered in the training of educational practitioners. The department of Education at the University of Zimbabwe established a Centre for Distance Education with an initial enrolment of 623 Students studying for the Bachelor of Education in Educational Management. The information and knowledge needs of these students were then catered for by the University of Zimbabwe Library. The Center for Distance Education mutated into the College of Distance Education between 1995-1999.During this period the College of Distance Education established Regional Centres in each of the ten Municipal provinces of the country.
These included the following:
1. Harare

2. Mashonaland East
3 .Mashonaland Central
4. Mashonaland West
5. Matebeleland North
6. Matebeleland South
7. Bulawayo
8. Manicaland
9. Midlands
10. Masvingo

The structure of Distance Learning at Zimbabwe Open University

One of the major functions and responsibilities of the Regional centres is to provide library services to the lecturers, tutors and students. In comparison to full time conventional University students, ODL students have exceptional library needs in that they require information and knowledge to be delivered at their doorstep. Such library services have a high technological orientation and these would enable library patrons to access information where ever they are located. The spread of ODL, its uniqueness and the characteristics of a distance learner-all have presented the library with a number of challenges. The rise of electronic information services such as the internet, e-books, e-journal, and search engines and online catalogues has aggravated the dilemma of the ODL library.

The challenge facing distance education is that whilst the demand for the new technology is indeed necessary to meet the information needs of a geographically spaced clientele through the dissemination of such knowledge and information through the use of ICTs. The libraries in developing countries have failed to keep up pace with the technological demands. Those supporting new technology have unprepared library user audience which is both unprepared to accept digital library services because of lack of sufficient technology skills and which cannot afford such services. This is despite the need for information and knowledge to be supplied to the distant student who may never set foot into the library. Despite of all this, the distance education library must embrace new technology in order to survive in today's information society and the global village epitomized by the internet if it is to remain relevant in support of graduate education. Yet despite the pivotal role that ICTs play in enhancing library and information services to a geographically spaced clientele there is a challenge in trying to offer services to an audience which is indeed unable to utilize the services through limited access to ICTs and lack of technical expertise to exploit such services. Despite that, it remains clear that the digital library services route is critical for libraries in an ODL environment.

The role of the Library in distance Learning

Prior to the realization or, even the concept of distance education and asynchronous learning networks, the library was seen as the owner of the essential process to store, preserve and to disseminate knowledge and information as it relates to the instructional process thereby contributing towards the quality of graduate education.

As educational institutions face the challenge of distance education, libraries find themselves playing a pivotal but ever changing role-thus providing up to date and relevant information to a student clientele that may never set foot into the library building. How will libraries cope? This calls for distance educators and researchers to take a pro-active stance-by looking ahead and seeing what will be needed to support not only the modern but also the traditional student. There must be a renewed structure to the role of academic libraries. The librarians can no longer be insular and strait jacketed in their approach but must be ahead on the issues of technology and knowledge management.

ICTs Overview with reference to libraries

The terms information technology (IT) and ICTs are synonymous with each other as all involve information processing interaction between the providers and the users of information. These technologies provide the means of handling already existing resources, information in this case educational subject information and knowledge. ICTs represent a convergence of electronics, computing and communication thus revolutionizing information handling. There is considerable interest in exploiting ICTs in all sectors in Africa. In the economic sphere, interest in ICTs is partly inspired by the belief that that they are increasingly essential for the efficient use of resources in general. It is also important, however, to recognize that there are, in many African countries already initiatives in which outside agencies, government, and private and public sectors are involved in the application of ICTs.

According to Okpaku (2003:2) ICTs have a duality of capacities: as a basic infrastructure for information and communications, that is as a utility; as well as enabling capacity which supports and in many cases drives practically all other sectors through its products and services. This implies also that there is a dual challenge: that of ICT development and ICT for development. In light of this assertion ICTs stand as utility where the question of utilizing them and developing them for the purposes of disseminating educational information comes into place. ICTs are seen as enablers as in the case of electronic document delivery in the form of emails or electronic forums or

bibliographic databases as those utilized by the ZOU library and information services in enabling access to e-books, e-journals and other library resources.

Chikonzo's (2005:33) research on librarians and the use of ICTs in the provision of HIV/AIDS information in developing countries cites SAFAIDS as an example with its electronic document delivery services, internet searches and literature searches through the electronic database. She also cites the University of Zimbabwe College of health sciences library that uses Healthnet e-mails to disseminate information regarding health issues. Chikonzo's (2005) research advocates for the use of ICTs as an effective method disseminating information in libraries and information service departments. Hence the use of ICTs in library services by ZOU and libraries.

Rosenberg (1998:5-13) argues that, many libraries have progressed in their implementation of ICTs, but they heavily rely on donor funding. In a survey conducted in nineteen university libraries of twelve African countries, the findings were that no library had made any practical proposals for financial sustainability. This manages to illustrate the attributes of implementing ICTs in the context of developing African countries. It appears sustainability is a challenge for any library department intending to set up ICTs in disseminating information to clients. This is so as the information age has seen the rapid generation of new hardware and software requirements to support ICTs as failure to cope with new updates might result in obsolesce.

According to Mchombu (2004:15) there are two ways to disseminate information through ICTs. The first is through a "push process" which provides timely messages to many people or groups without having to initiate the communication for example advertising. The second method is through the "pull process" which targets the needs of an individual or organizations and delivers it to them on demand for example booklets compiled from newspaper clippings. The library department's ability to manipulate ICTs will determine the extent to which the "pull and push processes" will be effective in disseminating information and knowledge. The picture presented by Mchombu (2004) shows the applicability and flexibility of ICTs in information dissemination which may be adopted in ODL libraries especially through the pull process.

Darch (1998:23) notes that, librarians face challenges in integrating traditional information delivery based on print with modern computerized and networking delivery of digital information. However, with the prevalence of the digital divide and the case of the rich north and poor south print media has been playing a pivotal role as the key library resources.

The African Development Forum (1999) assessed that ICTs are not only limited to the transfer of information. In the developed world in addition to relaying information, ICTs are used to promote better health behaviour, to promote information exchange among peers, and to promote the effectiveness of health institutions. This assessment gives an insight into the multi functioning attributes of ICTs and how that can be manipulated into the dissemination of educational literature. The diverse functionality of ICTs also poses a great challenge to library and information professionals as they are obligated to use ICTs effectively in order to ensure that ICTs are fully utilized. This enhances the accessibility of library services for the distant student. The Committee on Economic, Social and Cultural Rights (CESCR) (2005:31) revealed that "ICTs offer a freedom of informational access and expression that may exceed permissible social, political and legal boundaries". This is a characteristic that comes in very handy for libraries in ODL environments.

The Digital Library and its associated Services

The term a "library without walls" refers to the use of computers to store library materials or an organized collection stored in digital or electronic formats and accessible online. The term has been applied to a wide variety of offerings from collection of electronic materials to software agents that support inquiry based education to electronic versions of public and academic libraries. The virtual library emerged in the mid 60's from explosive growth of the internet and development of graphical web browsers. This encouraged the viability of extending library resources and services beyond their current walls and communities facilitating the sharing of scarce resources and reaching underserved populations. Along with distance education, the trends of a virtual library have been advancing for decades brought on by the automation of many of the library services. This was precipitated by the demand for efficient and faster information caused by the emergence of enhanced information technology. As the digital age continues libraries will have to continue with their intuitive nature to provide materials at the client's individual location any time anywhere. However, there are barriers to the development of virtual libraries in developing counties because of low levels of technology and computer literacy. This is so despite the potential of virtual libraries in enhancing information access in ODL environments.

Bavakutty and Parmeswaran (2000:36) propounded that, Information Technology (IT) has entered libraries and their users in the form of tools or products, resources or infrastructure giving users effective service. It has ushered in a variety of media

and helped library and information managers in devising effective methods of information acquisition, organisation and dissemination.Despite the various benefits that accrue from the concept of virtual libraries to distance education institutions, Africa in general and Zimbabwe in particular has been lagging behind of this new technological sensation brought about by the information age due to a variety of reasons. Virtual libraries require sophisticated information and communications technology which the country does not currently have as such technological infrastructure requires vast financial resources. In addition the setting up of digital libraries requests a huge intellectual investment which developing countries lack.

Most libraries are manual making the delivery of distance learning library services difficult with very few full computer literate information professionals in the form of librarians and support staff. The absence of computerized systems in academic libraries such as Machine Readable Catalogues better also known as MARC and On Line Public Access Catalogue (OPAC) inhibit the ability of distance learning academic libraries to overcome the physical barrier of distance in the provision of library services. Current trends in supporting the distant clientele include affording library patrons to have region wide borrower's cards enabling clients to go to different libraries but having the same rights and privileges. Consortia membership between academic libraries allowing for access to shared catalogues and databases and the ability to request online interlibrary materials. Toll-free telephone numbers providing and encouraging direct communications between the student and the library may also be utilised. Fax capabilities and electronic document delivery for the timely delivery of information resources to the distant client may also be explored and local area networks and wide area network to provide the distant students with the capabilities of using multiple databases and on line public access catalogue is also essential. The internet provides a huge database of reference materials and capabilities to communicate with people sharing the same research, it also enables the students to perform research at other libraries and institutions.

The challenge for the ODL library is to remain relevant in a very fast moving technological knowledge economy that threatens to bypass it. In this digital age, libraries will be required to react to the need of anytime anywhere by providing materials at the student's individual locations. The question is how can distance education libraries continue, in today's digital age, to play their traditional role of being the citadels and bastions of information that is central to active learning when dealing with distant

learners who may never set foot into the library building and who are technologically illiterate and who have limited access to ICTs and who have limited access to the physical library building because of distance and time. It has been the primary challenge of distance education programmes and units to provide current, relevant information for the distant students. Ever since the advent of automation, distance education libraries have been faced with what library science scholars call "techno stress". This stress is not caused by technological ignorance but by the rate of change and the in ability to afford. With the emergence of new technology distance education libraries will see no relief from this dilemma. Thus libraries need to keep pace with the new information technology in order to strive to meet the distance student's needs.

Training and Education in ICTs
ICT skills are increasingly becoming a necessity if one is to fully participate in today's information society. ICT skills become very important for the distant student to access knowledge and information in pursuit of their studies.
Ekpeyong (2003:198) states that users need to be educated and trained on how to effectively use ICTs as well as other resources in the information centre to enhance their teaching and research. Librarians must rethink access tools, develop intelligent databases and redesign their organisations to enable them to face the challenge of disseminating information.
Professional library staff should be trained in ICT skills to enable them to assist and educate users. Training in ICT skills and management must be a continuous exercise. With ICT, libraries must re-order their priorities; old systems have to make way for new and useful ones to suit the electronic age. For effective services, the acquisition of relevant skills is vitally important. However the ODL library faces the challenge of trying to train library patrons in the use of ICTs who would not be available because of distance and who often do not have the time to undergo training but who are in need of the ICT skills to enable them to access library services.

The Nature of electronic Library Services at Zimbabwe Open University
The Zimbabwe Open University in an effort to roll out library services has subscribed to about ten websites and data bases which include sites such as EBSCO, Emerald, Cambridge and E-brary. These e-resources offer access to a vast array of e-books, journals and other resources on various subjects and disciplines. Students are given access to the user I.D's and passwords enabling them to access e-

resources were ever they are able to gain access to the internet.

The library and information services has established computer labs throughout the ten regional libraries in an effort to enhance access to the internet and to e-resources. However, the e-brary data base can only be accessed using the ZOU IP thereby only enabling students to access to resources on this data base at ZOU computer labs. The students in outlying areas do face challenges in accessing the regional libraries and computer labs. The University has set up district resource centres in effort to alleviate this challenge. In addition there is a cooperative system between government funded educational institutions which enable students to access libraries of other state funded educational institutions.

Purpose of the study

- To establish the challenges of establishing digital library services in an ODL environment

- To find the ICTs skills and capabilities of ZOU students.

- To find out e-resource usage amongst students

- To find out how digital library services should be introduced in an ODL environment.

Statement of the problem

What are the challenges of establishing digital library services in an ODL environment and the ICT skills required by ODL students?

Research Questions

- What are the challenges of establishing digital library services in an ODL environment?

- What are the ICTs skills and capabilities of ZOU students?

- Have e-resource been utilized effectively by students?

- How should digital library services be introduced in an ODL environment?

Assumptions of the study

- The students will respond to questionnaires issued

- The respondents will honestly answer questions
- That students are aware of the advantages of using ICTs.

- Students are aware of the E- Resources offered by the ZOU Library

Scope of the study

- The study focused on 545 ZOU Mashonaland East registered Students.

Limitations of the study

- The study was conducted in Mashonaland East region and therefore cannot be generalized for the other 9 ZOU regions.

- The study was conducted over a single semester which might limit accuracy and validity of the information obtained.

- Due to the use of a single data gathering instrument the accuracy of the information gathered might be limited.

Methodology

In order to gather information on the use of electronic resources the researchers used the survey technique to gather information regarding the access and use of electronic library resources. Data was gathered using 200 questionnaires which contained closed and open ended questions. Questionnaires were issued to students who came to the Mashonaland East Regional Library.

Sample Selection

The researchers randomly selected 210 students out of a total population of 545 students who were registered for the semester and 200 students responded to the questionnaire.

Data Collection and Analysis

Data was collected between the periods February to May 2011. The data collected was analysed statistically.

Summary of Findings

A total of sixty percent of the library patrons fall between the ages of 31-40 and those who are 41-50 make up thirty two percent. Six percent of students are between 17-29 and two percent are 51years and above. While 70% of students are married whereas 15% are single, 10% divorced and 5% are widowed. These findings are in line with general characteristics of distance education students with a majority of them being mature and married. This tends to impact on their ability to afford ICTs as they have several

family commitments, hindering their access to ICTs and e-resources. Most mature students lack a lengthy exposure to ICTs as most ICTs have just become more readily available in developing countries.

Sixty five percent of library clients reside in rural areas whilst 35% stay in urban areas. Rural and peri urban areas have limited telecommunications infrastructure which restricts access to the internet and in addition there is also limited access to electrical power making the use of ICT gadgets difficult as computers and multimedia appliances rely on electrical power.

Only 20% of students own personal computers while 30% described themselves as computer literate. This really points to a great need for the library to enable training in ICTs if students are to benefit from the library's e-resources. 60% of students access the internet at internet café's while 35% access internet on mobile phones and 5% access the internet at work. ICT gadgets are costly and lie beyond the reach of many hence a very   few students have multimedia phones which can access the internet.

85% of the students do not have access to the e-resources offered by the library because of lack of ICT gadgets like multimedia cell phones and computers as well as the non availability of electrical power and a weak telecommunications infrastructure that is in rural and peri urban areas. 95% of students prefer print resources compared to electronic resources because they are unable to access electronic sources as they have limited access to computers and internet. In addition students possess limited skills in ICTs.

95% of students rarely use the internet for scholarly research and 28% of students have training in the ICTs mainly in word processing while they lack internet and information retrieval skills. 82% of students said they needed training in ICTs especially in word processing, internet surfing and information retrieval as they identified these skills as being useful during their studies.

Recommendations and Conclusions

As noted by Chikonzo (2005) the use of ICTs in disseminating information is useful in libraries but however Rosenberg highlighted concerns to do with sustainability in terms of financing the maintenance of the ICT infrastructure as most libraries rely on donor funding or simply cannot afford them at all. While Darch (1998) has discovered that despite the technological advancements most libraries still provide information in print this has been as a result of a number of challenges paused by the digital divide and the costs of setting up ICT infrastructure. The adoption of electronic library services have to be rolled out gradually and with a lean towards print and

traditional library services as the students are technologically illiterate and lack the time to attend training programmes that distance educations might want to offer.

In addition most developing nations lack the technological infrastructure to support ICTs. These include reliable electricity and a good telecommunications system. Hence the centre of focus with regards to electronic library services is not mainly only on the client but also on how the library operates its administrative functions such as student registration and lending facilities. The administrative functions will definitely be affected by the weak ICT infrastructure, thus there is a need to run electronic administrative functions along with back up manual records. This is the only way the library can enhance increased access to library services using ICTs whilst offsetting the limitations of ICTs which include inaccessibility, technological illiteracy and in affordability by the use of traditional manual library services.

The combined adoption of electronic and digital library services however comes with increased costs and labour in terms of trying to run the two systems at the same time. But however, it is a necessary evil if information access is to be enhanced in order to meet the needs of a geographically spaced clientele of an Open and Distance Library. The library will gradually move towards to full digitalization of library services as the environment of the library changes.

The ZOU library and Information Services should strengthen its cooperation with other tertiary institution libraries to enable students to access library services at Universities and colleges near their places of residence, thus establishing effective library consortiums that break the barriers of distance learning and the handicap of the digital divide with regards to access to ICTs.

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