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Electronic Information Seeking Among LIS Postgraduate Students at Makerere University, Uganda

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Introduction

Higher education is changing rapidly (Toner 2008). Bennett (2003) identifies two major shifts in education. Firstly, higher education is moving away from a teaching to a learning culture. Secondly, the revolution in information technology is changing delivery of education. An academic library should take these two shifts into account while planning their services. Like much of the world, the Uganda system is becoming increasingly open and diverse with the underlying strategic aim of being available to all. Makerere University is Uganda's premier institution of high learning with over 30,000 students. It is one of the largest universities in East and Central Africa.. It is also one of the oldest and most prestigious universities in Africa. Makerere University was established in 1922 as a technical school and currently has 22 faculties offering day, evening, and distance study programmes. In recent years there have been a number of changes in the higher education sector in Uganda and, in particular, at Makerere University (Okello-Obura and Magara 2008). These dramatic changes include the way in which information is provided to the university community. The university, through a number of donor supported programmes, has embraced the electronic provision of information to facilitate study programmes and research. With the integration of online information services like full text online journal, electronic books, Electronic document delivery services and digital libraries in its library systems, Makerere University is attempting to disseminate information by means of an electronic hybrid Online systems. According to Tsakomas and Papatheodorou (2006) advances in technology and transformations in the information landscape have altered the way users interact with such information systems. The transition from print to electronic medium, apart from resulting in a growth of electronic information, has provided users with new tools and applications for information seeking and retrieval that take their idiosyncrasy into account, rather than obliging them to adapt their own characteristics (Tsakomas and Papatheodorou 2006).

The major objectives of the adoption of e-resources are to facilitate access to international information resources via the Internet as well as the timely dissemination of both local and international research output (Okello-Obura and Magara 2008). This should result in efficient research by enabling access to up-to-date international literature as soon as it is published; and ensure satisfaction of user needs.

Following a study conducted by Okello-Obura and Magara (2008) to determine electronic information resources use by Library and Information Science (LIS) undergraduate students, another study was commissioned to analyse the use of e-resources by LIS postgraduate studies. The need for this study

was prompted after discovering that the list of references of coursework and assignments submitted by most postgraduate students that did not include e-resources despite the fact that the Makerere University Library was subscribing to a number of them. Secondly this was also based on the assumption that students in the LIS discipline, should be knowledgeable and comfortable with electronic resource usage. This prompted a number of questions including: what computer skills LIS postgraduate students have? What are their attitudes towards e-resources? What suggestions do they have to help improve on e-resources?

1.1 Objectives of the study

The objectives of this study were to

- establish the level of computer skills of Makerere University LIS postgraduate students.
- determine the use of electronic information resources by LIS postgraduate students at Makerere University.
- determine the attitudes of LIS postgraduate students towards electronic information resources.
- recommend appropriate measures to improve electronic information access and use at Makerere University.

Literature Survey

Governments, publishers, academics and libraries throughout the world have realised that electronic publishing is and will continue to have an effect on how scholarly resources are published and accessed. Therefore providing access to e-resources is crucial if academic libraries are to be able to support their users into the next century (McQuistan and Henderson, n.d). The issue of retrieval skills, attitudes towards e-resources and strategies to improve on e-resources use become apparent in academic libraries.

Electronic Information retrieval skills

As noted by Tsakonas and Papatheodorou (2006), digital libraries, e-journal platforms, portals, e-prints and other web-based information systems provide services supporting users to perform intense work tasks that require complex interaction activities. This implies that library user cannot access e-resources without adequate computer skills. How do you access e-resources when you are not comfortable with computer usage? How can you when you do not know how to navigate through the Internet? These are some of the questions that confront e-resources users. According to Toner (2008), advances in technology have made possible virtual classrooms, online courses, and distance learning. This, coupled with the growth in society's access to information via ICT, has altered student perceptions of what the library has to offer. If libraries are to maintain their relevance in the cycle of student needs, then they must adapt and change (Toner 2008). MacWhinnie, (2003) and Thachill (2008), argue that students sometimes lack technical and research skills and so do not find the best and appropriate information, tempting them to use whatever information they can find first, fast and full text. More importantly, even with a good easy to use integrated system, students very often need the expertise of a librarian to apply search techniques and find the information they need (Thachill 2008).

Tella ... *et al* (2007) argue that the students' ability to find and retrieve information effectively is a transferable skill useful for their future life as well as enabling the positive and successful use of the electronic resources whilst at school. They noted that in this digital era any student at the higher level who intends to better achieve should have the ability to explore the digital environment. Students are increasingly expected to use electronic information resources whilst at the university. To make use of the growing range of electronic resources, students must acquire and practice the skills necessary to exploit them (Okello-Obura and Magara 2008). Skills learning is essential in a technology driven environment but can be enhanced tremendously through the use of innovative learning strategies (Lawson 2005). Ray and Day (1998) suggested that the skills required to access the maximum potential of electronic resources are much greater than those required for searching printed sources. These skills include knowledge of the structure of the database and the instructions which must be input into the computer by the searcher - as well as an understanding of the ways in which the instructions are linked to one another. Okon (2005) asserts that the core skills traditionally associated with information professionals, which include information handling skills, training and facilitating skills, evaluation skills and concern for the customer, are all still relevant.

The ability to find and retrieve information effectively is a transferable skill for enabling the positive

and successful use of electronic resources by students while they are at university - as well as in their future lives. As Brophy (1993) argues, libraries must "reach a position where the acquisition of information skills is acknowledged as one of the key learning objectives for every student entering a university, so that no student leaves without being fully equipped to cope up with the information intensive world - the information society - as an end-user." The library has not only ready and free information highway, but also the adequate and efficient information transport means, which allows the readers to use the tools and obtain the information they need (Shuling 2007). The literature highlights the advantages of electronic over printed sources of information, but also suggests the need for certain skills in order to access and use electronic resources effectively. Given their apparent lack of use of electronic resources, this study set out to determine if LIS postgraduate students at Makerere University have the required skills and ability to access and use electronic resources. But importantly, why the focus on e-resources?

Why electronic information resources?

Higher education is changing rapidly with the advent of technology. According to Shuling (2007), in recent years, electronic information has gradually become a major resource in every university library. The growth and diversity of electronic resources, especially e-journals, in the past few years has led many to predict the extinction of the printed journal (Okello-Obura and Magara 2008). It has been suggested that a new paradigm is sweeping scholarship (Liew, Foo and Chennupati 2000; Harper... *et al* 2006). Majid ... *et al* (1999) argue that technological advancements opened up new horizons for the creation, storage, access, distribution and presentation of information. In the global information communications technology (ICT)-dominated world, "place" is much less important (Ferguson 2006). "The impact of moving from text-based to resource-based learning has involved heavier use of library materials and a demand for more and varied media sources" (Kinengyere 2007). This makes the provision and use of Electronic Information Systems (EIS) in academic libraries a critical issue for those working in information and library services (Armstrong... *et al* 2001; Elam 2007). The pace at which information resources are being produced and converted into an electronic form is greater today than in previous years (Armstrong ... *et al* 2001). In today's information age it would seem that library users would not only be eager to take advantage of the convenience electronic resources have to offer, but would be fully immersed in the new technologies (Elam 2007).

Electronic information resources offer today's students different opportunities compared to their predecessors. Liew, Foo and Chennupati (2000:302) argue that while reading an e-journal is not the same as reading a printed one, many are beginning to acknowledge the possibility that electronic documents (e-documents) offer users advanced features and novel forms of functionality beyond what is possible in printed form. Years ago Brophy (1993), noted that the advantages of electronic resources over print include speed, ease of use, ability to search multiple files at the same time, ability to save, print and repeat searches, more frequent updating and the ability to access from outside the library (a particular advantage for the distance learner). According to Dadzie (2005), electronic resources are invaluable research tools that complement print-based resources in any traditional library. Their advantages include access to information that might be restricted to the user because of geographical location or finances, access to current information, and provision of extensive links to additional resources or related content (Dadzie 2005). E-resources could be stored electronically thereby saving space, the risk of lost, theft or damage is lessened and costs significantly reduced.

Attitude towards e-resources

Academic libraries now live in a superior new world. The rapid advancement of Information and Communication Technology (ICT) has brought a revolutionary change in the information scenario giving rise to a number of options to the users' community to handle varied information sources conveniently and effortlessly. As a result e-resources have become the lively substance to the modern library's reserves in satisfying varied needs of students, teachers, and researchers with minimum risk and time (Swain and Panda 2009). For better planning, it is vital to have knowledge on the attitudes of users towards e-resources. Swain and Panda (2009), say the library users' attitude to information is gradually shifting from the printed documents to electronic resources and thus, it has been their prerogative to know the details of the availability and organization of e-resources like online journals and databases, electronic theses and dissertations (ETDs), government publications, online newspapers, etc. in libraries. Given technology increased use, it is important to understand how technologically rich environments are influencing student attitudes toward e-resources access. Many factors influence attitudes. The introduction of open access journals and other resources for instance is creating another attitudinal tendency towards e-resources.

Open access is one of the cheapest routes to electronic resources and over the last few years open access resources have grown and provided an affordable way to provide access to some journal content (Price 2009). Supporters of open access argue that, when academic articles, dissertations and theses are put online and open to all, it helps in fighting duplication and plagiarism of other people's intellectual works. Although the open access movement has brought access to many valuable resources, and provided libraries with an invaluable amount of resources, many open access projects still face an uncertain future (Price 2009). Many critics are not sure that the open access model can survive because some are not considered "financially viable" or as high quality as traditionally purchased or subscribed content (Robinson 2006; Shao and Scherlen, 2007; Turk and Bjork 2008). Where do LIS postgraduate students fall in this case? What are their attitudes towards open access electronic resources?

Attitudes towards e-resources access could be attributed to problems faced when accessing e-resources. For instance in a situation where there is inadequate computer technologies to access e-resources or poor Internet connections, students positive attitudes could be affected. That is why the problems that affect e-resources access are addressed in higher learning institutions libraries.

The arguments for students using electronic resources are compelling. An adequate knowledge of computers and retrieval techniques is desirable to search these resources effectively. It is necessary to establish what computer skills students require to access electronic information resources in libraries. Amidst all the efforts to access e-resources, LIS postgraduate students face a number of challenges. These are reported in another paper by the same author.

Methodology

The study was conducted at the East African School of Library and Information Science, Makerere University, Uganda. A total of 36 first and second year Master of Science in Information Science (MSc. Inf. Sc) students constituted the population of the study. Since the population was small and manageable, the entire population was used as the sample. The study was conducted at a time when both first and second year students had learnt two relevant course units (Computers and Communication Technologies; Information Storage and Retrieval). The study used a quantitative approach in which a structured survey questionnaire was used for data collection. A survey research technique is a fact-finding research technique dealing, chiefly, with the nature and problems of the community that may result in the formation of important principles of knowledge and the solution of scholarly problems (Sharma 1990). A survey is used to explain/explore and may be explanatory, descriptive or a combination of both (McNeill 1990). A survey asks people about their beliefs, opinions, characteristics, past or present behaviour, expectations and knowledge (Neuman 2003). The possible answers to most questions in the questionnaire were coded before administering the questionnaire Edwards and Talbot (1999) argue that irrespective of the research design and the methods used, a stage of coding and classification of information must be undertaken. Given that the total numbers of MSc. Inf. Sc students was small (36), the questionnaire was not pretested among the population. Instead the researcher used 3 LIS lecturers to critic the survey questions. Following the critics' suggestions given, adjustments in wording and typing errors were made. The researcher administered the questionnaire during participants' lectures for five days in order to ensure that all could participate. Responses were checked for legibility and entered into an Excel spreadsheet by a data entry assistant. A researcher before analysis undertook further quality checking of the data by reading through entered data to establish data entry errors. Excel was used to carry out simple descriptive statistics that are highlighted below

Results

Characteristics of the respondents

Of the 36-targeted students, 25 (69.4%) participated, 52% were female while 48% were male.

Computer skills of the respondents

Computer skills were defined for the purposes of this project as 'the skills a computer user needs in order to use the computer'. Before the computer skills were established, the study first determined the level at which the LIS postgraduate students learnt how to use a computer and the results were as given in

Table 1.

Table 1 Levels at which respondents learnt how to use a computer

| Level at which respondents learnt how to use a computer | Frequency | Percentage |
|---------------------------------------------------------|-----------|------------|
| Nursery | 0 | 0 |
| Primary | 4 | 16 |
| Secondary | 9 | 36 |
| Diploma | 8 | 32 |
| Bachelor | 8 | 32 |
| Postgraduate | 2 | 8 |

To establish the computer skills of the respondents, selected number of computer skills/packages was given to the respondents to choose from. The results were as indicated in Table 2.

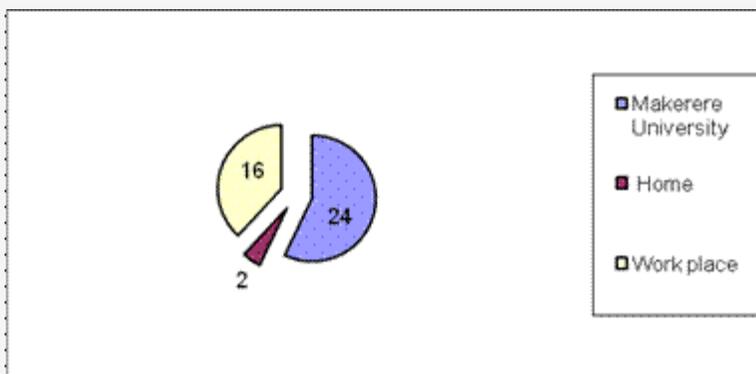
Table 2: Computer Skills N= 25

| Computer skills/packages | Yes (%) | No (%) |
|---------------------------------|---------|--------|
| Word-processing | 96 | 04 |
| Spreadsheets | 60 | 40 |
| Database Management | 92 | 08 |
| Internet and e-mail use | 60 | 40 |
| Programming | 40 | 60 |
| Web page design | 60 | 40 |
| Desktop publishing | 40 | 60 |
| Computer repair and maintenance | 24 | 76 |
| PowerPoint presentation | 72 | 28 |
| Others, Specify | 0 | 0 |

Electronic Resources Usage

To access e-resources, a user needs networked computer. Based on that, the respondents were asked to state where they access networked computers from and the responses were as given in Figure 1.

Figure 1: Places where LIS postgraduate students access networked computers from



When the respondents were asked where they would prefer to access e-resources from, the responses were as given in Table 3.

Table 3: Places where respondents preferred to access e-resources from

| Places | Frequency | Percentage |
|-----------|-----------|------------|
| On campus | 18 | 72 |

| | | |
|---------------|----|----|
| Residence | 10 | 40 |
| Work place | 24 | 96 |
| Internet Cafe | 8 | 32 |
| Others | 3 | 12 |

When the respondents were asked for the reasons as to why they access e-resources, the results were as given in Table 4.

Table 4: Reasons for accessing networked Computers

| Reasons for accessing networked computer | Frequency | Percentage |
|------------------------------------------|-----------|------------|
| Working on coursework assignment | 24 | 96 |
| Looking for opportunities | 10 | 40 |
| Creating a Blog | 0 | 0 |
| E-mail services | 24 | 96 |
| Sending short text messages (sms) | 10 | 40 |
| Participating on online discussions | 8 | 32 |
| Others | 2 | 8 |

It was necessary to establish the kind of e-resources accessed by the respondents. The results were as given in Table 5.

Table 5: Type of Electronic Resources and their usage at Makerere University

| Which of these e-resources do you use at Makerere University? | Frequency | Percentage |
|---------------------------------------------------------------|-----------|------------|
| CDROMS | 8 | 32 |
| Internet | 23 | 92 |
| E-mail | 10 | 40 |
| Electronic journals | 21 | 84 |
| DATAD (Database of Thesis and Dissertation) | 15 | 60 |
| OPAC | 13 | 52 |
| Electronic books | 11 | 44 |
| ELIN | 7 | 28 |

When respondents were asked to indicate the full text database they access and use, the responses were as given in Table 6.

Table 6: Use of full text databases

| Full text database** | Accessed and used full text | Percentage (%)*** |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------|
| AGORA: http://www.aginternetwork.org/en/ | 0 | 0% |
| Blackwell synergy: http://www.blackwell-synergy.com | 19 | 76% |
| Cambridge journals online: http://journals.cambridge.org | 11 | 44% |
| Cochrane library http://www3.interscience.wiley.com/cgi-bin/mrwhome/106568753/HOME | 11 | 44% |
| EBSCO: http://search.epnet.com | 16 | 64% |
| Emerald Group Publishing Ltd http://www.emeraldinsight.com/login | 23 | 92% |
| GALE (Thomas Learning) http://infotrac.london.galegroup.com/itweb/makuni | 0 | 0 |

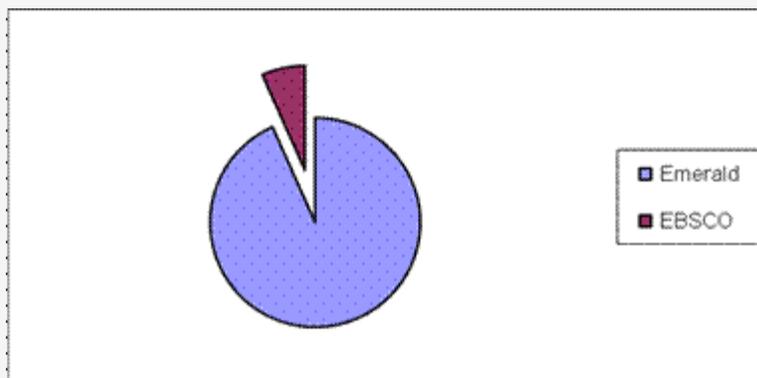
| | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|----|-----|
| HINARI: http://www.healthinternet.org/scipub.php | 11 | 44% |
| Institute of Physic Publishing (IOPP) http://www.iop.org/EJ | 0 | 0 |
| Oxford University Press (OUP): http://www3.oup.co.uk/jnls/ | 8 | 32% |
| Palgrave Macmillan journals http://www.palgrave-journals.com/pal/jnlsubject.html | 0 | 0% |
| Royal Society of London: http://www.pubs.royalsoc.ac.uk/ | 0 | 0% |
| Springer link: http://www.SpringerLink.com | 8 | 32% |

** Makerere University Library subscribes to all the given databases

*** Percentage computed is based on the response of each question out of the 25 respondents.

Respondents were asked to choose between Emerald and EBSCO databases in meeting their information needs, the responses were as in Figure 2.

Figure 2: Choice between Emerald and EBSCO in meeting Information Needs



Benefits of using e-resources

When the respondents were asked to state the benefits they derive from using e-resources, the results were as given in Table 7.

Table 7: Benefits derived from E-resources

| Benefits of using electronic information resources | (Yes) Frequency | % |
|----------------------------------------------------------------------------|-----------------|----|
| Access to a wider range of information | 24 | 96 |
| Faster access to information | 21 | 84 |
| Access to current up-to-date information | 19 | 76 |
| Easier access to information | 19 | 76 |
| Improved academic performance as a result of access to quality information | 19 | 76 |

4.4. Attitudes of LIS postgraduate students towards e-resources

Respondents' attitudes were determined by asking them to respond to the following statements:

Statement: "I feel that the standard of my academic work would suffer without electronic resources"

| Response Options | (Yes) Frequency | % |
|------------------|-----------------|----|
| Strongly agree | 18 | 72 |
| Agree | 3 | 12 |
| I don't agree | 4 | 16 |
| I don't know | 0 | 0 |
| I don't use it | 0 | 0 |

Statement: "I can avoid electronic information resources and still perform well in my academic work"

| Response Options | (Yes) Frequency | % |
|------------------|-----------------|----|
| Strongly agree | 0 | 0 |
| Agree | 0 | 0 |
| Somehow I agree | 7 | 28 |
| Disagree | 18 | 72 |

Statement: "Given the opportunity to choose between electronic resources and printed resources at Makerere University to do my coursework and research, I would choose printed materials"

| Response options | (Yes) Frequency | % |
|------------------|-----------------|----|
| Strongly agree | | |
| Agree | 1 | 4 |
| Somehow I agree | 4 | 16 |
| Disagree | 20 | 80 |

Statement: "Open access journals should be promoted because they help to fight plagiarism of people's intellectual works since they are open to everybody"

| Response options | (Yes) Frequency | % |
|------------------|-----------------|----|
| Strongly agree | 7 | 28 |
| agree | 4 | 16 |
| Somehow I agree | 7 | 28 |
| disagree | 7 | 28 |

Statement: "With the advent of e-journals and e-books, CDROMs are becoming unpopular among students"

| Response Options | (Yes) Frequency | % |
|------------------|-----------------|----|
| Strongly agree | 6 | 24 |
| agree | 17 | 68 |
| Somehow I agree | 1 | 4 |
| disagree | 2 | 8 |

Statement: "A University is not worth its name without e-resources"

| Response Options | (Yes) Frequency | % |
|------------------|-----------------|----|
| Strongly agree | 20 | 80 |
| Agree | 3 | 12 |
| Somehow I agree | 0 | 0 |
| Disagree | 2 | 8 |

Statement: "There is no need to subscribe to paid journals since open access journals relevant to my field do exist"

| Response Options | (Yes) Frequency | % |
|------------------|-----------------|----|
| Strongly agree | 1 | 4 |
| Agree | 0 | 0 |
| Somehow I Agree | 0 | 0 |
| Disagree | 24 | 96 |

The respondents were given a number of strategies to choose from so as to improve on the e-

resources use in Makerere University and responses were as given in below:

Table 8: Suggestions to improve on e-resources access and use

| Strategic Options (Suggestions) | (Yes) Frequency | % |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----|
| Computer skills of students should be improved | 18 | 72 |
| First year postgraduate students should be introduced to ICTs and e-information literacy in all faculties | 15 | 60 |
| Lecturers should insist postgraduate students in using e-resources | 15 | 60 |
| All postgraduate students should be taught e-records management to help in the management of electronic information obtained from e-resources | 18 | 72 |
| Librarian' skills on e-resources searching and retrieval should be improved | 19 | 76 |
| More networked computers should be purchased by the University | 18 | 72 |
| University Libraries should improve on awareness campaign of e-resources | 15 | 60 |
| Phone short message services should be integrated into library e-resources services provision for awareness services for e-resources | 16 | 64 |
| The University should introduce e-resources fee to be paid by students | 19 | 76 |
| Postgraduate students' computer laboratories should be established in all Faculties | 18 | 72 |
| Wireless network in Hall of residence/affiliated hostel should be started | 12 | 48 |

From the results it can be deduced that all suggestions are important

Discussion

University libraries are a hub of knowledge and information services in their institutions and are usually established along with their mother institutions as an integral part (Mirza and Mahmood 2009). This hub requires modern technology today. Modern technology has advanced greatly. With this advancement, the information needs of the library users have also changed (Chen and Wu 2009). The massive impact of ICT on the librarianship profession has changed the way librarians and support staff do their jobs and interact with users and colleagues (Oduwole and Sowole 2006). The question of knowing how to use a computer will remain a challenge to most students in developing countries like Uganda whilst access is a problem (Okello-Obura and Magara 2008). It is only when someone knows to use a computer that they can learn how to access e-resources. Electronic resources and the new models of education have generated an even greater need for reference and instruction (Thachill 2008). Okello-Obura and Magara (2008) argue that learning basic computer skills and applications is increasingly necessary to function in today's workplace or to pursue personal interests in an electronic environment. This knowledge gives library users a practical understanding about how their computers and printers operate, how to troubleshoot problems, how to locate an Internet web site, and a host of other technology-based skills that help a library user to be more successful in the technological world (Lawson 2005). For the effective use of electronic resources, computer use and information literacy skills are essential (Kinengyere 2007). An analysis of the findings (Table 2) indicates that the majority of LIS postgraduate students at Makerere University have different computer skills that include word-processing, Internet and e-mail, database management, power point and web page design. This is very encouraging. Ray and Day (1998); Oduwole and Sowole (2006) note that "if students are aware that the skills required for using electronic resources are not insular, and, provide them with valuable transferable lifelong skills, skills, which employers will be looking for, they may be more likely to learn how to use them".

To access electronic resources, networked computers are necessary ingredients, which any university should strive to have. From the study it was established that 24/25 out of the respondents depended on the university to access networked computers and only 2/25 respondents access networked computers from their work places (See Figure 1). An interesting finding was that when LIS postgraduate students were asked to suggest where they would want to access networked computer from, the majority (96%) suggested work places and on Campus (72%). Unlike in the study conducted by Okello-Obura and Magara (2008) where undergraduate LIS students suggested to access networked computer from campus, LIS postgraduate students want to access network computer from their work places and campus (See Table 3). This could probably be because they spent a lot of their time in their offices and come for only lectures.

Could it be that LIS postgraduate students prefer Distance education or part time education where most of their academic works are done from their offices? This could be investigated in another study.

When we observe Table 8 a great percentage of LIS postgraduate students (72%) proposed that more networked computers should be purchased by the University to help students' access e-resources. This shows that the LIS postgraduate students do understand that it is likely that very few students would be able to afford access to electronic resources without university support. A more difficult question remains whether the University Library can afford to increase the number of networked computers to match the increasing number of students at Makerere University. As Okello-Obura and Magara (2008) argue, national and external lobbying for support or charging fees to enable students to access electronic resources could be some of the possibilities to explore. An analysis of the reasons students use networked computers shows that the majority use networked computers to work on coursework assignments and E-mail services (See Table 4). Two percent of the respondents use networked computers for writing conference papers. Although this is encouraging to note that some LIS postgraduate students make efforts towards developing papers for conferences, the percentage is too low. Compulsory use of e-resources for assignments could improve usage but would require support or collaboration to acquire more networked computers.

Makerere University library - through a number of donor initiatives - subscribes to a number of databases that give full text articles in different journals, including Emerald and EBSCO that provide useful literature in Library and Information Science. An analysis of Table 6 shows that Emerald, Blackwell Synergy and EBSCO are the databases used by the majority of the respondents. When the comparison of the use of Emerald and EBSCO was made (See Figure 3), an overwhelming majority said that Emerald meets their information needs.

When we analyse Table 7, the benefits of using e-resources, we find that, access to a wide range of information, faster access to information, access to current up-to date information, Easier access to information and improvement of academic performance constitute the benefits of accessing e-resources by LIS postgraduate students. Dickinson (1994) earlier argued that electronic resources greatly increase access to information.

A look at the LIS postgraduate students' responses regarding their attitudes on e-resources, shows an encouragement. The majority (72%) of LIS postgraduate students strongly feel that the standard of their academic work would suffer without e-resources. They believe that in order to perform well, they cannot avoid e-resources. They are divided over the issue of promoting Open Access Journals to help in fighting plagiarism of people' work. But the majority disagree with the idea of not subscribing to paid journals since Open Access Journals exists. They believe that a University is not worth its name without e-resources and agree that with the advent of e-journals and e-books, CD-ROMS are becoming unpopular among students.

An analysis of Table 8 regarding suggestions to improve e-resources access and use, it is evident that the idea of having wireless network in Halls of Residence/affiliated hostel received minimal support. This could be attributed to the fact that most postgraduate students come from their homes or rent houses in and around Kampala city (Where Makerere University is located), so they do not see the opportunity of accessing e-resources from halls of residence or hostels.

Conclusion and Recommendations

The advance of technologies has made possible to extrapolate knowledge and moving academic libraries from a traditional environment to a digital environment. A superior stage of development has been reached where the prevalence of the electronic formats allows for providing larger quantities of information to a larger number of users (Vignau and Quesada 2006). To meet the ever-increasing demands from users for remote access to information, academic libraries now subscribe to electronic resources such as e-books, full-text e-journals and online bibliographic databases. While the availability of these electronic resources enables remote access to needed information, they concomitantly present issues and challenges (Armstrong ... *et al* , n.d). Online resources including e-book needs call for a sustainable model for continuous access due to shrinking budget of libraries. The innovative delivery services integral to accomplishing the goal of maximum information accessibility have proven to be quite successful in reaching out to the diverse library users' targets and addressing their specific needs for information services. The libraries of the future will be more of a portal through which students and staff will access the vast information resources of the world and less of a place where information is kept. The need to use electronic resources is of paramount importance to developing countries if access to up-to-date e-resources is to be realized. When students effectively use the electronic resources, there would be enough justification for a library to use its budget to

acquire or provide access to e-information resources and also seek for more funding. The results of this study show that students could exploit the benefits of electronic resources in their academic work. For this, a number of issues need to be addressed beforehand. This study, therefore, recommends the following:

- Computer skills of LIS postgraduate students should be improved. The current ICTs course given to LIS first year postgraduate students should be maintained with emphasis on e-information literacy. This could include training on searching open access journals and subscription based databases, using Boolean logic searches, training on database structure or providing the searching aids for them to at least some degree.
- Lecturers should insist on LIS postgraduate students using e-resources. Encouragement *via* academic staff should be explored to promote the usefulness of electronic resources to students. If LIS academic staff were to promote electronic resources by providing references for students to locate, this may increase the number of students acquiring the necessary information retrieval skills. Lecturers are crucial in the promotion of electronic information resources. Coursework/assignments attached to the use of electronic resources should be evolved. This will compel LIS postgraduate students to use electronic resources further.
- All LIS postgraduate students should be taught e-records management to help them in the management of electronic information obtained from e-resources. This can be an integral part of the course on Information Storage and Retrieval taught to LIS Masters' students.
- Librarian' skills on e-resources searching and retrieval should be improved. Libraries are changing, and there has been a paradigm shift in services offered throughout the world. Library-centered services are changing to user-centered. It may be necessary for Makerere library staff to receive training themselves in customer care and e-resources use in order to provide training more effectively.
- More networked computers should be purchased by the University. This could be achieved through soliciting external support and charging e-resources fees to be paid by students. Though the charging of e-resources fees to be paid by students is supported by the majority of LIS postgraduate students, undergraduate students is opposed to this idea. The time for operation - like span of working hours and time allocated to each user - should be revised upwards to fit within postgraduate students' academic time. This is because they are working-students who get little time to be on campus during the day.
- University libraries should intensify their awareness campaigns concerning the availability of electronic resources. The use of e-mail alert system, text messages and prizes for those who use a lot of e-resources should be considered by the University Library as methods of promotion. Phone short message services should be integrated into library e-resources services provision for awareness services for e-resources.

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