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Electronic Information Access and Utilization by Makerere University Students in Uganda

Constant Okello-Obura

Lecturer, East African School of Library and Information Science

Makerere University

Kampala, Uganda

E-mail: Obura@easlis.mak.ac.ug.

Elisam Magara

Associate Professor, East African School of Library and Information Science

Makerere University

Kampala, Uganda

E-mail: Magara@easlis.mak.ac.ug

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Abstract

Objectives – The objectives of this study were to establish the level of computer utilization skills of Makerere University (Uganda) Library and Information Science (LIS) students; to determine the use of electronic information resources by LIS students; to determine the attitudes of LIS students towards electronic information resources; and to establish the problems faced by LIS students in accessing electronic information resources.

Methods – A questionnaire survey was used for data collection.

Results – The majority of Library and Information Science students at Makerere University depend on university computers for their work, and very few of them access the library's e-resources. The few who access e-resources are self-taught. The majority of students surveyed were unaware of Emerald and EBSCO databases

relevant to Library and Information Science students, and they found accessing e-resources time-consuming.

Conclusion – The study concluded that a concerted effort is needed by both LIS lecturers and university librarians in promoting use of the library's electronic resources.

Introduction

Makerere University is Uganda's premier institution of higher learning, and enrolls over 30,000 students. Makerere is one of the largest universities in East and Central Africa. The university is also one of the oldest and most prestigious universities in Africa. It was established in 1922 as a technical school, and it currently has 22 departments offering day, evening, and distance study programs.

In recent years there have been a number of changes in the higher education sector in Uganda and, in particular, at Makerere University. These dramatic changes include the way in which information is provided to the university community. The university, through a number of donor support programs, has embraced the electronic provision of information to facilitate study programs and research. With the integration of virtual and digital libraries in its library systems, Makerere University attempts to disseminate information by means of an electronic hybrid online public access catalogue (OPAC). The major objectives of the adoption of e-resources are to facilitate access to Internet-based information resources, as well as the timely dissemination of both local and international research output. This should result in more timely access to current issues of international research journals and improve user satisfaction with library services.

Following an analysis of reference lists submitted with assignments in 2004-2005,

LIS lecturers discovered that students in the Library and Information Science (LIS) discipline were not effectively using e-resources for their coursework assignments and were not including references located from e-resources. This prompted a number of questions including:

- What are the perceptions of Makerere University LIS students regarding the availability of electronic information?
- How frequently do LIS students use the e-resources available to them through the library web site?
- What are LIS students' attitudes towards substituting e-resources for printed formats?
- What problems do Makerere University students face in accessing electronic resources?

By gaining a better understanding of the situation, lecturers aimed to identify whether students' information needs were being met effectively and to develop proposals to ensure effective and efficient electronic information resource utilization by LIS students at Makerere University.

This study set out to establish whether students really needed e-resources and to determine their attitudes towards electronic resource utilization and the problems they faced in accessing electronic resources in the university library.

Literature Review

The need for electronic information resources

According to Shuling (2007), electronic information has gradually become a major resource in every university library in recent years. The growth and diversity of electronic resources, especially e-journals, has led many to predict the extinction of the printed journal. It has been suggested that a new paradigm is sweeping scholarship (Liew, Foo, and Chennupati; Harper et al.). Majid and Abozova argued 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 less important (Ferguson). "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). This makes the provision and use of electronic information systems in academic libraries a critical issue for those working in information and library services (Armstrong et al.; Elam). The pace at which information resources are being produced and converted into electronic formats is greater today than in previous years (Armstrong et al.). 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).

Electronic information resources offer today's students new opportunities not available to previous generations. Liew, Foo, and Chennupati (302) argue that while reading an e-journal is not the same as reading a printed issue, many people now acknowledge that electronic documents offer users advanced features and novel

forms of functionality beyond those possible in printed form. Brophy 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 documents from outside the library (a particular advantage for the distance learner).

Electronic resources are invaluable research tools that complement the print-based resources in a traditional library. Their advantages include access to information that might be restricted to the user due to geographical location or finances, access to more current information, and provision of extensive links to additional resources or related content (Dadzie).

The arguments for students using electronic resources are compelling. However, a knowledge of computers and retrieval techniques is needed to search these resources effectively. It is therefore necessary to determine what computer skills students need to access library electronic information resources.

Information retrieval skills

Tella et al. noted that students' ability to find and retrieve information effectively is a transferable skill useful for their future lives as well as enabling the positive and successful use of academic electronic resources. The ability to explore the digital environment is a requirement for academic success today. Students are increasingly expected to use electronic information resources at the university. In order to make use of the growing range of electronic resources, students must acquire and practice the skills necessary to exploit them. Skills learning is essential in a technology driven environment, and it can be enhanced through the use of innovative learning

strategies (Lawson). The skills required to achieve the maximum potential of electronic resources are much greater than those required for searching printed sources (Ray and Day). These skills include knowledge of the structure of the database, the instructions that the searcher must enter into the computer, and an understanding of the ways these instructions are linked to one another. Furthermore, it has been suggested that libraries should ensure that all university students acquire information skills to enable them to operate in an information society once outside the university environment (Brophy).

The literature highlights the advantages of electronic over print sources of information, and it also suggests the need for certain skills in order to access and use electronic resources effectively. Given their apparent failure to use electronic resources, this study sets out to determine if LIS students at Makerere University have the required skills to access and utilize electronic resources.

Objectives of the study

The objectives of this study were to

- Establish the level of computer utilization skills of Makerere University LIS students.
- Determine the use of electronic information resources by LIS students at Makerere University.
- Determine the attitudes of LIS students towards electronic information resources.
- Establish the problems faced by LIS students in accessing electronic information resources.
- Recommend appropriate measures to improve electronic information access and utilization at Makerere University.

Methodology

The study was conducted at the East African School of Library and Information Science, Makerere University, Uganda. The study population included a total of 250 second- and third-year Bachelor of Library and Information Science (BLIS) students. These students were selected as the study population because they had been exposed to information and communication technologies (ICTs) in their first year of studies, and because they were expected to use electronic resources for their coursework assignments and research. The study used a quantitative approach in which a structured survey questionnaire was used for data collection. The questionnaire (Appendix 1) was pre-tested on ten second- and ten third-year Bachelor of Library and Information Science students who did not participate in the main study. Following pre-testing, some questions were re-worded for clarity. One researcher administered the questionnaire during participants' lectures (both day and evening students) over a two-day period. The responses were checked for legibility by a researcher and entered into an Excel spreadsheet by a data entry assistant. A researcher performed further quality checking of the data before analysis. Excel was used to perform simple descriptive statistics that are highlighted below.

Findings

Characteristics of the respondents

Of the 250 targeted students, 190 responded, resulting in a response rate of 76%. The majority of students (55.3%) were female, while 44.7% were male.

Computer utilization skills of the respondents

Computer utilization skills were defined for the purposes of this project as "the skills a

computer user needs in order to use the computer.” The study established that all respondents had some basic computer utilization skills (Table 1). The majority (60.5%) had acquired their computer utilization skills at secondary level (prior to joining the University), whereas 26.3% had acquired them at degree level. Only 13.2% of the respondents had acquired their computer utilization skills at primary level. None of the participants had acquired computer skills at diploma level. The majority of the respondents did not have skills in a wide range of computer applications. Students were most proficient in word processing, spreadsheets, database management, and desktop publishing.

Table 1
Respondents’ computer utilization skills

Computer packages (skills)	Responses Number (Percentage)
Word processing	91 (47.9%)
Spreadsheet	75 (39.5%)
Database management	75 (39.5%)
Desktop publishing	75 (39.5%)
Internet and e-mail use	52 (27.4%)
Programming	24 (12.6%)
Web page design	24 (12.6%)
Computer repairs and maintenance	10 (5.3%)

The majority of LIS students did not believe they had the knowledge or skills for e-resources retrieval (Table 2).

Table 2
Respondents’ knowledge and skills with e-resources retrieval

Knowledge and Skills	Responses Number (Percentage)
Knowledge on the determination of appropriate search term	83 (43.7%)
Use of Boolean logic searching	78 (41.1%)
Knowledge on database structure	75 (39.5%)
Using different search engines	50 (26.3%)

To understand whether respondents seek assistance when they have computer problems, respondents were asked to state how often they asked for assistance. The majority (55.3%) of respondents admitted to sometimes asking for assistance, 32.6% said they rarely did so, and only 12.1% said they always asked for assistance. No respondent admitted to never asking for assistance.

Electronic information resources usage

One of the objectives of the study was to establish the usage of electronic resources by LIS students at Makerere University. Almost three-quarters of the students (74.7%) depended on the university for computers to access to the networked resources, and the remainder (25.3%) accessed computers either at home or at their hostels. Respondents stated that they used networked computers for academic (study) purposes (41.1%); e-mail services (53.7%); and sending text messages to cell phones (44.2%).

When the respondents were asked to review a list of the library’s electronic resources and to select the products they used, the results

indicate that 55.8% used the Internet; 30.5% used the library OPAC; and 5.3% used CD-ROM titles.

Survey respondents reported little use of the library's full-text databases (Table 3).

Emerald and EBSCO full-text databases contain titles that would be most relevant to the academic needs of LIS students, and these were the most frequently used products. Nevertheless, the use of these two products was only minimal (6.32%). The remainder of the products were each accessed by 1% of respondents or less.

Respondents were asked how they learned to access electronic resources and how they acquired database search skills. The majority are self-taught (73.7%), and a large percentage learns from fellow students

(47.4%), trial and error (42.1%), or lecturers (42.1%). Only 5.3% acquired their skills in use of electronic resources from guidance given by library staff.

Survey respondents indicated a variety of perceived benefits related to use of the library's electronic resources (Table 4). While the majority (70%) perceived e-resources as providing access to a wider range of information, only 18.4% believed these resources provided easier access to information. This might be attributed to the lack of available personal computers (Table 5). It is significant that 33% of the students did not consider that access to quality information via e-resources led to improved academic performance.

Table 3
Utilization of full-text databases available at Makerere University*

Full-text Databases	Yes, accessed and utilized the full-text database (Number of respondents)	Percentage (%)*
AGORA	1	0.53%
Blackwell Synergy	0	0
Cambridge Journals Online	1	0.53%
Cochrane Library	0	0
EBSCO (journal collections)	12	6.32%
Emerald Group Publishing Ltd.	12	6.32%
GALE (Thomas Learning)	0	0
HINARI	1	0.53%
Institute of Physics Publishing (IOPP)	0	0
Oxford University Press (OUP)	2	1.1%
Palgrave Macmillan Journals	2	1.1%
Royal Society of London	1	0.53%
SpringerLink	0	0

* Percentage computed based responses from 190 respondents.

Table 4
Benefits students derive from e-resources

Benefits derived from electronic information resources	Responses Number (Percentage)
Access to a wider range of information?	133 (70.0%)
Faster access to information?	107 (56.3%)
Access to current/up-to-date information?	76 (40.0%)
Easier access to information?	35 (18.4%)
Improved academic performance as a result of access to quality information?	63 (33.2%)
Other? (e.g., it is modern, saves money in photocopying etc)	49 (25.8%)

Attitudes of LIS students towards electronic information resources

The questionnaire asked survey participants to respond to the following statements to help determine students' attitudes toward electronic information resources,

I feel that the standard of my academic work would suffer without electronic information resources.

A large majority (90%) of the respondents agreed or strongly agreed with the statement that the standard of their academic work would suffer without electronic resources; only 10% disagreed.

I can avoid the utilization of electronic information resources and still perform better.

The respondents were equally divided on this statement. Fifty percent of the respondents strongly agreed with the statement, while 50% strongly disagreed. None of the respondents chose the "Agree" or the "I don't know" options.

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

Responses were mixed concerning printed versus electronic resources. Sixty percent of the respondents either "strongly preferred" or "preferred" printed materials over electronic resources, and 40% of the respondents did not choose printed materials over electronic resources.

The majority of the students preferred to teach themselves or have lecturers teach them how to use e-resources (Figure 1).

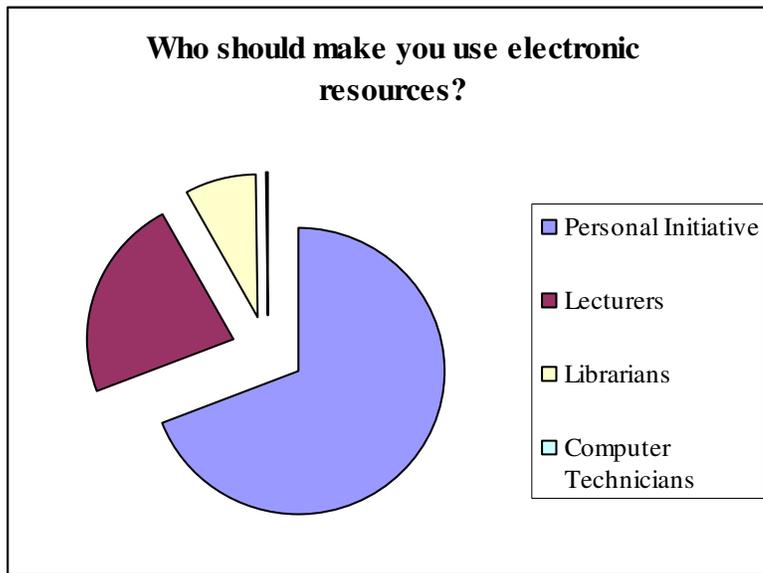


Fig. 1. Students' opinions about who should teach them to use e-resources

Problems faced in accessing electronic resources

The study also sought to identify the main problems users had in accessing electronic resources. Respondents were asked to select from a list of possible problems listed in Table 5. Respondents said the main barrier to their being able to access e-resources was their limited access to a computer terminal (90%). Time, lack of IT knowledge, and

retrieval of too much information were also cited as barriers by large numbers of students. Together these can be viewed as a result of ineffective information retrieval skills as effective information skills are likely to result in the retrieval of more manageable amounts of information and a more efficient use of time. Uncooperative staff members were also perceived as a problem by 20% of the respondents.

Table 5
Problems students faced in accessing e-resources

Problems faced in accessing e-resources	Responses Number (Percentage)
Limited access to a computer terminal	171 (90.0%)
It is time consuming and wastes a lot of my time	97 (51.1%)
Lack of IT knowledge to effectively use the services	76 (40.0%)
There is too much information retrieved	76 (49.0%)
Uncooperative staff to facilitate easy access	38 (20.0%)
Using electronic resources often distracts me from doing other work	1 (1.0%)

Proposals to improve on e-resources access and utilization in Makerere University

Respondents' views were canvassed on a range of proposals that would potentially improve e-resources access (Table 6). There was a high level of agreement with almost all of the proposals listed. Students recommended an improved awareness campaign for e-resources and compulsory use of e-resources for coursework assignments, but a suggestion to introduce a fee to support use of e-resources was supported by only a very small percentage of the students.

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 become more successful in the technological world (Lawson). For the effective use of electronic resources, computer utilization and information literacy skills are essential. An analysis of the findings indicates that the majority of

Table 6
Recommendations on ways to improve accessibility and utilization of e-resources at Makerere University

Suggestions	Responses Number (Percentage)
Computer skills of students should be improved	182 (95.8%)
First-year students should be introduced to ICTs and information literacy	187 (98.4%)
Lecturers should insist that students use e-resources for coursework/assignments	99 (52.1%)
Librarians should be trained to work with students	188 (98.9%)
More networked computers should be purchased by the University	190 (100.0%)
University Libraries should improve an awareness campaign of e-resources	103 (54.2%)
Text message services should be integrated into library e-resources services provision	187 (98.4%)
University should introduce student-paid e-resources fee	11 (5.8%)
Others, please, specify	4 (2.1%)

Discussion

The massive impact of ICT on the profession of librarianship has changed the way librarians and support staff do their jobs and interact with users and colleagues (Oduwole and Sowole). However, the question of knowing how to use a computer will remain a challenge to most students in developing countries such as Uganda, where access to computers is a serious problem. Learning basic computer skills and software applications is increasingly necessary to

university students at Makerere University did not have the necessary computer skills and had problems accessing personal computers.

Some but not all students arrive at Makerere University with computer utilization skills, this raises a question concerning the level at which university information technology training should start. With increasing numbers of students entering higher education and the numbers of staff not keeping pace with this increase, it is not

possible to ensure that all students have acquired the needed skills. This poses serious challenges for educators, especially in terms of those students who do not seek assistance or guidance from lecturers.

According to Ray and Day, extensive experience in user education programs has shown that teaching information retrieval skills to students should be embedded in the curriculum, and instruction should be given at a time when users can understand its appropriateness. This training should be adapted to the varying abilities of the users. If students are aware that the skills required for using electronic resources are not insular, and that these skills will provide them with valuable transferable lifelong skills employers are seeking, they may be more likely to learn how to use them (Ray and Day; Oduwole and Sowole).

To access electronic resources, networked computers are necessary ingredients that any university should strive to have. This study established that 74.7% of the respondents depended on the university to access networked computers, and that 90% had problems accessing personal computers (Table 5). Further, 100% of the respondents proposed that more networked computers should be purchased by the University to help students access e-resources (Table 6). It is likely that very few of the students surveyed would be able to afford access to electronic resources without university support. A more difficult question remains as to whether the University Library can afford to increase the number of networked computers to match the increasing number of students at Makerere University. Possible solutions might be national and external lobbying for support or charging fees to enable students to access electronic resources. This finding however, sharply contrasts with a study conducted in the United Kingdom at Glasgow Caledonian University, where Crawford noted that

Internet access from home and from work has caused a declining demand for Internet and electronic information services usage on campus. This should be taken into account on the future provision of Library services for developed countries, but developing countries such as Uganda need to address the issue of having adequate networked computers on campus. Students' reasons for use of the university's networked computers were not solely related to academic work or course preparation. Although a large proportion (41.2%) used the campus computers for academic study, the majority used networked computers for sending e-mails (53.7%) and short messages (44.2%). Compulsory use of e-resources for assignments would improve usage, but this would require more financial support or collaboration to acquire additional computers.

The Makerere University Library - through a number of donor initiatives - subscribes to a number of databases, including Emerald and EBSCO, which provide full-text journal articles for studies in Library and Information Science. These databases are not used to their maximum potential. This lack of use could be attributed to a number of factors. In addition to access, there may be a lack of awareness amongst the students of the availability of the databases, and they may not be aware of their relevance and value to their LIS studies.

Although the library has made an effort in promoting awareness of these resources within the university community, there is still a need for a more vigorous awareness campaign. Experience has shown that because of the importance students attach to grades on course assignments, using lecturers to make use of electronic resources compulsory might be a positive way forward. Lecturers may not currently be actively encouraging students to familiarize themselves with these resources and use

them. Academic staff members also seem reluctant to use electronic resources, possibly because of a lack of awareness of the resources and their functionality. Training from library staff might be useful, but further investigations surrounding these assumptions are necessary.

Myers, Saunders, and Rogers warn that although the concept of the hybrid and virtual library has been much discussed with the advent of electronic resources, librarians in some developing countries have also been slow to move away from traditional library concepts and formats. As a result, many libraries simply emulate dry, dull replicas of the traditional library catalogue or bibliographies in their design of links to Web-based resources (Myers, Saunders, and Rogers). Conyers argued that with the advent of electronic journals, libraries now have the opportunity, as never before, to obtain robust quantitative data about levels of use of their periodicals and to analyse how far their investment in their journals collections represents value for money for their institutions. This is an opportunity that Makerere University should utilize, and the library should design strategic interventions to promote and monitor e-resources utilization. Using a monitoring system, the University Library could identify lecturers who encourage students to use e-resources with prizes for the most use. Another way might be to send lecturers e-mail alert messages when changes to the database are announced.

Although the level of usage is low, it is encouraging to find that the majority of students make an effort to teach themselves how to use electronic resources. The minimal contribution which appears to be made by librarians raises a number of questions, such as: Are librarians not willing to help students or do the students not consider librarians important in their literature search? Al-Baridi and Ahmed note

that an increasingly important function of academic libraries, today, is the provision of information in electronic formats, including indexes, full-text articles, complete journals and Web resources. Students need to understand that librarians can be very useful in assisting them in their electronic information searching. Librarians need to assert their positions and make their positions (roles) seen by library users through promotion and efficient service delivery. A number of respondents indicated that staff members were uncooperative, and this is a concern for improving e-resources utilization and the development of the University Library. Okon asserted 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. It is possible that library staff would benefit from further training, perhaps in customer care.

Although the majority (70%) of the respondents accepted that e-resources provide access to a wide range of information, lack of access to networked computers remained the largest reported barrier to computer use (Table 5). Dickinson argued that electronic resources greatly increase access to information. The lack of computers and frequent power outages limited students' ability to effectively access electronic information resources, and these are issues that need to be addressed in both the University's main and branch libraries in the University. The problem of lack of adequate access to networked computers confirms Dadzie's argument that most studies carried out by African authors cited inadequate PCs as one of the major barriers to electronic or Internet access. A study carried out by Shuling in the library of Shaanxi University of Science and Technology, Xianyang, Shaanxi, China also found that a lack of access to the Internet

and computer are the main obstacles for the readers using electronic resources. This appears to be a problem for developing countries where the costs of technology and communication infrastructures far exceed their allocated budgets.

Although students have problems in accessing electronic resources, the majority (75.3%) agree that their standard of academic work would suffer without electronic resources, suggesting a positive attitude towards them. The University Library should address the problem of lack of retrieval skills for e-resources among students. Although Kinengyere clearly outlined efforts made by individual programs to increase e-resources usage including organising training sessions on how to access the OPAC and other end user-programs, more is required to enable efficient utilization of e-resources by students. This could include training on searching open access journals and subscription based databases, using Boolean logic, training on database structure, or providing searching aids for them to at least some degree (Shuling). 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. Therefore, 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.

Conclusions and Recommendations

Modern university education now depends on a robust program of automated information services to support and facilitate teaching, learning, research, and management. Developing countries need to adapt to the new situation of handling library services. Makerere University is trying to provide this support despite inadequate access to networked computers.

The findings of this study on the use of electronic information resources show that students could exploit the benefits of electronic resources in their academic work. However, a number of issues need to be addressed internally beforehand. These include:

- The current method of training LIS students in ICTs at the beginning of their career at the East African School of Library and Information Science (EASLIS) should be maintained in order to promote computer utilization skills. Information technology, especially online retrieval and database searching, should be integrated into the curriculum and delivery of all LIS programs in Makerere University. As Sani and Tiamiyu noted for Nigerian universities, programs should be initiated to enable all university teachers to learn how to use modern information technologies to deliver courses and to interact with students (e.g., e-mail, file sharing) in all programs. This will help provide the necessary ICT skills for e-resources access.
- The University Library could improve the promotion of electronic resources to LIS students by providing training in e-resources retrieval skills as part of their curriculum. It may be necessary for library staff to receive training in customer care and e-resource utilization in order to provide training more effectively.
- Encouragement by academic staff should be explored as a way of promoting the usefulness of electronic resources to students. If academic staff were to promote electronic resources by providing

references for students to locate, this might increase the number of students acquiring the necessary information retrieval skills. Lecturers are crucial in the promotion of electronic information resources utilization. Coursework assignments requiring the use of electronic resources should be developed. This will compel students to utilize electronic resources.

- University libraries should intensify their efforts to promote the availability of electronic resources. The University Library should consider using e-mail alert messages, text messages, and prizes as methods of promoting use of the library's electronic resources.
- More networked computers should be provided on campus. This could be achieved through soliciting external support and charging e-resource fees to be paid by students. LIS schools should employ computer laboratory assistants who are interested and willing to offer assistance to students during information retrieval.
- There should be a university-wide study on students' access and use of electronic information resources at Makerere University. If LIS students - who should know the importance of electronic information resources - are not optimally utilizing them, what is the situation with students from other faculties?
- A course in information literacy should be made compulsory for all students irrespective of their discipline. This will go a long way in increasing the knowledge level of the learners regarding the use of electronic information.

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Questionnaire

TOPIC: ELECTRONIC INFORMATION ACCESS AND UTILIZATION BY MAKERERE UNIVERSITY STUDENTS

Dear respondent, this is to kindly request you to candidly answer the questions asked in this questionnaire. The answers will be used to provide strategies to improve on e-resources utilization in Makerere University. All answers will be treated as confidential.

SECTION A: BACKGROUND INFORMATION

1. Gender [1] Male [2] Female
2. Year of study.....

SECTION B: COMPUTER SKILLS

3. At what level of education did you learn how to use a computer?
[1] Nursery [2] Primary [3] Secondary [4] Diploma [5] University
4. a. What computer skills do you have?
[1] Word-processing [2] Spreadsheets [3] Database management
[4] Internet and e-mail use [5] Programming [6] Web page design
[7] Desktop publishing [8] Computer repair and maintenance.
[9] Other, please, specify
- b. Which Knowledge or skills do you have for e-resources retrieval?
[] Word processing [] Determination of appropriate search terms
[] Use of Boolean logic [] Knowledge on Database structure
[] Using different search Engines [] Others, please specify.....
- c. When you are using computer to do your work, how often do you ask for assistance when you have problem with using the software?
[] Always [] Sometimes [] Rarely [] Never

SECTION C: ELECTRONIC RESOURCES USAGE

5. Do you get access to a networked computer from:
a: Makerere University? [1] Yes [2] No
b. Home/Hostel [1] Yes [2] No
6. When you access a networked computer, what do you mostly use it for? Tick as applicable
[1] Academic purposes [2] viewing pornography [3] E-mail services
[4] Sending sms [5] Other, please, specify.....
- 7.a. Which electronic resources do you use at Makerere University?
[1] CDROMS [2] Internet [3] E-mail [4] Electronic journals
[5] Database of Thesis and Dissertation (DATAD) [6] OPAC [7] Other, please specify.....
- b. Which of the following Full text journal databases have you ever accessed from Makerere Library:
[1] AGORA: <http://www.aginternetnetwork.org/en/>

- [2] Blackwell-Synergy: <http://www.blackwell-synergy.com>
- [3] Cambridge Journals Online: <http://journals.cambridge.org>
- [4] The Cochrane Library: <http://www3.interscience.wiley.com/cgi-bin/mrwhome/106568753/HOME>
- [5] EBSCO: <http://search.epnet.com>
- [6] Emerald Group Publishing Limited: <http://www.emeraldinsight.com/login>
- [7] GALE (THOMAS LEARNING): <http://infotrac.london.galegroup.com/itweb/makuni>
- [8] HINARI: <http://www.healthinternetwork.org/scipub.php>
- [9] Institute of Physics Publishing (IOPP): <http://www.iop.org/EJ>
- [10] Oxford University Press (OUP): <http://www3.oup.co.uk/jnls/>
- [11] Palgrave Macmillan Journals: <http://www.palgrave-journals.com/pal/jnls/subject.html>
- [12] The Royal Society of London: <http://www.pubs.royalsoc.ac.uk/>
- [13] SpringerLink: <http://www.SpringerLink.com>

c. How did you learn how to use computer to access electronic resources? (Choose as applicable)

- [1] Trial and error
- [2] Guidance from other students
- [3] Guidance from Library staff
- [4] Self taught
- [5] Courses offered by University or College
- [6] Guidance from Lecturers
- [7] External courses
- [8] Guidance from Technicians

8. a. What benefits have you derived from electronic information resources utilization?

- [1] Access to a wider range of information
- [2] Faster access to information
- [3] Access to current up-to-date information
- [4] Easier access to information
- [5] Improved academic performance as a result of access to quality information
- [6] Other, please, specify

SECTION D: ATTITUDES TOWARDS ELECTRONIC RESOURCES

Please, rate your feelings or opinions to the following statements:

9. a. I feel that the standard of my academic work would suffer without electronic resources

- [1] Strongly agree [2] Agree [3] I don't agree [4] I don't know [5] I don't use it

b. "I can avoid the utilisation of electronic information resources and still perform better" [1]

- Strongly agree [2] Agree [3] I don't agree [4] I don't know

c. Given the opportunity to choose between electronic resources and printed resources at Makerere University to do my coursework, I would choose printed materials.

- [] Strongly agree [] agree [] disagree

d. Who should make you use electronic resources?

[1] My self – personal initiative [2] Lecturers [3] Librarians [] Computer Technicians

SECTION E: PROBLEMS FACED WITH ELECTRONIC RESOURCES

10. What problems do you face with electronic resources?

- [1] There is too much information retrieved
- [2] Time consuming and waste a lot of my time
- [3] Limited access to a computer terminal
- [4] Lack of IT knowledge to effectively utilise the services
- [5] Using electronic resources often detracts me from doing my other work
- [6] Uncooperative staff to facilitate easy access
- [7] Other, please, specify.....

11. Suggest ways to improve e-resources utilisation in Makerere University.

- [] Computer skills of students should be improved
- [] First year students should be introduced to ICTs and information literacy
- [] Lecturers should insist on students using e-resources for coursework
- [] Librarians should be trained to know how to work with students
- [] More networked computers should be purchased by the University
- [] University Libraries should improve on awareness campaign of e-resources
- [] Phone short text message services should be integrated into library e-resources services provision
- [] The university should introduce e-resources fee to be paid by students
- [] Others specify.....

THANK YOU VERY MUCH FOR YOUR TIME SPENT