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**ELECTRONIC INFORMATION RESOURCES UTILIZATION BY STUDENTS IN
MBARARA UNIVERSITY LIBRARY**

By

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Abstract

This study assessed the utilization of electronic information resources in Mbarara University Library by students by addressing four objectives namely; identifying the availability e-resources in Mbarara University library, determining the extent of use and the relevance of e-resources in Mbarara University library and lastly proposing strategies to promote the usage of e-resources by students. Both quantitative and qualitative methods were employed to elicit data from library staff and undergraduate students from four faculties of Mbarara University. Two hundred and sixty six respondents participated in the study. Data was collected by use of questionnaires, document analysis and interview guide. The study found that utilization of e-resources was not only affected by lack of computer skills and information literacy skills but also lack of enough computers and slow internet connectivity. The frequency of use of these resources indicated that a lot need to be done to increase e-resource use

1.1 Background to the study

By the turn of the 21st century, library automation and the Internet had revolutionized information access and library operations around the world. Mbarara University of Science and Technology (MUST) Library was able to take advantage of these developments to facilitate the process of teaching and learning. New modes of accessing information have emerged as a result of the Internet and World Wide Web. MUST students therefore are able to access up-to-date international literature as soon as it is published on the Internet. This has been profound, especially on academic institutions. Libraries in such institutions can now provide information access to off-campus students wherever they are located even to sites hundreds and thousands of miles away. Services have evolved from the days of closed stacks, through shelf browsing and card catalogues, punched cards and OPACS to the concept of open access and institutional repositories. This historical migration has brought satisfaction on the changing needs of library users, including ease of access to information resources (Cise 2006).

In 2000, MUST library started with a dial-up based Internet service through info.com, a commercial internet service provider. The aim was to improve information delivery electronically. Over the years, the University Library acquired a number of computers that were connected to the Internet. The main objective of IT investment in the Library was to enhance accessibility to information resources so as to achieve optimum usage levels; it would also facilitate access to international information resources on the World Wide Web.

In 2004, Mbarara University Library integrated Information Communication Technology (ICT) in all its functions in order to improve the delivery of its services. The International Network for the Availability of Scientific Publication (INASP) UK enhanced these efforts through the Programme for Enhancement of Research Information (PERI), Uganda. The objective was to support capacity building in the research sectors especially in University Libraries in developing countries by strengthening the production, access and dissemination of information and knowledge (INASP 2003).

The collaboration between Lund University in Sweden and MUST helped the library to strengthen ICT capacity where over 60 computers were connected to the Internet. According to MUST Strategic Plan (2008-2013), the University is planning to invest more in e-resources than in print materials.

Electronic information usage in MUST Library is a shift from print materials to electronic information materials and services in the form of CD-ROMS, e-books, e-databases, electronic journals, electronic current awareness service and information subject gateways, accessed through the internet. This means that students are able to utilize these resources for effective research and of better quality.

1.2 Problem

Whereas accessing electronic information resources offers opportunities to obtain accurate and timely literature, observation shows that there is low usage of e-resources in Mbarara University library. This is evident from library statistics, register records and from information obtained verbally. According to MUST Library Annual Report (2008), low usage of electronic resources was cited as a challenge to the library management.

Although the University Library conducts workshops, seminars and communicates to students regularly about the available e-resources, students are not effectively using electronic information resources. Some of the available electronic information resources have not been utilized at all. The library subscribes to a total of 10 electronic information resource packages which include full text electronic journals, current awareness services and bibliographic databases. There is also a provision of electronic document delivery yet on average less than 8 (eight) documents request forms are submitted in a month for articles in electronic journals, (Library Statistics, January - December 2009). It is not known why there is such low usage of these resources in the university whose student population is almost 3000. This lack of understanding is what is causing concern to both the university and library managers.

1.3 Objectives

The study was guided by the following specific objectives:

- i) Identify the available e-resources in MUST library.
- ii) Determine the extent of use and the relevance of e-resources, to student needs in MUST library
- iii) Propose strategies for promoting the usage of e-resources by students

2. Literature Survey

The review is presented basing on the research objectives and these constitute: information resources, electronic information resources in academic libraries, attitudes towards e-resources usage and global strategies adopted for e-resources utilization.

2.3 Information resources

According to Ikoja-Odongo (2002), over a long period of time human beings have been able to record their memories, ideas and discoveries into forms that are classifiable such that information organizers have been able to produce certain categories of information resources. He asserts that information can be classified by content matter or by the physical format by which information is kept. The information resources classified by physical format include: written sources, databases, technical reports, grey literature and electronic resources, among others.

Muteshewa (2004) reveals that traditional libraries stored different types of information resources in different formats in buildings. Various tools and guides to locate these resources were available only when a patron physically visited the library. The situation has now changed and access to these guides has become paramount. He asserted that with the advent of computers and telecommunication technologies, libraries and information services can provide access to these resources through work-stations like PCs and terminals that are in patron's offices, as well as in the Library.

Hawkins (2000) emphasizes that the library of the future will have the daunting mission of helping scholars discover what relevant information exists anywhere in the world and in a variety of formats and media. Understanding how students navigate this maze of resources is important in helping the librarians to develop and assess pedagogy designed to instruct students in library use. The study intended to assess the usage of e-resources available in MUST library and to determine the extent of use. This would help guide MUST librarians in the transformations required in handling information in the context of the complex challenges posed by the emerging e-learning environment and globalization.

2.2 Electronic Information Resources

According to Shuling (2007), electronic information has gradually become a major resource in every university library. The emergence of electronic information resources, simply referred to as electronic resources, has tremendously transformed information handling and management in academic environments and in University libraries in particular. Ellis and Oldman (2005) note that through the use of electronic resources, researchers and students; now have access to global information resources, particularly the Internet for their scholarly intercourse.

The death of current and up-to-date information for research in University libraries is attributed to poor levels of developing electronic information resources, (Afolabi, 2007; Faborode, 2007; Bozimo, 2007). Libraries need to be vanguards for technology transfer from the developed world to the developing economies of Africa; to meet these expectations African university libraries must provide a link between local researchers, scholars and their counter parts in other parts of the world. Utilization of online information resources is the way of achieving this objective. According to Tsakonas et al. (2006) electronic information resources are information resources provided in electronic form, and these include resources available on the Internet such as e-books e-journals, online database, CD-ROM databases and other computer –based electronic networks, among others.

2.4.1 The Internet

According to Jensen's Report (2007), 54 countries in Africa had Internet connectivity. By the year 2009 however, Internet penetration as a percentage of

the total population of Africa was still 1.4% compared to the world average penetration of 12.7% (Internet Worldstats.com2009). Gakibayo (2001) carried out a study on Internet usage by students and staff at Mbarara university of Science and Technology and the results of the study indicated low usage. Though the Internet has provided a wider access to global information resources such as online databases, e-journals e-prints and other sources of digital information, these resources are not effectively utilized due to varying factors. According to Missen et al. (2005), the Internet poses African Universities to gain equal footing with their sister institutions in the more developed countries. It is imperative that African Universities be connected if they are not to be rendered irrelevant in the modern academic world. The Internet is very useful as a communications tool in the Universities among librarians and library clientele. It is the most efficient means of electronic document delivery (Al Fadhli and Johnson, 2006).

2.2.2 Electronic Journals

With the advent of the Internet, researchers and academics have recognized the capabilities of the information and communication technologies as efficient means to share results and to get around barriers by full transfer of intellectual property rights from the author to the publisher, it is also a means of improving the slow turn-over of traditional publishing (Correia and Neto, 2006).

Electronic journals relatively provide efficient access to information and, thus they are easy to distribute to library patrons than traditional print; in the financial stringent environment of higher education system, electronic journals have become a medium which is cheaper than the traditional printed journals (Ellis and Oldman, 2005). According to Rowley (2006) electronic journals take two different forms: journals that are published in print form, available in digital form and electronic journals which do not necessarily need a publisher, and which can be managed by an editor and the scholarly community. Both types may have a significant impact on scholarly communication and in the way knowledge is created and disseminated. The major objective of Mbarara University library for subscribing to the electronic information resources is to facilitate access to international information resources on the World Wide Web as soon as it is published. This study was intended to establish whether MUST library is taking advantage of these technologies with regard to effective utilization of e-resources by students.

2.2.3 Online databases

The most effective way to provide access to electronic books/journals in University libraries is through subscription to online databases which can be accessed through the internet. Online databases are a collection of electronic information sources (e-journals/e-books) by publishers from various fields and disciplines, (Afolabi, 2007). Some of these databases are provided free of charge to libraries in developing countries by their publishers or vendors. Some of these include NARI, <http://www.healthinternetnetwork.org/scipub.php> AGORA:<http://www.agininternetnetwork.org/en/>. Others require subscription fee such as emerald database, <http://www.emeraldinsight.com> and Blackwel-

synergy:<http://www.blackwell-synergy.com> among others. Access to these databases provides researchers and students with thousands of scholarly articles in their fields of specialization or research (Fatoki, 2004). For students to utilize the growing range of electronic resources they must acquire and practice the skills necessary to exploit them (Okello-Obura 2010).

2.2.4 CD-ROM databases

CD-ROM databases allow users access to relevant databases without robust Internet connectivity in libraries. It is therefore cost effective than online databases as information could be accessed off-line without paying for telecommunications fee (Afolabi, 2007). Besides, CD-ROM databases are of immense value over print if the system is networked, as patrons at their terminals could access information without coming to the library. The information revolution brought forth by advances in information and communication technology has enabled universities and colleges around the world to take advantage of these developments. New modes of teaching, learning and accessing information have emerged as a result of Internet and World Wide Web (Darkwa et al 2007). CD-ROM databases are important tools for identifying the bibliographic details of potentially useful documents and ensure easy access to large volumes of literature for research.

Majid and Tan (2002) emphasize that the amazing technological advancements have opened new horizons for information creation, duplication, storage, access, distribution and presentation. The pace at which information sources are being produced and converted into electronic form is tremendous. Digitization of information is resulting in access to unbelievable volumes of information. It is important to find out how this information is utilized in MUST library by students

2.3 Electronic Information Resources Utilization in Academic Libraries

Academic libraries are an integral part of universities and have a critical role to play in supporting the core mission of the university that is teaching, learning and research. However, according to Tiefel (2004) most library users are unaware of the quality and variety of information available. Tiefel pointed out that students are often satisfied with materials that an experienced librarian would find inadequate and /or inappropriate. It was identified that discipline has a major influence on usage patterns and preferences, and that faculty members in science tend to use the internet more intensively than faculty members in the humanities or social sciences (Lazinger *et al.*, 1997; Bar-Ilan *et al.*, 2003). Age also plays an important role in usage; the younger the student and faculty members are, the more they use electronic sources (Bar-Ilan et al, 2003). It has also been reported that men are heavier users of the Internet and make most use of the more complicated services (Busselle et al., 1999; Teo, 2001; Chong, 2002). Bar-Illa et al., (2003) also found that gender and academic rank have only a minor influence on the usage of e- sources and the Internet.

Studies on usage of other electronic resources such as library OPACs, e-books, and subject gateway projects have revealed difference in use. Waldman (2003) reported high usage of the library's OPAC by students at City University of New York. Falak (2003) reported the rapid growth and use of e-books in schools colleges and universities in developing countries. Ashcroft and Watts (2004) also mentioned the potential advantages of e-books including easier access, speedy publications space-saving and lower costs. Various studies have also been carried out on the use of electronic resources by students, and research staff of institutions of higher learning. Most of these studies reported high usage of internet resources (De Vicente *et al* 2004; Falk, 2003). High usage was attributed to a number of factors including the freely available access, the ease of use and its currency. The ability to find and retrieve information effectively is a transferable skill useful for future life and for enabling the positive and successful use of the electronic resources for students whilst at university (Tella et al. 2007) Therefore, libraries must reach a position where the acquisition of information skills is acknowledged as one of the key objectives for every student entering the university.

Among other things this study intended to establish the information literacy and computer skills of student and the level of e-resources usage focusing on Mbarara University library as a case study. According to Levey (2001) information access isn't necessarily the problem but careful utilization is. This is because users do not always understand which information resources are most appropriate for their needs. Users need skills to make comparisons between paper, CD-Rom and electronic resources. Zaki (1991), pointed out that the poor library use background by students in using library facilities, had led them to carry this problem with them to Universities and higher institutions. Agaba (2003) carried out a study on e-resources usage at Makerere University; the results of this study indicated low usage.

Electronic information resources have many functions and benefits which can be of immense use to students in schools and particularly more so in research institutions. Once a user is connected to the Internet such user can link up with any part of the world for whatever purpose the user has in mind, Osunrinde, Adekiya and Adyemo (2002). There is need to equip end-users with skills such as information literacy skills, information retrieval skills, computer skills among others as a strategy to promote e-resource usage especially among students in Academic libraries such as Mbarara University library for effective utilization of e-resources.

2.4 Students attitude towards electronic resource utilization

Ray and Day (1998) carried out a study on students attitudes towards electronic resources. The study reveals that a large number of students leave universities without necessary skills to cope within the information based society. Electronic information resources offers today's student new opportunities that were not available to previous generations. Liew et al (2000) argue that while reading an e-journal is not the same as reading a printed issue, many students now

acknowledge that electronic documents offer users advanced features and novel forms of functionality beyond those possible in printed form. As argued by Swain and Panda (2009), the library users' attitude to information is gradually shifting from the printed document to e-resources. Singh (2009) argues that ICTs have brought a tremendous change in nature, boundaries and structure of information. It is generally agreed that many factors do influence attitudes. Brophy (1993); Okello-Obura (2010) note that the advantages of electronic resources over printed ones include: speed, ease of use, ability to search multiple files at the same time and ability to access documents from outside the library among others. According to Dadzie (2005) electronic resources are invaluable research tools that complement the printed ones that are based in the traditional library. These advantages include access to information restricted to the user due to geographical location or finances and provision of extensive links to additional resources or related content. However, knowledge of computers and retrieval techniques is needed to search these resources effectively and this has a bearing towards their attitude towards e-resources. Waldman (2003) asserts that students with high self-efficacy regarding computers would be more likely to explore new technologies, software or databases. Tella and Tella (2003) reported that self-efficacy has a significant relationship with academic achievement. In a related study of library instructions and self-efficacy, Ren (2005) also showed a positive correlation between students' self-efficacy and the frequency in the use of library electronic resources.

Self efficacy is a person's judgment about his/her capability to organize and execute a course of action that is required to attain a certain level of performance. Self-efficacy beliefs contribute to motivation by determining the goals that individuals set for themselves, how much effort they expend and how long they persevere in the face of difficulties, and their resilience to failures. Students who have self confidence believe in their capabilities.

In relation to this study's perspective, students who have confidence in themselves use e-resources more than those with low esteem. Perceived usefulness of the Internet is considered to be an important influence on internet use (Teo, 2001 and Shuh, 2003). This study was intended to find out attitudes of students about various issues surrounding the use of electronic resources and in addition, it also aims at unraveling the benefits students feel they derive from electronic information resources utilisation.

2.5 Strategies adopted for e-resource utilization

One solution that was recommended by Pejova (2006) is launching and carrying out collaborative joint projects between professionals from developed countries and those from less developed countries as a way of developing information literacy skills which will enable students to acquire information retrieval skills that will enable them to exploit the massive e-resources that are in existence today. According to Katundu (2000), information literacy in the curriculum has not received much attention due to the factor that only librarians are engaged in

the teaching of the library discipline. Many authors such as Heseltine (2000) and Rader (2000) agree that a successful information literacy programme can be well delivered when it is integrated within curriculum. This is the only way that can be made to relate information sources to various courses, thus rendering it functional and more meaningful to students.

Omoniwa (2003) observes that power will rest largely on staff that possesses multiple skills. Employment of librarians for instance, should be based on skills in technology applications. This strategy would improve on e-resource utilization, as library staff would be expected to provide leadership in computer applications such as Internet and CD-ROM technologies among others. This would translate into a greater ability of students to exploit the massive technologies in academic libraries in developing countries. In the opinion of Dai et al (2000), there is a need for a library consortium that will ensure collective acquisition of e-resources. This will enable financially weak University libraries to contribute to a general pool that would ensure the utilization of jointly acquired ICT facilities as a means of gaining easy access for the users. A consortium with the collective strength of resources of various institutions available to it is in a better position to resolve the problems of managing, organizing and archiving the electronic resources (Bedi & Sharma, 2008). Therefore consortia are imperative towards the improvement of Libraries in Africa. Libraries the world over are forming alliances for the purpose of identifying and addressing common needs arising from development in information technology, especially the growing importance of the internet and the World Wide Web. According to Bedi and Sharma (2008) the strategies in this direction include among others:

- Selecting a coordinating agency to work on behalf of the entire group of participants that will be charged with executing and monitoring programs and activities.
 - Identifying and negotiating with the potential publishers/vendors or aggregators to provide access in which purchase is done by consortia.
 - Identifying the necessary infrastructure for electronic access to resources.
- Such an arrangement has made it possible for users to access and download the required materials without even going through the elaborate process of inter-library lending.

3. Methodology

The study used utilized a cross-sectional survey design with quantitative and qualitative approaches to assess electronic information resources utilization by students in MUST. Using this design, data was collected from both students and library staff. A qualitative research design was used to bring the researcher and the respondents together and help the researcher to have in-depth understanding of the variables under study. According to Bailey (1987) such a design allows an easy description and interpretation of people's opinions, the interview guide was useful in this regard. A quantitative research design was used in determining percentages and frequencies. It was also useful in drawing tables and pie charts that brought out the study results.

Stratified random sampling strategy was applied and the population was divided into four strata and a sample from each Faculty was randomly selected. Busha and Harper (1980) assert that stratified sampling strategy ensures a more representative sample with less variation. Data was collected mainly with a structured questionnaire because questionnaires provide an opportunity for respondents to give frank and anonymous answers is not affected by the presence of the researcher (Moser & Kalton, 1997). Secondly, questionnaire also had an advantage of enabling respondents to give their opinions independently (Sarantakos 2003).

Data analysis was mainly done by use of qualitative and quantitative methods. The raw data was organized in such a way that it was edited, classified and tabulated. Through editing, the raw data was checked for accuracy, completeness and usefulness. The responses were checked for legibility. EXCEL was used to perform descriptive statistics. Tables and pie charts were used in the data analysis processes to show the trends of events and to compare two or more variables of the research interest.

4. Findings

The study targeted three hundred forty eight (348) respondents/students to fill in the self-administered questionnaires. However, out of the 348- targeted students, the researcher managed to get back 266 (76%) responded. Nonetheless use of questionnaires was the most appropriate method for students because of time constraints because interviews would be difficult to arrange for students.

4.1 Demographic characteristics

The demographic characteristics are summarized in tables, 1, 2,3, and 4

Table 1: Shows Gender of respondents/students

Gender	n=266	
	Frequency	Percent
Male	169	63.7
Female	97	36.3
	n=266	

Table 2: Shows the Ages of respondents/students

Age	Frequency	percentage
19-20	71	26.6

21-24	168	63.1
25-30	21	7.8
31 and above	6	2.2
	n=266	

Table: 3: Shows University Faculties involved in the study

Faculty	Frequency	Percentage
Institute of Computer Science	60	22.5
Development Studies	81	30.5
Science	30	11.3
Medicine	95	35.7
	n=266	

Table: 4: Shows year of study of respondents/student

Year of study	Frequency	Percentage
I	129	48.4
II	63	23.7
III	60	22.6
IV	7	2.6
V	7	2.6
	n=266	

4.2 Use of Computer

You cannot access e-resources without adequate computer utilization skills (Okello-Obura and Magara, 2008). It was important to establish computer skills of the respondents in order to determine whether it was an issue affecting the use of e-resources in the library

Table 5: Showing respondents (students) who had computer training

Response	Frequency	Percent
Yes	223	83.8
No.	43	16.2
	n=266	

The study also established the different places where training in computer use was acquired from and the results are as given in Table 6.

Table 6: Different places where training in computer use was acquired

Places	Frequency	Percent
Mbarara University of Science and Technology (MUST)	154	57.8
Previous Secondary School	22	8.8
Others e.g. Home, Kyambogo & Makerere University.	90	34.5
	n=266	

The utilization of electronic information resources can only be realized when one has knowledge on computer use. It was necessary for the researcher to establish computer utilization skills of the respondents. To establish the computer utilization skills of respondents, a selected number of computer skills/packages were given to respondents to choose from. The results were as indicated in Table 7.

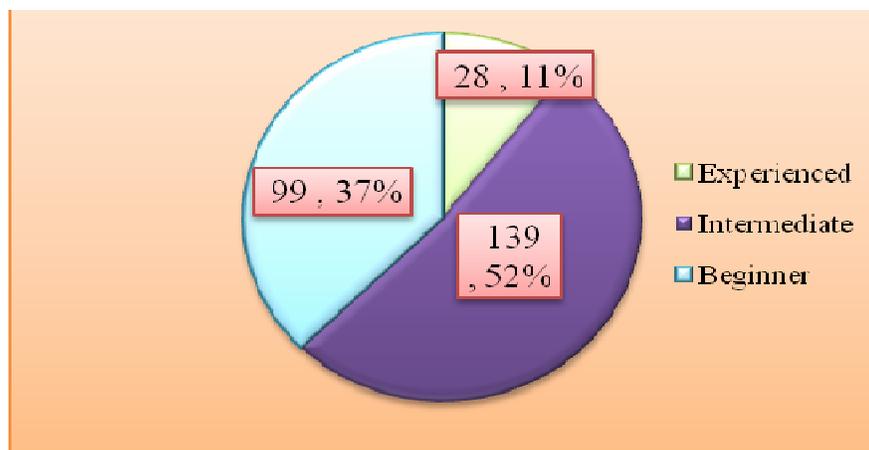
Table 7: Showing Computer utilization skills of respondents

Computer skills	Frequency	Percent
Word processing	200	75.1 %
Internet and e-mail use	160	60.1%
Database management	73	27.4%
Programming	56	21%

Source: Research Data (percentage computed based on the response of each question. n=266)

When the respondents were asked to rate the level of their computer skills, the results were as shown in Figure 1:

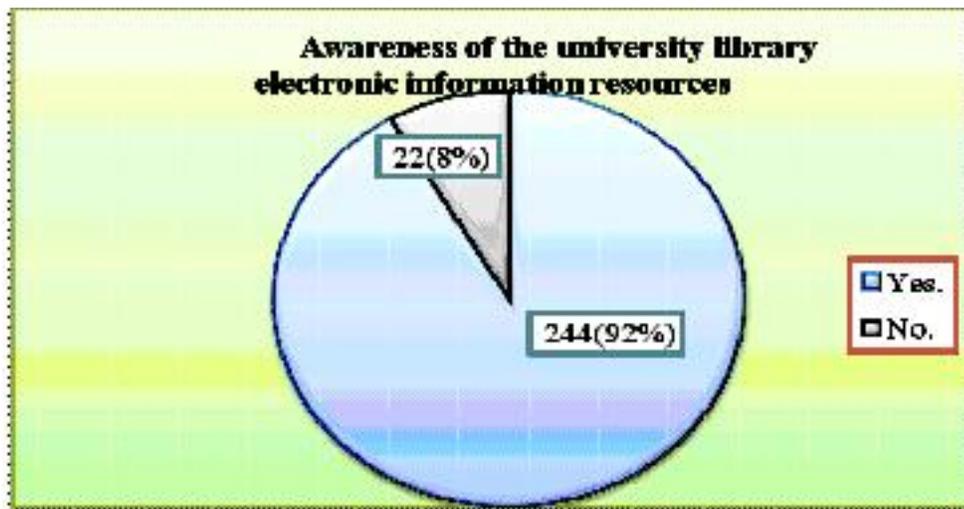
Figure 1: Rating computer skills of respondents



4.3 Utilization of electronic information resources

The provision of information through electronic resources in MUST library has been going on for the last 4-5years. Little is known about students' awareness of this form of information provision. Without a better understanding it is difficult for service providers to meet the needs of students effectively. It was necessary to establish whether students were aware of the available resources and the results are as indicated in Figure 2.

Fig 2: Showing awareness of e-resources in the University Library



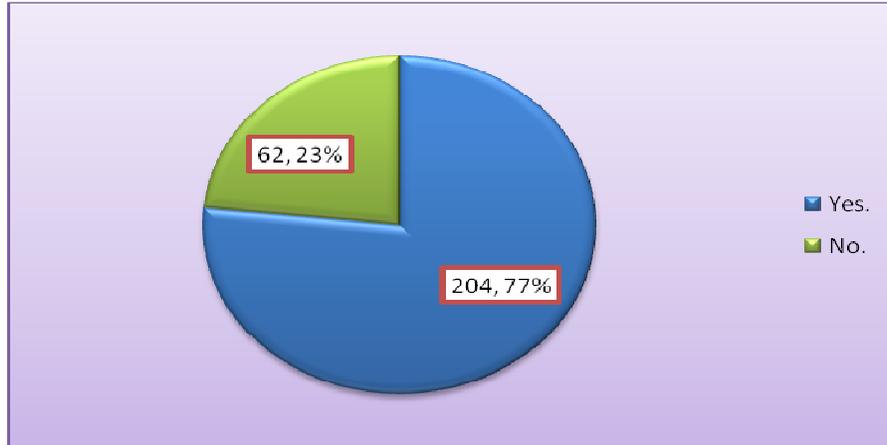
Respondents were asked how they came to know the availability of e-resources in the university library and the responses were as indicated in Table 8.

Table 8: Forms of communication on e-resources in the library.

Forms of Communication	Frequency	Percent
Hear from colleagues	144	54.1%
Faculty notice boards	60	22.5 %
Other (Specify)	46	17.2%
E-mails from the Library	31	12%
Workshops and seminars conducted by the library staff.	27	10 %

Respondents were asked if they use information resources in the university library and the response were as given in Figure 3..

Fig 3: Responses on the use of e-resources in the library



When respondents were asked to indicate the most utilized resources, the results were as indicated in Table 9.

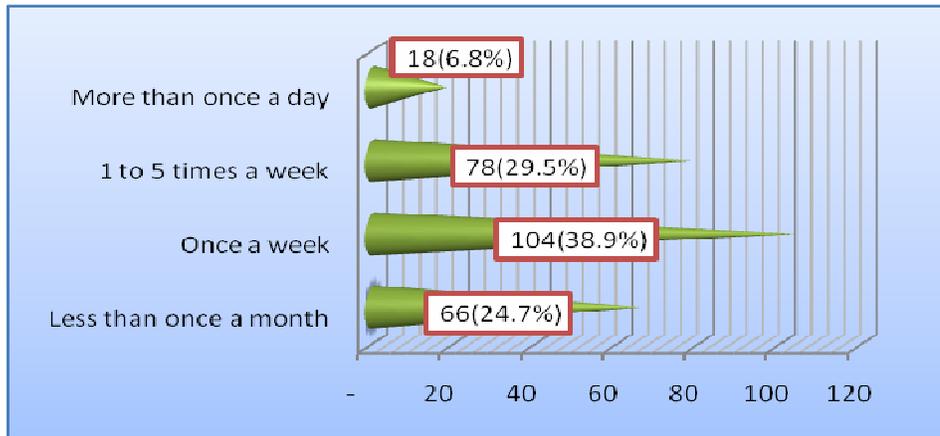
Table 9 showing most utilized electronic information resources in the university library

Electronic resources	Frequency	Percent
Internet search engines	168	63%
Electronic mail	94	35.3%
e-books	36	13.5 %
CD-ROM databases	31	11.6%
Electronic journals	20	7.5%
Electronic document delivery	18	6.7%
Scholarly databases	15	5.6%

4.4 Attitudes towards e-resources utilization

Respondents were asked to indicate the frequency of access to e-resources and the results were as indicated in Figure 4.

Figure 4: Frequency of use of library electronic resources (n= 266)



When the respondents were asked to give the benefits they derive from e-resources, the responses were as given in Table 11.

Table 11: Benefits derived from electronic information resources

Benefits	Frequency	Percent
Access to wider range of information	153	57.5 %
Access to current up to date information	113	42.4 %
Fast access to information	111	41.7 %
Others (Specify) e.g accuracy,timely, relevance	18	6.7%
	n=266	

4.6 Strategies to improve on e-resources utilization

Table 12: Communication channels to improve e-resource utilization

Communication channels	Frequency	Percent
Through Library newsletter	122	45.8%
Posters	92	34.6%
Through lecturers	87	32.7%

To elicit the respondents' contribution to the improvement of e-resources utilization, they were asked to indicate the communication channel that should be used to communicate e-resources matters in the University and also to suggest ways to improve on e-resource utilization and the results were as given in Tables 12 and 13

Table 13: Suggested ways to improve e-resources utilization in MUST library

Strategies	Frequency	Percent
First year students should be introduced to computer training	164	61.6 %
The University should have more networked computers	161	60.5 %
Computer skills of students should be improved	141	53%
Information literacy skills be incorporated into the academic program	94	35.3%
Lecturers should insist on students using e-resources	83	31.2 %
Information Literacy training ought to be intensified	77	28.9%
There is need for information literacy competency standards	55	20.6%

5. DISCUSSION

The concern of the study was to assess the utilization of e-resources by students in Mbarara University Library. In this section the discussion of findings and relating them to literature has been used to support the results. The specific objectives were: to identify the available e-resources, to determine the extent of use and relevance of e-resources and to propose strategies to promote the usage of e-resources by students.

5.1 Use of computers

In order 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). According to the results of the study, a big percentage of 83.7% of respondents (Table 5) indicated they had training in use of computers. While a small percentage of 16.3% of respondents claimed that they had no training in use of computers. The question of knowing how to use a computer will remain a challenge to most students in developing countries like Uganda (Okello-Obura and Magara, 2008). Learning basic computer and software applications is increasingly necessary to University students. Okello-Obura and Magara (2008) argue that learning basic computer skills and applications is increasingly necessary to function in today's work place or to pursue personal interest in an electronic environment. Computer 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). This suggests that students need training in a wider range of ICT applications for them to make full use of technology in utilizing e-resources.

The study revealed inadequate computer skills as only a small number of 11% of respondents rated themselves as experienced followed by beginners; the majority were at intermediate level (Figure 1). This concurs with a study carried out by Waldman (2003) at the City University of New York. The findings revealed lack of retrieval skills as a barrier to e-resource utilization. This implies that there is need for serious strategic interventions to correct the situation. Universities in Uganda must reach a position where the acquisition of information literacy skills is acknowledged as one of the key learning objectives for every student entering university so that no student leaves without being fully equipped to cope with the information intensive world as an end-user.

5.3 Electronic resource utilization

It is increasingly an important function of academic libraries today to provide information in electronic formats including indexes, full-text articles, complete journals and web resources. Findings revealed that some of the respondents indicated that they use e- resources in the library while some did not use them. This is an indication that some students do not use e-resources and this calls for another enquiry to find out what other alternatives students use in meeting their academic work.

The study agrees with Nlyidizi (2005) that most students come from rural environment with poor learning facilities that do not include the library as an integral part of learning therefore, such students have not been exposed to information technologies and information sources. This partly provides an explanation why some students do not use the e-resources in the library. Tella *et al.* (2007) argue that the students' ability to find and retrieve information effectively is a transferable skill useful for their future life in addition to enabling the positive, and successful use of the electronic resources while at school. Therefore, information professionals at MUST need to pay more attention to make every user aware of various available e-resources and search strategies among others so as to promote the use of electronic information services in the University. Librarians interviewed revealed that some students were not effectively utilizing the e-resources because they lack computer skills. Some students arrive at Mbarara University with computer utilization skills, while others come with no computer skills. One librarian interviewed had this to say: *“you have students that rush in on the first day saying where the facilities for e-resources are, I would like to send an e-mail, and on the other side you have students saying I don't know anything about e-mail, e-resources”*. This reveals that library staff has not done much to sensitize students on the value and importance of e-resources. Internet search engines were the most used followed by e-mail. This concurs with a study carried out by De Vicente., (2004) Falk, (2003). They reported high usage of Internet resources. Some of the reasons attributed to this high usage of the Internet are the freely available access, the ease of use and the currency of resources.

The Mbarara University library subscribes to a number of databases including Emerald and EBSCO, which provides full-text journal articles. These databases are not used to their maximum potential. The lack of use could be attributed to a number of factors. There may be the 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 studies. Majid and Tan (2002) and Ibrahim (2004) mentioned lack of awareness of electronic resources, lack of time to access and too many passwords to remember. Users need skills to make comparisons between paper, CD-ROM and electronic resources. Ellis and Oldman (2005), assert that through use of electronic resources, researchers and students now have access to global information resources, particularly the Internet for their scholarly communication and research. It is imperative that MUST students take advantage of these e-resources in the university library. The findings reveal that the e-resources were not frequently used as the majority of the respondents indicated that they use the resources only once a week and less than once a month as indicated in Fig.4, the frequency of utilization of these e-resources indicates that a lot has to be done to attract users to use these resources regularly.

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. Conyers (2004) argues that with the advent of electronic journals, libraries now have the opportunity as never before to obtain robust quantitative data about levels of use for their periodicals and to analyze how far their investment in their journals collections represents value for money for their institutions. This is an opportunity that Mbarara University should utilize. The library management needs to design strategic interventions to promote and monitor e-resource utilization. This calls for proper planning, user training in information literacy skills and good Internet connectivity among others; these are bound to alter the gravity of the problem in the utilization of these resources.

5.4 Attitudes towards e-resource utilization

Although students have problems in accessing electronic resources 60.9% of them agree that one can obtain whatever information they want easily as indicated in Table: 11. A total of 57.5% indicate that they can access wider range of information. Another 42.5% of them indicate that they can access current information. This suggests that students have a positive attitude towards e-resources. This concurs with the findings of Swain and Panda (2009) that the Library users' attitude to information is gradually shifting from printed documents to e-resources. Many factors do influence attitudes regarding e-resources utilization, such as the rapid advancement of ICTs, which has brought a revolutionary change in the information scenario giving rise to a number of options to the users e.g. handling varied information sources conveniently and effortlessly. However, lack of retrieval skills and other computer skills limit students' ability to effectively access electronic resources. For the effective use of electronic resources, computer utilization skills are essential (Okello-Obura and

Magara, 2008; Kinengyere, 2007). These are issues that need to be addressed. Librarians and lecturers at MUST need to work jointly to ensure the efficient and effective use of e-resources. 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 (shuling 2007). The need to use electronic resources is of paramount importance to developing countries if access to up-to-date electronic information resources is to be realized.

5.6 Suggested ways to improve e-information resources utilization in MUST library

The majority of 61.6% respondents suggest that first year students from all faculties should be introduced to computer training during their first year of study at the university. While other 60.5% were of the opinion that University should have more networked computers. The university should make efforts to improve students' computer skills through training and information literacy program and this could be integrated into the university curriculum. According to Ray and Day (1998), 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.

Students need to be encouraged by their lecturers to use e-resources for references to enable students to use and locate these resources. This may increase the number of students acquiring the necessary information retrieval skills. If students are not encouraged to use electronic resources by their lecturers, and if information skills training occur outside the curriculum, students will be less likely to make use of electronic resources for academic purposes. This calls for the university library to put in place more effective strategies in its sensitization and training of end-users.

6. CONCLUSION AND RECOMMENDATIONS

The findings of this study show that students could exploit the benefits of electronic resources in their academic work. But there are a number of issues which require to be addressed internally beforehand. The inevitable conclusion that arises from this study is that the utilization of electronic information resources by students of MUST is low. This is because:

- The majority of the respondents very infrequently use the e- resources i.e. once a week and less than once a month. And some resources were not used at
- Students Lack awareness of the potential and relevance of these e-resources on the academic programs.

- Computer skills, retrieval skills, limited number of networked computers and slow Internet speed, among others affected effective utilization of e-resources.

Based on the finding, this study thus recommends as follow:

- ✚ First year students should be introduced to computer training as suggested in the research findings.
- ✚ The University and Library in particular should ensure that there are sufficient networked computers with fast Internet connectivity. This will improve on full text delivery of resources, electronic document delivery and the use of search engines. This calls for increased procurement of such facilities.
- ✚ A course in Information Literacy should be made compulsory for all students irrespective of the disciplines. This will go a long way in increasing the knowledge level of the learners regarding the use of electronic resources.
- ✚ The University library should, through the available communication channels, educate students about the issue of decentralizing services to faculties since most of these resources can be accessed without necessarily going to the university library. Therefore there should be a policy for faculties to have their computer laboratories where they also train end-users.
- ✚ Workshops and seminars organized by the university library should be conducted from faculties instead of the main library because most students have limited time to attend most of these workshops. This leads to poor attendance.
- ✚ The library should employ more effective strategies such as using e-mail alert messages, text messages and prizes as a method of promoting use of the library's electronic resources. The present strategies of use of departmental notice boards and e-mails from the library have not done much to attract users to the library. Library staff visits to faculties to promote e-resources should be encouraged.
- ✚ The University library should up date faculties on the available electronic information resources. And academic staff should sensitize students on the usefulness of electronic resources to students. Course works assignments requiring the use of electronic resources should be developed. This will compel students to utilize electronic resources.
- ✚ There should be promotion of on-screen help, printed guides and training for the less popular electronic resources such as electronic document delivery in the library to encourage students realize the potential of these resources.

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