



Use of Electronic Information Resources by Undergraduate Students in the Faculty of Management and Administration at Africa University, Mutare, Zimbabwe

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Authors' contributions

This work was carried out in collaboration between all authors. Author TM designed the study, wrote the protocol and wrote the first draft of the manuscript. Author NS managed the literature review, editing and reviewed various versions of the manuscript while author CTC provided insights on methodological changes and also reviewed various versions of the manuscript. All authors read and approved the final manuscript.

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ABSTRACT

This study was carried out at Africa University, Mutare, Zimbabwe. It sought to evaluate the usage of Electronic Information Resources by undergraduate students in the Faculty of Management and Administration at Africa University. Data was collected through questionnaires from undergraduate students in the Faculty of Management and Administration at Africa University. The methodology used was a descriptive survey while the sampling technique used was purposive. The observation technique was used to observe the information seeking behaviour of the students and the type of information they frequently consult. The study established that there was a low usage of Electronic Information Resources by undergraduate students in the Faculty of Management and Administration due to socio and technical challenges. From the findings it can be concluded that students lacked adequate hands-on skills required to retrieve information from subscribed

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electronic information resources hence low usage. Furthermore it can be recommended that the Library should ensure that there is adequate information communication technology infrastructure and practical information retrieval training for students to empower them in effective electronic information utilization.

Keywords: Information literacy; electronic information resources; e-resources; higher education; developing countries; Zimbabwe.

1. INTRODUCTION

Electronic resources refer to those materials that require computer access, whether through a personal computer, mainframe, or smart technologies. [1] states that “students are increasingly expected to use electronic resources while at university”. Some of the resources include e-books and electronic journals among others. [2] defined an e-resource as “a resource which requires computer access or any electronic product that delivers a collection of data, be it text referring to full text databases, electronic journals, image collections, other multimedia products and numerical, graphical or time based, and a commercially available title that has been published with an aim to being marketed”.

Electronic information forms an integral part of libraries assisting users in learning, teaching and research. [3] argues that electronic resources are invaluable research tools that complement the print – based resources in a traditional library setting. Further, [4] argues that “e-journals have emerged as vital components of information resources of a library and play an imperative role in the distribution of prime information”. [3] also state that the advantages of e-resources 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 related contents. Such resources support knowledge discovery and collaborative learning.

Furthermore, [5] states that “the potentiality of the e-resources are huge, do not occupy physical space, elimination of time, space, cost limit, easy archiving of the content and organized subjectively and available 24 hours a day, 7 days a week, among others”. The advantages of electronic resources have prompted university libraries to provide electronic resources in order for them to meet users’ needs. [6] states that “Electronic Resources are an important element for the academic community as they enable

users to access up-to-date information in the right format without expending much time”. [7] argues that “Electronic resources are convenient to access, easy to search, and downloadable”.

A recent study at the University College Hospital (UCH) Ibadan, Nigeria revealed that the level of usage of the electronic information resources is not high. A major problem identified was lack of information retrieval skills for exploiting electronic resources, thus making the level of usage of resources by medical students very low [8]. [9] found that although the internet is extensively used by undergraduate students in Nigerian universities, the use of electronic resources such as the electronic journals and online databases by them was poor. Further, [6] argues that “Electronic resources are grossly under-utilised by undergraduate students despite their availability in libraries”.

Africa University Library (the Jokomo / Yamada Library) has managed to put in place electronic information resources for its clients. The institution also maintains access and discovery tools and also imparts lifelong skills through information literacy skills training. However, the usage of electronic resources at the Jokomo / Yamada Library is still low. Despite efforts to encourage wider use of e-resources, there is still a low uptake of such resources. It is not known why there is such low usage of these resources in the University whose student population is close to 3000. Therefore, it is necessary to know why there is low usage of electronic information resources among Africa University undergraduate students. As such this study sought to investigate causes of low usage of electronic information resources by undergraduate students at the Africa University.

1.1 Objectives of the Study

The objectives of the study were to:

1. To investigate the use of e-resources by undergraduate students;

- II. To identify the factors affecting how students access and use electronic resources;
- III. To examine the relevance of electronic resources offered by Africa University Library, and;
- IV. To examine the adequacy of information literacy skills training offered to undergraduate students at Africa University.

2. LITERATURE REVIEW

2.1 Defining Electronic Information Resources and Factors Affecting Use

According to [10] "Electronic resources" refer to those materials that require computer access, whether through a personal computer, mainframe, or handheld mobile device. They may either be accessed remotely via the Internet or locally. Some of the most frequently encountered types are: e-journals, e-books, full-text (aggregated) databases, indexing and abstracting databases, reference databases (biographies, dictionaries, directories, encyclopedias, etc.), numeric and statistical databases, e-images, and e-audio/visual resources [10].

According [1] factors that promote the use of electronic journals were timely availability, easy access and full text searching of the journals. [11] state that the skills required to maximise the potential of electronic resources are much greater than those required for searching printed sources. These skills include a 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 with one another. [12] states that students do not often appreciate the skills required to search these sources. Furthermore, [13] state that "the ability to find, retrieve, and synthesise information effectively is a transferable skill useful for future life as well as enabling the positive and successful use of the electronic information resources whilst at university".

2.2 Use of Electronic Books by Undergraduate Students

The integration of e-books in academic libraries is beneficial as they are remotely accessible and available around the clock. Furthermore

e-resources enable academic libraries to benefit from shared storage and easier integration to Virtual Learning Environments (VLEs). While the majority of the U.K.'s undergraduate students are now using e-books, none are yet relying on them as a primary source of information [14]. A study by [15] at the Faculty of Computer Science and Information Technology at the University of Malaya, Kuala Lumpur found low usage levels mainly because students preferred to use printed books and lacked knowledge on how to use e-books. [16] investigated the use and usability of e-books from users' perspectives in an academic and research environment at the Indian Institute of Science. The study found that e-book usage was very low although students tended to use e-books more than other faculty members and staff.

2.3 Use of E-Journals by Undergraduate Students

[17] argues that students show an increased reliance on online databases and electronic resources, especially when the products are made available by libraries at no cost. A recent study at Princeton on e-journals revealed that the smallest percentages of both users and non-users were - curiously - the undergraduates [18]. This implies that few undergraduates were using e-journals. However, major problems faced by undergraduate students towards the use of journals are; types of journal publications available to them, problem of awareness of the importance of journals by undergraduate students, lack of acquisition of current journals in different areas of specialisation, and lack of organization of journals in subject area for undergraduate students [19]. Electronic information resources at Africa University are well organized and are accessible both on campus and off campus through the website.

2.4 Challenges in the Use of Electronic Information Resources

Electronic information resources are underutilized in many universities because of various reasons. [20] found that many electronic resources were substantially under-utilized by undergraduate nursing students at the University of Namibia's Northern Campus. The main barriers identified were the shortage of computers, unreliable internet connections and lack of information literacy skills. A recent study by [21] revealed that some students at Dhaka

University were unaware of the existence of the journals in the University Library. This study reported lack of knowledge and awareness of e-journals among students and faculty members; lack of adequate fund allocation to subscriptions; poor knowledge about the links to e-journals; lack of computer skills; lack of adequate computer lab facilities; and lack of training and orientation programmes as some of the major challenges to e-journal usage. Some persistent challenges, namely bandwidth and funding, continue to affect e-resources usage. The high cost of bandwidth remains a major challenge that still hampers the full utilization of e-resources and when users do literature searches and/or try to download articles but find the Internet slow, some of them give up, and this affects usage [22]. [23] states that "Lack of printing facilities, terminals and trained staff are the major reasons that would discourage users from accessing the electronic information services. Ali also state that ... "users face difficulties while browsing e-resources". Finally, [24] suggests that substantial barriers to electronic resources access and use include a lack of research culture.

2.5 Information Literacy Skills Training

[6] argues that "the benefits that organizations and institutions reap from the investments in information technologies and electronic resources are influenced by the extent to which users possess the required information literacy skills necessary for utilizing them". [6] further argues that "It is very important that one should be conversant with the use and exploitation of electronic resources by being information literate in order to achieve a quicker and more effective usage". Gaining skills in information literacy multiplies the opportunities for students' self-directed learning, as they become engaged in using a wide variety of information sources to expand their knowledge, ask informed questions, and sharpen their critical thinking for further self-directed learning [25]. [26] state that "Even if information literacy skills are hailed as essential lifelong skills in line with many other digital skills, there is limited opportunities for students to refine and truly master the skills doing a few assignments that might require them to refine and truly master the skills to search for information". [27] argue that "Universities need to develop a well-defined course curriculum that encompasses all of the skills and competencies that could help undergraduates to be competent in the use of various online resources".

3. RESEARCH METHODOLOGY

3.1 Research Design

To meet the objectives of the study a qualitative (descriptive survey) method was adopted. A qualitative research design was used to bring the researcher and the respondents together and help the researcher to have in-depth understanding of variables under study. According to [28] such a design allows an easy description and interpretation of people's opinions. This design was also found to be relatively cheap because it reduced the financial constraint without negatively affecting the quality of the research. [29] states that this research approach provides an effective strategy to increase validity and reliability of the research. Further, in this view, the researchers pilot tested the data collection tools to enhance validity and reliability.

3.2 Population, Sample and Sampling Procedures

In defining a population, the researcher specifies the sample group, geographical location and boundaries of the population being targeted [30]. [31] defined the target population as that population to which a researcher wishes to generalize result of a study. The target population for this study was undergraduate students in the Faculty of Management and Administration at Africa University in Zimbabwe. These students were selected as the study population because they had just received information literacy skills training and were expected to use electronic resources for their coursework assignments and research. This approach was appropriate because the study explored the effectiveness of the information literacy skills course in motivating and equipping students to use electronic resources at Africa University. Purposive sampling method which is a non-probability sampling technique was used to select the sample for the study. [31] states that purposive sampling technique allows a researcher to get cases that have the required information with respect to the objectives of the study. Researchers sampled 70 undergraduate students from the Faculty of Management and Administration from a total population of 200 students as a representative for all Africa University undergraduates. The sample was chosen on the basis of the feasibility for the

research to get information from that particular group of participants.

3.3 Research Instruments

A questionnaire-based survey method was used for the study. A structured questionnaire was developed for data collection. For closed questions respondents were requested to tick the answer they think is the most appropriate. Suggested answers were provided to enable systematic analysis of data. Open-ended questions were also used to seek those details, which the researcher had little knowledge about. The questionnaire was distributed in a small scale pilot survey before circulated to a large group of survey participants for adjustments. Adjustments guaranteed that the questionnaire was well understood, participants interpret questions in the same way and to make sure that each question measures what it is supposed to measure. The process insured validity and reliability of data. In this study a questionnaires were used because they are generally cheap to administer and the questionnaire allows the researcher to guide participants along lines of thought. Further, the questionnaire was used because it offers respondents the flexibility of filling in the questionnaires at their own convenient times and has enough time to think about their responses, and anonymity of respondents will be assured.

3.4 Observations

The researcher observed students' use of print and electronic information resources in a natural setting to compliment the questionnaires that were used to collect data. The observation was mainly focused on the use of online databases, electronic journals, the internet, WebPAC (web accessed catalogue) and institutional repository resources on the Digital library such as past examination papers, scholarly articles and dissertations.

3.5 Data Collection Procedures

The researcher delivered the questionnaire in person. An appointment date and time was set for the collection of the questionnaires in order to lessen the burden on the respondents of getting hold of the research instrument once they have completed filling in the questionnaire. This also helped to ensure that the questionnaire got into the hands of the intended respondents.

3.6 Data Presentation and Analysis Procedures

All questionnaires were checked for completeness and irrelevant data was discarded while relevant data was consolidated for analysis. Questionnaires were also counted so as to determine the response rate. Data was extracted and recorded in a spread sheet and processed. The data was then analyzed by making use of percentages and interpreted. The data amassed in this research was presented through the use of illustrative methods that included bar graphs, tables and texts. The use of these presentation methods were justified because they are easy to understand and also give a clear depiction of trend and clearly illustrate a summary of the information gathered.

4. FINDINGS

The following section and subsection provide for the presentation, analysis and interpretation of data in line with the research objectives.

4.1 Response Rate

The response rate from questionnaires was excellent (93% response rate to the questionnaire) and provided basis for reasonable conclusion. Out of 70 questionnaires distributed 65 were completed and returned representing 93% response rate.

4.2 Databases Used by Undergraduate Students in the Faculty of Management and Administration

Survey data has demonstrated how often users have utilised the various online databases. Usage percentages of online databases were presented in Fig. 1. Only three databases have shown at least 20% or more usage, namely, Emerald, Taylor & Francis and Ebrary. The usage percentage of Emerald was 30% (19 students) while Ebrary Database was at 25% (16 students) with Taylor and Francis at 20% (13 students). All the other databases had much lower usage, for example, JSTOR had 15% (10 students) and EBSCO 10% (7 students). Other online resources that were used by the participants were the Digital Library (AUDiI) which hosts the Institutional Repository. Respondents also revealed that they used Wikipedia and Google search for information retrieval. Researchers also observed that over

60% of the respondents preferred to use Google Search Engine when searching for information. This was characterized by their frequent use of Google as compared to the subscribed electronic information resources. This finding is confirmed by a recent study by [27] that discovered that “many students do not use the university-subscribed online resources”.

Further, the low usage of the online database could be attributed to the fact that the lecturers were not recommending the students to use the databases. This was observed from reading lists given to students by lecturers. It was also noted that on the recommended lists used by the students who visited the library to search for information resources, there were no mention of any of the electronic information resources subscribed to by Jokomo /Yamada Library. The use of the databases would have been high had the lecturers recommended their use. Above all, undergraduate students have not still realised the importance of online resources due to their lack of experience in conducting academic research using online resources. Furthermore, users' traditional attachment or fixation with print materials may also have affected the usage level of online resources.

4.3 Purpose for which Undergraduate Students Use Electronic Information Resources

The use of electronic information resources by undergraduate students is growing steadily as e-resources provides a vast amount of information on a high speed and real time. Findings indicate that students used e-resources for various reasons; some used e-resources for one or more reasons. Eighty percent (80%) of the respondents indicated that they used e-resources for individual assignments, 20% for group projects, 25% for class discussion and 40% for research paper. Further, this finding is in agreement with findings by [32] who reported that the information needs of the first-year undergraduate students primarily concentrated on their academic coursework since they had little need to look for information beyond what is needed in their courses”.

4.4 Challenges Faced by Undergraduate Students when Accessing and Using Electronic Information Resources

A number of factors affected usage of electronic information resources by undergraduate students

at Africa University and these include slow or unreliable network, lack of adequate information retrieval skills, and irrelevant information in databases and insufficient workstations in the library. The most common and major challenge was slow or unreliable Internet connection (70%). Fifty percent of the respondents mentioned insufficient number of workstations in the Library, lack of IT skills (11%) and irrelevant in information databases (4%). However, other challenges were highlighted that had negative impact on the usage of e-resources and they included lack of awareness of e-resources, difficulties in reading from the computer screen, complex searching mechanisms and others mentioned that they were asked to purchase some articles, e-books or research papers within subscribed databases as a result they failed to access them because of information embargoes.

Further, it was observed that most of respondents preferred to use Google Search Engine as they claimed that it was relatively fast and easy to use. It was also observed that most of the Lecturers recommend students only to print information resources as this was reflected by their recommended lists. Students therefore thought print resources are the only important information resources. This had a negative impact on the use of electronic resources. Findings in Table 1 show that lack of adequate information retrieval skills is also a major challenge affecting effective and efficient utilisation of electronic information resources. This result is in agreement with [27] who state that “It is the lack of adequate skills which might inhibit students' success with electronic resources”.

4.5 Relevance of Electronic Information Resources to Undergraduate Courses

Most of the electronic databases offered by the Jokomo /Yamada Library are provided by the International Network for the Availability of Scientific Publications (INASP) and are relevant to undergraduate programs however various responses were given in the survey. 20 participants (30%) responded that the databases were highly relevant and 39 respondents (60%) were of the notion that databases were moderately relevant. Even though the majority stated that the databases were moderately relevant, 4% indicated that the databases were irrelevant and 6% stated that they do not know. Further, respondents also suggested that more electronic information databases that cover a

wide range of subjects need to be subscribed to. Additionally, respondents indicated that some of the information they get from the subscribed databases is not current.

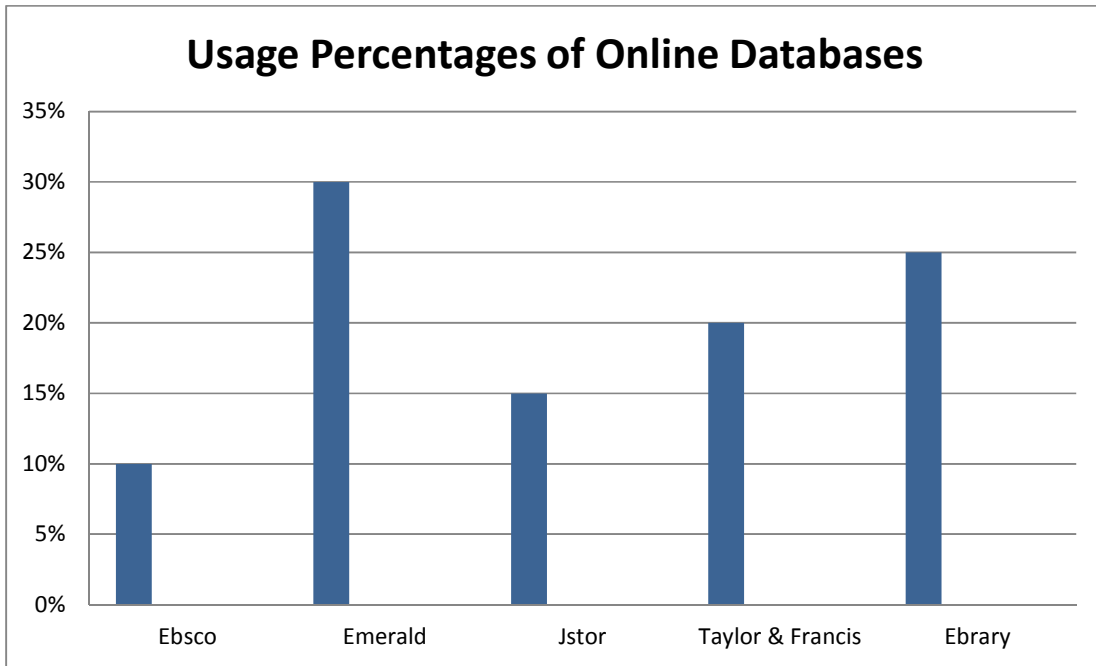


Fig. 1. Bar chart showing responses on the use of different databases by undergraduate students in the Faculty of Management and Administration (FMA)

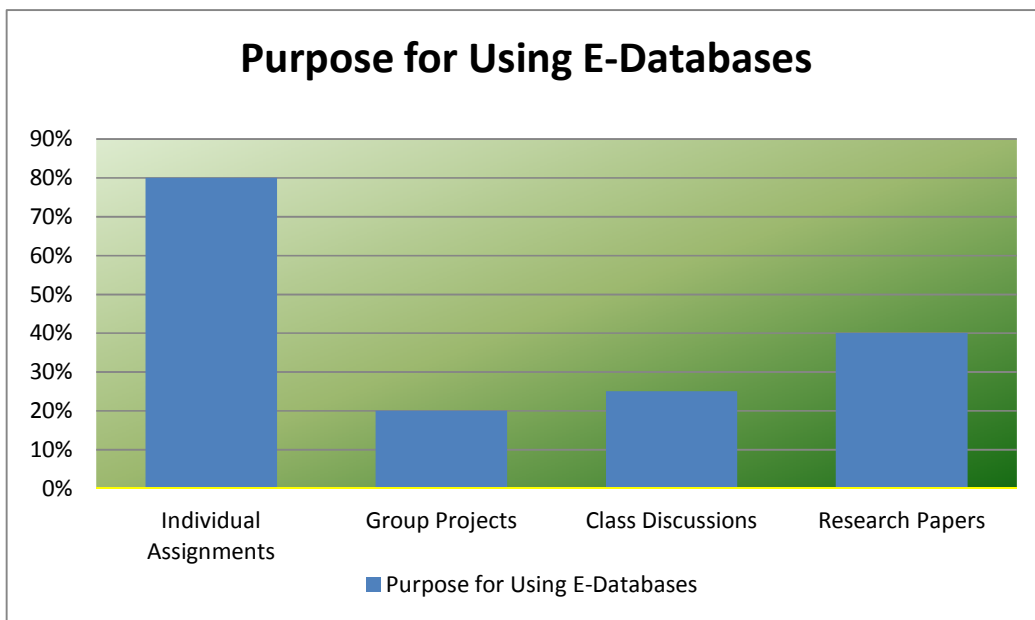


Fig. 2. Bar graph showing responses on the purposes for which undergraduate students use electronic information resources

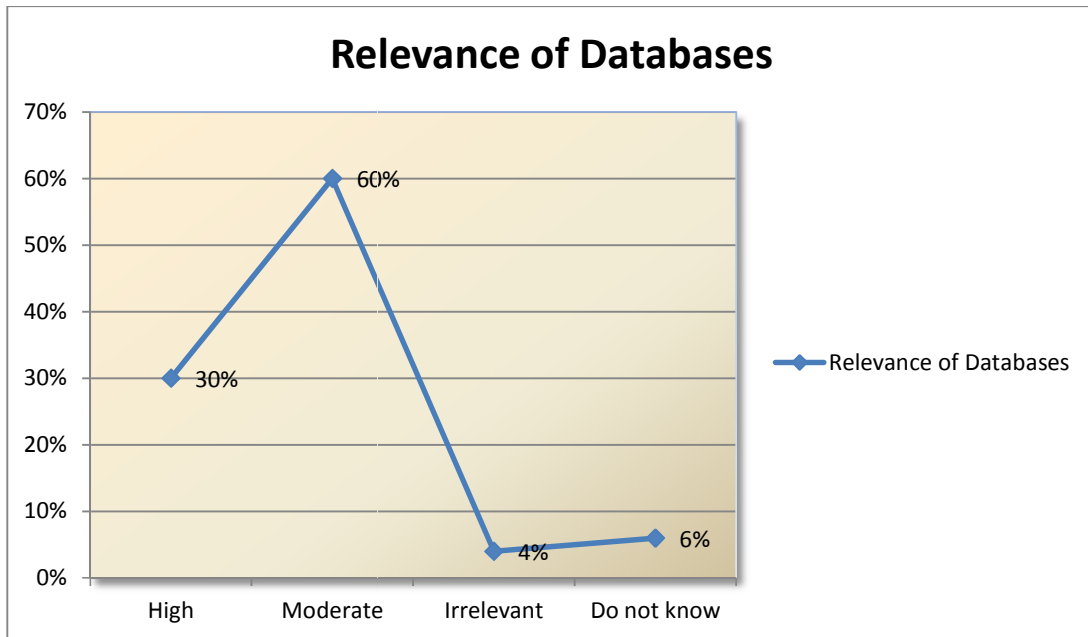


Fig. 3. Line graph showing responses of participants on rating the relevance of electronic information resources frequently consulted

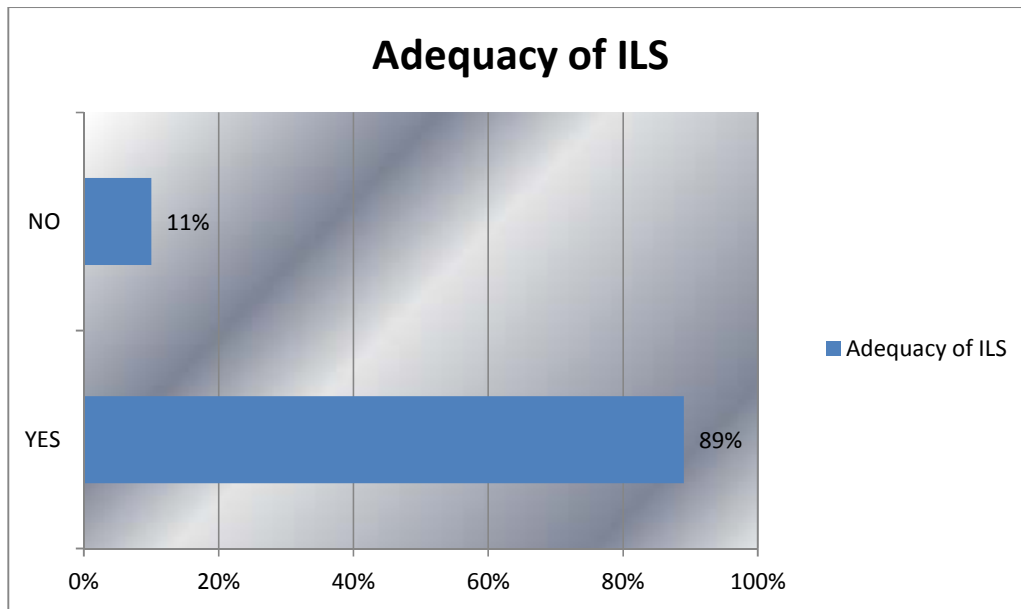


Fig. 4. Bar graph showing the responses of participants on whether the ILS training had equipped them to fully utilize the electronic databases

Table 1. Responses on problems faced by undergraduate students in accessing e-resources

Problems faced in accessing e-resources	Number of respondents	Percentages (%)
Insufficient number of workstations in the Library	10	15%
Lack of adequate information retrieval skills	7	11%
Slow or unreliable Internet connection	45	70%
Irrelevant information in databases	3	4%

4.6 Adequacy of Information Literacy Skills (ILS) in Equipping Students to Use Electronic Information Resources

All the 65 undergraduate students responded that they had undergone Information Literacy Skills (ILS) training however, different sentiments were revealed on whether the information literacy skills training was adequate in equipping them with skills to fully utilise electronic information resources offered by the Jokomo / Yamada Library. Fifty-eight respondents representing 89% responded that the information literacy skills training were adequate in equipping them to fully utilise electronic information resources. However, various suggestions were recommended by the respondents, almost 80% suggested that they need practical and interactive lessons on the use of electronic information resources. They claimed that the information literacy skills training were more theoretical. Some of them were of the notion that information literacy skills training must also be conducted more frequently than just once in the first year. Eleven percent (11%) of the respondents mentioned that the information literacy skills training were inadequate but they shared the same view that they needed more practical lessons.

5. DISCUSSION

Results showed that the electronic information resources are generally inadequately utilised by undergraduate students at Africa University. 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 must be addressed urgently to improve usage of electronic information resources subscribed to by the University Library. This is because the majority of the undergraduate students in the Faculty of Management and Administration confirmed that they were facing challenges in accessing and using electronic information resources because of slow or unreliable Internet connection thereby leading to low usage of e-resources offered by Jokomo / Yamada Library.

Further, the usage of electronic resources was low because the majority of the students revealed that electronic information resources offered by the Library were moderately relevant. This implies that the majority of students did not fully utilise the resources because they were not highly relevant. All the respondents confirmed that they have undergone information literacy

skills training course and the majority responded that the information literacy skills training course was adequate however the majority also suggested they preferred more practical and interactive lessons than theory. This implies that the students were equipped theoretically but practically they cannot effectively use the e-resources. The majority of the students responded that they use electronic information resources for course assignments. Generally, the undergraduate students have shown that they have an interest of using electronic information resources for their academic needs but their expectations were not fully met because of the above mentioned circumstances. Further, the information literacy skills course needs to be competency based education and training (CBET) in order to adequately equip students with critical knowledge and skills required to fully utilise the panoply of electronic information and leverage self determined learning (heutargogy).

All the participants responded that they had undergone information literacy skills training course and the majority indicated that the information literacy skills training course equipped them with skills to fully utilise the electronic information resources offered by Jokomo / Yamada Library. However a large number of the students strongly suggested integration of more practical and interactive lessons so that the students may be able to perform practical searches on their own.

In addition, the information literacy skills course should strongly emphasise the use of the e-resources to meet students' needs to fulfill their academic pursuits. The usage percentages of the sampled major databases showed that only two databases were slightly above half and the rest were below half. This was a sign that there is a low usage of e- databases. In order to improve the usage, students and lecturers must be made more aware of the databases.

6. CONCLUSION

From the findings, it can be concluded that students lacked adequate hands-on skills required to retrieve information from subscribed electronic information resources. Slow or unreliable internet connection were major causes of low usage. The majority, 89% of the students in this study responded that the information literacy skills training was adequate in equipping them to fully utilise electronic information sources. Students needed practical and

interactive lessons on the use of electronic information resources. However, it can be concluded that the information literacy skills course was adequate in equipping students to fully utilise electronic information sources.

7. RECOMMENDATIONS

From the findings of the study the following recommendations can be given to enable the Jokomo / Yamada make its electronic resources effectively utilised by students.

1. First the University and Library in particular should increase or ensure that there are sufficient networked computers with fast Internet connectivity and increase the bandwidth. There is need for computer training to enhance student's information and communication technology skills. This will improve on full text delivery of resources, electronic document delivery and the use of search engines.
2. Regular review of electronic databases should be done to ascertain their relevance to the academic programmes in the university. Furthermore, undergraduate students should be taught how to construct relevant search terms to whatever information they would want to search for because in most databases wrongly framed search terms yield undesirable results.
3. Academics should be involved in the selection process of electronic information resources so that they would confirm the relevancy of the databases and may appreciate them and therefore would recommend them databases to students. In this view, faculties should collaborate with librarians in designing and developing coursework assignments requiring the use of electronic resources.
4. The Information Literacy Skills training course should include more practical and interactive lessons to equip students with hands-on skills vital in effective information retrieval. Further this course should strongly emphasise the use of the e-resources to meet the needs of students in their academic pursuits. Faculty Librarians should engage Faculties in using e-resources. Academic staff should also play a role by recommending the use of e-databases to students rather than just recommending students only to print resources. Reading lists should also

include e-resources and multimedia information resources.

5. Academic libraries should employ more effective promotional and marketing strategies for e-resources this will improve the use of e-resources. Faculty Librarians need to actively train and update faculties on the available electronic information resources. Furthermore, librarians and academics should collaboratively sensitise students on the usefulness of electronic resources in their studies. This will compel students to utilise electronic resources.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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