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Assessing Information Literacy Skills: A Survey of Undergraduate Education Students at the University of Livingstonia in Malawi

By

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Abstract:

The purpose of this study was to assess the information literacy skills of Education Students at the University of Livingstonia. The study employed a cross-sectional descriptive survey design in which questionnaire was used to collect data. Stratified sampling technique was used to sample students from their respective degree programmes under the faculty of education. Altogether 160 questionnaires were distributed proportionally to respondents and 123 were successfully returned with a response rate of 76.9%. Data was analysed using IBM SPSS where percentages, charts and tables were obtained to present and interpret data. The findings revealed that Faculty of Education students (ES): (1) demonstrated a high level of awareness of types of information sources; (2) they accessed both print and electronic information; (3) expressed familiarity with APA referencing style and acknowledged the importance of providing citation and references to academic work to avoid plagiarism. However, students also demonstrated high deficiency in identifying diverse information sources. They did not have adequate knowledge on writing proper citation and references nor familiarity with the bibliographic and reference management software tools. Based on the findings, the study makes recommendations

KEY WORDS: Information Literacy Skills, Assessment, Faculty of Education Student, University of Livingstonia, Malawi

INTRODUCTION

Information Literacy (IL) skills, defined as set of abilities to recognize when information is needed and have the ability to locate, evaluate, and use the needed information effectively [1], have emerged around the world as essential skills for the 21st Century. This is due to the rapid advancement in Information and Communication Technologies (ICTs) [2, 3]. Students are faced with diverse and abundant information choices in their academic studies. This is because information is available in unfiltered formats, raising question about its authenticity, validity, and reliability [4]. Therefore, the effective use of information by students has become a necessity. Information has become a factor that enables students at all levels to achieve better results in their academic undertaking and even at work after graduation [5].

The current information overload requires students to validate and assess information to verify its reliability [5]. Besides, information is available through various multimedia formats, including graphical, video and textual; these pose new challenges for students in evaluating and understanding it [4, 6]. Yet, literature indicates that information by itself does not make students information literate [5]. Therefore, IL skills are required not only to gain access to the available information resources, but also sift from large quantities of information and utilize the most appropriate information resources [7].

Additionally, IL skills enable students to master content and extend their investigations, become self-directed and assume greater control over their own learning without relying on lecture notes given by their teachers [8]. Moreover, students with adequate IL skills know how to learn because they know how knowledge is organized, how to find information and how to use this information for their satisfaction. Further, the research skills of students are improved because they can retrieve information and interpret it using a variety of media and output formats [9]

Furthermore, when students possess adequate IL skills, their confidence and ability to work independently is improved since they can think critically, interpret information and make informed judgments [9]. Consequently, it is paramount for universities to ensure that all students acquire IL skills by integrating IL instruction into their curriculum [10, 11].

Yet, extant literature indicates that the new generation of undergraduate students is far less prepared with the necessary skills to handle the new wave of this powerful information [12, 13]. With this lack of IL skills, the majority of students are finding it difficult to use information effectively. For instance, many students over-rely on search engines such as Google and Wikipedia to find information on research topics in their fields of study to the exclusion of a range of other information sources [14]. As a result, quality of academic resources available in academic libraries is often overlooked and under-utilized [15, 38]

In Africa, IL is a relatively new concept [15-17]. Thus, only a handful of recent empirical studies in the following countries exist: Kenya [17], Nigeria [18], Tanzania [19], Botswana and Zambia [20, 13]. The findings from these studies demonstrate that undergraduate students do not exhibit adequate skills of IL. This is because majority of students come from environments where there are no school libraries, computers, and Internet services. Consequently, the students coming from such environments make limited use of ICTs and information resources available in the university environments [24, 43].

Despite the availability of studies in IL, there seems to be a gap in literature related to assessment of students' IL skills in universities. IL assessments among the undergraduate students have been overlooked by many scholars [3, 18, 19]. King [21] opines that in imparting IL instruction to the students whether formally or informally, there is need to conduct an assessment. Such assessments help to determine students' mastery of skills and knowledge associated with such IL programmes. It also serves as a tool of determining the efficiency of IL programmes [21-23]. In addition, studies have shown that lack of IL skills among undergraduate students is partly the cause of underutilization of existing ICTs and information resources available in the university libraries [4, 20, 24]. This is posing big challenges to universities in trying to achieve quality and excellent output in their graduates as they enter the job market [25].

Similarly, in Malawi few extant studies on IL Skills exist [26, 27]. The findings from these studies demonstrate that IL programmes' efforts are still at their infant stage. IL programmes are hampered by inadequate facilities, absence of IL policies and lack of qualified librarians to teach IL. It is worth noting that the cited studies were conducted in public universities and did not focus on IL assessment of Education students in Private higher education like University of Livingstonia. As a result, little is known about Education students' level of IL skills in Malawi.

Problem Statement

In today's academic environment students are faced with the daunting task of identifying, locating, searching and synthesising various sources of information in order to meet their information needs. This is due to the over-abundance of information which is generated at a fast rate by Internet and ICTs [3, 10, 11, 28]. Underscoring this challenge, UNILIA Library embarked on giving informal IL instructions to undergraduate students since 2010. This IL instruction has been in the form of library orientation, seminars and workshops so that undergraduate students are equipped with necessary skills to utilise adequately both print and electronic information resources available in the university [29].

Despite the availability of such IL instruction, IL skills among the students have not been assessed. Consequently, little is known about whether the students possess adequate IL skills to identify, search, locate and evaluate the quality of information sources. Furthermore, it is not clear how the students make citations and bibliographical references to comply with copyright requirements and ethical use of information in an academic environment. Such assessment of IL skills is critical since it helps to determine whether students have mastered the skills or not and identify gaps for further improvement. Besides, it also serves as a tool for determining the efficacy of IL programmes [31].

Based on the above observations, this study was conceived as a baseline survey aimed at assessing the level of IL skills among the Faculty of Education students at the University of Livingstonia. There was a need to conduct this study in order to understand the students' IL skills so as to come up with proper strategies and policies for implementing effective IL programmes. This would eventually enhance the mastery of IL skills among the students. The study focused on second year faculty of education students only registered in 2016/2017 academic year.

Purpose of the Study

The purpose of this study was to assess IL skills of Faculty of Education Students (FES) at University of Livingstonia in Malawi.

Specific Objectives of the Study

The study sought to achieve the following specific objectives:

- To identify knowledge of FES of different types of information sources
- To examine the purpose for which FES use and access information
- To determine how FES cited and referenced information sources
- To determine FES' familiarity with citation and reference management software tools

LITERATURE REVIEW

Types, Formats and Purpose of Using Information Sources

The information sources for undergraduate students are available in libraries in different types. These include primary, secondary and tertiary sources. Examples of primary sources include journal articles, monographs, patents, theses, poems, and others [17]. Secondary sources are

sources of information that have been modified, selected and rearranged to cater for a specific audience or purpose. Examples include histories, review articles, bibliographies, text books and others. Indexing and abstracting tools are considered as examples of tertiary sources [17]. Therefore, the use and access of different types of information among students depend on the knowledge of sources.

Kiman [17] notes that information sources are no longer confined to print. Students are no longer relying on traditional sources of information. Consequently, most academic libraries the world over are now acquiring digital information sources in different formats such as DVD, CD-ROM, e-dictionaries, e-books, online databases and electronic journals. A study by Wilkes and Gurney [32] at University of New England reported that majority of students (95%) indicated electronic resources as their sources of information. A similar study by Algudsi and Ali-Dousar [33] reported that at Kuwait University, 99% of the students indicated that they used electronic resources for personal shopping, downloading movies and e-books, checking encyclopedias, and quick reference. Singh and Singh [34] on “Assessing Indian Agricultural Sciences Graduates’ Knowledge and Information Literacy skills” revealed that a large proportion of students (81%) ranked Google and Yahoo as their main sources of information.

The results above contradict those of Kiman [17] in Kenya who reported that 40.1% of the students were aware of different types such as primary, secondary and tertiary sources while 45% were not aware of these types of information sources. About 30.7% of the students also indicated that they preferred both electronic and print sources. The author also discovered that the majority of students (69.3%) indicated that textbooks were mostly used as sources of information, followed by 65% who used Magazines, whereas 36.5% indicated that used e-books and 28.5% of the students said that they used online databases.

A study by Sasikala and Dhanraju [35] also reported that 94% of the students at Andra University used textbooks to access information, 27.66% of the students indicated that they used electronic journals, whereas 13% of the students also stated that they used online databases to access information. Similarly, Adeniran [36] reported that the majority of students at Redeemer’s University used both print resources for assignment, research and keeping up to date with current affairs. Only few students reported that they used information resources for entertainment and leisure.

Ilogho and Nkiko [16] conducted a study to determine information literacy search skills in five selected universities in Ogun State, Nigeria. Their findings revealed that the majority of students showed high deficiency in identifying diverse information sources including their uses. The authors concluded that the universities’ IL programmes might not have provided hands-on experience to students. A study by Baro and Fyneman [24] on IL among undergraduate students in Niger Delta University revealed that undergraduate students used library books, archival materials, journals articles and Internet.

Knowledge on Citation and Referencing Styles

Due to high proliferation of information on the Internet and other media, academic dishonesty has risen for the past two decades. Consequently, issues of copyright violation have become prevalent[17]. Therefore, it is imperative that undergraduate students have understanding of the ethical use of various information sources in their academic environment. One of the ways is to have skills in providing proper bibliographic referencing and citations to their academic work [35].

Pillar number six of the SCONUL Model [44] also postulates that the student or researcher should have the ability to cite bibliographic references in their academic work, construct a personal bibliographic system, apply information to the problem at hand, communicate information effectively using the appropriate medium and to understand issues pertaining to copyright and plagiarism [44]. There are various reference styles that are used for citing information sources in academic work. The notable ones include American Psychological Association (APA), Harvard, and Modern Language Association (MLA), among others [17].

In a recent study, Konsar and Mahmood [37] found out that a significant number of students (65%) at Air University in Pakistan, were not familiar with how to cite information resources correctly. Similarly, Anafo and Filson [38] reported that at Ashesi University College in Ghana, 75% of the students were not able to identify citation associated with journal articles. Lastly, a study on information literacy of freshmen at Illinois Wesley University by Asher and Duke [39] reported that the majority of students (83%) had problems in accurately reading citations which in turn made it difficult for them to find and select appropriate sources. Furthermore, a study by Orim [40] on plagiarism among undergraduate students in Nigerian institutions of higher learning asked students the reasons for acknowledging information sources in their writing. The findings revealed that 45% of the students stated, to avoid being accused of plagiarism, 48% indicated, to give credit to the author of an information source, while 47% mentioned to strengthen and give authority to your writing.

Familiarity with Citation and Reference Management software Tools

Many reference management software tools have emerged and exist in the market either freely or commercially [41-42]. These are software tools used by scholars to electronically store, organize and format references and citations within the manuscript. Some examples include Zotero, Endnote, Mendeley, Refworks, Turnitin and others [41].

It is imperative for undergraduate students to know different bibliographic and reference styles used for acknowledging information sources to avoid plagiarism. A Study by Francese [42] at University of Torino in Oslo, reported that 70% of the students were familiar with Endnote, 19% were familiar with Zotero, whereas 18% were familiar with using Mendeley, while only 8% did not know any reference management software tool.

METHODOLOGY

The study adopted a cross-sectional descriptive study design in which a structured questionnaire was used to collect data from second year Faculty of Education Students (FES). Altogether, 160 questionnaires were distributed to respondents and 123 were returned successfully with a response rate of 76.9%. The study targeted second-year undergraduate students registered in the 2016/2017 batch at the University of Livingstonia. The reason for targeting second year FES was that during their first year of study, they underwent informal library instruction. Therefore, they were in a suitable position to be assessed in terms of their level of information literacy skills and identify the gaps that exist in them. Statistical package for social sciences (SPSS) version 23 was used to analyze data. Questionnaires were pre-tested and all ambiguities and errors were corrected before they were finally distributed to the respondents. The permission to conduct the study was sought from the University authorities.

Case Study Context: University of Livingstonia

The University of Livingstonia (UNILIA) was established on 27th August, 2003 as a Christian private university in Malawi [29]. The Synod of Livingstonia believes that the Christian University provides an exceptional education for the young people of Malawi. The mission

statement of the university is *“To educate and inspire learners, guided by Christian values, to become principled leaders who will transform society through excellence in teaching, research, consultancy, and learning environment for the glory of God”* [29]. To date, the University of Livingstonia has four faculties offering various certificates, diplomas and undergraduate degree programmes in Education Sciences, Education Humanities, Social Sciences and Applied Sciences. The University has a student population of the carrying capacity of 1400 [29].

For any academic institution to fulfill its mandate of teaching, learning and research, the Library forms a central part of its operations. Thus, the primary function of the University of Livingstonia Library is to provide support for the University’s approved programmes of teaching, learning and research with the view of serving the needs of the students, staff and researchers accredited or affiliated to the University of Livingstonia [30]. The University Library provides lending and circulation services; reference services; current awareness services; readers’ services; Inter-library loan services; internet services and e-resources services [30].

The University Library also provides informal IL training in the form of library orientation, workshops and seminars to incoming first year students. The students are taught how to access information and use it effectively, how to develop search abilities, evaluation information, and cite and reference information resources. The students are also orientated on basic ICTs such as Word processing, Excel, Power point presentation and the internet [29]. This IL training is done to ensure that undergraduate students are equipped with necessary skills to adequately utilize both print and electronic information resources available in the university environment [29]. Despite, the existence of such informal IL training offered to the students, there has been no formal assessment conducted to establish IL skills among the students particularly to the Faculty of Education Students.

ANALYSIS AND DISCUSSION

Preliminary questions in the survey sought to gather respondents’ demographics. Responses to these questions are presented in the multivariable below.

Demographic characteristics of Respondents

Table 1: Demographic Profile of Respondents

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Demographic Characteristics	Number (N=123)	Percentage (%)
Age		
16-20	29	24.1
21-25	54	43.8
26-30	19	15.3
31 and above	21	16.5
Total	123	100
Gender		
Male	65	52.9
Female	58	47.4
Total	123	100
Faculty of Education Programmes		
Bachelor of Education Humanities	11	9.0
Bachelor of Education Science	15	11.6
Bachelor of Education ICT	12	10.4
Total	123	100

As evident on Table 6 above, results show that 54 (43.8%) of the respondents' age ranged between 21-25, followed by 29 (24.1%) of those who were between 16-20, and 21 (16.5%) of respondents whose ages ranged between 31 and above. Only a very small proportion, 19 (15.3%) had their ages ranged 26-30.

Table above also indicates that 65 (52.9%) respondents were males and 58 (47.4%) of the respondents were females. In terms of programmes of study, respondents were pursuing the following undergraduate degree programmes: This means that the largest number of students participated in the survey questionnaires were from Public Health while Education ICT had the least participants. The age range of 21-25 years had a large number of participants, while the age range of 31 years and above had the least participants. Similarly, majority of the participants were males.

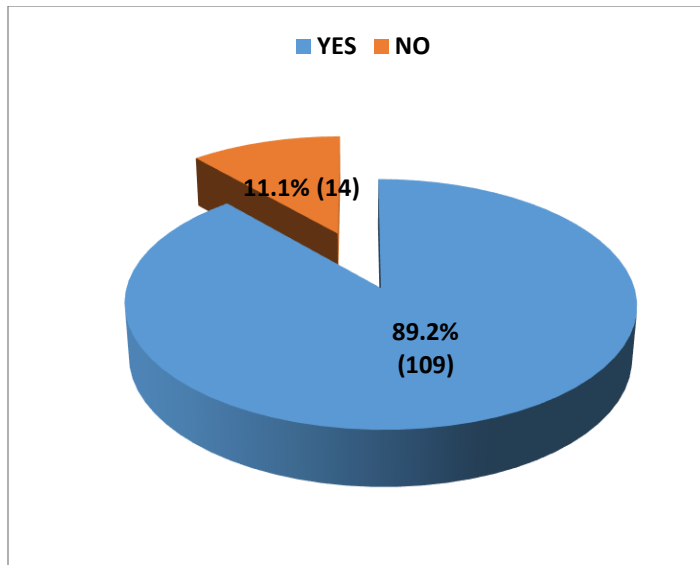
Knowledge of Different Types of Information sources

Kimani (2014) posits that information sources for undergraduate students are available in libraries in different types. These include primary, secondary and tertiary sources. Examples of primary sources include journal articles, monographs, patents, theses, poems, and others (Kimani, 2014). Secondary sources are sources of information that have been modified, selected and rearranged to cater for a specific audience or purpose. Examples include histories, review articles, bibliographies, text books and others. Indexing and abstracting tools are considered as examples of tertiary sources (Kimani, 2014). Therefore, the use and access of different types of information among students depend on the knowledge of sources.

Awareness of Information sources

The respondents were asked to indicate whether they were aware of different types of information sources. A total of 123 students responded to this question and the results are presented in Figure 1.

Figure1: Awareness of Different Types of Information Sources



As shown in Figure 1 above, 106 (85.7%) of the respondents were aware of different types of information sources and 17 (14.4%) indicated that there were not aware of types of information sources.

Examples of Types of information sources

For those student respondents who indicated **YES**, a follow-up question was asked to match examples of information materials into primary, secondary and tertiary sources. 116 students responded to this question. The results are presented in Table 2.

Table 2: Awareness of Information Sources and their Examples

Types of Information Sources and their Examples	Responses	
	Frequency (N)	Percentage (%)
A Textbook is a Secondary Source	52	45.3
A Dictionary is a Tertiary Source	14	12.4
A peer-reviewed journal article is a Secondary Source	30	25.7
A Manuscript is a Primary Source	20	17.1
Total	116	100

As evident on the Table 2 above, 52 (45.3%) of the respondents managed to correctly indicate that a textbook is a secondary source, while 30 (25.7%) respondent indicated that a peer-reviewed journal articles is a secondary source. However, only a small proportion of the respondents (14 or 12.4%) managed to indicate correctly that a dictionary is a tertiary source. Therefore, the findings revealed that the majority of FES at the University of Livingstonia were aware of types of information sources, though they had problems identifying them. Similarly, a study by Ilogho and Nkiko [38] reported that the majority of the students in five Nigerian universities showed high deficiency in identifying diverse information sources including their

usage. The authors concluded that IL programmes might have failed to provide the students with hands-on experience.

Purpose for accessing and Using Information

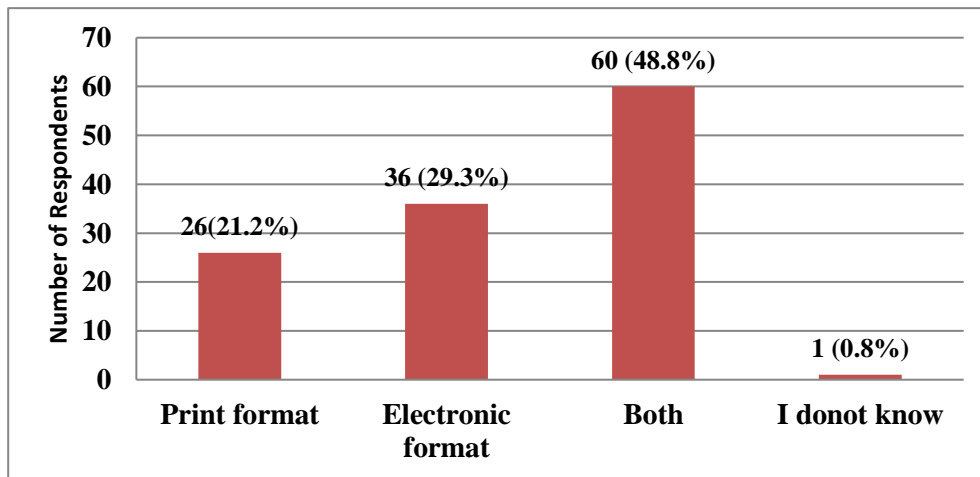
The second objective of the study was to determine the purpose for which FES used information. Two questions were posed to answer this objective: What are your preferred formats for accessing information and what are the major reasons for accessing a variety of information sources.

Preferred Formats for Accessing Information

Kimani [17] notes that information sources are no longer confined to print. Students are no longer relying on traditional sources of information. Consequently, most academic libraries the world over are now acquiring digital information sources in different formats such as DVD, CD-ROM, e-dictionaries, e-books, online databases and electronic journals. Therefore, it is critical for an information literate student to be able to identify and access their preferred formats of information. The second objective of the study aimed to find out the formats FES preferred to access and use information and reasons for consulting a variety of information sources.

The findings show that majority of respondents (60 or 48.8%) preferred to access information sources in both print and electronic formats, 36 (29.3%) of respondents preferred to access in electronic format and 26 (21.2%) indicated print format. Only 1 (0.8%) respondent indicated not know which format he/she preferred to. The findings are presented in Figure 2.

Figure 1: Preferred Format of Information Sources

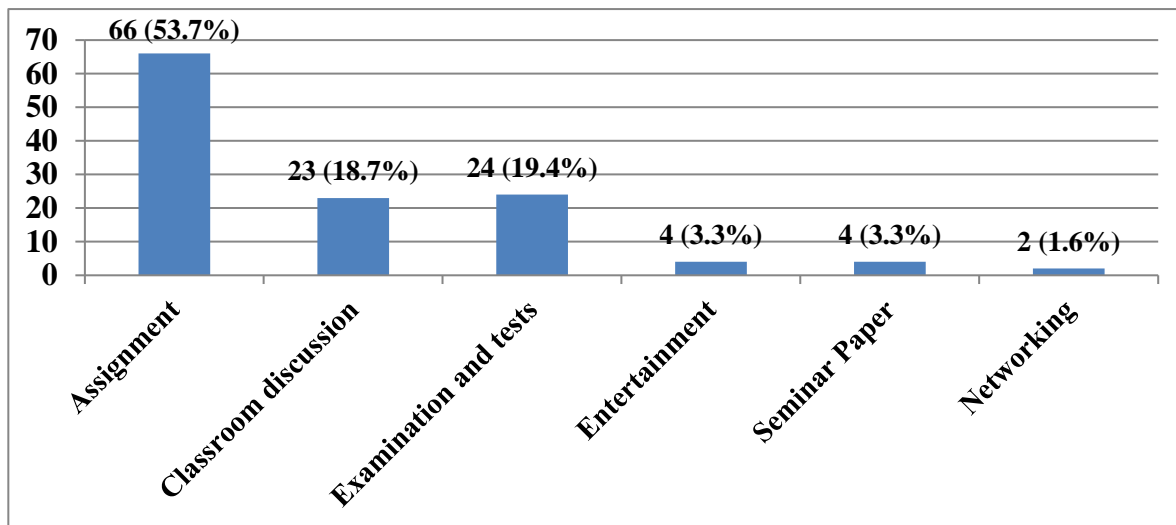


This indicates that respondents accessed both print and electronic information sources. The reason could be due to high level of awareness.

Reason for Accessing and Using a Variety of Information Sources

The participants were also asked to state the main reasons for accessing and using variety of information sources in the library. Figure 3 above, reveals that 66 (53.7%) of the respondents indicated that they accessed a variety of information for course assignment, 24 (19.4%) accessed information sources for preparing for examinations and tests, while 23 (18.7%) indicated that they accessed information sources for preparing for classroom discussion.

Figure 2: Main Reason for Consulting a Variety of Information Sources



The findings above confirm those of Adeniran [36] who reported that 21.8% of the students at Redeemer's University in Nigeria used information resources for assignments, 21% used for research and 12% of them used information sources for keeping up to date with current affairs. Only a few (5%) reported that they used information resources for entertainment and leisure.

Knowledge of citation and referencing information sources

Undergraduate students need to have an understanding of the need for ethical use of various information sources in their academic environment. One of the ways is to adhere to ethics related to fair use of information through proper bibliographical referencing and citation. Therefore, the third objective of this study was to ascertain whether the students are able to use information ethically. In order to answer this objective to questions were posed: What type of referencing styles do you use to cite information? Can you provide some examples that show unfair/unethical use of information? What are the main reason for citing and referencing information sources?

Familiarity with Types of Citation and Referencing Styles

The respondents were asked about the referencing style(s) they were familiar with in referencing and citing information sources.

Table 1: Respondents' Familiarity with Types of Citation and Referencing Styles

Types of bibliographic and referencing style(s)	Frequency (N)	Percentage (%)
Modern Language Association (MLA)	16	13.3
American Psychological Association (APA)	99	80.7
Harvard	5	4.2
Chicago	1	0.8
Others	2	1.9
Total	123	100

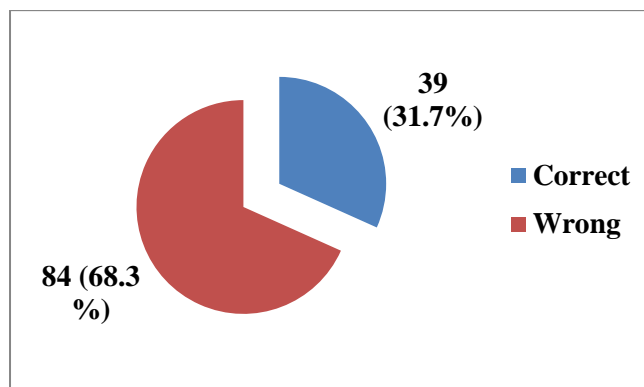
The results in Table 18 above show that 99 (80.7%) of the respondents indicated that they were familiar with APA referencing style, 16 (13.3%) reported that they were familiar with MLA

referencing style, whereas 5 (4.2%) of them stated that they were familiar with Harvard referencing style. However, 2 (2%) of the respondents who indicated others referencing styles, said they were familiar with Vancouver Reference Style.

The respondents were further asked a follow-up question to write a bibliographic reference of an information source that was given to them based on their familiarity with the referencing style they stated.

As can be seen in Figure 8, the majority of the respondents (84 or 68.3%) failed to write correctly the bibliographic reference of an information source that was given to them, only 39 (31.7%) of them wrote correctly the bibliographic reference of an information source that was given to them.

Figure 3: Participants’ Results on Writing a Bibliographical Reference



This means that a large number of participants were not familiar with various referencing styles except for APA style. They also had problems of using them appropriately. The challenge could be because respondents did not have enough time practice or the IL sessions did not focus much on teaching citation and referencing styles.

Examples of Un-ethical Use of Information

The respondents were also asked if they were able to provide an example that could show un-ethical use of information.

The findings reveal that 50 (41.4%) of the respondents indicated cutting and pasting information from the Internet without reference to it, 31 (24.7%) of the respondents stated that student handing in an assignment work that has been copied from published sources, while 23 (19.3%) of the respondents reported that when the block of text is copied directly but not enclosed with quotation marks. Only 19 (14.8%) of the respondents indicated that when a lecturer is publishing someone else’s work under his or her own name was an example of un-ethical use of information.

Table 2: Participants’ Responses on Examples of Un-ethical Use of Information

Examples of un-ethical use of information	Frequency (N)	Percentage (%)
When block of text are copied directly but not enclosed with quotation marks.	23	19.3

Student handing in an assignment work that has been copied from published sources.	31	24.7
Lecturer publishing someone else's work under his/her own name.	19	14.8
Cutting and pasting information from internet without reference to it.	50	41.4
Total	123	100

Importance of Citing and Referencing an Information Source

The respondents were also asked to indicate what they perceived to be major reason for providing citation and reference to an information source. Four options were provided in which respondents had to choose one option. The results are summarised in Table 20.

Table 3: Participants' Responses on Citation and Referencing an Information Source

Reasons for providing citation and reference to an information source	Frequency (N)	Percentage (%)
To keep track information sources used	15	12.3
To be honest about one's own original contribution	19	15.1
To protect one from charges of plagiarism	68	54.7
To give credit to those who initiated the ideas used in the work	21	16.9
Total	123	100

As can be seen in Table 20 above, the majority of the respondents 68 (54.7%) indicated to protect one from charges of plagiarism, 21 (16.9%) of the respondents indicated to give credit to those who initiated the ideas used in the work and 19 (15.1%) of the respondents stated to be honest about one's own original contribution, while 15 (12.3%) of the respondents indicated to keep track of the information sources used.

Based on the foregoing, the results revealed that the majority of FES (99 or 80.7%) at the University of Livingstonia were familiar with APA style and followed by MLA (16 or 13.3%). This could be attributed to the fact that APA is a referencing style which is recommended to the students for use at the University. However, when the respondents were asked to write a bibliographical reference of a peer-reviewed journal based on the type of referencing style they were competent, the majority of them (84 or 68.3%) failed to write the correct answer and 39 (31.7%) only of the respondents got it right. Therefore, the findings are similar to those of Merkely [45] who reported that 45% of the students in Canada were not able to write proper citation, while 28% of them identified the correct citation.

Likewise, Konsar and Mahmood [37] also noted that a significant number of students (65%) at the Air University in Pakistan were not familiar with how to cite information resources correctly. Contrary to the above findings, Kimani [17] reported that at the Catholic University of Eastern Africa in Kenya, only 7.3% of the students were familiar with APA referencing style, 18.2% said

they knew Harvard referencing style, 49.6% indicated that they did not know any referencing style. Therefore, the author concluded that the students committed some form of plagiarism either knowingly or unknowingly.

The findings have also established that the majority (68 or 54.7%) of FES at the University of Livingstonia, indicated that “to protect one from charges of plagiarism” and a few of them (21 or 16.9%) indicated “to give credit to those who initiated the ideas used in work” was the major reason for providing citations and reference to an information source. Similarly, the findings confirm those of Orim [40] who found that almost half of the students (45%) at ten universities in Nigeria stated to avoid being accused of plagiarism as their main reason for providing citation, to give credit to the author of the sourced (48%), and to strengthen and give authority to your writing (47%). This shows that at least a substantial number of the students were aware of the importance of citations and references in academic work.

Knowledge of Citation and Reference Management Software Tools

To due to increasing number of information in digital formats, managing citations and references have become a daunting task for students. However, currently many reference management software tools exist in the market either freely or commercially[41-42]. These software tools used by scholars to electronically store, organize and format references and citations within the manuscript. Some examples include Zotero, Endnote, Mendeley, Refworks, Turnitin and others [41]. Therefore another objective was sought from respondents if they were aware of and able to use some of the bibliographic and reference management software tools.

Figure 4: Participants’ Responses on Knowledge of Citation and Reference Management Software Tools.

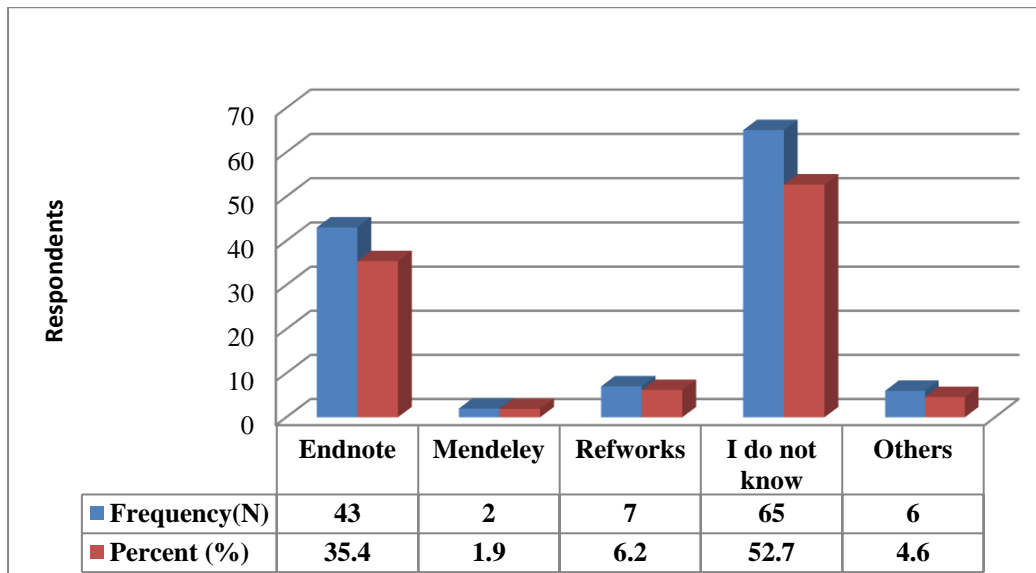


Figure 9 above shows that 65 (52.7%) of the respondents indicated that they did not know the software, 43 (35.4%) indicated that they knew Endnote software, 7(6.2%) of the respondents stated that they knew the Refworks software, while 2 (1.9%) of them that they knew Mendeley Software. Only 6 (4.6%) of those who indicated that they knew other reference software apart from the options that were provided, said they knew Zotero software reference management software. The above findings contradict with those of Francese [42] who reported that 70% of the students at University of Torino in Oslo, were familiar with the use of Endnote, 19% of those who indicated to be familiar with Zotero, whereas 18% of the students considered to be familiar

with Mendeley, while only 8% of the students did not know any reference management software tool. Chipeta [26] posits that the majority of the students who have not received adequate formal or informal IL training have problems with proper citation and reference in their academic works. At this point, it is evident that students at the University of Livingstonia might not have received adequate training in proper citation and referencing or there is lack of awareness about reference management software tools. The reference management software tools are emerging technologies which might also have not been incorporated in their IL programme.

CONCLUSION AND RECOMMENDATIONS

The purpose of this study was to assess IL skills of FES at the University of Livingstonia. The study has shown that FES at the University of Livingstonia demonstrate a high level of awareness of types of information sources, though awareness did not translate to actual usage. The students also demonstrated high deficiency in identifying diverse information sources including their uses which is an indication that they possessed moderate IL skills on types of information sources. It can be concluded that IL training might have lacked adequate hands-on experiences.

On ethical use the information, the study established that the sampled Education students at the University of Livingstonia expressed familiarity with using APA reference style. This could be attributed to the fact that APA seems to be a recommended referencing style at the University of Livingstonia. They also expressed awareness of the importance of providing citation and references to academic work to avoid plagiarism. This was quite encouraging. Despite the positive indications, the majority of the students demonstrated deficient knowledge on writing proper citation and references. They also did not know the bibliographic and reference management software tools. This meant that students might have lacked hands-on experience and also the IL instruction might not have been incorporated other referencing styles including reference management software tools.

Therefore based on the above findings the study makes the following recommendations: Librarians as custodians of knowledge should conduct advocacy and awareness on emerging technologies and incorporate to IL programmes. This will spur interest among the students to participate in different IL programmes available at the University. Library administrators should also provide enough hands-on experience to students rather than focusing on theoretical concepts only. However, this requires procurement of more computers and projectors to facilitate effective delivery of IL instructions. The university should also improve the network connectivity by increasing its bandwidth. The availability of such facilities will ensure conducive environment for teaching and learning and enable the students have more time to conduct practical sessions and eventually improves their IL skills. This will further lead to effective use of information resources.

While this study makes an important empirical contribution to IL literature, it was without limitations. The study was conducted as base line survey with very little sample of education students. Furthermore, the study did not capture all measurement indicators of IL skills like evaluation skills, search skills and others. Therefore it is recommended that future studies should integrate more IL skills measurements with bigger samples.

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