

An Assessment of Information Literacy Skills of Undergraduate Students at the United States International University- Africa

Nyarigoti Naom

United States International University Africa (USIU-A)

Email: nyarigoti@usiu.ac.ke

Abstract

This paper is based on an assessment of information literacy skills of undergraduate students at United States International University Africa (USIU-Africa). The practice of annual assessment of course effectiveness and proposed interventions are aimed at supporting the learning processes for instructors and improving their practice. The study involved final year student from all departments in the university. The study sought to find out whether at their final year, students had acquired the necessary skills requiring them to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information. The students did an information literacy test to assess their competence. The data was analyzed statistically. Findings show that students' use of the library and its resources are low with most of them largely relying on search engines such as Google as the main sources of information. The study makes a number of recommendations among them introducing information literacy education and digital information skills as a taught undergraduate course in the university.

Keywords: *Information literacy, assessment, ACRL, Digital information, Library skills*

INTRODUCTION

The Internet has greatly altered the ways in which people create, share, analyze, and validate information. Availability of search engines such as Google seem to provide quick access to information for contemporary students. Due to the huge chunk of information available on the internet, students must have the information literacy skills to be able to identify credible information and use it effectively. According to the Association of College and Research Libraries (2000), gaining skills in information literacy increases the opportunities for students' self-driven 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.

Information literacy (IL) is a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information (Ashoor, 2005). At the United States International University- Africa (USIU-Africa), instruction of Information Literacy (IL) skills are integrated in the general education (GE) courses such as English, computer and Strategies for University Experience (SUS) which are offered in the first and second years. In addition, students receive library instruction sessions organized by library staff. These are not compulsory classes and they run alongside the regular classes. Due to the flexibility of these library sessions, chances of students missing them are high. Another approach has been having faculty in collaboration with library staff arrange for a one-off library instruction session within the regular classes.

This also has drawbacks as only so little can be covered and it only applies to day classes when library staff are available but not evening and weekend classes. This therefore demands a more strategic approach to equip students with the necessary Literacy skills.

USIU-Africa conducts program assessments annually. The assessment involves collecting and analyzing information about a program's activities, characteristics, and outcomes. Its main purpose is to evaluate current practices and seek interventions to improve its effectiveness. According to Bober, Poulin, and Vileo (1995) assessment gives results that can be used for improving the quality of the program. It can also lead to professional development of teaching staff, which can help institutions achieve ultimate program goals. This process yields accountability that will result in institutionalized curricular changes. This assessment employed the Information Literacy Competency Standards for Higher Education proposed by Association of College and Research Libraries (ACRL). The ACRL provide a set of information literacy standards, performance indicators and outcomes that serve as the basis for assisting learners to master content and extend their investigations, to become more self-directed and to assume greater control over their own learning. These include:

- The information literate student defines and articulates the need for information.
- The information literate student accesses needed information effectively and efficiently.
- The information literate student evaluates information and its sources critically and incorporates selected knowledge into his or her knowledge base and value system.
- The information literate student, individually or as a member of a group, uses information effectively, to accomplish a specific purpose.
- The information literate student understands many of the economic, legal and social issues surrounding information and accesses and uses information ethically and legally (ALA 2006).

The above standards guided the formulation of the test that was used to assess students' IL skills. The main aim was to assess whether by the end of their four-year course, the students had acquired the required information literacy skills, with the objective of identifying any challenges and proposing possible improvement strategies in the process.

LITERATURE REVIEW

With the fast-changing world, students need more than just a knowledge base. They also need techniques for exploring it, connecting it to other knowledge bases, and making practical use of it. The delivery of information literacy instruction to students is therefore a key priority in every higher learning institution. The proliferation of electronic resources and the increased use of the internet as an information source has put more demand for IL skills. Users of information technology should be able to select authentic, valid, and reliable information from the diverse choices. This applies not only in academic studies, but also in the workplace and in personal lives.

Information literacy empowers people in all works of life to seek, evaluate, use and create information effectively to achieve personal, social, occupational and educational goals (UNESCO 2008). IL involves abilities to recognize when information is needed and ability to

formulate questions designed to gather the needed information. It also includes evaluating and using information appropriately and ethically once it is retrieved (Kinengyere, 2006).

The concept of IL is not new as seen from earlier studies (see Owusu-Ansah, 2005; Lloyd 2005; Matoush 2006; Harris and Millet, 2006; Ramesha, 2008; Lloyd, 2008; O'Connor 2009). The Association of College and Research Libraries' (ACRL, 2000), define Information Literacy as a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information. It is a social response to the need for effective use of the huge amount of information accessible in today's information society (Johnston & Webber 2003). IL should however not be thought of as a simple ladder of skills to be attained but a recursive learning process. It involves individual's attitude to their learning and research such that they are explicitly thinking about how they "use, manage, synthesize and create information, in a wise and ethical manner, to the benefit of society", as part of their learning life (Bent, Gannon-Leary & Webb 2007, p.84). This means information literacy is central to learning and research and it involves changing people's learning attitudes and habits so that they understand how information fits into their learning lives.

Brabazon (2007) warns against the "clicking replacing thinking' habit as it has damaged learning institutions and the ambitions of students and educators" (p.16). Brabazon notes that information literacy is a priority if we have to transform learning especially in higher learning institutions. Currently, information comes to individuals in unfiltered formats, raising questions about its authenticity, validity, and reliability. There is a huge chunk of misleading information on the open web, whose origin may be associated with simple error, prejudice or malicious intent to deceive (Banks, 2013). The goal should therefore be to establish IL programs that will instill within students the IL skills to critically and objectively examine any piece of information they encounter, wherever they encounter it (Berk et al, 2007; Godwin, 2009; Walsh, 2010) to ensure credibility of information.

A range of IL standards and models have been developed (see Mackey and Ho 2005; Loo and Chung, 2006; Keene et al, 2010), but it important to note that users are different and needs vary as observed from earlier studies; (Stephenson & Caravello 2007; Sales 2008; Pinto 2010; Zuccala (2010). Majority of students are not able to access relevant information because of lack of skills in terms of concept identification, search strategies, information sources, proper use of library catalogue and ethical and legal use of information (Anafo and Kwame 2014). The emerging question then is who bears the responsibility to lead the information literacy drive. Dadzie (2008) argues that, the responsibility lies on librarians since they have custodial duties of collecting, organizing and providing access to the multiple forms and sources of information. She however notes that information literacy, though an issue for librarians, is not a library affair but requires partnership with faculty and senior university managers to integrate information literacy into the curriculum.

The purpose of this assessment was to evaluate the students' ability to use information effectively to accomplish a task, ability to recognize and access the needed information effectively and efficiently, and ability to evaluate information critically. Findings are meant to inform faculty and other decision makers of the contributions and impact of the programs being offered, and provide support for institutional decision-making activities such as

program review and strategic planning, as well as external accountability activities such as accreditation.

METHODS

A survey was used to collect data from 179 final year undergraduate students of USIU-Africa. The survey consisting of eleven (11) variables were formed based on the 5 ACRL standards namely; defining information need, formulating search strategy, evaluating information, conducting research, and legal & ethical use of information. The survey questions comprised multiple choice and short answer questions designed to assess knowledge on the basic levels/standards of information literacy. A total of 5 out of 8 final year classes in Fall Semester formed the study population. The survey constituted a total of 30 questions: 26 of these were multiple choice and 4 short answer questions. Questions 1-3 collected demographic data of the participants and questions 4-8 collected data regarding the use of the Internet. Question 9 to 30 of the questionnaire were formulated according to the 11 variables summarized in Table 1 below.

Table 1. Methodological framework

| Themes | Variables | Questions |
|---------------------------------------|-------------------------------|------------------------------|
| 1. Defining Information Need | 1.1.Information Sources | 9, 30 |
| | 1.2.Types of Information | 10, 11, 30 |
| 2. Formulating Search Strategy | 2.1 Search Strategy | 12, 30 |
| | 2.2. Search Tools | 13, 14, 15, |
| | 2.3 Internet Search Tools | 30 16, 17,18,19, 30 |
| 3 .Evaluating Information | 3.1 Internet Sources | 20, 21, 23, |
| | 3.2. Books | 30 22 |
| 4 .Conducting Research Paper | 4.1 Conducting Research Paper | a 24, 25, 29, 30 |
| 5. Legal & Ethical Use of Information | 5.1. Copyright Issues | 26, 30 |
| | 5.2. Bibliographic Citations | 27 28, 30 |
| | 5.3. Bibliographic Styles | |

FINDINGS

Differences between a journal and a book

Exposure to a great deal of information does not make people informed citizens; they need to learn how to use this information effectively, ACRL (2000). Due to the information and data explosion students face many difficulties to locate, evaluate, and use information. Information literacy is considered the solution to this challenge (ACRL 2000). The students were asked to describe the difference between a book and a journal. Some of the major differences that were captured in this question were in terms of frequency and number of publications, number of authors, and nature of details and diversity of content. Most of the respondents said journals were published often and focused on various subjects while a book focused on a particular subject and published once unless reviewed through volume

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publications. They also said a journal is brief with a book being termed as very detailed. The other differences given are as shown below.

| Journal | Book |
|--|---|
| Has multiple publications | Has single publications |
| A collection of academic research papers | A book is physical |
| Contains particular information regarding a particular topic | Compilation of different topics that takes years to compile |
| Journal is online based | Published once and overtime through volumes |
| A journal is brief | A piece of work that cannot be added its already complete |
| Academic material that is published at regular intervals | A book has more details |
| Contains the author's personal view on a topic | Book is published once and revised |
| Bears only one topic | Book looks at a particular subject in broader terms |
| Daily record of events updated | Contains factual information |
| Has multiple publications | Contains several topics |

Non reference material

Reference materials are sources that provide background information or quick facts on any given topic. Examples include; almanacs, encyclopedias, dictionaries, atlases, handbooks, bibliographies, biographical resources, citation guides, and indexes. All of these provide good information that can be used to start or supplement a research, but cannot be used as the basis for a research project. For students to conduct effective research, they must therefore understand the different types of resources available for them. This is not only important for a focused research but also easy access to relevant information. Students were asked to select a non-reference material from a list of sources including Almanac, Handbook, Dissertation, Dictionary, Journal and Encyclopedia. Most of the respondents 39.1% (n=68) chose almanac as the non-reference material followed by 24.7% (n=43) who felt that a hand book was also a non-reference material. Only 4.6% correctly indicated that a journal is not a reference material. The summary of the responses is as shown below.

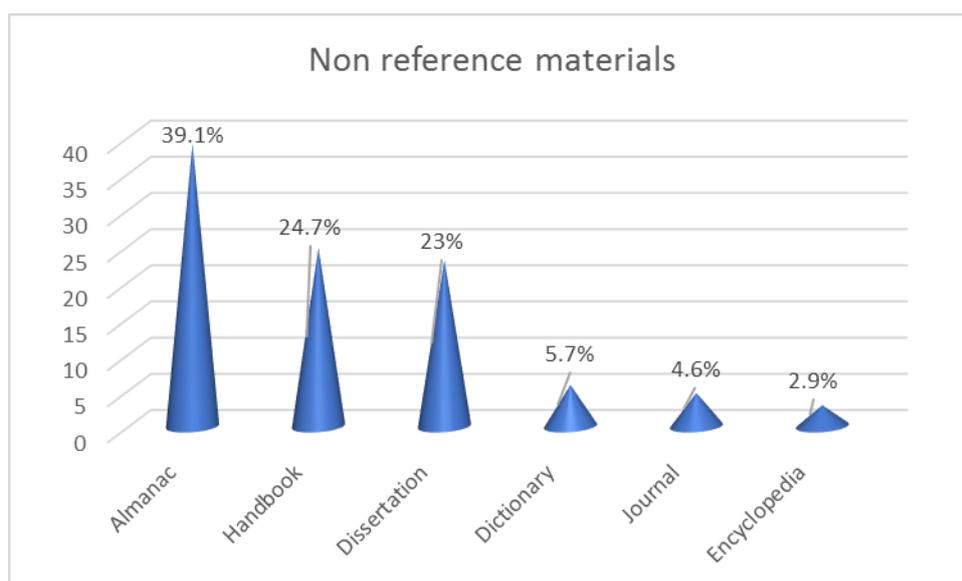


Figure 1: Non reference materials

Information literacy in the 21st century

Lifelong learning has become one of the main themes in the 21st century higher education sector. Students, therefore, need to sharpen their skills of learning and critical thinking in order to succeed academically and in their future job opportunities. To test if the students were aware of this significant role of IL skills, the students were asked to indicate what they thought was the most needed IL competency in the 21st Century. 78% (n=135) of the students in the assessment survey, confirmed the finding, critically evaluating and effectively using information was what one needed to know in order to be information literate in the 21st century. Recognizing when information is needed was the least needed 1.7% (n=3) according to the students as represented below.

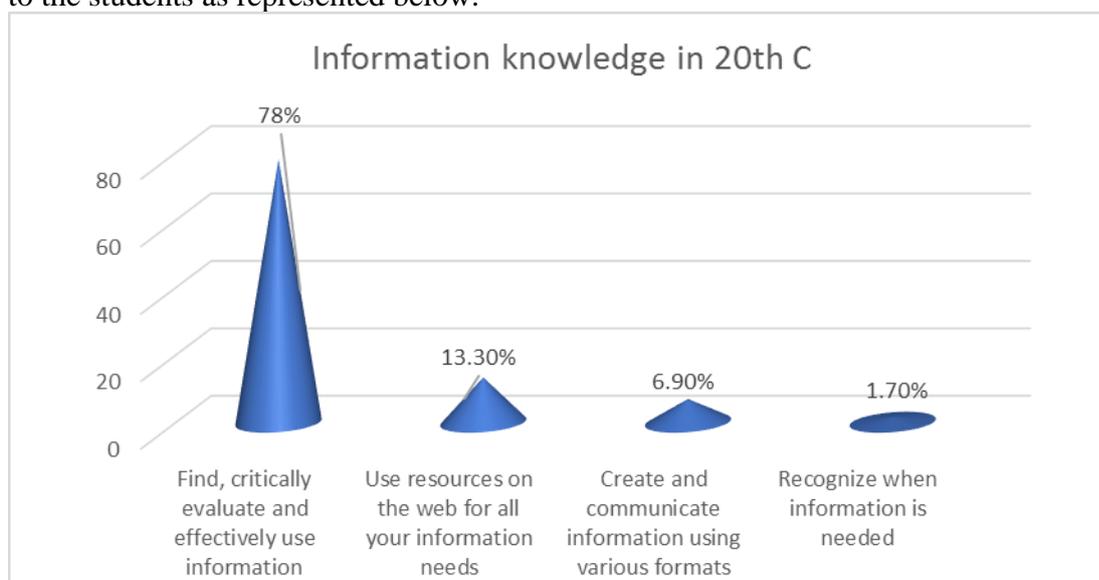


Figure 2: Information knowledge in the 20th C

Keyword search

The students at USIU-Africa access information by using online public access catalog (OPAC) system, utilizing the key search strategies: by author, by title, or by key

words/phrases. Students could also seek assistance from librarians to locate the resources they need. The students were asked to respond to a question on the use of a keyword as one of the information search strategies. 58% (n=102) of the students felt that a keyword looked for words in any field in the record, while 24% (n=42) indicated that a keyword looked for words in the subject field only. This is as shown in figure 2 below.

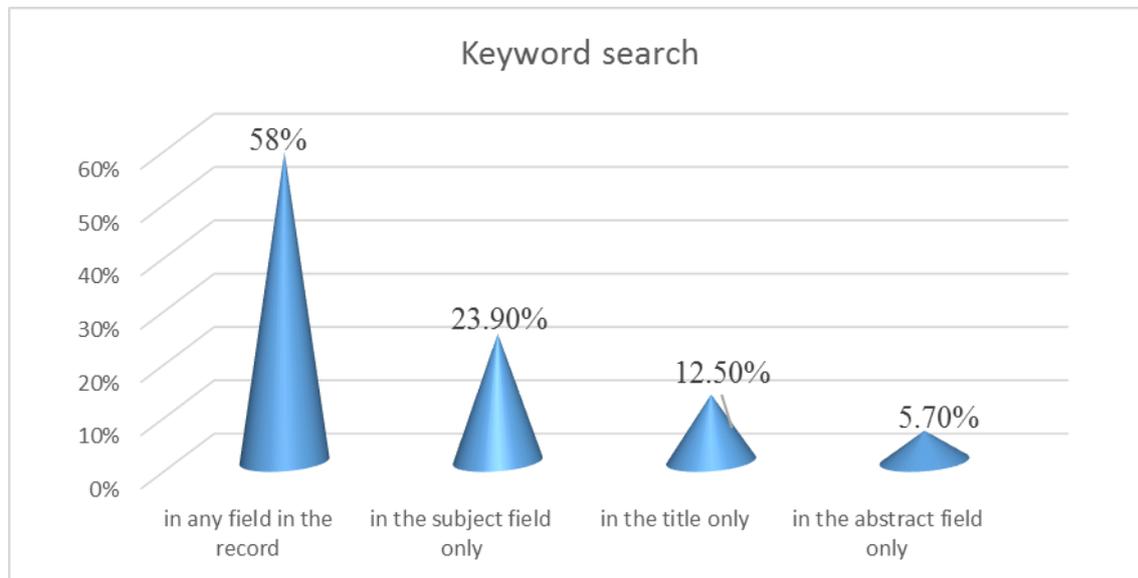


Figure 3: Keyword search

Use of truncation symbol

Truncation is a searching technique used in databases in which a word ending is replaced by a symbol. Truncation enables different forms of a word to be searched for simultaneously, and will increase the number of search results found. Students were asked to choose from the given options when they could use a truncation symbol. Only 30% of the respondents answered that the truncation symbol is used to search for various endings in a word and search in a specific database. The results are presented below.

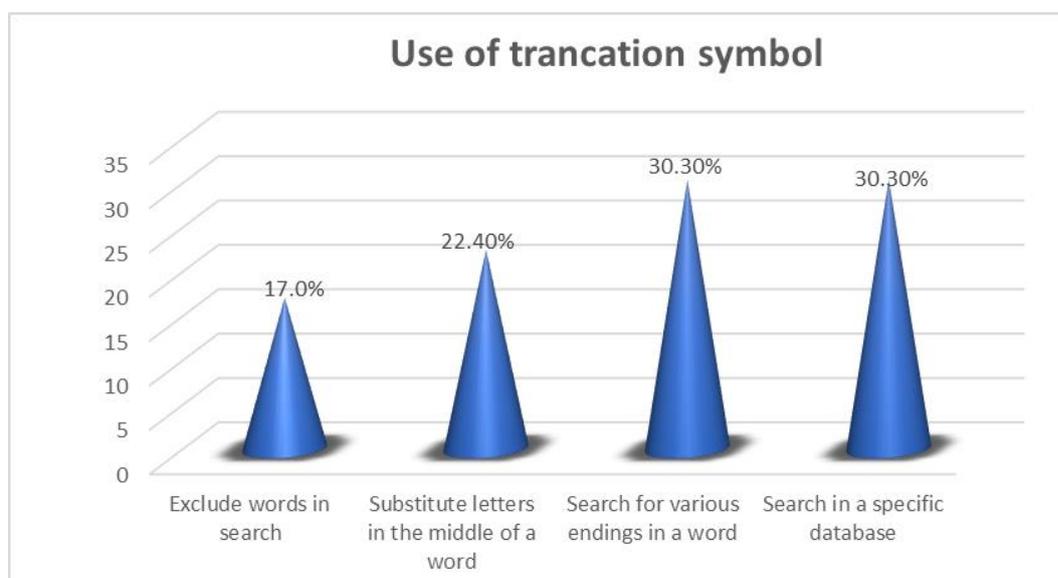


Figure 4: Use of truncation symbol

Call numbers on shelves

In attempting to ascertain the level of skills the students had to use the library catalogue for identifying and locating the required item, the students were asked to identify from four call numbers the reference that would appear first on the shelves. Majority 63.7% (n=107) of the respondents correctly answered that HD7105.4.R75 2008 would be the first book to come on library shelf. No other option scored by more than 17% of the respondents as shown below.

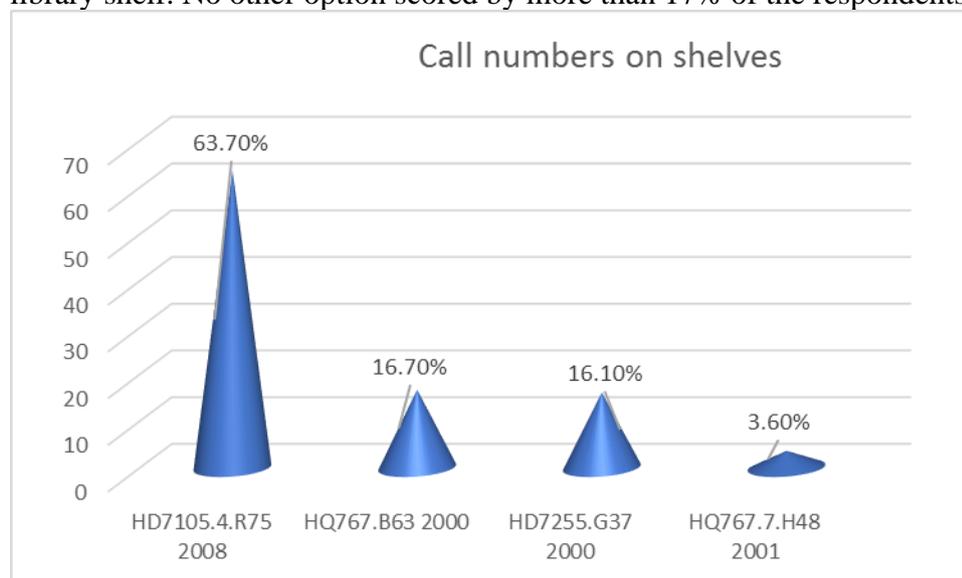


Figure 5: Call numbers

Evaluation of resources

The assessment showed that the students understood the criteria for evaluating information sources although their actual practice was contrary as indicated in their main sources of information. Specific examples of challenges for students include the inability to distinguish between library and non-library resources, scholarly and popular sources and to determine the credibility of information sources, especially on the internet. For instance, document format was selected as the least important item to consider when evaluating resources by majority of the respondents 76% (n=132). There are those 16% (n=27) who felt the publisher was also not very important when evaluating resources. Below are the selections from the students.

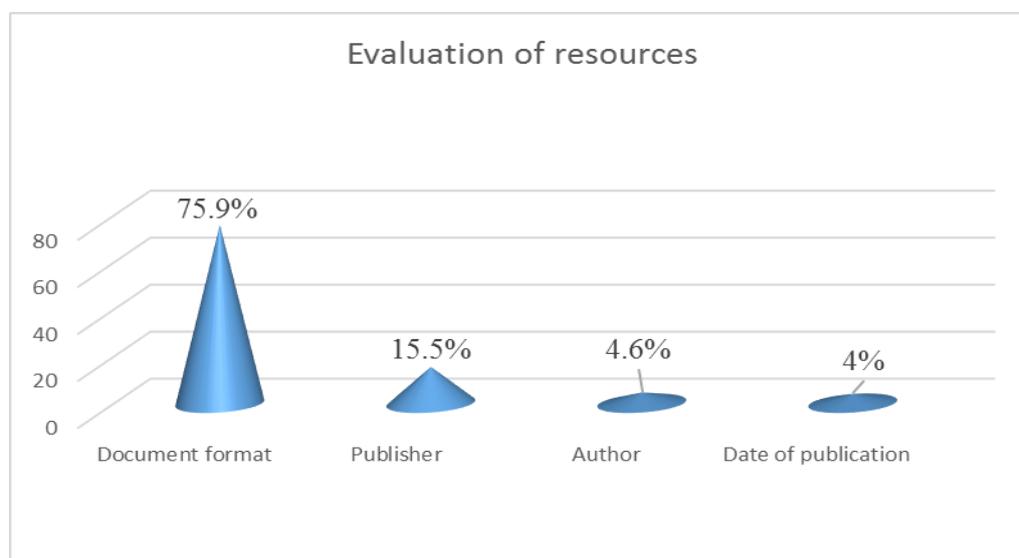


Figure 6: Evaluation of resources

Most used sources of information from library electronic databases

Information that is available in print and electronic format ranges widely in validity and quality. Students seem to rely more on the free Web for information, a behavior pattern that is compounded by students' overreliance on Google and if something isn't available on-line, they seem to think it doesn't exist. In order to find out the students' research habits, they were asked to choose from the options given the information source they used most. It turned out that Google/Wikipedia was the most frequently used source of information at 31% while class notes were least used 8.9% as shown below.

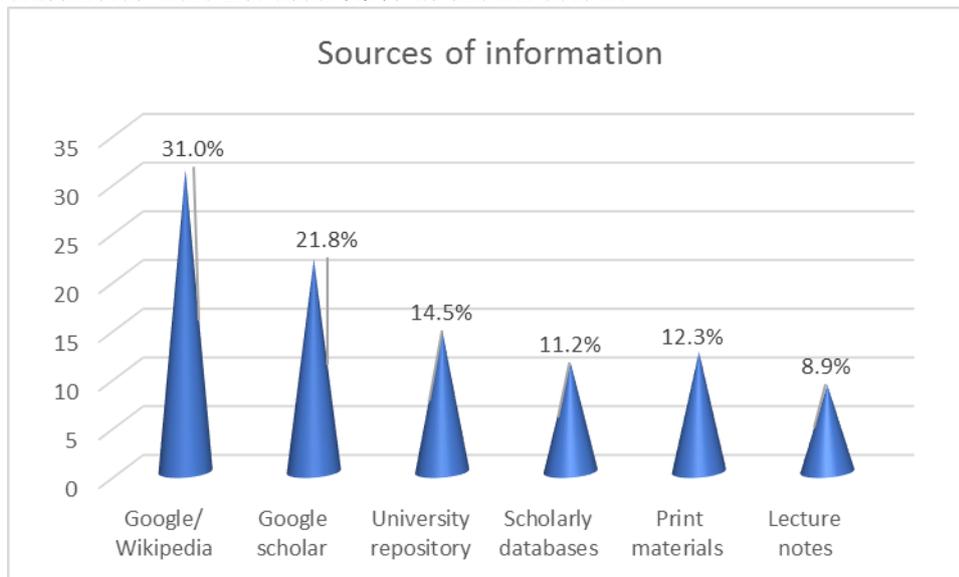


Figure 7: Sources of information

Finding related articles

Referencing from the article was the most efficient source of finding related articles according to majority 65% (n=113) of the students in this survey.

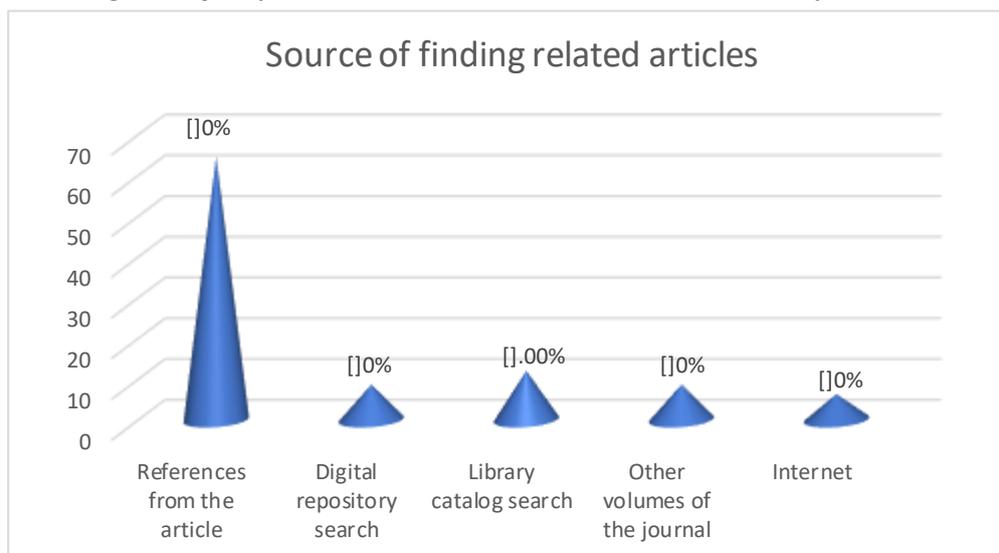


Figure 8: Finding related articles

Use of electronic resources

92% (n=161) disagreed that they had to go to the library on campus to use electronic resources with only 8% (n=14) agreeing that they actually had to go to the library in campus any time they wanted to use electronic resources. On renewal of materials in the library, 52.3% (n=91) felt that they did not need to go into the library to renew materials while 47.7% (n=83) indicated that they needed to visit the library to renew materials. Such responses clearly indicate that some students complete their course without using their university library. On answering the question on obtaining materials that were not found in the library catalogue, majority of the students seemed to know other possible options. Some of them however gave Google as an alternative.

The students were tested on their citation skills. They were given 3 citations from which they answered questions. Their responses are described below:

Citation 1

Kors, Alan Charles "Morality on today's college campuses: The assault upon liberty and dignity." *Vital Speeches of the Day*. 64(20):633-637.1998.Aug 1.

80.9% (n=106) stated the article's title was: Morality on today's college campuses: The assault upon liberty and dignity. 19.1% stated: *Vital Speeches of the Day* as the title of the article.

Citation 2

The New York Times, January 31,1999, Sunday, Late Edition-Final, Section 1; Page 12; Column 6; National Desk, 745 words, Two Protests by Students Over Wages For Workers, By Steven Greenhouse.

Again, the responses were shared equally, 50% of the 179 respondents stated the periodical title was: The New York Times while the other 50% said the title was: Two Protests by Students over Wages for Workers

Citation 3

Watson, Jinx Stapleton "If you don't have it, you can't find it." A close look at students' perceptions of using technology. *Journal of the American Society for Information Science*. 49(11): 1024-1036. 1998 Sep. [References]

91.6% (n=120) of the students chose 49(11) as the volume and issue number of the while 8.4% said it was the volume and number of pages in the article.

DISCUSSION OF FINDINGS

The library skills survey revealed that students had inadequate understanding of some rather elementary conventions for identifying and organizing information. Key basic library skills identified as causing confusion among the students surveyed were the ability to: (1) decipher the location of sources using the call numbers (2) identify subject headings in a library catalog record, (3) distinguish reference and non-reference materials, (4) identify references to journal articles, (5) interpret location information in a catalog serial record, and (6) use the truncation symbol to search. For instance, most respondents agreed that they would use the truncation symbol to search for various endings in a word and search in a specific database

although few seemed confused on how they could do it as only a few were able to give examples of relevant words that would use truncation symbols. Also, most students 58% (n=102) felt that a keyword looked for words in any field in the record, while 24% (n=42) stated that a keyword looked for words in the subject field only. This being a basic skill in information retrieval, the different answers given suggest that students have been involved in regular research.

Another skill area that was of challenge to the students was the ability to tell the difference between a book and a journal. Most of the respondents said journals were published often and focused on various subjects while a book focused on a particular subject and published once unless reviewed through volume publications. They also said a journal is brief with a book being termed as very detailed. Obviously, students who are constantly engaged in research would tell the difference.

Students were not able to distinguish between reference and non-reference materials. Most of the respondents 39.1% (n=68) chose almanac as the non-reference material followed by 24.7% (n=43) who felt handbook was also a non-reference material. In general, most respondents understood the term peer review as an evaluation of scientific, academic or professional work by others in the same field. It also meant subjecting your work to somebody else (mainly a specialist in that area) for scrutiny and criticism although there were others who felt that peer review could be done by friends.

Finding, critically evaluating and effectively using information was what one needed to know in order to be information literate in the 21st century according to 78% (n=135) of the students. Recognizing when information is needed was the least needed 1.7% (n=3) although others 13.3% felt that they could use resources on the web for all their information needs. Almost all responds 92% confirmed that they didn't need to go to the library on campus to use electronic resources with only 8% (n=14) agreeing that they actually had to go to the library in campus any time they wanted to use electronic resources. The students seemed to know the alternative for obtaining information not available in the university, although few resorted to Google as an option. Although students seem to know that Electronic databases are a reliable source of more accurate and scholarly information, compared to Google, they still shun them.

Some information that would be regarded as obvious was not to some of the students. For instance, 47.7% (n=83) felt that they needed to visit the library physically for them to renew materials, a probable reason why students do not want to borrow library resources for fear of being penalized if they failed to renew them or lost them. In finding related information, majority (65%) of the students pointed to the use of reference page in the article as the most efficient source. They also suggested Digital Repository search, Library catalog search, and other volumes of the journal as possible sources. In reducing plagiarism, they suggested using quotation marks or block quotes around exact quotations, documenting citations of items used and paraphrasing the idea rather than directly copying the words as good practice

CONCLUSION

The goal of this study was to assess whether exposure to the library over the course of four years at USIU-Africa, through the course requirements, through library instruction, or simply via a frequent use of library helps students attain required information literacy skills. Given

the small sample of students involved in the survey, it would not be prudent to make a generalized conclusion about the IL competence of the students but the assessment yielded insights that could be used to impact practices within the institution for improved results. Findings and the overall analysis show that, although the students are not at a total loss when it comes to the concepts and skills surveyed, they have not attained the optimal standards of what makes an IL competent student. Majority of the students were not cognizant of the methods used to search for information, the use of the library catalogue, and evaluation and presentation of the information.

The assessment thus leads to a number of recommendations:

- An IL approach that emphasizes integration of IL instruction across the curriculum. A cross curricular approach will remedy the inconsistencies experienced among faculty in delivering IL instruction to students.
- Exposure of students to regular research so that they continue to build their research skills through practice. Faculty to increase library and online resource-based assignments where students are required to find, use, and evaluate books and articles apart from the list of course texts provided.
- The library staff to devise strategies of motivating students to enrol for library instruction classes. This includes enhanced publicity and articulating the role of information literacy in lifelong learning. This also calls for an atmosphere of friendliness through which the students can engage.
- Librarians and faculty to work in collaboration in structuring instruction sessions, in order to address the entire research process, including building critical thinking and evaluation skills during library instruction. Individual or small group instruction sessions for students who faculty identify as needing additional help would be a possible approach.
- Introduction of Information Literacy as a taught course to mitigate weaknesses experienced when integrating it into other courses
- Faculty involvement in IL related workshops to keep them up-to-date on new resources and search interfaces.

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