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Assessment of Information Literacy Skills of Undergraduate Medical Students in Selected Public Universities in Kenya

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Abstract

This study was conceived with the aim of investigating information literacy skills (ILS) of medical undergraduate students in selected public universities in Kenya, with a view of proposing a framework to enhance delivery and utilisation of the information literacy skills in institutions of higher learning. Baro (2013) assert that for a medical practitioner or student to derive maximum benefits from information he/she must possess information literacy skills. However, literature reveals that in Kenya, there is no national policy on ILS. Information literacy skills-related training is an individual institutional matter. Further, medical practitioners prefer using human sources instead of online databases or print sources that are readily available because of low information literacy skills. In this line, most medical students do not know how to refine search strategies, lack of skills on how to deal with information explosion and on appropriate use to avoid plagiarizing published scientific work. Majority of learners do not know how to evaluate the credibility of online information sources and the teaching of ILS is inadequate. The objectives of the study were to: Examine the status of information literacy skills offered to medical undergraduate students at University of Nairobi and Moi University and ascertain the usefulness of these skills; examine the information literacy skills curriculum and assess the methods used in delivering the programme to undergraduate medical students in the two universities; analyze the adequacy of policies and regulations supporting information skills literacy programmes in the two institutions; determine the perceptions of undergraduate medical undergraduate students towards ILS;

assess knowledge, skills and training possessed by staff engaged in facilitating ILS among medical undergraduate students; examine the role of ICT in facilitating and promoting information literacy skills among medical undergraduate students at the University of Nairobi and Moi University; and find out the challenges in ILS delivery and develop a framework to enhance ILS among medical undergraduate students in the University of Nairobi and Moi University. The study was guided by both the Sauce Model as developed by Bond (2009) and the Six Frames of Information Literacy Education Model as developed by Bruce, Edwards & Lupton, (2015). The study utilized the pragmatic research paradigm with mixed method approach. Additionally, multiple case design and convergent parallel design were adopted in data collection. The two universities were purposively selected that is University of Nairobi and Moi University. The students were stratified into their area of specialization and purposive sampling applied in selecting 182 respondents in 6th year medicine, 4th year nursing and 5th year dentistry. A sample size of 182 lecturers were selected through purposive and simple random sampling strategy. Purposive sampling techniques was utilized to select 2 university librarians, 2 medical librarians, and 6 Heads of Department (HODs). Data was collected using interviews, questionnaires and document reviews. To ascertain validity, triangulation of different data sources was carried out. Reliability of the study was tested through internal consistency technique and Cronbach's alpha. Finally analysis of data was carried out quantitatively and qualitatively. The findings indicate that the two universities which were sampled had initiated information literacy skills programmes in form of communication skills unit, with varied goals and objectives, majority of the students had not earned information literacy skills, meaning that they would experience problems in retrieving and utilizing information resources. However, most respondents indicated that the information literacy programmes should be designed to ensure that all users are literate in the use of both printed and electronic resources in the library. It is envisaged that the findings will enable public and private universities develop a befitting information literacy skills curricula that would benefit students to become effective users of information resources. The recommendations will inform the librarians, lecturers, university administrators, curriculum planners and education administrators on the importance of information literacy skills in the learning and training process.

Key Words: Assessment, Communication skills, Curriculum, Electronic Information Resource, Information and Communication Technology, Information literacy, Information literacy program, Information skills / Library skills, Information Professional/ Specialists, Information Seeking Behavior, Information Sources, Library User Education

Introduction

Information is a vital resource needed by human beings in different walks of life. Information can be defined as processed data, which helps in decision making, increase an individual's knowledge and mental thinking and overall change in the societal status of the nation (Badween, 2001). Similarly, Madden, (2000) defines information as the resolution of uncertainty which answers the question of "what an entity is" and thus defines both its essence and nature of its characteristics. For an individual to derive maximum benefits from information he/she must possess information literacy skills. Bruce (2004) defines Information Literacy as a set of skills needed to find, retrieve, analyze, and use information. Consequently, American Library Association (ALA) (1972) defines information literacy skill

as the ability to recognize when information is needed as well as the ability to locate, evaluate and effectively use it.

Information literacy in the 21st century is considered as a tool to individual empowerment and community development. Kavulya (2003), Hall (2010), Scott (2012) and Diehm & Lupton (2014) describe information literacy as the people's ability to know when there is need for information. Knowing when there is need for information enables one to identify, locate, retrieve, evaluate and effectively use it to solve the problem it was intended for or carry out more research. There is information deluge in various study fields especially medical sciences. Nonetheless, access to this dense information, demands for information literacy skills. Medical, dentistry and nursing students develop these skills by participating actively in information literacy instructions and enquiry-based learning. It is necessary for them to become effective information seekers and users in order to successfully negotiate their ways and become knowledgeable in medical research process. Thus, information literacy skills are no doubt significant determinants for active and result-driven engagements in the research process, especially in medical field.

In medicine, there are two methods of training that is the problem-based learning approach and conventional approach. These two methods of training are intensive hence there is need for students to be well grounded on information literacy skills. In addition, there is need to integrate ILS into basic sciences and clinical practice to enable medical students to identify, locate, evaluate, organize, and effectively use medical information to foster their training and future assignments in the medical field. (Vainiomäki 1995; Barrows 1996; Boud and Feletti 1997).

To cope up with medical training curriculum in an information overloaded environment, it is inevitable for medical students to be information-literate, to develop set of abilities to extract the appropriate information from the sea of information in the shortest possible time, and to critically evaluate the authenticity, validity and accuracy of the information. These sets of abilities needed for the information seeker is known as Information Literacy skills (ILS). If the students lack the ILS needed to find and use information effectively, they can be burdened by information overload (Andretta, 2005). Hence, the need for ILS training which is pivotal in the development of independent learner in academic environment such as the students on PBLC (Peters et al., 2007).

In light of the statements above, this study seeks to investigate information literacy skills of undergraduate medical students in selected public universities in Kenya, with a view, of proposing a framework to enhance delivery and utilisation of information literacy skills. The research objectives are to; explore information literacy skills offered to undergraduate medical students at the University of Nairobi and Moi University, determine the perceptions of medical undergraduate students towards the content and delivery methods of ILS and assess knowledge and skills possessed by staff engaged in facilitating ILS to undergraduate medical students. This study findings will provide a more practical way of integrating and utilizing ILS into medical training curriculum and also assist in developing more effective pedagogic approaches of imparting ILS to students at institutions of higher learning. In addition, the recommendations of this study will go a long way in helping universities to re-engineer ILS programmes in relation to course structuring, developing course contents, crafting methods of delivery and establishing assessment and evaluation strategies.

THEORETICAL FRAME WORK

Kerlinger (1979) states that a theory is a set of unified variables, descriptions, and propositions that elicit a systematic view of phenomena by specifying relations among variables with the purpose of explaining natural phenomena. There are various theories that are relevant for the study on information literacy skills that include among others; Sauce Model, Six Frames information education theory i-skills, SCONUL's Seven Pillars of Information Literacy, Information Literacy Standards Model, Five-Part Model of instruction, Kuhlthan's theory of information search process, the Bloom Taxonomy and Eisenberg and Berkowitz (1988) Big6 Skills

Model for Information Problem-Solving. This study will primarily be underpinned by Sauce Model (Bond, 2009) and the Six Frames of Information Literacy Education Model (Bruce, Edwards & Lupton, 2015).

Sauce model was advanced by Bond in 2001 and subsequently revised in 2009 (Bond, 2009). It is a research and problem solving process aimed at providing information literacy skills for learners to use in problem solving and research (Bond, 2011). Sauce model has six key facets/variables, which are Information literacy, collaborative and individual learning, essential skills, higher thinking skills, problem solving and ICT integration. Additionally, Bond(2011) avers that the six facets of the Sauce Model can be practiced through a five-step process that begins with task setting, information acquire, information use, information communication and information evaluation. Sauce model is anchored on the premise of projecting and leading students to higher-order thinking skills and developing learners into independent information-literate people (Bond, 2001). Therefore, the model will help in the realization of the aim of study.

Additionally, the six frames for information literacy education model will be utilized to bridge the weakness identified in the Sauce model. The six frames for information literacy education was developed by Christine Bruce in 1997 as a learning oriented approach to ILs (Bruce, Edwards & Lupton, 2015). as a theoretical tool to help partakers in the ILS education arena reflect on, and analyse, the varying implicit or explicit theoretical influences on their contexts. The frames have brought a paradigm shift on ILS teaching, learning and ILS curriculum design (Pratt et al, 1998 and Toohey, 1999). The six frames of information literacy education are ;The Content Frame, Competency Frame, Learning to Learn Frame, Personal Relevance Frame, Social Impact Frame and the Relational Frame. Each frame brings with it a particular view of ILS, information, curriculum focus, learning and teaching, content, and assessment. Some elements of the frame apply to both the substantive content and to the ILS component where these are taught together.

LITERATURE REVIEW

The Status of Information Literacy Skills training in Universities

Scholars like Kavulya (2003), Amunga (2007), Joseph (2005), Kingori (2015) Mundave (2016) & Gatero (2016) in their various studies agree that the following are problems of information literacy skills training in Kenyan institutions of higher learning: Over-dependence on one day orientation program; Lack of collective curriculum for user education program in Nigerian universities; Use of unqualified personnel to teach the course. Edom (2007) itemizes the problems as follows: Inadequate time, large number of students, inadequate number of instructors/lecturers, inadequate facilities/equipment, high cost of audio visual materials, the attitude of lecturers, the attitudes of students, and use of library combined with use of English

Ogunmedede and Emeahara (2010) in their study observed that no matter how large the stock of a library is, if the services and its resources are not fully utilized, such a library will be a white elephant project. Further they posit that Information literacy skills can be imparted in the form of orientation/training programmes, workshop, and seminar, “know your library programmes” occasionally organized by the library for both new and old library users. These activities may be packaged in hard copies, i.e. manuals, handouts or in soft copies i.e. compact disc. The fundamental objective of user education is to expose, acquaint and inculcate in the clients, the basic

knowledge or understanding and skills which are necessary for effective and efficient use of the library services and resource. On the same breath, Uwakwe (et al, 2016) argue that the advent and advancement of technology as well as the development of computer systems, have given rise to unprecedented increase in volumes of published materials, both in print and non-print forms and compelled modern libraries and the librarianship profession to pursue and adopt new age tools and methodologies in the discharge of its activities. These sentiments are echoed by Aligu (2011) who states that changes brought about by the use of ICT facilities in storing, retrieving and dissemination of information poses challenges on the library users hence the need to instruct them on how well to use them to retrieve information. He insists that the application of ICT into library system demand from an exposure to ICT facilities and be taught on how to use them. Onyeneke (2017) observes that many ILS studies in Nigeria have shown that many students do not use the library. Onyeneke (2017) further, alludes that some students are not even aware of the existing information materials in the library. Those who use the library find it difficult locating needed materials because they lack the knowledge of the search tools which would help them locate information materials needed. Consequently, the library resources are underutilized and this seems to account for students' inability to do meaningful research which ultimately results in poor academic performance.

Policy and Regulatory Framework Available to Facilitate ILS in Universities

IFLA in 2014 developed a comprehensive document regarding policy and regulatory framework to facilitate ILS in Universit**ies.** This documentation points to standards and regulations set in teaching and application of ILS. Moreover, Taylor (2006) acknowledges that information literacy standards are broad student outcomes that describe an information literate student. Similarly Kingori (2015) alludes that performance indicators, levels of efficiency and examples are provided with the standards to enable library media specialists to measure students' competencies at various levels.

Mokhtar and Majid, (2008) in their study entitled Information Literacy Standards, Guidelines and Their Implementation, found out that universities and institutions of higher education worldwide have implemented different ILS standards and guidelines. The guidelines list the ILS competencies that students ought to possess and exhibit, and how these competencies can be integrated within the curricula and also the various strategies that can be implemented in order to effectively impart these competencies to students.

Mundave (2016) avers that lack of ILS policy framework at institutional or national level was another hindrance to underdeveloped ILS among undergraduate students in Kenya. These sentiments concur with Katundu (2004) who carried out a study on information literacy skills in two public universities in Tanzania, and found out that policy framework on ILS training were lacking and that efforts of integrating some form of library instruction, orientation or user education have not been able to create a workable policy to enable develop an all-round individual user who can find, evaluate, use, create, organize or share information. Additionally, scholars such as Kavulya (2003), Kingori (2015), Mathangani and Irura (2005) assets that lack of home grown standards and policies are a great challenge to provision of information literacy skills in Kenya. In support of these sentiments. Esterhuizen and Kuhn, (2017) acknowledge that it is only as recently as 2016 that the CHELSA developed draft guidelines for use in SA. Other than these, he explained further, most academic libraries in Kenya and Africa at large use standards

developed in the Western developed countries which may not properly fit in the local context.

Information Literacy Skills Curriculum

Since the dawn of the information age, it has increasingly become clear that students cannot learn everything they need to know in college from the recommended textbooks. They need additional information from other sources which appear in various formats. Therefore, students should be trained on ILS so that they can continue learning independently long after they are out of university campuses (Baro et al, 2013). Over the years a variety of different types of user education programs have been established worldwide and the information literacy literature is full of studies regarding these programs. The prevailing theme in these studies is how to provide better information literacy skills programs, rather than whether to provide them or not. Lanning (2002) assert that ILS instruction enables students to become information literate, hence able to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information.

Lwehabura (2008), argue that most of the ILS programmes and initiatives have been introduced under the influence of librarians because they are the experts in most ILS activities which are in the information domain. Katundu (2004) observes that efforts of integrating some form of library instruction, orientation or user education have not been able to create an all-round individual user who can find, evaluate, use, create, organize or share information. Katundu (2004) suggests that in order for students to acquire these skills, it is necessary to undertake a user information literacy needs survey before any information literacy programme is instituted. In support of these assertions, Kavulya (2003) avers that library instructions are library-centered rather than information centered and that ILS instructions are presented in an abstract way because the knowledge acquired cannot be used immediately. It is therefore necessary to determine the students' level of competence before commencing ILS training. Although students can get information faster than before due to the automated data bases in libraries, they are still unable to identify bias, differentiate between fact and opinion, recognize authority (authorship), broaden or narrow the search/topic as necessary, or evaluate the resources they have found. Further Katundu (2004) assert that in many institutions of higher learning ILS programmes lack relevance and importance in the learning process due to the fact that they are not credit bearing courses. Odini (2000) states that there are different kinds of information literacy skills programs provided by Kenyan universities. They include library orientation, library instruction courses, individual instruction or reference service, and use of library manuals and guides. Kavulya (2003) states that in all of the four universities his study examined, library orientation is mandatory and takes place in the first and second weeks when new undergraduate and post graduate students report to the university.

Knowledge, Skills and training possessed by staff in facilitating Information Literacy Skills (ILS)

Kavulya (2003); Nyamboga (2004); Kingori (2015) assert that a library, is the centre of excellence in any institution of learning, and as such it is expected to play a major role in equipping and facilitating its users with the appropriate information literacy skills. For new students specific library orientation courses may be run so that they are in a position to: write projects during their courses with very little assistance from the library staff and teachers; prepare term papers and retrieve the required references both from print and electronic sources (Gatero, 2010).

Such courses involve professional library staff in providing information about the catalogue, the classification scheme, the circulation service, reference and information services, periodicals, research and special collections, audio-visual materials and archives. Additionally, with ICT in place, the library professionals will also have to include information about the OPAC, CD-ROMs electronic information sources, and Internet browsing and searching. Both the traditional and modern skills have to be covered as demand increases and changes arise.

In a study conducted by Lwoga (2014) on the mapping of information literacy outcome and learning experiences of health sciences among undergraduate students, it was found out that students continue to use the skills gained during the IL course both in class and for purposes not related to class. However, it was further found out that there was low usage of scholarly databases and the library catalogue for academic and non- academic activities. These findings revealed that there was inadequate training on search strategies, information sources and evaluation of resources as a practical skill. Interestingly, the study recommended that there should be a study to validate differences between students' self-reports of their IL competency with their actual competence as measured by a strenuous post-test.

The above findings are echoed by a study conducted by Mbabu etal (2012) on information literacy skills among undergraduate students, found out that majority of undergraduate students were still using search engines, Wikipedia, and social media tools to find their information. This indicates students are not receiving adequate instruction in developing the information literacy skills required to conduct research using credible and viable resources. Students want the easy way or the "fast" way to find information because they are comfortable with searching the internet rather searching online databases. Also, the OCLC (2010) report indicates that there is a decline in students use of accredited online journals and databases, that students opt for faster ways of obtaining the information needed to complete their assignments. These sentiments are echoed by Mundave (2016) who contend that staff lack of adequate ILS hence one can't teach what one know not. Lwehabura (2008) in his study in Tanzanian universities indicated, lack of clear information literacy policy in the country, inadequate time on the part of librarians to teaching information literacy as a stand-alone programme on a voluntary basis, and non-involvement of teaching staff in promoting the action are some challenging factors for effective impacting adequate IL skills to students. Lastly, Idiodi (2005) mentions that, disruptions in the academic calendar, lack of space, and inadequate support from their parent institution constitute the challenges in teaching information literacy course in Nigeria.

Similarly, in a study conducted by Mundave (2016) on information literacy learning experiences of fourth-year psychology students in Kenyan universities found out that there were low number of qualified staff to teach ILS. The study further, established that the number of librarians and lecturers teaching ILS was low, especially in the public universities compared to the number of students they handled. This affected the quality of instruction, since attention to individual learners was almost absent (Baro & Zuokemefa, 2011).Consequently, Baro & Zuokemefa, (2011) in their study found out that lack of ILS training for lecturers and librarians resulted in poor teaching methods and incompetence in teaching ILS. Since some lecturers did not even comprehend the concept of ILS themselves, it can be concluded that they could not be competent to instruct students in an area whose concept they did not grasp. The study further

revealed that the learning approaches used lacked motivation to learners.

Table 1: Research Gap

Research Gap	**How the gap will be addressed**	**Research Question**
Steinert (2014); Kanguha (2014); Kimani (2014); Cornwall (2011); Shabi, Shabi, Akewukereke, and Udofia (2011); Hurwitz and Slawson (2010) ;Gatero, (2010); Lwehabura and Stilwell (2008); Ajuwon (2006); Lau, (2006); Kavulya (2003) recommends that further investigation is needed on the ILS possessed by students because majority of the students are unable to adequately access, use , cite information resources due to lack of understanding the various information searching strategies and techniques.	The study will explore information literacy skills offered to medical, dentistry, and nursing undergraduate students at the University of Nairobi and Moi University and ascertain the usefulness of these skills	What is the status of information literacy skills among medical, dentistry, and nursing undergraduate students in Nairobi and Moi universities?
Kavulya (2003); Nyamboga (2004); Mutula et al., (2004) ; Bury (2010); Baro & Zuokemefa, (2011); Mbabu et al (2012); Lwoga (2014) suggests that there is need to re-look at the knowledge, skills and training of librarians and teaching staff engaged in ILS.	To analyze the adequacy of policies and regulations supporting information skills literacy programmes in the two institutions	1. What information literacy skills policy and procedure are used in imparting ILS to medical undergraduate students at University of Nairobi and Moi University?

Arnold, (1998); Carder *et al.*, (2001); Cooney and Hiris, (2003); Dennis, (2001); Doherty *et al.*, 1999; Leadley, (1998); Hiscock and Marriott (2003); MacDonald *et al.*, (2000); Kingori (2015); Mundave (2015) recommendes that there is need for a pedagogic framework for delivering effective information literacy programs to undergraduate students	The study will seek to determine the information literacy skills programme and asses the methods used in delivering the programme to undergraduate medical, dentistry and nursing students in the two universities.	What is the adequacy of information skills curriculum offered to medical, dentistry, and nursing undergraduate students at the University of Nairobi and Moi University?
Pejova et al, (2002); Kavulya, 2003; Amunga, (2011) ; Adeyoyin, (2006); Farrell, (2007);Ganley, & Kraemer, (2005); Tilvawala and Myers (2009); concurs that computer illiteracy among students and staff is a major impediment to information literacy efforts in Kenya because of underutilization and digital illiteracy.	The study will assess the perceptions of undergraduate medical, dentistry and nursing undergraduate students towards ILS	What is the perception of staff and medical, dentistry and nursing undergraduate students towards ILS in Nairobi and Moi universities in Kenya?
Kavulya (2003); Nyamboga (2004); Mutula et al., (2004) ; Bury (2010); Baro & Zuokemefa, (2011); Mbabu et al (2012); Lwoga (2014) suggests that there is need to re-look at the knowledge, skills and training of librarians and teaching staff engaged in ILS.	The study will assess knowledge, skills and training possessed by staff engaged in facilitating ILS among medical, dentistry, and nursing undergraduate students	What knowledge skills and training are possessed by staff in facilitating ILS among medical, dentistry, and nursing undergraduate students of Nairobi and Moi universities?

METHODOLOGY

This study sought to investigate information literacy skills of undergraduate medical students in two selected public universities in Kenya, with a view, of proposing a framework to enhance delivery and utilisation of the information literacy skills. The study adopts a pragmatic research design which paradigm emphasizes the research problem and allows researchers to use available methods that enable them to address the problem (Creswell, 2009),

and is usually associated with a mixed methods approach (Creswell & Clark, 2011). Additionally descriptive survey design within a case study was used. Consequently a multiple case design was utilized whereby the two selected universities were treated as independent unit of analysis. The population for this study will consists of Medical, dentistry and nursing students; University librarians; Head of Medical librarians from the two institution; Lecturers and Departmental heads in the two colleges of health sciences of University of Nairobi and Moi University. The study targeted 6th year students in Medicine, 5th year students in Dentistry and 4th year students in Nursing from both institutions. The motivation behind this is that these students are at advanced/ final levels in their studies hence understands how ILS affect their studies and can best describe ILS experiences, perception, attitudes, notions. Simple random sampling was utilized in selecting a sample size of 182 respondents from 6th year medicine, 4th year nursing and 5th year dentistry respectively. The lecturers were stratified into the departments that they teach in then, simple random sampling technique used to select 182 lecturers. Purposive sampling was used as a sampling strategy for selecting the 2 university librarians, 2 medical librarians, and 6 HODs. Interviews, questionnaires, and documents analysis were used as means of collecting both qualitative and quantitative data. Interviews were used to collect qualitative data from university librarians, medical librarians and HODs, similarly questionnaires were used to collect quantitative data from students and lecturers, while document analysis was used to collect qualitative data. After the completion of data collection, all returned questionnaires were sorted and reviewed. Incomplete Questionnaires were excluded. The data was then coded and inserted in the statistical package for social sciences. Both descriptive and inferential analysis were deemed appropriate to answer the study's questions, including frequencies, percentages, means, and standard deviations for descriptive analysis

PRELIMINARY FINDINGS

ILS Training curriculum

The study sought to find out if there existed an official ILS curriculum and if yes, establish the ILS content that the curriculum covered. This was meant to help the researcher understand the adequacy of the ILS skills taught to the students would have acquired to help them utilize information resources.

The findings revealed that there existed no officially drafted ILS curriculum. What is available is the communication skills unit with some components of library skills. Additionally, the findings pointed out that majority of the respondents had not received information searching skills represented by (29%), while less than a quarter of the respondents had received user instruction and orientation represented by both (18%), a small percentage of the respondents (8%) had been trained on computer and information technology and also a small percentage of the respondents (19%) had gone through training on online databases, (17%) had acquired skills on how to evaluate information resources . The study findings are in line with Eisenberg, Lowe and Spitzer (2004) findings that established that embracing information literacy is more than a responsibility of library, it is an institutional concern. Therefore the researcher agrees with them that the faculty should play a vital role in defining the content and place of information literacy within the curriculum; it cannot avoid this issue if students are to be prepared effectively for the future. Every ILS training curriculum should emphasize and offer more training on user instructions, orientation, computer information literacy, research skills, problem solving skills, information evaluation skills, ethical use of information and online

databases for majority of the respondents felt they needed more training as reflected by the figure above.

The study findings were also in-line with National Forum on Information Literacy (2015) which noted that information literacy is a learner centric instructional template that, if applied strategically, can foster the development of independent, self-sufficient learners. In fact, information literacy skills instruction cuts across all disciplines, information literacy practice is not educator dependent. Parents and family members can apply this skill set in supporting student learning at school, at home, and in the workplace. Every learner should know how to demonstrate and utilize baseline information literacy skills. Having the abilities to define tasks and information needs as well as access and ethically manage a variety of information resources within a digital universe is key to producing the independent, lifelong learners in the 21st century. College and career readiness success is built on a platform of information literacy and digital literacy preparation. Without its specific inclusion in future educational and workforce development reform policies, our pathway to an effective economic and social recovery remains dim. According Eisenberg, Lowe and Spitzer (2004) to be information literate one requires a new set of skills. These include how to locate and use information needed for problem- solving and decision- making effectively and efficiently. From the above findings, it can be inferred that due to the inadequacy of ILS curriculum that is used to teach ILS in the two selected institutions, undergraduate medical students have not acquired adequate skills on information search and retrieval as well as the skills to evaluate information sources, and therefore they could not locate, access, evaluate and utilize the information resources.

Status of information literacy skills among medical students in University of Nairobi and Moi University.

The study established that (80%) of the respondents had not received information literacy skills, namely information search and retrieval, evaluation of information skills, information use, problem solving skills. the study further found out that the respondents were trained on user instruction and library orientation. A small percentage of the respondents (8%) had been trained on computer and information technology skills. Additionally, only (23%) of the respondents indicated that they had knowledge on how to access online databases. From the above findings it is clear that majority of the students had not earned information literacy skills, meaning that they would experience problems in retrieving and utilizing information resources. Further, less than a quarter had received user instruction and orientation therefore majority of the students had not been trained hence they could not identify, locate and access information resources, the study also noted that majority of the student had not received any training on computer and information technology and on online databases, therefore they would not utilize e-resources and this leads to underutilization of the electronic information resources.

The study sought further to understand the level of proficiency of students on plagiarism, knowledge of breach of the copyright law, acknowledging sources of information, evaluation of information on the internet and choice of search engine used

Copyright Law

On legal and ethical use of information, students' views were sought on issues relating to the copyright law of Kenya. The responses from the undergraduate medical students

indicated that a greater proportion 122(67.4%) considered photocopying an entire document infringement on the copyright law of Kenya. A significant proportion 30(16.0%) did not have an idea of the issue of the copyright law of Kenya related to photocopying. Table 2 demonstrates this better.

Table 2: Infringement of the Copyright Law in Kenya

Responses	Frequency	Percent
Seeking Permission From Authors	7	5.1
Photocopy Just A Page	19	14.0
Photocopy A Full Chapter	10	7.4
Photocopy The Entire Material	122	67
Total	**182**	**100.0**

Source: field study, 2020

Plagiarism

Information literacy skills helps students understand what constitute plagiarism and why they should avoid plagiarizing other authors' intellectual literary works, and as such the researcher asked the medical students from both institutions a 'Yes' and 'NO' question, to indicate whether they consider plagiarism as an academic dishonesty or not. According to the results, majority 104(57%) were of the opinion that plagiarism is an academic dishonesty. While on the other hand 72(43%) were of the view that plagiarism is not an academic dishonesty.

Table 3: Plagiarism an Academic Dishonesty

Responses	Frequency	Percent
YES	104	57.0
NO	72	43.0
Total	**182**	**100.0**

Sources: field study, 2020

Acknowledging Sources of information

Using someone's work without acknowledging the source is not considered an attribute of an information literate person. When respondents were asked whether they acknowledge their information sources, 34% of the respondents indicated 'yes' meaning, they use other people's work and acknowledge the sources, whiles 66% of the students indicated that they use people's works without acknowledging sources.

A follow up question was posed to those who answered 'NO' to the question above to give reasons why they don't acknowledge the sources of information that they have utilized in writing their academic work. The responses showed that the reasons student use someone's work without acknowledging were; they didn't know how to do it, they didn't consider it important, had no time to cite.

Table 4: Reasons for using someone's work without acknowledging

Responses	Frequency	Percent
Didn't know how to do it	130	71
They didn't consider it important	35	20
No Time To Cite	17	9
Total	**182**	**100.0**

Source: field study, 2020

Evaluation of Information on the Internet

It was established in the literature of the study that, internet use among students is on the increase in current times. To test how students evaluated information on the internet especially with search engines, a question was posed and Table 5 .illustrate the answers that the respondents gave.

Table 5: Techniques of evaluating information on the internet

Responses	Frequency	Percent
Author Experience	130	71
Year of publication	35	20
Host of the website	17	9
Total	**182**	**100.0**

Source: field study, 2020

Search Engine used

There are many search engines available to students on the web and therefore the researcher inquired from them the very type they used in searching for information. It was revealed that, majority 178(98%) of the respondents used Google search engine, followed by an insignificant number 4 (2%) who indicated they used yahoo very often. See Table 6.

Table 6: search engines used in browsing

Responses	Frequency	Percent
Google	178	98
Yahoo	4	2
Total	**182**	**100.0**

Source: field study, 2020

Students' perceptions on the information literacy skills

Table 7 summarizes students' responses on how they perceive ILS training. 76% of the respondents assert that ILS increased their ability to find information, 67% it enabled them to reduce time they spent to search for information, 63% it enabled them to accomplish their assignment on time, 62% it made them aware on plagiarism issues, 58% made information search easier, 55% it increased their ability to evaluate the reliability and accuracy of information found, 51% It provides useful information for my research

project/assignment , 47% developed strategies for planning my searching , 47% it enhances the quality of my research project/assignment, 43% Knowledgeable about what information is available through library-provided, 41% better grades following information searching training and 72% was useful and provided life-long skills, as shown on table 6 below. However, there were 109 negative replies to the question on whether they could use the databases on their own indicate a need for more extensive ILS training.

Table 7: Benefits of Learning ILS

	Frequencies	Percentages
Increased ability to find information (i.e., developed their searching skills)	156	76.0%
It enables me to reduce time that I would use to search information	142	67.3%
It enables me to accomplish my assignments more efficiently	132	62.8%
Understanding plagiarism issues	131	61.5%
Information is easier to find	98	57.8%
Increased ability to evaluate the reliability and accuracy of the information I find	97	54.5%
It provides useful information for my research project/assignment	96	51.6%
Developed strategies for planning my searching	88	47.3%
It enhances the quality of my research project/assignment	87	46.9%
Knowledgeable about what information is available through library-provided		
Better grades following information searching training	83	41.5%

Information literacy skills challenges

Participants from different institutions highlighted the lack of support from the administration, as well as the top university management, which has led to the unstructured teaching of ILS programme to students and these are done on a one-on-one basis or in groups.

Participants highlighted their experiences from their own institutions and indicated that there is no buy-in from the university stakeholders, which makes it even harder to implement IL in their institutions. Again, faculty librarians debated during the focus group discussion that institutional stakeholders are not forthcoming when it comes to library issues as they think IL is the library's responsibility. Baro, Seimode and Godfrey (2013) also discovered that a lack of cooperation and collaborative support from teaching staff concerning library services has become a threat to the library and its services.

Conclusion

The main purpose of this research study was to evaluate information literacy skills among medical students, in order to gather information on how information literacy skills training and learning might be improved. The results showed that there existed no officially drafted ILS curriculum, what is available is the communication skills unit with some components of library skills; majority of the students had not earned information literacy skills, meaning that they would experience problems in retrieving and utilizing information resources; evaluation of information skills was identified as moderate overall, with more emphasis given to the creditability and accuracy of information. Further the study revealed that

Information ethics received higher levels of information literacy among the respondents, proving recognition that information ethics contribute to strengthening the capacity of information societies.

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