

Assessment on Students' Information Literacy Skills for Self-Directed Learning at the Open University of Tanzania

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Abstract

This study assessed students' information literacy skills for self-directed learning at the Open University of Tanzania. The specific objectives were to; assess students' pre-university information literacy skills; examine the variations of information literacy skills among students; and to investigate facilitators' support in developing students' information literacy skills. The study conducted at the Open University of Tanzania in Kinondoni Regional centre. The study employed mixed methods approach and sequential exploratory design. The respondents involved were; students, facilitators, librarians and Information Technology specialists. The participants were obtained through purposive and simple random sampling procedures. The instruments of data collection included were; interview, observation, focus group discussion, documents review, and questionnaires. Qualitative data were analysed through content analysis and quantitative data were analysed using descriptive analysis employing Statistical Package for Social Sciences (SPSS) software version 20.0. The findings indicated that some students had pre-university information literacy skills and others relapsed into information illiteracy. Based on information literacy variation some students possess high capacity for recognizing information sources while fewer had lower skills. Moreover, the study revealed ineffective academic support between lecturers and students. The study concludes that, the high or low of information literacy skills among students lead distance learning to be easier or complex learning process.

Keywords: *Information literacy skills, Self-directed learning and Open and Distance Learning*

Introduction

Globally, the rapid growth of Information and Communication Technologies has contributed to the emergence of a related concept, namely, information literacy which is becoming increasingly important in the information society due to the development and change of science and technology (Bundy, 2004).

Tracing the origin of information literacy, Bruce (2013) indicates that the history of information literacy runs back to the early 1970s when it was associated with the foundation of library education and information science. The author indicates that since the information literacy has become a foundation to learning and an essential component of digital age, it must be integrated in the whole education system in order to develop a perspective called informed learning or using information to learn. Andretta (2012) adds that information literacy is essential in addressing the requirements generated by such phenomena as information overload, the rapid developments in digital technologies, the needs of the information society for competent information consumers, and the requirements of the knowledge economy for the responsive and informed workforce.

Catts, Lau, Lee and Chang (2012) argued that information literacy empowers people from all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals. The authors define information literacy as “a capacity for people to recognize their information needs, locate and evaluate the quality of information, store and retrieve information, make effective and ethical use of information and, apply information to create and communicate knowledge”.

The nexus between information literacy skills and self-directed learning can be evidenced by examining one’s mastery of information skills that enable an individual to function independently (Thomas, 2012). A study by Bundy (2004) views information literacy as one of the important foundations for self-directed learning and lifelong learning. The author describes information literacy as a prerequisite and essential enabler for lifelong learning, arguing that lifelong learning is intertwined with self-directed learning.

Bruce (2002) notes that skills such as researching, decision-making, communication and problem-solving requires one’s ability to locate, manage, evaluate and use information from various sources. Not only that but also Shapiro and Hughes (1996) suggest that information literacy skills are key for students at all levels of learning to learn across all curriculum areas. Such skills could unlock independent learning and help students to do an independent works.

Several studies suggest information literacy skills play a key role in the development of self-directed learning in an academic environment that enables one to go beyond reading lists and recommended texts to discover and explore information independently (Peters, Jones and Mathews, 2007). Given its importance, some scholars (See for example Andretta, 2012) recommend Universities to provide students with ability of information skills and other competencies for working successfully in the modern knowledge-based environment. Such authors emphasize that the goals of education should be to facilitate students on how to think critically and independently using information sources and how to manage it.

The study conducted by Edward (2006) in Australia revealed that students who are unfamiliar with the use of information searching techniques such as use of truncation or wildcard and Boolean operators face problems of finding information from reliable sources for their academic matters. Bruce (2002) point out that the effect of poor information literacy skills on learning is huge among University students. Also the study conducted in Singapore found that some students were unable to search effectively information as required and could not make an accurate interpretation of the questions (Hepworth, 1999). Within the context of Africa Ilogho and Nkiko (2014) conducted a study on information literacy search skills of students in five selected private Universities in Nigeria. The study shows that students have low knowledge of information literacy skills with high deficiency in identifying diverse information sources. The study concluded that sound information literacy skills is needed in knowledge acquisition in the twenty-first century and recommended *inter alia*; that information literacy skills should be integrated into the secondary and tertiary schools' curricula. Another study conducted by Jiyane and Onyancha (2010) in eleven (11) South African higher education institutions identified challenges facing first year students in applying information literacy skills such as the lack of information handling skills, including basic computer skills. The findings show that most of the students who come from poorly technologically equipped schools had zero information literacy skills. Furthermore, the study noted that lecturers are forced to begin information literacy program at very basic levels to each first-year cohort (Jiyane and Onyancha, 2010).

Under exploration of issue in case of Tanzania, only few studies have been carried out to explore the status and levels of information literacy skills among

higher education students. Lwehabura and Stilwell (2008) noted that information literacy was a new phenomenon to most of the University students. The study indicated that not all students were able to search online materials using their electronics devices such as laptops and smart phones. Meanwhile, the authors indicated that lack of adequate resources and lack of an information literacy policy were identified as challenges hindering the effectiveness of information literacy programme.

Also, Wema (2006) conducted a study on students' development of information literacy program among public Universities. The study revealed that there was a need to recognize the importance of information literacy education since most of the students were unfamiliar with categories of information sources, analysis, synthesis, evaluation and use of information as needed.

Another study conducted by Lwoga (2014) on mapping information literacy outcomes and learning experiences of health sciences undergraduate students. The study aimed to assess whether first year undergraduate students are applying the research skills taught in an information literacy module. The findings show that there was low use of scholarly database and library catalog for academic and non-academic activities. The study suggests the need to address some issues concerning the information literacy module by putting more emphasis on teaching the topics related to search strategies, information sources and evaluation of resources as a practical and useful skill.

Despite the existence of these studies, only a few of them had focused on investigating the levels and status of information literacy resources in the Open and Distance Learning (ODL) mode of learning within the context of Tanzania. In this regard, the purpose of this study was to assess the extent to which information literacy skills at the OUT facilitate or limit ODL students' capacity for self-directed learning.

Literature Review

The Concept of Self-Directed learning

The concept of self-directed learning (SDL) has its origin in adult learning and it is associated with a number of scholars (Brookfield, 1986, Candy, 1991, Carré, 2012, Gibbons, 2002, and Loeng, 2020).

Brookfield, (1986) and Candy (1991) for example suggest two dimensions related to this concept; the first dimension, self-directed learning refers as self-

teaching whereby learners control much of the mechanics and techniques of teaching themselves in a particular subject and second dimension, self-directed learning which refers to personal autonomy or autodidact, (taking control of the goals and purpose of learning and assuming ownership of learning). Meanwhile, Carré (2012) views self-directed learning as the process that includes both the students' self-determination (freedom of choice) and self-regulation (autonomous learning methods). Thus, the process of learning in SDL context takes place through students' self-production of information and knowledge.

Loeng (2020) argued that the importance of self-directed learning could be viewed through societal and technological changes worldwide. The author explained that the world has changed vastly because of the rapid rate of political, social, and technological change which increases the need for self-directed citizens. The technological development at the workplace and in society, as a whole, requires unique skills and abilities relating to searching and using information from reliable sources. The use of modern technology devices in the workplace lead the significance of updating or upgrading knowledge and skills among workers hence an increasing need of self-directed learners.

Furthermore, Gibbons (2002) argued that self-directed learning develops learner's ownership of learning through motivating a learner to pursue a learning goal and persist in learning process and implies student's autonomy. According to the author's perspective there are a number of steps for one's to become a self-directed learner as shown below (see table 1).

Table 1: THE GROW'S MODES OF LEARNING AUTONOMY

Student assumptions	Teachers assumptions	Examples
Dependent	Authority, Coach	Coaching with immediate feedback. Drill. Informational lecture. Overcoming deficiencies and resistance.
Interested	Motivator, guide	Inspiring plus guided discussion. Goal-setting.
Involved	Facilitator	Discussion facilitated by a teacher who participates as equal. Seminar. Group projects.
Self-directed	Consultant, delegator	Internship, dissertation, individual work or self-directed study group.

Source: Knowles, Holton III, and Swanson (2005, p.187)

In his view Gibbons (2002, p.11) argues that a program adhering to SDL should have the following essential elements: (i) Students control over as much of the learning experience as possible. (ii) Skill development (iii) Students' learning to challenge themselves to their best possible performance. (iv) Students' self-management that is, management of themselves and their learning enterprises. (v) Self-motivation and self-assessment.

Information Literacy Skills in Learning

The other key concept in the present study is the concept of information literacy that has been widely discussed in the contemporary society and it is associated with concepts like; metaliteracy, media and information literacy, information fluency, digital literacy and transliteracy (Bruce, 2016). Bundy (2004, p.4), defines information literacy as “an intellectual framework for recognizing the need for, understanding, finding, evaluating, and using information”.

Bruce, Demasson, Hughes, Lupton, Abdi, Maybee, Somerville and Mirajimdotter (2017) argued that in learning process information literacy skills enable students to use information in a range of ways. From that perspective students can confidently adapt particular ways of experiencing to the situation they are in and navigate effectively through the information environment. Moreover, the authors confirmed that information literacy skills help an individual to access, evaluate, organize, and use information in order to learn, to solve information problems, and make decisions in educational settings.

Scholars such as Hepworth and Walton, (2013) view the relationship between the information literacy and learning in the broadest sense, as they argue that the relationship between the two is founded on two extremes; firstly, on directed learning where people actively seek information to answers to problems, and secondly, passive learning whereby people absorb information and knowledge from their contact and interact with information landscape around them in an accidental or unplanned way.

The Attributes of Information Literate Person

Bundy (2004) considered the information literate people as an individual who knows when he/she needs information and is able to identify, locate, evaluate, organize, and effectively use the information to address and help resolve personal, job-related, or broader social issues and problems. On the other hand, Wolf (2007, p.1) states that “information literate students are those

who recognize when information is needed to solve problems, who can frame information needs in the form of questions or decisions, and those who can acquire quality information from a variety of sources". Meanwhile, Hepworth and Walton (2013) consider information literate as not just having an ability to define needs, to access information and use that information, but also capacity to think about problems from information perspectives that involves a change in outlook. Furthermore, the Society of College, National, and University Libraries 'SCONUL' (2011) views information literate people as those who demonstrate an awareness of how they gather, use, manage, synthesize and create information and data in an ethical manner and will have the information skills to do so effectively.

Doyle (1994) equate the attributes of information literate person with ability to recognize the need for information, formulate questions based on information needs, identify potential sources of information, evaluate information, organize information, and integrate new information into an existing body of knowledge, as well as using information in critical thinking and problem solving. Thus, learning to be information literate involves acquiring and demonstrating the identified above information literacy skills. Johnston and Webber, (2003) identify key areas of the desirable behavior of information literate person, arguing that information literate student should be able to: (i) Determine the nature and extent of information needed (ii) Access needed information effectively and efficiently (iii) Evaluate information and its sources critically and incorporates selected information into his or her knowledge base and value system (iv) Uses information effectively to accomplish a specific purpose (v) Understands many of economic, legal, and social issues surrounding the use of information and accesses and use information ethically and legally.

Information Literacy and Teaching and Learning in the Context of SDL

Bruce (2002) states that the adoption of information literacy education emphasizes a broader shift from a content orientation to process orientation and a shift from a teacher-centered to the learner-centered view of learning, and an increased emphasis on understanding the perceptual world of students and their pedagogical implications. The author adds that students who possess information literacy skills are likely to construct their own knowledge and work independently. To promote information literacy for self-directed learning,

Iannuzzi (2000) argues that education should be restructured to meet the information society needs in the ICT development.

Likewise, Hepworth and Walton (2013) emphasizes instructors to use instructional strategies that help learners to become independently informed rather than being given or directed to the information they need. Bundy (2004) adds that using motivating instructional strategies enables learners to understand information gaps and use variety sources of information to construct knowledge, ask informed questions and sharpen their critical thinking skills. The author emphasizes on student-centered constructivist pedagogy such as inquiry-based, problem-based and resource-based learning.

Scholars such as Sanga, Sife, and Lwoga (2007) recommend the use of electronic devices in teaching and learning processes, suggesting that the use of advanced technologies can encourage e-learning especially in the self-directed learning context. They further encourage the use of variety of ICT facilities such as televisions and radios, Compact Discs (CDs) and Digital Versatile Discs (DVDs), video conferencing, mobile technologies, web-based technologies, and electronic learning platforms. The authors argue that in the self-directed learning contexts, technology takes place as a major medium of instruction.

Institutional Support to Students' Development of SDL Skills

Given the wider application of information literacy resources in teaching and learning processes, it seems important for institutions to review their missions and educational goals to determine how information literacy would be supported (Iannuzzi, 2000). As recommended by the author institutions should develop an assessment plan that measures students' information literacy competencies level and help students with lower levels. Moreover, Bruce (2002) argues that Institutions which support information literacy education produce self-directed and lifelong learning skilled graduates. Supporting this view, Lau (2006) argues that institutions should create applicable policies that influence and trade the advantage of information literacy skills in teaching and learning processes.

Furthermore, Andretta (2012) recommend that institutions should support students by providing access to the learning resources available, and teaching and learning processes should go beyond the physical limitations of the traditional library. Apart from that the author emphasizes students, faculty, and staff to have access to remote as well as on-site information resources so as to

fill gaps found in open and distance learning mode. Meanwhile, Bundy (2004) suggests that institutions should incorporate information literacy across curricula in all programs offered. Furthermore, the author emphasizes each institution to develop human resources who possess information literacy skills and those could offer technical support to overcome information problems that facing students and other staffs in an academic environment.

With regard to the issue related to technical problems, Sanga *et al.* (2007) argues that academic institutions should provide technical support services to students where necessary, these support services should include software installation, operation, maintenance, network administration and security. The authors see the provision of technical support services as an important part of the integration of information literacy skills in teaching and learning processes.

Lastly, Lwoga (2013) conducted a study on faculty perceptions and practices in information literacy at Muhimbili University of Health and Allied Science in Tanzania. The findings show that there was a general support for information literacy development and its importance in enabling students to do library-based research. In assessing faculty perceptions' to a large extent, faculty believed that the information literacy competencies of students were relatively lower (especially the first and second-year students), and improved at the upper levels (third-year undergraduates, and all postgraduates). The study also revealed that students fail to do their assignments due to insufficiency of library use caused by inadequate of information literacy skills.

Knowledge Gap

It is evident that Information literacy skills are the foundation of learning in all level of education system and lack of these skills could hinder students to achieve the intended goals. Despite the availability of information search tools, gateways, databases, search engines and librarians as described by some existing studies, the extent to which open and distance learners at the Open University of Tanzania optimally use these tools effectively to become self-directed learners has less or not been determined. However, researcher found that, most of existing studies in Tanzania on students' information literacy skills focus on Universities that run conventional face to face mode of teaching. Thus, the development of information literacy skills and self-directed learning is crucial to ODL students. Though a number of studies had been conducted in

the field of education in Tanzania context, but still there was few, if any, that had focused on the concept of ODL context. It's against this background that a study of this nature was seemed necessary.

Material and Methods

This study adopted a mixed methods approach. Given the complexity of the study on assessing students' information literacy skills for self-directed learning, a mixed methods approach that allows the use of evidence from different sources is appropriate as argued by Plano-Clark and Creswell (2015). The study employed a sequential exploratory design because the study under investigation needed detailed exploration to understand how students possess information literacy skills and how those skills could facilitate self-directed learning. Two-phase mixed method design was used (See figure 1). The research adopted Plano-Clark and Creswell (2015) model to build qualitative and quantitative data.

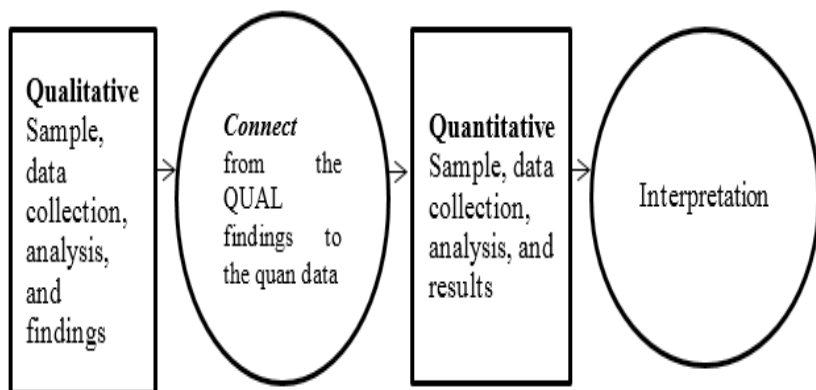


Figure 1. The sequential Exploratory QUAL quan Mixed Methods Research Design

Source: Adapted from Plano-Clark & Creswell (2015, p.398) (Note: QUAL qualitative; QUAN quantitative)

The study was conducted at the Open University of Tanzania covering the Kinondoni Regional centre in Kinondoni Municipality in Dar es Salaam Region. The OUT was selected as the research area because it constitutes one of oldest open and distance learning institutions in the country, which has pioneered the use of information literacy resources in teaching and learning.

The sample for the study included 114 participants, the qualitative phase included

24 participants and the quantitative phase involved 90 students. In order to gather reliable data the researcher used two phases of multilevel sampling technique as suggested by Onwuegbuzie and Collins, (2007). The first phase referred to purposive sampling under the qualitative phase of data collection, while the second was simple random sampling. Through purposive sampling, a smaller qualitative sample of 18 students, two facilitators, two librarians, and two IT specialists was obtained. On the other hand, simple random sampling was used to obtain 90 students who were required for the larger quantitative sample.

The study employed five data collection methods; interviews, observations, focus group discussion, documents review, and questionnaires. On the other hand, to ensure reliability of the research instruments, the researcher conducted a pilot study before the actual data collection. To enhance the trustworthiness of data in the qualitative component of the study, the researcher used multiple data analysis procedures to analyze the same information. For instance, the data gathered from facilitators and students were analysed differently to establish correlations. Confirmation was also used to compare the students' interviews and focus group discussion responses if they matched.

Considering the nature of the study, data collected from this study were analysed both qualitatively and quantitatively. All qualitative data were manually transcribed and subjected to content analysis based on the research questions. On top of that direct quotations as expressed by respondents were analysed and checked for grammatical errors before presented to the findings. The quantitative data were gathered by questionnaires and analysed using Statistical Package of Social Sciences (SPSS) Version 20. The researcher analysed data by using descriptive statistics. The responses were presented using frequencies, percentages as well as clustered bar graphs in order to compare the results. The analysed data were used to supplement the findings from the qualitative findings.

Results

The findings from this study were sought based on the following three objectives: To assess students' pre-university information literacy skills; to examine the variations of information literacy skills among ODL students; and to investigate facilitators' support in developing students' information literacy skills.

Student pre-University Information Literacy Skills

The first analysis based on the students' pre-University information skills and its application with future skills in learning at a distance. From the analysis of findings, it was noted that some students had pre-university information literacy skills acquired at advanced secondary, Diploma and workplaces that could help them to learn more effectively and confidently. Some of the interviewed students with good background in using information literacy resources for example reported its usefulness.

I often use materials from 'open courseware' to supplement my study material. This is because of the information literacy experiences I had from Diploma education that helps me to use Online Public Access Catalog 'OPAC' for searching information. (Interview, third-year student no.12)

The above quote suggests that prior information literacy knowledge helped its bearer to pursue studies conveniently. Subsequent analysis from the focus group discussion conducted with students supported the findings in relating to the role of previous experience in helping one to develop future capacity for learning, as reported.

Some of us we have background knowledge in using information literacy resources. We can easily find materials from different sources. We normally use reference books that we find in study materials for searching other materials. (Focus Group Discussion, student no. 2, 5 and 6)

The foregoing quotes suggest the importance of prior information literacy experience in ensuring good self-directed learning practices. However, further analysis suggested that being information literate only does not necessarily determine that one could practice all learning and information activities because some of the functions require advanced skills. The analysis of the study suggested further that, the lack of practices in using information literacy resources could lead into some students relapsing into information illiteracy even if they learned such skills before, as illustrated in the interview quote.

I learned information literacy education when I was pursuing Diploma where we were introduced to knowledge on how to use search engines and tools like keywords and Boolean operators. I am relapsed into information illiteracy due to poor and lack of frequent practices. I often request support from my husband for searching online information. (Interview, first-year student no. 3)

The quote above suggests that the lack of or poor practices could lead some students relapsing into information illiteracy even though they had background knowledge on information literacy skills. However, it was noted further that not all interviewed students had background in using information literacy resources. From the analysis, it was noted that some students with no prior knowledge on information literacy skills use could not use information literacy resources effectively, as illustrated in the quote.

I had no prior experience on information literacy resources use. I cannot operate a computer and use internet. Since I registered in this course, I have never used computers to write or search information. I always depend on hard copies and group discussion materials. (Interview, first-year student no. 9)

The foregoing quote suggests that students with poor information literacy skills background found it difficult to use some information literacy resources when learning such as searching information compared to those with good background knowledge of information literacy skills. The analysis suggests further that the majority of information illiterate student (almost 25%) tended to use the hardcopies, a practice that could lead into poor or under-utilization of online materials.

With regard to quantitative data on the status information literacy resources and students' levels of information literacy skills, the analysis indicated that about 65% students could use information literacy resources effectively while 35% could not use properly. Furthermore, the analysis indicated that out of 90 students (73.3%) indicated that they could use the database to search for materials, and 88.9% were able to store information in computers, mobile phones, and flash disks. Additionally, (70.0%) of students indicated they were able to use materials found in open courseware, while 61.1% indicated they were able to use OPAC for searching information (see table 1). From these data, it was noted that some students had skills in using technological devices that could enable them to access information easily in self-directed learning processes.

Table 2: STUDENTS' UTILIZATION OF SELECTED INFORMATION LITERACY RESOURCES

Information literacy practices	Respondents views (n=90)	
	Disagree	Agree
I use library database to gather materials	24(26.7%)	66(73.3%)
I store information in computer, mobile phone or flash disk	10(11.1%)	80(88.9%)
I use material from open courseware	27(30.0%)	63(70.0%)
I always use search strategies such as keywords and Boolean operators in searching information	40(44.4%)	50(55.6%)
I access full-text materials, both softcopy and hardcopy materials	13(14.4%)	77(85.6%)
I use OPAC for searching information	35(38.9%)	55(61.1%)

Table 2 shows levels of students' utilization of some selected information literacy resources. The data indicated that some students had moderate abilities to skills like access to full-text materials, both softcopy, and hardcopy. Further analysis indicated that almost 44.4% students were unaware of search strategies such as Boolean operators.

The examination of the influence of students' pre-university experience in using information literacy resources was also analyzed using graphs. Figure 2, 3 and 4 indicate the student pre-university qualifications predicting their prior information literacy skills. The results indicate that students who joined the university with Diploma and A-level qualifications seemed to have relatively higher levels of information literacy skills than those who joined with foundation courses.

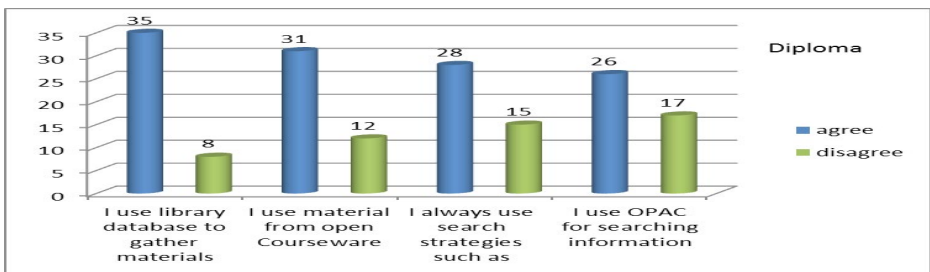


Figure 2: Students with Diploma Qualifications at Joining the University

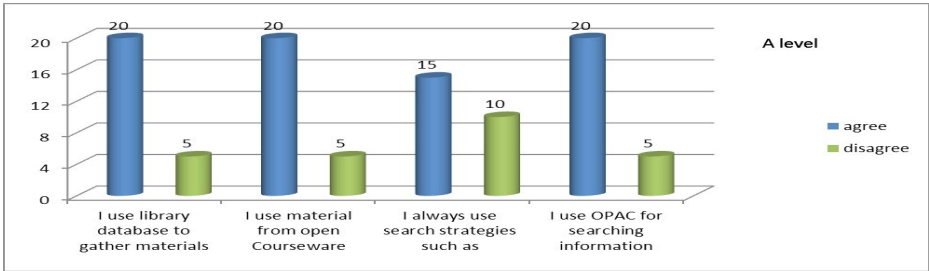


Figure 3: Students with A-level Qualifications at Joining the University

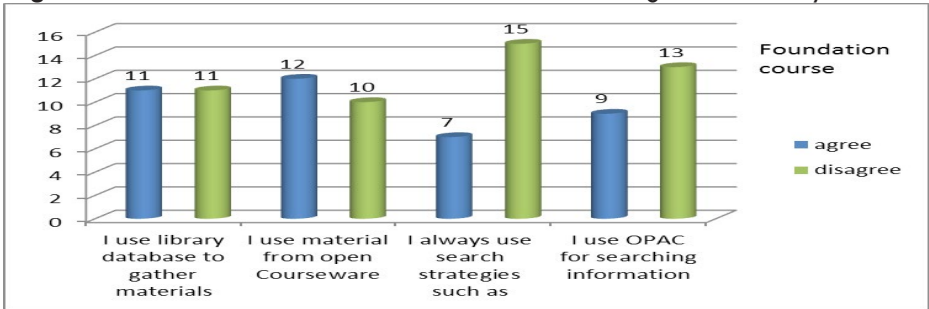


Figure 4: Students with Foundation Courses Qualifications at Joining the University

Figure 2, 3 and 4 indicate the students' pre-university variation in entrance qualification and prior information literacy skills. Again, the study revealed that students differed in their prior information literacy levels on the basis of their education background and foundational skills.

Variation of Information Literacy Skills among Students

It was noted that there were no relatively significant differences in some skills. However, it was noted also that some students' possess higher capacity for recognizing sources while fewer had lower level of skills, as suggested.

I often identify information required through the topics recommended in the class to be covered in the academic semester and from the proposed study materials. (Interview, third-year student no. 6)

I am aware of some information sources. When I do not recognize the required information, I request support to my colleagues. (Interview, second-year student no. 18)

The quotes above suggest that some student possessed some information literacy skills and only few could not identify sources properly. Further analysis suggested that even though some students could recognize proper information needed, still others seemed to have no adequate skills. Inability to recognize sources also was noted during FGD sessions with students in which some participants (especially first year students) claimed to face difficulties in recognizing information need as illustrated.

We face challenges in searching information and it is time-consuming to identify the appropriate materials from various sources. The only alternative way we use is to borrow or photocopy materials from colleagues. (Focus Group Discussion, first year students)

The foregoing quote suggests that some students could easily find hard copies than softcopies due to their inabilities to use online sources. The study in addition, examined variation in students' abilities to distinguish information, in which the analysis of data suggested that some students could distinguish information as they agreed to statement such as most of the online materials contain accurate contents than hardcopy study materials. It was noted further that almost 45% students could distinguish hardcopy materials from online materials. The findings, in addition, suggested that some of the students (almost 55%) could not distinguish information that suit course needs as reported.

I often get hard time to identify information gaps found in online learning materials. To fill the gaps I find support from colleagues who assist me to differentiate appropriate types of material that meet topics mentioned in the course needs. (Interview, first-year student no. 5)

When I joined the University, I find it difficult to distinguish online information sources. However, recently, I can somehow distinguish information found from different sources. (Interview, third year student no. 2)

The above quotes show variations among first and third year students in distinguishing gaps in information. One of the possible explanation for the differences between first year and third year students could be because at the beginning (first year) normally some students face challenges in using information literacy resources and they gradually develop skills as they continue with studies at the upper levels (second and third year).

With regard to students' variation in abilities for evaluating information, the findings suggested that students' ability for comparing and evaluating differed

according to factors such as educational background and previous exposure they had, as illustrated.

I access material from different sources. The challenge I get is assessing the credibility of materials I gather from those sources. (Interview, first-year student no. 11 with A-level background)

Sometimes we have trouble in identifying suitable search strategies. Once we had a topic or question, we write the whole topic statement or question and start searching using Google. We often find it difficult to choose the right information. (Focus group discussion, students with foundation course background)

I always prefer to read materials from different sources that are relevant for our study materials. Before I use those materials I assess the quality and accuracy if meet our course needs. (Interview, second-year student no. 8 with diploma background)

The above quotes suggest some variations among students in abilities to evaluate and filtering information.

Facilitators' Support to Students' Information Literacy Skills

Qualitative findings indicated that many students did not receive required support from tutors. Further findings show most of the interviewed students reported to meet their facilitators only during face to face sessions and few of them find support via e-mail contacts and mobile phones, as illustrated.

Only few students visit my office in the academic semester. Most of them call me via the mobile phone for academic support. I experience a hard time to support students who didn't attend orientation course and those with poor IT and library skills background. (Interview, facilitator no. 1)

We visit the lecturer office for academic support. He teaches us how to identify various source of information. Also, He helps us to download e-books, articles, and journals which are in the form of PDF's files. (Focus group discussion, second year students)

The foregoing quotes suggest the role of support in helping students processing and identifying information through online searching. By using observation schedule and documents review it was noted that two out of five computer laboratories at the Kinondoni region center had insufficient facilities and students had to use the OUT headquarters' computer laboratories which were just nearby. Again, during the focus group discussion with 6 students, some

participants reported that most of computers at the OUT headquarters were not connected to internet and those with internet had poor connectivity. Participants also reported that there was no wireless internet connectivity and in most cases they had to rely on mobile phones, as illustrated.

There is no wireless connectivity at the OUT compound and the available internet network in the library is too slow. We use too much time in searching information. (Focus Group Discussion students)

My phone is everything in studying since it enables me to search for materials from online PDF's files and e-books. I read material from those documents and write short notes guided my course outline; I create folders and store documents. I normally send those materials and documents to my colleagues through e-mail. (Focus Group Discussion, student 6)

The above quotes illustrate some kind of problems faced by students in using information literacy resources. The analysis of findings from IT specialists suggests that some kind of support services were available to students with obstacles in getting internet connection. As reported by IT specialist, this was the main reason that led to fewer resources and network overload as well as overcrowded library, as suggested.

During weekends and evenings, we experience a big number of students who seek assistance due to network problems. Although we have three large computer laboratories here at the HQ, sometimes this service fails to accommodate a large number of students. We also experience power interruptions and network breakdown. (Interview, IT specialist 1)

The foregoing quote suggests the status of information literacy resources at the OUT. From the analysis it was noted further that computer rooms at the Kinondoni centre had a capacity to accommodate only 30 students and had inadequate facilities. Similar findings were also noted during the focus group discussion, which suggested that students were experiencing challenges in accessing both printed and online materials, including a shortage of relevant books.

Further analysis from observation schedule suggested that only few printed books were in the library. For example, it was noted that the library had only six bookshelves. Also, during the focus group discussion the analysis noted the shortage of books and insufficient of library venue to accommodate a large number of students. Furthermore, some participants reported that sometimes they could not find the intended books in the library as illustrated.

We normally visit the OUT library during evening and in the weekends. Sometimes, we do not find books that are relevant to my course. When we find them using the databases like Amazon, they normally require payment. The purchasing costs limit us from accessing the books because they are sold in terms of US dollars and we are not familiar with terms and conditions for online purchasing. (Focus group discussion students)

As the above quote illustrates, even though students were aware of the material found from different sources still they could not access relevant materials. Further analysis suggested that more than 50% of interviewed students could not find relevant material from the library but they could find such materials in other online databases like Amazon which demanded payments.

A subsequent interview with academic staffs and librarians also suggested that there were many challenges related to resources, including poor internet and information literacy resources with insufficient support services. The analysis of findings from interviewed librarians, suggested further that all three regional centres (Kinondoni, Ilala, and Temeke) had no library services, they depended on the headquarters. Given the insufficient support services, the OUT headquarter library could not accommodate large numbers of students who visited the centre for books review and other information resources services. Further analysis of data from interview with librarians indicated that the capacity of the library was only 200 students. Using observation schedules however, it was noted that there were only 160 chairs in the library.

The status of information literacy resources and accessibility was also examined using quantitative data using questionnaires in which the analysis show that many students (almost 90%) reported had access to full-text hardcopy materials (see table 2 above). From the qualitative findings however, it was noted that most students were unaware of free online libraries such as libGen and Bookzz which could offer free ebooks and PDF documents.

Again, through the use of observation schedules, it was noted that not all electronic resources were accessible but most of the electronic databases services were operating and some were completely or temporarily closed (see Figure 5).

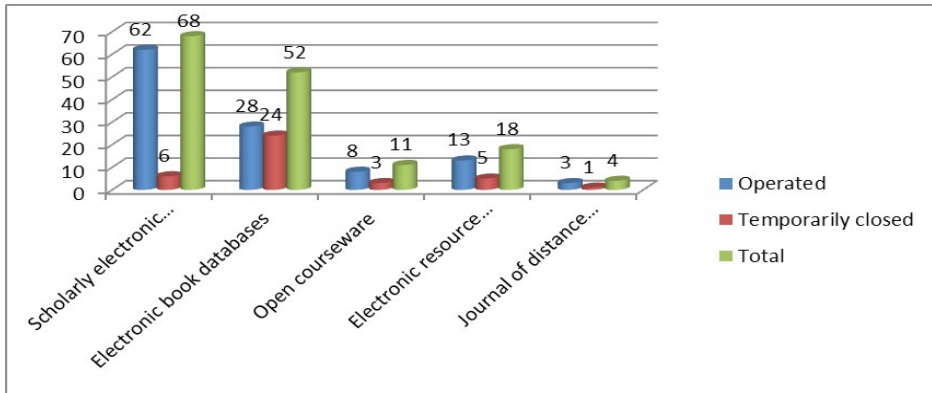


Figure 5. Status of Electronic Materials at the OUT

Figure 5 suggest that scholarly electronic database had many sources of information than others. On the other hand the Journal of Distance had fewer information sources than others. Further findings of interview indicated that the OUT encouraged students to use open courseware which was free and had open digital publication of high-quality from respectable Colleges and Universities around the world.

Discussion

The purpose of this study was to explore the extent to which students' information literacy skills at the OUT facilitate or limit students' capacity for self-directed learning. The findings from the interview indicated that although some students reported that they were computer illiterate, also they were not able to use some functions such as search engines like Google to download e-books and PDF's documents. Some students for example reported that they could not read online materials then write short notes, create folders and store documents in their phones or print out. These findings are similar with those of Lwoga (2013), who noted that information literacy for students including their ability to find, compare, use and evaluate information was average while at the lower levels (first and second-year students) and could improve at the upper levels of their study (third-year undergraduates and all postgraduates).

Furthermore, the results in the present study show that most students who join the University without foundational courses are unfamiliar with materials and uses of online search tools. Meanwhile, the results from the interview showed further that, some students faced challenges in using resources such as OPAC

search tool and their levels had relatively lower information literacy skills foundation. These findings are also consistent with those of Edward (2006) who noted that undergraduate students could have confidence in using information literacy resources when they join a university with a background in the use of information literacy resources. Similar findings are also reported in a previous study by Wema (2006) who noted that University students who have poor skills in locating information through tools such as the library OPAC, online database, and search engines could have poor information literacy skills background. Meanwhile, related findings are also reported by Jiyane and Onyancha (2010) who revealed that students who join universities for the first time lack basic information handling skills, including basic computer skills.

The findings on variation in students' abilities to evaluate information indicated that some students had a higher capacity for recognizing sources while fewer had lower level of skills. The results are also consistent with findings in a study by Andretta (2012) who reported a variation in evaluating information critically, in which students with relatively poor information literacy skills background could not perform well. These findings also are consistent with the findings in the previous study by Bruce (1997) which indicates that learners who previously possess information competencies could evaluate information from both hard copies and could enable them to interact with the world of knowledge and technology hence it becomes easily for them to be self-directed learners.

The results from facilitators' support to students' information literacy skills indicates that support service from lecturers could be essential for strengthening students' information literacy skills. From the analysis, the study revealed lack or poor effective academic support between lecturers and students caused by two factors; Firstly, orientation programs facilitated for few days and do not meet a high number of students. Secondly, face to face session is scheduled for students to meet with their instructor for portfolio assessment only and no room for critical discussions. The findings on poor communications between learners and facilitators are also reported in a study by Edward (2006) who indicates that students cannot access information needed if they are not supported. Furthermore, the findings on student support and accessibility to information resources were consistent with those of Lwoga (2013) which indicated that the lack of familiarity with some online resources could lead into students failing to do their assignments and other academic works effectively.

Generally, in the light of research findings, it can be concluded that, the high or low of information literacy skills among ODL students contributes towards making distance learning an easier or complex learning process in the contemporary digital age respectively.

The findings of this study have proved the adequacy of information literacy resources is central for the development of self-directed learning capacity among students. This is due to the fact ODL students with access to information literacy resources had a greater chance for distance learning. Furthermore, the findings have revealed that students' ability to search for information independently can enhance the development of generic skills such as critical thinking, decision-making, and problem-solving skills, hence self-directed learning.

Lastly, the current study was based on undergraduate students and the study has revealed that the students were limited to information practices such as assignments and projects contrary to postgraduate students who do assignments and conduct research works. The study recommends for further studies at the same institution aimed at exploring the capability of postgraduate students' information literacy skills.

References

- Andretta, S. (2012). Ways of experiencing information literacy. <http://doi.org/10.1016/B978-1-84334-680-7.50004-8>
- Brookfield, D.S. (2006). *The skillful teacher: On technique, trust and responsiveness in the classroom* (2nd ed.). San Francisco, CA: Jossey-Bass
- Bruce, C. (2002). Information literacy as a catalyst for educational change: A background paper. Paper presented at the white paper prepared for UNESCO, the U.S. National Commission on Libraries and Information Science, and the National Forum on Information Literacy. Retrieved from <http://www.nclis.gov/libinter/infolitconfe&meet/papers/bruce-fullpaper.pdf>
- Bruce, C. (2013). Keynote address: Information literacy research and practice: An experiential perspective. In S. Kurbanoglu, E. Grassian, D. Mizrahi, R. Catts, & S. Spiranec (Eds.) *Worldwide commonalities and challenges in information literacy research and practices: European Conference on Information Literacy*. Revised selected papers (pp.11-30). (Communications in Computer and Information Science Series: 397). Heidelberg, NY: Springer
- Bruce, C. (2016). Information literacy research: dimensions of the emerging collective consciousness. A reflection, *Australian Academic & Research Libraries*, 47:4, 239-244, DOI: 10.1080/00048623.2016.1248236
- Bruce, C., Demasson, A., Hughes, H., Lupton, M., Abdi, S., Maybee, C., Somerville, M. & Mirajimdotter, A. (2017). Information literacy and informed learning: conceptual innovations for IL research and practice futures. *Journal of Information Literacy*, 11(1), pp.4-22. <http://dx.doi.org/10.11645/11.1.2184>
- Bundy, A. (2004). Australian and New Zealand information literacy framework, 48. Retrieved from <http://www.library.unisa.edu.au/learn/infolit/infolit-2nd-edition.pdf>
- Candy, P.C. (1991). *Self-direction for lifelong learning. A comprehensive guide to theory and practice*. San Francisco, CA: Jossey-Bass
- Carré, P. (2012). The double dimension of self-directed learning: learners experiment with freedom. In L. M. Guglielmino (ed) *International Journal of Self-directed Learning*, 9(2), 1 - 10. Retrieved from <http://www.sdlglobal.com>

- Catts, R., Lau, J., Lee, A. Y. L., & Chang, H. H. (2012). Theoretical and Conceptual Framework for Media and Information Literacy (MIL) Indicators. Draft paper submitted to the Communication and Information Sector, UNESCO.
- Doyle, C. (1994). Information literacy in an information society: A concept for the information age. New York: Eric Clearinghouse on Information Resources
- Edwards, S. (2006). Panning for Gold: Information literacy and the net lenses model. Adelaide: Auslib Press
- Gibbons, M. (2002). The self-directed learning handbook. San Francisco, CA: Jossey-Bass
- Hepworth, M. (1999). 'A study of undergraduate information literacy and skills: the inclusion of information literacy and skills in the undergraduate curriculum'. 65th IFLA Council and General Conference. Bangkok. Retrieved from <http://www.ifla.org/IV/ifla65/papers/107-12e.htm>
- Hepworth, M. & Walton, G. (eds) (2013). Introduction – information literacy and information behaviour, complementary approaches for building capability. In Hepworth, M. & Walton, G. (eds) Developing people's information capabilities: fostering IL in educational, workplace and community contexts. Bingley: Emerald Group Publishing Ltd.
- Iannuzzi, P. (2000). Information Literacy Competency Standards for Higher Education. Community & Junior College Libraries, 16. http://doi.org/10.1300/J107v09n04_09
- Ilogho, J. E. & Nkiko, C. (2014). Information Literacy Search Skills of Students in Five Selected Private Universities in Ogun State, Nigeria: A Survey. Library Philosophy and Practice (e-journal) . 1040. <https://digitalcommons.unl.edu/libphilprac/1040>
- Jiyane, G. V., & Onyancha, O. B. (2010). Information literacy education and instruction in academic libraries and LIS schools in institutions of higher education in South Africa. South African Journal of Libraries & Information Science, 76(1), 11–23. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=54403710&site=ehost-live>
- Johnston, B., & Webber, S. (2003). Information Literacy in Higher Education: A review and case study. Studies in Higher Education, 28(3), 335–352. <http://doi.org/10.1080/03075070309295>
- Knowles, M. S., Holton, E. F., & Swanson, R. A. (2005). The adult learner (8th ed.). New York: Routledge
- Lau, J. (2006). Guidelines on information literacy for lifelong learning. Boca del

- Rio, Veracruz, Mexico: IFLA. Retrieved from <http://www.jesuslau.com/docs/publicaciones/doc2/lflaguidelines.pdf>
- Loeng, S. (2020). Self-Directed Learning: A Core Concept in Adult Education. *Education Research International*, 2020, 12. <http://doi.org/10.1155/2020/3816132>
- Lwehabura, M., & Stilwell, C. (2008). Information literacy in Tanzanian universities: Challenges and potential opportunities. *Journal of Librarianship and Information Science*, 40(3), 179–191. <http://doi.org/10.1177/0961000608092553>
- Lwoga, E. (2013). Faculty perceptions and practices in health sciences information literacy instruction in Tanzania. *Library Philosophy and Practice*, 1017, 1–19
- Lwoga, E. (2014). Mapping information literacy outcomes and learning experiences of health sciences undergraduate students. *Partnership : The Canadian Journal of Library and Information Practice and Research*, 9(1), 1–17. Retrieved from <http://criticalvoices.lib.uoguelph.ca/index.php/perj/article/view/2695>
- Onwuegbuzie, A. J., & Collins, K. M. T. (2007). A typology of mixed methods sampling designs in social science research. *The Qualitative Report*, 12(2), 281–316. Retrieved from <http://www.nova.edu/ssss/QR/QR12-2/onwuegbuzie2.pdf>
- Peters, K., Jones, R., & Mathews, D. (2007). InfoSkills: Training for independent learning. *Library & Information Update*, 5 (1), 4 - 8. Retrieved from <http://www.celt.mmu.ac.uk/ltia/issue12/peters.pdf>
- Plano-Clark, L.V. & Creswell, W. J. (2015). *Understanding research: A consumer's guide* (2nd ed.). New York: PEARSON
- Sanga, C., Sife, A. S., & Lwoga, E. T. (2007). New technologies for teaching and learning : Challenges for higher learning institutions in developing countries. *International Journal of Education and Development Using Information and Communication Technology*, 3(2), 57–67
- SCONUL core model (2011). *The Society of College, National and University Libraries. Seven Pillars of Information Literacy*. (April), 1–14. <http://doi.org/10.1108/00907320610716486>
- Shapiro, J. J., & Hughes, S. K. (1996). Information Literacy as a Liberal Art Enlightenment proposals for a new curriculum. *Educom Review*, 31(2),

1–6. <http://doi.org/10.1016/j.tics.2005.02.002>

- Thomas, L. J. (2012). Do-It-Yourself Information Literacy: Self-Directed Learning at a Distance, *Journal of Library & Information Services in Distance Learning*, 6:3-4, 376-386, DOI: 10.1080/1533290X.2012.705168
- Wema, E. F. (2006). Developing information literacy programs fo public university libraries in Tanzania : a case study of the University of Dar es Salaam. (Unpublished Ph.D. thesis) Loughborough University Institutional Repository
- Wolf, S. (2007). Information literacy and self-regulation: A convergence of disciplines. *School Library Media Research*, 10, 1-1. Retrieved from www.ala.org/aasl/s/r.