Advancing the Information Literacy Skills of Postgraduate Students in University of Nigeria

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Abstract

Purpose: *The paper aimed to find out the various information literacy skills possessed by postgraduate students of University of Nigeria Nsukka and the need to advance such skills.*

Design/Methodology/Approach*: Descriptive design was used for the study. The entire PG students in University of Nigeria, Nsukka formed the population of the study. A total of 300 questionnaire copies were distributed across all the attendees with a retrieval success of 270 copies, representing 90% return rate. Data were analyzed using Mean, percentages and frequencies.*

Findings: *The findings of this study revealed that most of the postgraduate students are knowledgeable in basic information literacy skills such as use of search engines (98.0%), as opposed to knowledge in emerging research trends such as virtual research environment (31.4%), use of social media for research (3.70%) and online referencing tools – Zotero and Mendeley (9.2%) . It was equally found that none (0.0%) of the postgraduate students is knowledgeable about research ethics, eg. avoiding plagiarism, duplicate publication, republishing conference papers, conflict of interest, supervisor authorship, etc. For the information literacy skills needed, majority (84.4%) of the respondents stated that they need Zotero and Mendeley skills, 92.9% need research writing skills, 92.5% need to be taught the use of Library OPAC, while 81.4% need knowledge about building online community (Virtual Research Environment).*

Originality/Value: *The paper captures beyond the traditional information literacy skills by designing and recommending an advanced information literacy curriculum for postgraduate students.*

Keywords: *Information literacy, Information Literacy Programme, Lifelong learning, Information search skills, Postgraduate students, University of Nigeria Nsukka.*

Paper type: *Empirical research*

Introduction

The radical change in the provision of information in this age requires a lot of skills, knowledge and strategies to ensure maximum utilization of information. Beside, varied systems used by libraries and information providers across the world to classify, catalogue and make information available require special skill to access information. Information is very important and critical to every individual especially research students. The skills to identify, evaluate and use information is learned over a period of time. Studying and understanding the basis of using information tools is very helpful to carry out research. Postgraduate (PG) students are engaged with research and a lot of assignments with high expectation from their teachers to come up with quality research papers and findings. PG students are also required to carry out in-depth research since their final work (thesis and dissertations) are scrutinized and tailored to answer questions which invariably provide solution to problems identified by the researchers. This makes the students to research extensively to overcome the challenges. It therefore becomes important for PG students to have sound knowledge and skills to utilize information. Somi and De Jager (2005) affirm that today's technological changes require societies to have certain capabilities (other than the ability to read and write) to fully utilize information resources.

Information Literacy (IL) education develops life-long learning skills which not only supports students' tertiary studies but also empower them in their future careers in industry. The information revolution has vastly increased the importance of being able to access and utilize information from a variety of sources, including

information published electronically (Fahey, 2003). Much of this information comes unfiltered by peer review and this raises challenges in evaluating, understanding and using information in an ethical and legal manner. The uncertain quality and expanding quantity of information also poses large challenges for organizations and for society itself (Bundy, 2011). Haberle (2002) asserts that society requires multi-skilled learners, who are able to think critically, pose and solve problems, and become independent and lifelong learners. If people are unable to access information as observed by Fahey (2003), they will be faced with information poverty, which Faye defines as a form of poverty that leads to disadvantage due to a lack of access to all types of information.

It is also important that learners acquire an understanding of the technological environment in which information resources are integrated and used, as it is not just the finding of information, but the ability to use it that is important (Brandt, 2001). Educational institutions should provide opportunities for ensuring that all students acquire competence in knowing how to learn, to formulate questions, to assess potential sources of information, to evaluate what is found for accuracy and pertinence, to organize information, and finally, to use information to do something, the last and most valuable step in the process (Doyle, 2003). To be able to actually use information, Doyle further affirms that students need to be thoughtfully engaged with new information, to connect facts with what they already know.

The International Federation of Library Association and Institution (IFLA) saw the changes in our information needs due to technological changes and therefore in 2006 set up the International Guidelines on IL. The aim was to compile guidelines on how to incorporate IL in school curriculum by the IL section (InfoLit) of (IFLA) with the intent of providing a pragmatic framework for those professionals who need or are interested in starting an IL program. The guidelines will aid information professionals engaged in educational program, ie basic and higher education, in their efforts to meet their current information needs. Information professionals working in all types of libraries should have as one of their main institutional goals the facilitation of users effort to acquire information competencies. questions about authenticity, validity and reliability. In turn, these questions pose special

Information skills are vital to success of lifelong learning, employment, and daily interpersonal communication of any citizen, such as when a person needs information about health services for someone in his/her care, or a student requires specific information to complete an assessment (IFLA 2006).

In our daily lives, we make decisions concerning every aspect of our life be it political, social, religious and economic, and to be able to make better choices in these areas, we need information. IL therefore provides one with a way of knowing and making sense of the world around us and thus enables us to meet the increasing demands of modern life. IL and lifelong learning have a strategic, mutually reinforcing relationship with each other that is critical to the success of every individual, organisation, institution and nation-state in the global information society. These two paradigms to them should ideally be harnessed to work symbiotically and synergistically if people and institutions are successfully survive and compete in the 21st Century and beyond (IFLA 2006).

This therefore makes it imperative for one to continue to learn even after formal classroom education. To this end, (Bothma et al, 2014) attested to the fact that it is not possible for one to learn everything one needs to know in one's field of study in a few years at the university. However if one is information literate, one has the needed skills to become a lifelong learner. This means that one is able to apply and transfer these skills to many other areas of learning and research. To them, becoming information literate is part of lifelong learning and being a lifelong learner is part of being information literate. However, it is not a quick-and-easy process, nor a one-off occurrence. It needs training and continues learning as the format in which information materials are stored and assessed is changing every day.

The library profession has long worked to promote the knowledge and skills necessary to be effective consumers of information (Ekwelem, Eke and Dim, 2009). The development of IL competencies among the library users and throughout the society, has become a vital requirement to face the challenges of the 21st century. IL programmes

need to be implemented mainly by the library staff in schools, universities, public and other libraries in order to achieve library goals and to convert their users to lifelong learners and critical thinkers. However it is very important to note here that these programmes would be more successful if the library staff is able to enlist the cooperation of the teaching and administrative staff too. In addition to this, IL programmes will enable librarians to play a more prominent and meaningful role among their clients (Ranaweera, 2008).

Statement of the Problem

Individuals in our global, information-rich environment are faced with increasingly diverse and abundant information choices. It has been observed however, that majority of postgraduate students in Africa search for sources in the library almost on daily basis but they lack required information literacy skills. This has become a problem in most institutions in Africa because these students are not being taught the required IL skills which they require for their day-to-day lives as researchers. It is worthy of note that efforts to improve IL levels in academic institutions are often focused on undergraduate students, even though some institutions may not find it paramount at that level. Instead, such undergraduate students are limited to their course of study which in turn, leaves them unknowledgeable in the area of information search skills. It is on this note however, that the paper seeks to address the relevance of designing an IL programme or rather, advanced IL programme for postgraduate students, especially in University of Nigeria, Nsukka. It is common practice to organize 'library orientation programme' for undergraduate students but most often when this is done, the content of the programme is not rich and relevant enough to guide the students through quality information search. For instance in University of Nigeria, the IL programme offered to first intakes is usually done in a day. In this practice, librarians in University of Nigeria take the students on a library tour, showing them the various sections of the library. Although more recently, there is the introduction of a General Studies course (Introduction to the use of the library and study skills) but the course does not cover much on IL, moreover it is designed for undergraduate students only. Recently, IL skills are inculcated in postgraduate students of UNN but the issue is that not much is covered in the process. The major concern is in marketing the library subscription databases and enlightening the postgraduate students on how to access materials from such databases. There are more skills to acquire than just these. Such situation as this and more, gave rise to the rationale for this paper. This observation is confirmed and documented by previous studies which found that postgraduate students often feel overwhelmed, anxious, under prepared, frustrated, and incapable of effectively keeping up with literature. (Harris, 2011; Marcus, Covert-Vail & Mandel, 2007). This study therefore proposes an IL curriculum for postgraduate students that will address the above concerns.

Research Questions

Two research questions were formulated as guided by the statement of the problem:

1. What information literacy skills are possessed by UNN postgraduate students?
2. Which Information Literacy Skills of UNN postgraduate students should be strengthened?

Literature Review

Conceptual Framework

Literacy and Information Literacy

An individual is basically considered literate when he/she is able to read or write. This affirms the basic definition of literacy by Chambers English Dictionary (2003) that literacy is "the condition of being literate". According to Merriam Webster Dictionary, Literacy is the quality or state of being literate. As a *state,* one could say that literacy is a measure of some degree of attainment; it is a state of mind which is a function of the exposure of the subject. When an individual gains access to certain information that could change the state of the person's mind, the person is literate and anything that relates to the mind involves critical thinking. Information Literacy is a vital key in the field of research. It is seen as the ability of a person to have the skills to search, locate, evaluate, disseminate and use the right information to solve a given problem. In reviewing the literature, one can affirm that South Africa is more advanced in this area of IL which has had a great impact on their economy and life because of the value they place on information and the ability to use it to solve problem. According to Breivik and Senn (1998)

cited in Bothma et al (2014), "an educated graduate student will no longer be defined as one who has absorbed a certain body of factual information, but as one who knows how to find, evaluate and apply needed information". This is very true today as when one is information literate, one is able to think critically and use a wide variety of information sources and resources in one's studies and research. In addition the ability to manipulate and use information gives the user the confidence that is needs in his day to day activities.

Information Literacy (IL) has become an important skill for postgraduate students, due to societal changes that have seen information become a valuable commodity, the need for graduates to become lifelong learners, and the recognition that IL is an underpinning generic skill for effective learning in higher education. Much of the discussion around this issue has arisen in recognition that we have entered an age where:

> *[. . .] the quality and quantity of information needed to function effectively in society and the workplace continues to increase. Individuals [. . .] must be able to master rapidly changing this information technology and posses the IL skills to act independently in this information rich environment (Hartmann, 2001).IL as been defined by the American Library Association (ALA), as "a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (ALA, 2000).*

Because of the explosion of information output and information sources, there is need for critical skills which are necessary to become independent lifelong learners. IL is the set of skills needed to find, retrieve, analyze, and use information. To be information literate an individual must recognize when information is needed and have the ability to locate, evaluate and use effectively the information needed (ALA, 1989). This assertion identifies the need for information and the barrier to use the needed information effectively, is the lack of IL skills. Critical thinking has been identified as a basic trait of an information literate person. Lloyd (2006), cited in Baro & Zuokemefa (2011), noted that 'the information literate person is defined according to a range of attributes, which, once acquired, facilitate the development of critical thinking and problem-solving skills and motivate students to learn throughout life.

These are integral parts of IL elements which Bundy (2004) defined under three elements:

1. *Generic skills:* a. problem solving, b. collaboration, c. team work, d. communication, e. critical thinking
2. *Information skills***:** a. information seeking, b. information use, c. information technology fluency
3. *Values and beliefs:* a. using information wisely and ethically, b. social responsibility and community participation.

Information Literacy is broadly defined by Bothma, et al. (2014) as 'the ability to find, retrieve, analyse and use information.' To Bothma, et al., the ability to know when information is needed, to be able to find the information, to evaluate the information and to use the information that has been found constitute IL. The American Library Association on the other hand defined IL as the ability to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (ACRL, 2000).

Fig. 1. Is a schematic representation of the IL concept by Jesus, L. (2006).

From figure 1, it can be observed that the various branch-outs of IL have so much to do with the library environment. Library orientation for instance, is one of the IL skills which librarians have been involved in.

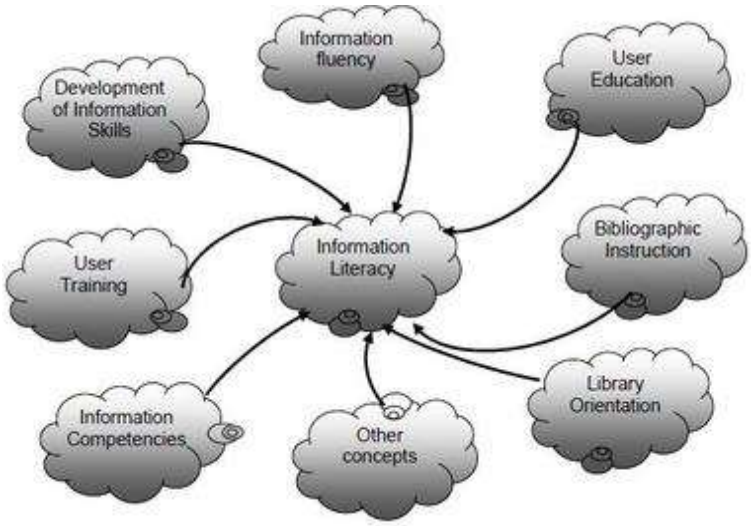

Fig. 1: The concept of IL (c) Jesus (2006)

Information Literacy Models

Different models have been invented in order to achieve the IL goals. These models according to Rawaneera (nd) help students and teachers to reach the ultimate goal of the education, with a specific guided plan. There are many models of IL but the researchers have chosen two to guide the study:

1. *The Big 6:* This IL skill was developed by Mike Eisenbert and Bob Berkowitz in 1987 and it is could be summarized thus:

TD = Task Definition

ISS = Information Seeking Strategies

L&A = Location & Access

I = Use of Information

S = Synthesis

E = Evaluation

2. *The PLUS model-Herring:* The PLUS information was developed by James Herring, who is an authority on IL based at Queen Margaret University College, Edinburgh. PLUS breaks information skills into four main parts, as shown thus:

P = Purpose Identifying the purpose of an investigation or assignment

L = Location Finding relevant information sources related to the purpose

U= Use Selecting and rejecting information and ideas, reading for information, notetaking and presentation

S = Self evaluation : How pupils evaluate their performance in applying information skills to the assignment and what they learn for the future.

The relationship the model has with the present study is that the postgraduate students are expected to pass through the stage of TILISE and PLUS in order to be affirmed information literate.

Theoretical frameworks on IL

In different countries, IL frameworks and models have been developed. This was reported by Baro and Zuokemefa (2011) who listed such frameworks and models as:

- IL competency standards for higher education" by the American Library Association (2004); Council of Australian
- University Librarians (CAUL) (2001);
- Library and Information Association of New Zealand Aotearoa (LIANZA) (Bundy, 2004);
- The Standing Conference of National and University Libraries (SCONUL, 1999);
- The National Institute of Library & Information Science (NILIS) (Wijetunge and Alahakoon, 2005).

In Africa, IL has not been accorded its position in the higher education curriculum (Ojedokun and Lumande, 2005). In Nigeria, the supervisory organ for universities, the National University

Commission (NUC), makes it mandatory for all universities in Nigeria to include library literacy

Information Literacy Skills possessed by Postgraduate students

The IL skills instruction at the University of Botswana (UB) is designed to empower students with lifelong information-seeking skills which can be applicable in a variety of circumstances not necessarily tied to a specific information centre (Mbambo and Roselle, 1996). The American Library Association Presidential Committee on IL (1990) has defined information literate persons as:

> *A person able to recognize when information is needed and having the ability to locate, evaluate and use effectively the needed information. Ultimately literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organized, how to find information and how to use information in such a way that others can learn from them. They are people prepared for lifelong learning because they can always find the information needed for any task or decision at hand (np).*

Bundy (2004) stated the relationship between IL and lifelong learning by remarking that 'IL is the foundation for the independent learning and lifelong learning. According to The Alexandria Proclamation on IL and Lifelong Learning (2005),IL lies at the core of lifelong learning. It empowers people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals. It is a basic human right in a digital world and promotes social inclusion of all nations.

Several studies have shown that lack of IL is partly the cause of underutilization of existing information and communications technologies (ICTs) and information resources. Buer (2005), on looking at the "Teaching of IL as a credit-bearing course at two Ghanaian universities: a comparative study", concluded that there were considerable differences in the curriculum of IL programmes in these universities and this is due to the lack of standardization and thus suggested this be done to bring about uniformity.

Sasikala & Dhanraju (2011) argue that IL is a necessary skill that is useful in every aspect of a person's life. Information Literacy skills would lead to independent and student-centric learning, rather than dependence on the teacher to provide answers to questions or problems they encounter. This in turn creates a greater responsibility towards their own learning, which would help them become dynamic learners and thinkers who are creative, analytical and efficient, instead of mere regulators of facts.

Adam and Wood (2006) established among other factors the problem of lack of IL. Whereas in developed countries IL has largely been included in the curriculum, in Africa, many students at various levels of education are unfamiliar with variety of information sources and services within and outside the library.

In assessing the curriculum on IL levels at the University of Ghana and University of Cape Coast by Dadzie (2007), it was revealed that library literacy, computer literacy and communication skills are taught in both universities but only as an elective. This is due to the large number of enrollment, lack of collaboration and cooperation among departments and therefore recommended sensitization and importance of libraries and information professionals in IL programmes at the universities.

In a study conducted by Kinengyere (2007) on 'the effect of IL on the utilization of electronic information resources in selected academic and research institutions in Uganda', it was revealed that some of the available resources were not being utilized at all which meant that users were not aware of the availability of such resources, they didn't know how to access them, or they didn't know what the resources offered. IL is very vital in influencing utilization of e-resources. Information professionals are needed to pass on IL skills to library users, while library users should endeavor to find out what information is available online for their consumption. Their attitudes and perceptions also influence the level of utilization.

Catalano (2010) found in his study that many students were deficient in the use of Boolean operators, Truncation, ERIC descriptors and Subject Headings for all search strategies listed on the survey.

Ozoemelem (2009) embarked on a research to elicit 'LIS postgraduate students' use of electronic resources in Delta State University, Nigeria'. The level of ICT skills possessed by these students were investigated with 79% of the students disagreeing with the option that they are skilled in working in a network environment. 67% were found not to be skilled in the use of electronic library tools e.g. CDROM, OPAC, Subject Gateways etc. The author concluded that 'Postgraduate Students of Library School in Delta State need to do more in order to improve on their ICT skills so as to equip them in utilizing the enormous benefits available in electronic formats.'

Omeluzor, et al. (2013) carried out a research on 'IL skills among postgraduate students of Babcock University Nigeria. The study revealed that 'most of the respondents had their IL skills through seminar, user education (library instruction), orientation, one-on-one discussion and tutorial. It further indicates that majority (90%) of the respondents could identify information in their study area; 55.6%, 50% and 50% of the respondents respectively agreed that orientation, tutorial and seminar did not significantly help them to select and use wide range of sources in their discipline from the library.'

In a study conducted by Ilogho and Nkiko (2014) on IL Search Skills of students in Five selected Private Universities in Ogun State Nigeria , it was revealed that most of the respondents were not aware that library books or collections couldn't be adequately located through Google or Yahoo search Engines. They concluded that the students had poor knowledge of literacy and search skills. They concluded that students probably had never attended any IL classes before, or may have attend classes occasionally and never paid close attention to what was taught in the classes. They therefore recommended that IL skills should be integrated into the curriculum to underscore the seriousness and utmost relevance of the programme.

Anafo & Filson (2014) on their study on 'Promoting IL among undergraduate students of Ashesi University College in Ghana', attested that IL promotes lifelong learning, and that not being able to access information materials well was due to the lack of skills in terms of concept identification, search strategies, knowledge on the availability of information sources and the proper use of these databases as well as ethical and legal use of information when they even find it.

More recently, Anunobi and Udem (2015) carried out a study on IL skills possessed by LIS postgraduate students with a focus on knowledge and skill level. They found that 'LIS postgraduate students in Federal Universities in South East Zone Nigeria possessed information literacy knowledge since the measure based on understanding the need for information, how to locate, evaluate and use information had average percentage scores of 95%, 87%, 82% and 88% respectively.'

Advancing the Information Literacy Skills of Postgraduate students

Scott (1995) stated that knowing how to find information and having good research skills, especially online searching skills, is particularly critical for university and special libraries that cultivate autonomous learners. The nature of information seeking by students is diverse due to differences in information needs, differences in IL skills and availability of resources. The task of identifying the diverse behaviour is not a simple task by the fact that human beings are heterogeneous.

Wema & Hepworth (2007) conducted a study on evaluation of an IL training initiative at the University of Dar es Salaam and revealed that:

> *"The IL training course was developed at the University of Dar es Salaam, Tanzania as part of a PhD research with the purpose of instilling Information Literacy skills to Masters of education students in the faculty of education, and it was implemented by staff in the library. This was done by integrating the knowledge from information behaviour research and educational theory and current Information and Library Science perspectives of IL.*

Wema & Hepworth further stated that: "the teaching of IL emphasised enabling independent learning and problem solving using secondary sources of information, such as books, articles, World Wide Web sites, and the tools to locate these resources".

Baro and Zuokemafa (2011) conducted a survey on 'IL programmes in Nigeria to examine the

various IL practices in university libraries in Nigeria; to identify the likely barriers facing IL programmes in Nigeria, and to provide suggestions on how best to improve the IL practices. Librarians from 36 university libraries participated in the survey which adopted an online method.The study revealed that university libraries in Nigeria were found to be engaging in different Information Literacy (IL) practices ranging from library tour/orientations sessions to introductory information skills, database searching skills, bibliographic training and use of the library. Barriers such as lack of interest by students, teachers, and management, inadequate human resources to handle IL training, lack of facilities, low acceptance of online IL delivery approach and absence of IL policy were identified as factors militating against librarians' efforts when advocating and providing IL programmes in university libraries in Nigeria.

Anunobi and Udem (2015) concluded that the LIS students postgraduate students of the south eastern Nigeria which they studied (University of Nigeria inclusive), are 'equipped for lifelong learning in view of the fact that they possess information literacy knowledge which is revealed in their understanding of when and why they need information, where to find it, how to evaluate it, how to use and communicate it ethically and legally', but that 'there is the need for more practical aspect of information literacy through industrial training and internships in order to enhance the information literacy skills of the students.'

Issa, et al. (2015) investigated the IL competence of the final year undergraduate students at the University of Ilorin, Nigeria and found that 'majority of the respondents had information needs on their academic engagements like class assignments and project writing'. It was further discovered that their IL skills were limited.

Building Information Literacy course content for Postgraduate students

The World Book Encyclopedia (cited in Ekwelem, Eke and Dim, 2009) defined curriculum as a school's planned educational programme or the educational experiences of students. When IL is built into the curriculum of PG students, the manner in which students conduct research, will witness remarkable changes. In view of the above, Birks (cited in Ekwelem, Eke and Dim) opined that 'IL must be an integral part of the curriculum so that skills are taught and developed in context and students can apply the learning to real situation'.

Rasaki (2008) remarked that the IL course requires the student or person knowing, how-to clearly define a subject or area of investigation, selecting the appropriate terminology to express the concept or subject, formulating a search strategy, analyzing the data collected for value, relevancy, quality, suitability, and subsequently turning information into knowledge. In course design, for example, the University of Ghana, the faculty of Agriculture, in collaboration with Balme Library professionals, could include key IL skills such as research and critical thinking skills, use of the internet to locate resources, use of library resources and use of referencing format, into assignments and projects (Dadzie, 2007). Dadzie recommended that course content should include literature searching for dissertations/projects/theses, use of e-journal, and the use and importance of search engines and techniques.

The study carried out by Omeluzor, et al. (2013) revealed that 'information literacy skill pragramme (briefing by librarian) organized by PG school was not well attended where 209 (86%) of the respondents were absent. Based on these findings, the researchers concluded that postgraduate students should be mandated to attend information literacy skill programmes organized by library such as briefing by librarian, computer-aided instruction, online courses, and workshops to enhance students' research ability in the emerging information age.'

Issa, et al. (2015) recommended in their study that 'University authorities should consider the teaching of IL as a course to fresh students with credits attached'. This came up as a result of the findings that the students were not properly grounded in IL skills.

Barriers to IL course implementation

Reporting on the adoption of IL as credit-earning course at the University of Malaysia, Chan (2003) enumerates the following problems with informal user education: the programmes were not accorded any official status and this did not receive the support of students or academic staff; students were not given any hands-on experience, meaning that there was no formal assessment of the effectiveness of the

programmes; the programmes were too short to be really effective; as most students had no or very limited experience with library use and resource-based learning, they did not think it worthwhile to expend time and effort to learn to use the library.Rasaki (2008) asserted that in many universities that offer the course for credit earning, the emphasis is on library and reading skills with utter neglect of computer and technology literacy. Rasaki concluded that the curricula of the universities studied are deficient in one aspect or the other in regard to IL. He therefore, recommended IL curriculum of the three universities be reviewed and expanded to reflect computer, library, and IT literacy skills to make the learners truly information literate, and that the design and review of the curriculum and teaching of the IL course should be all-embracing.

Dadzie (2007) identified a number of problems which could hinder the implementation of IL programmes in the University of Ghana and University of Cape Coast, Ghana. These include the lack of university commitment to the project, inadequate information about what IL is, unwillingness of the various departments already handling components of the IL programmes to collaborate with each other to form a campus-wide project, unwillingness to accept innovations in curricula planning, inadequate technological infrastructure/computers, inadequate electronic resources and inadequate human resources. Responsibility for IL education must be shared within strategic partnerships, operating at various levels, including curriculum design, policy development, staff development, research and classroom teaching, and be supported by educational leaders such as deans (Bruce, 2002).

In the same vein, Lwehabura (2008) concluded that because of a number of factors, including lack of clear IL policy, inadequate time, the teaching of IL as stand-alone programme on voluntary basis, and non-involvement of teaching staff, the current IL delivery approach is not effective in those universities for imparting adequate IL skills. In like manner, Baro (2009) in his study on "barriers to effective and efficient reference and information services in Nigerian libraries" identified among others, information illiteracy among library users as factors hindering the effective utilization of reference services in the library. Elsewhere in the world, like the specific barriers to IL identified in New Zealand by the Library and Information Association of New Zealand Aotearoa (LIANZA) IL taskforce (LIANZA, 2002) are those which resonate with the library profession worldwide:

i. a lack of understanding and awareness of the concept of IL and its implication;
ii. fragmentation of initiatives and interests at all levels nationally;
iii. underestimation and underutilization of the contribution of libraries;
iv. absence of policy and strategy frameworks;
v. lack of research, documentation, assessment and evaluation tools; and
vi. lack of clearly regarding roles and responsibilities.

Research Method

Case study research design was used for the study. The databases used for the study were: Emerald, ScienceDirect, Google Scholar and Directory of Open Access Journals (DOAJ). The criteria for choosing the databases were: Topics covered, availability of the full text, type of publications covered, time span, fields available to refine the search strategy, types of search forms available, descriptions of the intellectual content, and links to other relevant publications. The search terms used were – Literacy, Information Literacy, Information Literacy programme, advanced Information Literacy programme, curriculum, postgraduate students. Advanced search strategy was applied, using the Boolean Operators: AND, OR, NOT. Natural language queries were also used. Descriptive research design was adopted for the study while questionnaire was used to retrieve relevant data from the respondents. The researchers were more interested in eliciting the current skills possessed by postgraduate students to enable them propose an advancement in skills for these students. And so, the questionnaire was structured to capture the IL skills of the PG students and the areas that need to be strengthened. The population for the study was the entire PG students in University of Nigeria, Nsukka who attended the orientation programme in 2015. The exact number of PG students that attended the lecture were not captured but a total of 300 questionnaire copies were distributed across all the attendees with a retrieval success

of 270 copies, representing 90% return rate. There were two sections of the questionnaire. Section A was on demographic information of the respondents, with emphasis on their degree enrolment. Section B sought to elicit information on the IL skills of the PG students and the need for advancement of such skills. Data were analyzed using Mean, percentages and frequencies.

Results Presentation

Demography

Majority of the respondents 155 (57.4%) were enrolled for Masters Degree, 98 (36.2%) were enrolled for Ph.D while fewer students (17, 6.29%) were enrolled for Postgraduate Diploma (**Chart 1**).

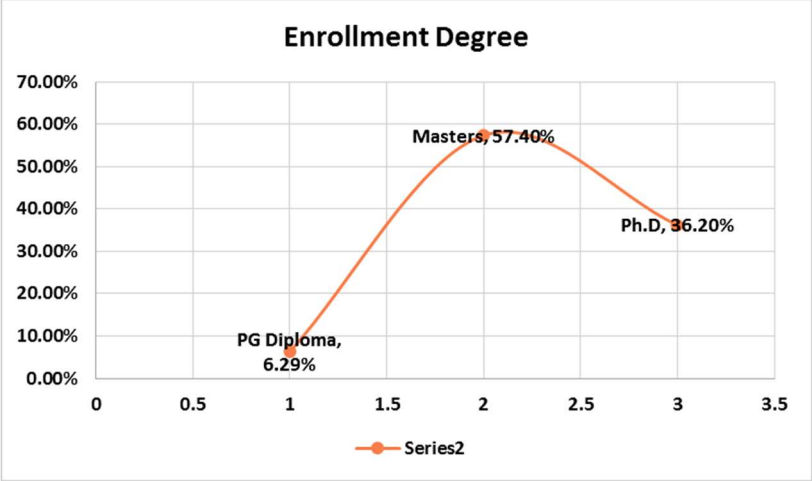

Chart 1: [enrollment degree of Postgraduate students]

Information Literacy Skills of Postgraduate Students

Regarding information literacy skills of postgraduate students, the study found that majority (98.0%) of the PG students are familiar with search engines and their uses. It was also revealed that many (71.3%) of the students can do database search without any assistance. Regarding research ethics like 'avoiding plagiarism, duplicate publication, republishing conference papers, conflict of interest and supervisor authorship', almost all the respondents (92.5%) strongly disagreed on being knowledgeable in those areas. Obviously, no (0, 0.0%) respondent agreed to being knowledgeable. Personal information management (PIM) is about systematic arrangement of personal resources for future use and easy retrieval. Majority of the respondents disagreed (11.1%) and strongly disagreed (76.2%) that they have learnt about PIM. Recognition of databases is basically knowing the different databases to use for research. And so, 33.3% (91) of the respondents disagreed to being able to recognize the differences in databases while 29.6% agreed. Open access repositories and copyright policies received a higher response of disagreement (40.7%) from the students under study. Social media is a tool that can be utilized for research purposes, especially for publicity of publications and collaboration. A little beyond half (55.5%) of the respondents do not know how to use the social media for academic research. The study findings with regards to personal archiving revealed that more than half (67.3%) of the respondents are ignorant of it, while only 32.5% have learnt about personal archiving. It was revealed also, that almost all (94.3%) the PG students are familiar with cloud services and storage as a research tool. Zotero and Mendeley are becoming popular in research based on its usefulness in referencing publications. Surprisingly though, many (75.9%) of the respondents responded that they are not familiar with the tools. It was found that knowledge and use of E-learning platforms such as Moodle and Blackboard are not common among UNN PG students that were studied, as 92.5% disagreed with knowledge of the e-learning platforms. Few (31.4%) of the students were found to be familiar with the online virtual research environments, as opposed to 135 (68.5%) who were in disagreement **(Table 1).**

Table 1: Information Literacy Skills of Postgraduate Students = 270	SA	A	D	SD
I can do database search without any assistance	120 (44.4%)	70 (26.9%)	30 (11.1%)	50 (18.51%)
I know how to use the Boolean operators for research	50 (18.51%)	75 (27.7%)	63 (23.3%)	82 (30.3%)
I know about the search engines and their usages	220 (81.4%)	45 (16.6%)	5 (1.8%)	0 (0.0%)
I am knowledgeable about research ethics, eg. Avoiding plagiarism, duplicate publication, republishing conference papers, conflict of interest, supervisor authorship, etc.	0 (0.0%)	0 (0.0%)	20 (7.4%)	250 (92.5 %)
I have learnt about personal information management (PIM)	0 (0.0%)	34 (12.5%)	30 (11.1%)	206 (76.2%)
I can recognize the differences in databases	79 (29.2%)	80 (29.6%)	91 (33.7%)	20 (7.4%)
I know about open access repositories & copyright policies to a reasonable extent	35 (12.9%)	63 (23.3)	110 (40.7%)	62 (22.9%)
I know how to use the social media (Facebook, Google Scholar, Researchgate, Survey Monkey, Google Forms, LinkedIn, Twitter, Youtube, etc) for academic research	10 (3.70%)	30 (11.1%)	150 (55.5%)	80 (29.6%)
I have learnt about Personal Archiving	20 (7.4%)	68 (25.1%)	150 (55.5%)	32 (11.8%)
I am familiar with cloud services and storage as a research tool	0 (0.0%)	15 (5.5%)	25 (9.2%)	230 (85.1%)
I am familiar with academic publishing and referencing tools such as Zotero and Mendeley	25 (9.2%)	40 (14.8%)	135 (50.0%)	70 (25.9%)
I know about, and can use E-learning platforms such as Moodle and Blackboard platforms	12 (4.4%)	8 (2.9%)	50 (18.5%)	200 (74.0%)
I am familiar with how to build online community (Virtual Research Environment)	25 (9.2%)	60 (22.2%)	50 (18.5%)	135 (50.0%)

Information Literacy Skills advancement for Postgraduate Students

The respondents were required to indicate the areas of their Information Literacy skills that should be strengthened. From the responses, it was remarkably revealed that majority (99.9%) of the postgraduate students need to learn more about research writing skills and use of the library OPAC. Building online community is another skill which the students wished to be strengthened, as revealed in the response (99.9%). The use of online databases for research is another skill which needs to be advanced as responded by 85.9% of the students. A total of 249 (88.1%) of the respondents agreed that they needed advancement on web publishing skills. Surprisingly, not many (55.5%) of the students thought they needed to be skilled in the use of social media for academic research. Online resources are beginning to dominate physical ones in the Nnamdi Azikiwe Library, UNN. Some of the resources are available through subscription databases while others are open access. This calls for the need to train the library users on how to access the resources. Based on that, many of the PG students think they need to learn more about how to access these online resources. It was found therefore, that 99.9% agreed that they needed to learn how to access online resources **(Table 2).**

Discussion of Findings

For academic research purposes, there are required skills which a postgraduate student needs to possess for a successful research career. Based on the information gathered from the respondents, the researchers have deduced common issues. Search engines are commonly used among students for finding information on the Internet. Many researchers use search engines like *Google, Ask, Yahoo* for their research, relegating scholarly search engines like *Google Scholar, SSRN* and others to the background. Most of the respondents are familiar with search engines and their usages but know little about ethics in research. Every postgraduate student conducts research but close to none knows the rudiments of research ethics such as avoiding plagiarism, duplicate publication, republishing conference papers, conflict of interest, supervisor authorship, etc.

Postgraduate students lack skills on virtual research environment, use of social media for research and online referencing tools. Research ethics is a very required skill in research as well as knowledge of how to conduct advanced searches using Boolean operators for precision in information retrieval.

Table 2: Advancing the Information Literacy Skills of Postgraduate Students

n = 270	SA	A	D	SD
Research Writing Skills	251 (92.9%)	19 (7.0%)	0 (0%)	0 (0%)
The Use of Online databases for research	198 (73.3%)	34 (12.6%)	30 (11.1%)	8 (2.9%)
Web publishing	179 (66.2%)	70 (25.9%)	19 (7.0 %)	2 (0.7%)
Personal information management skills	80 (29.6%)	50 (18.5%)	95 (35.1%)	45 (16.6%)
Open Access repositories and copyright policies	123 (45.5%)	121(44.8 %)	16 (5.9%)	10 (3.7%)
How to access online resources	156 (57.7%)	114 (42.2%)	0 (0.0%)	0 (0.0%)
The use of social media (Facebook, Google Scholar, ResearchGate, Survey Monkey, Google Forms, Twitter, Youtube, etc) for academic research	50 (18.5%)	70 (25.9%)	90 (33.3%)	60 (22.2%)
cloud services and storage as a research tool	167 (61.8%)	50 (18.5%)	24 (8.8%)	29 (10.7 %)
Academic publishing and referencing tools such as Zotero and Mendeley	228 (84.4%)	134 (49.6 %)	44 (16.2%)	14 (5.1%)
E-learning platforms such as Moodle and Blackboard platforms	123 (45.5%)	88 (32.5%)	50 (18.5%)	9 (3.3%)
Building online community (Virtual Research Environment)	220 (81.4%)	50 (18.5%)	0 (0.0%)	0 (0.0%)
Use of the library OPAC	250 (92.5%)	20 (7.40%)	0 (0.0%)	0 (0.0%)

This is a major concern in this study as many respondents are not conversant to a reasonable extent, with use of Boolean operators. This agrees with the study carried out by Ivanitskaya, O'Boyle and Casey (2009) which revealed that few students were able to narrow a search by using multiple search categories simultaneously or by employing Boolean operators. In the same vein, Omekwu, Eke and Agbo (2014) found that very few students agreed to using Boolean Operators to narrow down their research topics. A lot of databases exist in libraries, but knowing how to navigate them becomes a problem. Hence, Omeluzor, et al. (2013) found that 'most of their respondents knew how to search online databases using search parameters (i.e. Boolean operators).'

Social media are relevant for research purposes, especially with the advent of altmetrics (alternative metrics) where author's works are tracked based on number of shares and citations through social networks. This aids for the global visibility of researchers and collaboration opportunities with fellow researchers. Beyond that, there are other useful activities that can be carried out in research using these tools such as the use of Survey Monkey for designing of research instrument, sharing it via same social media tools like Facebook, Twitter, and Google Plus. Data shared can also be retrieved and analyzed using this Survey Monkey or Google Forms as the case may be. Nandez and Borrego (2013) listed eighteen (18) categories of social media tools and found in their study that twitter was one of the least utilized social media tools for academic research. Researchgate and GoogleScholar are relevant for research communication, especially Researchgate which is more interactive with a very captivating feature like *comments* which enables people to start up a conversation on an author's paper by commenting on it. Facebook on the other hand, has become a powerful tool in online

information sharing. It is appalling that most postgraduate students are not familiar with the use of social networks for research purposes, although many of them could be active 'Facebookers'. Many have accounts on these platforms but how many are using them for academic purposes? It was responded by majority of the postgraduate students under study, that they are not familiar with the use of social networks for research purposes.

Mendeley and Zotero offer great features like *bookmark* toolbar which enables users to easily retrieve the metadata of articles in a click of a button. Mendeley in particular, passes for reference manager as well as social network platform. Mendeley and Zotero are very good for writing of literature review and formatting of citations to suit a style of one's choice. For postgraduate students of University of Nigeria though, the use of these academic publishing and referencing tools is not common. This is a serious deficit in research skills due to the benefits derived from use of such tools as it saves time and energy while citing sources and also offers opportunity for collaboration among researchers.

OPAC (Online Public Access Catalogue) is a computerized database of a library's holdings , or an online bibliography or of a library collection that is available to the public and, or a computer based catalogue that can be accessed through computer terminals in a library (Adenike and Akin, 2014). Research skills, use of the library OPAC and building virtual communities were rated highest in the needed skills for advancement. This gives a high rating on library literacy skills over other types of information literacy which were highlighted by Hassan and Mansor (nd). It was evident in the work carried out by Omeluzor, Bamdele and Onuoha (2013), that 112 (46.1%) of the respondents agreed they need to learn to navigate through the OPAC. Likewise, Less than half of respondents (35%) in the study carried out by Ozoemelem (2009), were found not to be skilled in the use of OPAC. However, Anunobi and Udem (2015) found that the postgraduate students studied for the academic session of 2011/2012 agreed to being skillful to a reasonable extent, on the use of OPAC. Surprisingly, the University of Nigeria, Nsukka (UNN) PG students formed part of the population for Anunobi and Udem's study, meanwhile the UNN recently launched its Online Public Access Catalog in 2015. As a matter of fact, not many students are aware of the OPAC due to the nonchallancy of librarians in marketing it. The systems for the OPAC are existing though, but a close observation by the authors of the present study revealed that most of the users of the OPAC are undergraduate students who only use the systems to access databases, browse for other materials using search engines and checking their mails.

To concretize the issues raised, Rasaki (2008) asserted that in many universities that offer the course for credit earning, the emphasis is on library and reading skills with utter neglect of computer and technology literacy. This practice negates what Plotnick (1999) noted, that 'to be information literate, students must be lifelong learners as they have to master new technologies and skills to survive the information age. Rasaki (2008) concluded that the curricula of the universities studied are deficient in one aspect or the other in regard to IL. He therefore, recommended IL curriculum of the three universities be reviewed and expanded to reflect computer, library, and IT literacy skills to make the learners truly information literate, and that the design and review of the curriculum and teaching of the IL course should be all-embracing. Information literacy skills of postgraduate students are on a low ebb in University of Nigeria and this gives rise to the need to advance these skills.

Proposed Information Literacy Programme for Postgraduate Students

The ideal information literacy programme is one where information literacy is integrated into the curriculum (Idiodi, 2005). The authors have designed the following IL Curriculum for postgraduate students in such a manner that it can be taught and completed in the first (1st) year, First semester of their course. This course can be conducted at a session of 3 hours a week, for a full semester so that the skills can be applied to real problems. This will provide the students with knowledge which will help them in their regular information searches throughout their studies (**Table 3**). The nature of the course is such that should attract a certificate of course completion whereby the participants are certified as 'Information Literate' persons.

Advanced Il Programme For Postgraduate Students

Table 3: Advanced curriculum for postgraduate students.

Course	Learning Outcome	Learning activities	Assessment
Introduction to IL	-To learn about the need for IL -To know about critical thinking	Identifying the need to be information literate and how useful it is for research.	Online quiz and group exercises
Introductory Information Skills/Library Catalogues	-to know about the various types of library catalogue -to get familiar with the library OPAC and its uses	-Opportunity given to students to differentiate between card catalog and OPAC and ability to use various catalogs. - Practical use of the Library OPAC by using various search term/access points: Title, Author's name, Subject, ISBN, etc.	Online quiz and group exercises
Study and research skills	Introduce students to technologies and resources that will underpin their university work.	Identifying the types of sources students would use to research a particular topic.	Discussions, short quizz
Advanced Information Skills (Database Searching)	To learn about Boolean system and using Boolean operators, constructing a search query, recognition of differences in databases, search engines and when to given search engines.	-Use of Treasure hunt -Students will be taught how to use the library databases.	-Database Search practicals
Information Retrieval and Literacy	Student will be introduced to: - Web-based IR - Online Journals - Cross-Language &Multi-Lingual Information Retrieval - Evaluating Information for Use - Information Retrieval Systems: Inverted Indexing - Stopwords, Boolean Operators, Normalizing, Addresses, etc. - Web Directories - Meta sites - Operator Precedence and Nesting - Quorum Searching	Practical Exercises: -Concept Identification Information Retrieval Systems: Inverted Indexing-Documents	-Short quiz
Open Access Repositories	Recognizing the benefits of publishing in open access repositories. -To learn about institutional repositories. Open Source Software -To learn about copyright policies	Students will be introduced to Registries and Harvesters	Assignments
The Research Process	To learn about: - formulation of research topic and questions - stating a problem of research - Various research methods and research design - citation skills and - Plagiarism - How to avoid publishing in predatory journals	Students will be allowed to formulate research topics and state the problem. - A practical example of how plagiarism software can be used to review a publication. - Submitting a research paper to Thomson Reuters-Indexed Journals, and other reputable journals.	Quizzes
Social Media for Academic Research	To learn about: -Academic use of social media -Social research environment -Various social media platforms and benefits. -Principles of online collaboration using social media -dangers of social media -digital footprint management. -the importance of ORCID, Google Citation, Hootsuite, Blogging.	-Social media in practice. Various academic social media platforms will be introduced and students will register. Eg. LinkedIn, Mendeley, Pininterest Googlescholar, Twitter, ResearchGate, Wikispaces, Academia.edu, etc.	Quizzes
Management & Organisation of Information	To learn about: -Personal Information management -Personal Archiving Literacy -tools for PIM eg.	Students will be engaged in practical exercises on: - filing structures. – how to organize their folders on their laptops and on Google Drive. -File naming conventions	Quizzes
Cloud Services and Storage as a research tool	To learn about: -Cloud computing -Principles for collaboration -Google Drive -Online Privacy and Security -Gmail Calendar Management	Exercises	Quizzes
Publishing tools	To learn about: -Electronic authoring principles -Exporting for publication -Using a word processor effectively	Introduction to Zotero	Quizzes
E-learning module	To learn about: - the Learning Management System used in the institution (Moodle for UNN)	- Creation of usernames and passwords for students navigation skills - posting of papers on the platform	Group practicals
Virtual Research Environments (VREs)	Students will learn about: - Managing, facilitating, learning, sharing and building an online research community - Virtual research environments/eco-systems - E-research	- Online search of digital tools by for VREs. - Possible download of such tools and utilization of the tools.	Group practicals and quizzes.

NB: *The contents of table 3 were adapted from Carnegie Continuing Professional Development (CPD) 3 course contents. The authors of this paper were the group 4 members of the CPD programme, 2015 batch.*

Forming Partnerships for IL Programme delivery

Librarians and academics are becoming increasingly aware of the need to provide programs that develop student communication and research skills (Lindstrom and Shonrock, 2006). But then, it is one thing to develop a curriculum, another thing is to identify who is responsible to deliver the contents to the students. Library literacy could be solely handled by librarians but what about other types

of information literacy, namely: technology literacy, media Literacy, basic literacy, and visual literacy? Basic literacy, library literacy and technology literacy are the most suited kinds of literacies for postgraduate students. There is therefore need for collaborative efforts in delivering some of the course contents if they are outside the scope of library literacy. Ivey (2003) took up a study to find out how librarians and academics work in partnership to deliver effective learning programs and found that 'librarians are not involved in designing courses but are responsible for planning the information access and retrieval aspects of learning programs, and that the amount of collaborative planning, teaching and evaluating that occurs when these two aspects are brought together depends on factors specific to each partnership.'

Librarians need to continue to prove their place within the curricular structure of the university (Lindstrom and Shonrock, 2006) by showing they can handle basic technology literacy provided they are given adequate training to support their curriculum. But in a situation where librarians are not competent in basic information technology skills like evaluating and cataloguing of e-resources, navigating open access library databases (Ojedokun and Okafor, 2015), how can they solely be involved in the delivery of IL courses to PG students? The delivery of course contents like *use of e-learning platforms*, requires the expertise of the IT personnel and academic staff in related field. As earlier discussed, Rasaki (2008) recommended the review and expansion of IL curriculum of universities to reflect computer, library, and IT literacy skills to make the learners truly information literate Writing on the 'roles libraries play in e-learning, Eke (2010), listed seven (7) points, reiterating that librarians become partners in teaching and learning (**Figure 2**)

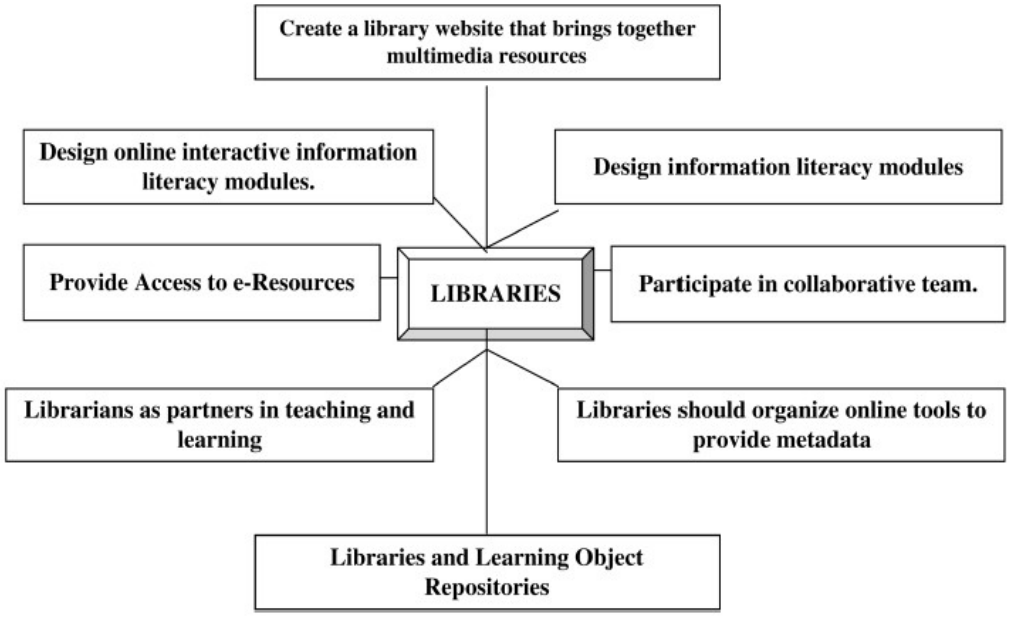

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Figure 2: Roles libraries play in e-learning. *Source: Eke(2010)*

Summary and Conclusion

In Nigerian Universities today, information literacy skills are being preached to lecturers and postgraduate students so as to enable them undertake serious research works. But the issue is that the university academic planning unit seems to be more interested in the global visibility of the university scholars, paying less attention to the needed skills to achieve such feat. University of Nigeria recently engaged academic staff of the university on 7th January, 2016 for a 'meeting on moving the academic standards of the university forward' As a matter of fact, University of Nigeria attained 1st position in Nigeria, 14th in Africa and 1, 389 in the world based on Google Scholar Citations (Webometrics 2015). Most of these citations came from lecturers and other academic staff of the University rather than postgraduate students. This led the Associate Dean of the School of Postgraduate Studies to unveil on behalf of the Dean, that every postgraduate student is thereafter expected to publish at least one paper

in a Thomson Reuters-rated journal before being awarded certificate of completion.

The implication therefore, is that such postgraduate students might need basic information literacy skills, library literacy skills and technology literacy skills as highlighted by Hassan and Mansor (nd). This further calls for the integration of Information literacy in the curriculum of postgraduate students or concurrent running of IL programmes for the students as the case may be.

IL programme is very important and must be incorporated into the curriculum of postgraduate students as this will help them while in school and even after their formal education. This supports Bothma et al 2014 findings that it is not possible for one to learn everything one needs to know in one's field of study in a few years at the university. However if one is information literate, one has the needed skills to become a lifelong learner. This means that one is able to apply and transfer these skills to many other areas of learning and research. To them, becoming information literate is part of lifelong learning and being a lifelong learner is part of being information literate. However, it is not a quick-and-easy process, nor a one-off occurrence. It needs training and continuous learning as the format in which information materials are stored and assessed is changing every day.

Managing an IL Programme (ILP) at a postgraduate level often comes with challenges. One needs to be aware of the resources involved such as financial resources for buying the hardware and software, training of trainers (human resources), the physical resources such as the buildings, furniture and reliable connectivity. However, having an IL Programme for postgraduate students in academic institutions will without doubt enhance their information search and retrieval for LIS professionals and students at large.

Having information competencies in the information age provides opportunities to incorporate IL into the academic curriculum and foster collaboration between faculties, students and librarians. Thus, in order to promote effective IL education several efforts need to be taken into consideration. One of them being, mainstreaming IL in the curriculum. It should be firmly embedded in subject context, in the curriculum itself because the need to acquire these skills only becomes meaningful to students in a curriculum context.

It can be deduced from the findings of the present study, that there is urgent need to embed IL skills in the curriculum of PG students. Holding occasional workshops may not be enough for these students to master these skills.

Recommendations

One of the researchers of this study participated in a recent (7th January, 2016) registration of academic staff of University of Nigeria on Google Scholar platforms and observed that most of these lecturers were not skilled in creating account on Google Scholar, neither did they know how many citations their publications had attracted.

It is a plight that more attention is paid to lecturers than Postgraduate students of the University in terms of acquiring skills for research advancement. Based on this and more, the following recommendations are made:

1. The curriculum of postgraduate students in University of Nigeria and other universities, should be strengthened by incorporating the proposed advanced IL courses which should aid them in research especially in the contemporary big data-overwhelmed world.
2. Because information literacy is primarily the concern of librarians (Mackey,2005) and is rooted in the concepts of library instruction and bibliographic instruction (Issa, Blessing and Daura, 2009), librarians should form major stakeholders in this PG curriculum reform due to their wealth of experience in information handling. As revealed by the study carried out by Anunobi and Udem (2015), Library and Information Science postgraduate students possessed information literacy knowledge. This can be attributed to their lecturers with background in information studies. Information literacy has its roots from library and information science.
3. Librarians and academics should work together to deliver effecting learning programs. This view was shared by Ivey (2003) who opined that 'a shared understanding is needed by university and library management, and by the teaching partners, of how information

literacy is developed and the associated teaching responsibilities, to ensure that programs are adequately resourced.'

4. Postgraduate students should be exposed to all aspects of information literacy (Basic literacy, Visual Literacy, Library Literacy, Media Literacy and Technology Literacy).
5. Information Literacy should be made a pre-requisite course in Schools of Postgraduate studies in Nigeria.
6. Librarians should collaborate with the IT personnel and other academic staff to design IL course contents and teach them to PG students
7. The IL programmes for PG students should be designed with robust course contents.
8. Certificate of course participation, course completion (bearing grades) should be awarded to participants at the end of the course.
9. The government and university management should ensure that there is ubiquitous network in the universities, as this would aid in delivering courses that are offered online.

References

Adenike, O. and Akin, O. T. (2014). Online Public Access Catalogue [OPAC] in Nigerian libraries: A case study of the Kenneth Dike Library and University of Lagos Library. *Ozean Journal of the Social Sciences* 6 (3): 55-65.

Aharony, N. (2006) The use of deep and surface learning strategies among students learning English as a foreign language in an Internet environment. *British Journal of Psychology* 76 (4): 851-66.

ALA (2000) *The IL competency standards for higher education*. Available at http://ala.org/acrl/ilconstan.html.

Alexandria (2005) *Beacons of the Information Society: The Alexandria Proclamation on IL and Lifelong Learning. Available* at: http://www.ifla.org/publications/beacons-of-the-information-society-the-alexandria-proclamation-on-information-literacy

American Library Association (1989) *Presidential Committee on IL: Final* Report, available at: http://www.ala.org/ala/mgrps/divs/acrl/publications/whitepapers/presidential.cfm (accessed 7 June 2015).

American Library Association. (2000) *Position paper on IL – AASL,* available at: http://www.fiu.edu/~library/ili/ilicurr.html (accessed 7 June 2015).

Anafo, P. and Filson, C. (2014), Promoting IL among undergraduate students of Ashesi University College, *Library Philosophy and Practice (e-journal),* Paper 1032, available at: http://digitalcommons.unl.edu/libphilprac/1032 (accessed 5 May 2015).

Andretta, S. (2005) *IL: A Practitioner's Guide,* Elsevier.

Anunobi, C. and Udem, O. K. (2015) Information Literacy Competencies of Library and Information Science Postgraduate Students in South East Nigeria Universities: A Focus on the Knowledge and Skill Level. *Information and Knowledge Management* 5(2):20-30.

Baro, E. and Tarela K. (2012) Teaching and fostering IL programmes: a survey of five university libraries in Africa. *The Journal of Academic Librarianship* 38 (5): 311-315.

Baro, E. and Zuokemefa, T. (2011) IL programmes in Nigeria: a survey of 36 university libraries. *New Library World* 112 (11/12):549-565.

Bothma, T J., Cosijn, E., Fourie, I. and Penzhorn, C. (2014) *Navigating IL: your information society survival toolkit* (4th ed.). Pearson, Cape Town.

Brandt, D.S. (2001) Information technology literacy: task knowledge and mental models, *Library trends* 50 (1): 73.-88,

Bruce, C. (2002) IL as a catalyst for educational change: a background paper, *White Paper Prepared for UNESCO, the US National Commission on Libraries and Information Science, and the National Forum on IL, for Use at the IL Meeting of Experts Prague.*

Buer, V. B. (2005) Teaching of IL as a Credit-Bearing Course at Two Ghanaian Universities: a Comparative Study, available at: http://pu.edu.pk/images/journal/pjlis/Current%2520Issue/(5)%2520Teaching%2520of%2520Information%2520Literacy.pdf (accessed 17 October 2015).

Bundy, A. (2001) For a clever country: Information Literacy diffusion in the 21st century available at: http://www.library.unisa.edu.au/about/papers/clever.htm (accessed 19 Feb 2016).

Bundy, A. (ed.) (2004) *Australian and New Zealand IL Framework principles, standards and practice. (2nd ed).* Adelaid: Australian and New Zealand Institute IL.

Chambers English Dictionary (2003) Literacy available at: http://www.merriam-webster.com/dictionary/literacy (accessed 7 February 2015).

Chan, S. (2003) Making IL a compulsory subject for undergraduates: the experience of the University of Malawi. *IFLA Journal* 29 (4): 328-35.

Dadzie, P. S. (2007) Information literacy: assessing the readiness of Ghanaian universities. *Information Development* 23 (4): 266-277.

De Jager, K. and Nassimbeni, M.C. (2005) IL and quality assurance in South African higher education institutions. *Libri* 55 (1): 31-38.

Eke, H.N. (2010) The Perspective of E-Learning and Libraries in Africa: Challenges and Opportunities *Library Review* 59 (4): 274-290.

Ekwelem, V. E., Eke, H. N. and Dim, C. L. (2009) Information literacy and critical thinking: an essential partnership for learning in higher institutions *International Journal of Communication* (10): 188-203.

Fahey, N. (2003) The importance of addressing accepted training needs when designing electronic Information Literacy training. *Information science journal* 6:173-185.

Haberle, N. (2002) Developing a theoretical evaluative framework for Information Literacy interventions: a South African initiative. *South African journal of higher education* 16 (3): 21-30.

Harris, C.S. (2011) The case for partnering doctoral students with librarians: a synthesis of the literatures. *Library Review* 60 (7): 599-620.

Hartmann, E. (2001) Understanding of IL: the perception of first year undergraduate students at the University of Ballarat. *Australian Academic and Research Libraries* 32 (1): 53-60.

Hassan, B. and Mansor, Y. (2009) Role of academic libraries in promoting information literacy among students of higher learning institutions, available at: http://irep.iium.edu.my/1425/ (accessed 9 February 2016).

Idiodi, E. A. (2005) Approaches to information literacy acquisition in Nigeria. *Library Review* 54 (4):223-30.

Ilogho, J.E. and Nkiko, C. (2014) IL Search Skills of Students in Five Selected Private Universities in Ogun State, Nigeria: A Survey. *Library Philosophy and Practice (e-journal),* Paper 1040, available at: http://digitalcommons.unl.edu/libphilprac/1040

Issa, A. O., Blessing, A., & Daura, U. D. (2009) Effects of Information Literacy Skills on the Use of E-Library Resources among Students of the University of Ilorin, Kwara State, Nigeria, *Library Philosophy and Practice (e-journal), 245,* available at: http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1249&context=libphilprac (accessed 12 August 2015).

Issa, A. O., Amusan, B. B., Olarongbe, S. A., Igwe, K. N. and Oguntayo, S. A. (2015) An assessment of the information literacy competence of undergraduate students at the University of Ilorin, Kwara State, Nigeria. *Annals of Library and Information Studies* 62: 68-76, available at: http://14.139.47.23/index.php/ALIS/article/view/6867 (accessed January 6 2015).

Ivanitskaya L., O'Boyle I. & Casey A.M . (2009) Health information literacy and competencies of information age students: results from the Interactive .Online Research Readiness Self-Assessment (RRSA). *J MedInternet Res.* 8 (2), available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1550696/ (accessed 5 May 2015).

Ivey, R. (2003), "Information Literacy: How Do Librarians and Academics Work in Partnership to Deliver Effective Learning Programs? *Australian Academic & Research Libraries*. 34 (2):100-113.

Kinengyere, A.A (2007) The effect of IL on the utilization of electronic information resources in selected academic and research institutions in Uganda. *The Electronic Library*, 25 (3): 328 – 34.

Kurbanoglu, S. (2006) Developing Information Literacy self-efficacy scale. *Journal of Documentation* 62 (6): 730-743.

Lau, J. (2006) Guideline on IL for lifelong learning. *IFLA Veracruz*, available at: http://www.marin.edu/word-ppt/iflaguidelines.pdf (accessed 24 January 2015).

LIANZA (2002) National information policy position paper: IL and literacy. Library and Information Association of New Zealand Aotearoa, available at: http://lianza.org.nz/text_files/literacy.pdf

Lindstrom, J. and Shonrock, D. D. (2006) Faculty-Librarian Collaboration to Achieve Integration of Information Literacy. *Reference & User Services Quarterly* 46 (1): 18-23.

Lloyd, A. (2006) IL landscapes: an emerging picture. *Journal of Documentation* 62 (5): 570-83.

Lwehabura, M.J.F. (2008) IL delivery in Tanzanian universities: an examination of its effectiveness. *African Journal of Library & Information Science*, 18 (2): 157-68.

Mackey TP., Jacobson TE. (2005) Information literacy: A collaborative endeavor. *College Teaching* 53: 140–144.

Marcus, C., Covert-Vail, L. & Mandel, C.A. (2007) NYU 21st century library project: designing a

research library of the future for New York University: report of a study of faculty and graduate student needs for research and teaching, available at: http://library.nyu.edu/about/KPLReport.pdf (accessed 7 June 2015).

Merriam-Webster Collegiate Dictionary. Availble at: http://www.merriam-webstercollegiate.com

Nandez, G. and Borrego, A. (2013) Use of social networks for academic purposes: a case study. *The Electronic Library* 31 (6): 781-791.

Ojedokun, A.A. and Lumande, E. (2005) The integration of information literacy skills into a credit-earning programme at the University of Botswana. *African Journal of Library, Archives and Information Science* 15 (2): 117-124.

Ojedokun, A. A. & Okafor, V. N. (2015) ICT skills acquisition and competencies of Librarians. *The Electronic Library* 33 (3): 502 – 523.

Okiki, O. C., & Asiru, S. M. (2011) Use of electronic information sources by postgraduate students in Nigeria: Influencing factors, *Library Philosophy and Practice e-journal* available at: http://digitalcommons.unl.edu/libphilprac/500/, (accessed 19 April 2015).

Omekwu, C. O., Eke, H. N. and Agbo, J. A. (2014) Internet Search Strategies Employed by Library and Information Science Students of University of Nigeria, For Research, *Library Philosophy and Practice (e-journal),* Paper 1194.

Omeluzor, S. U., Bamidele, I. A., Onuha, U. D. and Alarape, A. A. (2013). IL skills among postgraduate students of Babcock University, Nigeria. *International Journal of Innovative Research in Management* 12 (2).

Ozoemelem, O. A. (2009) Use of Electronic Resources by Postgraduate Students of the Department of Library and Information Science of Delta State University, Abraka, Nigeria. *Library Philosophy and Practice (e-journal),* available at: http://digitalcommons.unl.edu/libphilprac/301

Plotnick, E. (1999) Information literacy. Syracuse, NY: ERIC Clearinghouse on Information Resources.

Ranaweera, P. (2008) Importance of IL skills for an Information Literate society, available at: __http://eprints.rclis.org/11956/1/Microsoft_Word_-_Prasanna_2__.pdf (accessed 4 June 2015).

Rasaki, O.E. (2008) Comparative study of credit earning IL skills course of three African universities. *Library Philosophy and Practice*, available at: http://findarticles.com/p/articles/mi_7005/is¼2008_Dec/ai_n31312624/ (accessed 4 June 2015).

Sasikala, C & Dhanraju, V, (2011) Assessment of IL Skills among Science Students of Andhra University. *Library Philosophy and Practice (e-journal).* Paper 626, available at: http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1658&context=libphilprac (accessed 6 June 2015).

SCONUL (1999) The seven pillars of IL. Retrieved from www.sconul.ac.uk/groups/information_literacy/sp/seven_pillars.html (accessed 4 July 2015).

Scott, G. (1995) Virtual equity? Equity and the information technology in higher education, students of Andhra University, *Australian Academic and Research Libraries*, 32 (3).

Senn, J. (1998) The challenge of relating IS research to practice. *Information Resources Management Journal* 11 (1): 23-28.

Webometrics (2015) Top 2000 Universities by Google Scholar Citations, available at: http://www.webometrics.info/en/node/169 (accessed 23 January 2016).

Wema, E. and Hepworth, M. (2007) An evaluation of an IL training initiative at the University of Dar es Salaam. *Journal of IL*, 1 (1):1-12.

Wijetunge, P. and Alahakoon, U.P. (2005). Empowering 8: the IL model developed in Sri Lanka to underpin changing education paradigms of Sri Lanka, *Sri Lanka Journal of Librarianship & Information Management* 1 (1):31-41.