FACILITATING THE INFORMATION LITERACY SKILLS OF POSTGRADUATE STUDENTS OF PUBLIC UNIVERSITIES IN NORTH GEOPOLITICAL ZONES OF NIGERIA

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ABSTRACT

The main purpose of this paper was to assess the level of Information Literacy Skills (ILS) of Postgraduate (PG) students of public universities in North Geopolitical zone, Nigeria with a view to facilitating the acquisition of skills. The study adopted quantitative research method using cross-sectional research design. The study population comprised of 1416 library registered PG students. Proportionate stratified random sampling technique was used to select 425 of them as sample size for the study. Questionnaire was the only instrument used for data collection; with a total of 425 copies of the questionnaire were administered to the respondents. However, only 387 were returned and used for the data analysis, which was done using descriptive statistics. The findings of the study revealed that the respondents possessed high level of ILS. Occasional workshops, self-study, trial and error among others are factors facilitating acquisition of ILS. Also, ILS has no significant relationship with demographic variables of the respondents. These findings' implications were for the university management, faculty and librarians to provide IL instruction policy; and also provide insight on areas of IL to work on when advancing the level of ILS of PG students of the public universities studied. The study concluded that holding occasional workshops, trial and error, among others might not be enough for the students to master higher-level skills and become competent lifelong learners. The study therefore, recommended that the PG students should be exposed to more practical aspects of higher levels of IL in order to meet the increasing demands of information age. This paper is an empirical research, which contributes to the frontier of knowledge and provides driving force in developing necessary framework for designing plan of action for workable strategies that would encourage inclusion of IL programme at PG level in order to facilitate acquisition of ILS of the PG students of public universities in North Geopolitical Zone, Nigeria.

Keywords: Information literacy skills, Postgraduate students, Public University, Nigeria

Introduction

The concept of Information Literacy (IL) emphasizes skills to identify, search, locate, access, evaluate and use information. IL facilitates the development of critical thinking as well as problem-solving skills, which motivate students to learn throughout their lives. Chartered Institute of Library Professionals (CILP, 2018) defined information literacy as thinking critically and making balanced judgments about any information we find and use, which empowers us to reach and express informed views as well as engage fully with society. Osunrinade (2018) emphasized that information literacy skills enable students to take greater responsibilities towards their own learning; it helps them become dynamic learners and thinkers who are creative, analytical and efficient instead of mere regulation of facts.

The process of becoming IL starts by being equipped with skills that make one to engage effectively with information in various formats. Information literate students are the ones that are able to identify when information is needed for specific situation. They are able to construct search strategy to locate and access information. They are also able to ascertain which information is reliable, relevant and authentic. This is essential because information usually comes unfiltered, therefore can appear to be genuine, but be false or misleading. To this regards, knowledge of how to evaluate information can save students from use of information that is misleading. Students should also become more versatile and responsible when using information by crediting sources of information where needed. This skill is vital not to only give value to students' research work but to also ensure that they do not plagiarize, which has often characterized students' use of information.

IL skills acquisition has become an integral part of higher education learning and research. It is the process of gaining the tools that assist the development of an individual's IL. Odede (2018) stressed that the ability to locate information is necessary for quality research especially at Postgraduate (PG) level where quality research is expected to contribute to the body of knowledge. To this regards, facilitating ILS of PG students is important because they need to explore knowledge and use the knowledge gained to fulfill the information needs of day-to-day activities, for learning, academic and research purposes, decision-making as well as other vital activities that may directly involve or affect their lives.

Nevertheless, Samani, Noordin and Karimzadeh (2019) observed that socio-demographic characteristics are related to digital literacy and digital literacy is subsumed in information literacy. This implies that demographic characteristics could be predictors of ILS. Therefore, testing hypothesis to determine relationships in order to substantiate this claim or prove it otherwise becomes vital. It is against this background that this study focuses on assessing the level of ILS of PG students, identifying the factors facilitating acquisition of ILS and establishing the relationship between the level of ILS and demographic variables of the PG students in order to further advance their skills for better learning and research.

Statement of the Problem

Postgraduate (PG) students are faced with diverse and abundant information choices in their learning and research activities. It is therefore, not feasible to search, locate, evaluate and

use information in a very short span of time as information comes in unfiltered formats, thus, raising questions about its validity, reliability and authenticity. This implies that students are expected to be equipped with ILS to effectively search for sources to support learning and research activities. However, Okpala, Benneh, Sefu and Kalule (2017) observed that majority of PG students in Africa search for sources in the library almost on a daily basis but they lack the required IL skills as these students were not being taught the IL skills they require for their day-to-day lives as researchers at PG level. As such, PG students may experience difficulties in their learning and research activities due to lack of skills.

In view of the emerging emphasis on acquisition of ILS for excellent performance in universities, it is not certain whether PG students of public universities in North Geopolitical Zone, Nigeria possess ILS. This study was carried out to ascertain the level of ILS of the PG students with a view to facilitating acquisition of skills. To achieve this, the following research questions were raised to guide the study.

Research Questions

Answers were to be provided to the following research questions:

1. What is the level of ILS of PG students of public universities in Northern Nigeria in terms of identifying the need for information; constructing search strategies to locate information; evaluating information; and using information?
2. What are the factors facilitating the acquisition of ILS of PG students in the public universities under study?
3. What is the relationship between ILS and demographic characteristics of the PG students in the public universities under study?

Hypothesis

This study also formulated one hypothesis, which was tested at 0.05 level of significance as follows:

$H0_1$ There is no significant relationship between information literacy skills and demographic characteristics of the respondents.

Review of Related Literature

Information literacy (IL) has been defined by Association of College and Research Libraries as a set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued and the use of information in creating new knowledge and participating ethically in communities of learning (ACRL, 2016). Many scholars have conducted several studies on the ILS of students. For example, Omeluzor, Bamidele, Onuoha and Alarabi (2013) conducted a study on Postgraduate (PG) students' ILS at Babcock University, Ogun State; Nigeria. Findings revealed that IL programme were only addressed at undergraduate levels while PG students were marginalized. The PG students had their ILS training through seminar, user education, one-on-one discussion and tutorials. The study also established that PG students have a moderate level of ILS. The study concludes that PG students should be mandated to attend IL programme organized by libraries. This study was a
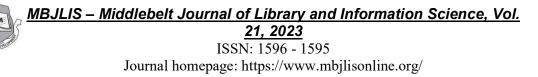
case study; findings, therefore, cannot be generalized to other universities in Nigeria. It is necessary to expand the scope of the study to include more population of PG students from other universities in Nigeria in order to have wider coverage and comprehensive view of the present status of the skills possessed by PG students.

Munshi and Nagar (2016) carried out an investigation on ILS among the PG students at Aligarh Muslim University, India, using descriptive survey method. The findings revealed that according to the students' needs to improve their ILS, they suggested motivational lectures; workshops, conferences, symposia, project-based learning and online literacy programme should be organized to facilitate their skills acquisition. This study was conducted in India; therefore, there is need for similar study in Nigeria. infrastructures increases the use of information, hence the rise in IL of citizens. Similarly, Onwuchekwa's (2017) study on IL and lifelong learning in the national open university of Nigeria found that the respondents agreed that universities need to put policies in place to promote development of ILS as well as more training and orientation should be conducted towards IL process.

Okpala, Benneh, Sefu and Kalule (2017) conducted a study on advancing the ILS of PG students in university of Nsuka, Nigeria, using descriptive design. The entire PG students of the university formed the population of the study. A total of 300 questionnaires were distributed to the respondents with a retrieval success of 270 copies. Findings revealed that most of the PG students were knowledgeable in basic ILS as opposed to knowledge in emerging research trends. The study also found that none of the PG students was knowledgeable in research ethics. On the needed ILS, majority of the PG students stated that they needed Zotero, Mendeley and research writing skills, respectively. The study recommended an advanced IL curriculum for the PG students. This study was conducted in Nigeria; however, it was a case study, which findings cannot be generalized to larger settings; hence the need to conduct another study that incorporates larger setting.

In Malanga's (2017) study, which investigated the ILS of undergraduate students at University of Livingston in Malawi. The respondents showed high deficiency in their ability to identify diverse information sources. They expressed familiarity with the American Psychology Association (APA) referencing style. However, they did not possess adequate knowledge on writing proper citation and references. They were not familiar with the bibliographic and reference management software tools. Thus, on the whole, finding indicates that the students possess moderate ILS on the types of information sources and how to integrate what they had retrieved to solve problems at hand.

Naved and Rafique (2018) investigated workplace IL of 140 working scientists from Pakistan. The findings revealed that the respondents perceived that they were competent in IL. They were also confident in using multiple search tools. However, majority of the respondents never attended any IL training during their academic or professional career. The findings further revealed that there was positive correlation between respondents' IL and academic qualification, research experience, number of research publications and age. Female scientists had higher self-efficacy IL than male scientists and there was no significant relationship between IL instruction received and their academic professional career.

Osunrinade (2018) investigated the extent to which demographic factors and ILS of secondary school students in Ogun state, Nigeria determines their utilization of media resources using survey research design of the ex-post facto. Questionnaire was used as the major instrument for data collection. The findings from the study revealed that the students possessed moderate level of ILS. Background factors and ILS were found to have joint and leading contributors to media resources utilization among the secondary school students in Ogun State, Nigeria respectively.

Odede and Zawedde's (2018) study focused on several dimensional constructs of IL among PG students in three universities in South Africa. The findings revealed that IL was a prerequisite to using EIRs. The study concluded that there was need for universities to introduce ILS certificate programme, workshops, seminars etc. that would facilitate acquisition of ILS of students. In the same vein, Ekong and Ekong (2018) decried that there is lack of ICT components in IL instruction in Nigerian schools. To this regards, they suggested that ICT facilities should be installed in academic libraries for effective teaching and learning of IL.

Anyanwu, Okoye, Lemoha and Nnadimele (2019) investigated IL for effective utilization of information resources in academic libraries in Nigeria using four hundred (400) copies of questionnaire administered to students. The findings revealed that practical components of IL were not taught and use of ICT in teaching was lacking. The study recommended that practical components of teaching should be included and modern method of teaching should be used in teaching the students. There was also need for training the trainers. The study also recommended that teaching and learning of IL should incorporate copyright, plagiarism and proper ways of evaluating information sources. In addition, there is also the need for guided tour, flipped instruction, video conferencing, advanced literature search, use of interactive boards and other computer aided programmes to enable students possess ILS.

Thanuskodi (2019) conducted a study on ILS of 750 library and information science professionals from university, special and public libraries respectively. Quantitative research methodology was used, while questionnaire was the only instrument used for data collection. The findings revealed that majority of the respondents were aware of the concept and value of IL. The study also found that there was significant difference among various age groups, educational level, designation and location of the respondents concerning ILS. However, there was no significant difference between gender and ILS.

Ngo, Pickard and Walton (2019) studied IL capabilities of upper secondary students in Vietnam. Their findings revealed that the ILS of the respondents had not been well developed. Information evaluation was one of the areas where students performed most poorly. The study concluded that there was need to work towards improving the IL capabilities of the respondents. That's why Okeji, Ilika and Baro (2020) stated that Internet is flawed with information quality problems, to this regards, students need to have the ability to discern between good and bad information and decide on using the most relevant information for their tasks; a task which librarians and faculty should assist students in achieving.

Keboh and Baro's (2020) study on Library and Information Science (LIS) students'
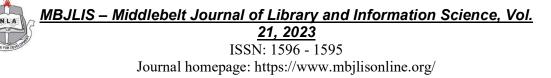
competency in evaluating information and information resources in universities in Nigeria found that LIS undergraduate students verified information before using it. They also rated currency of the work, relevance of the content, scholarly/professional and overall quality of information as important when evaluating information. However, the respondents did not pay attention to publisher, author's affiliation and cited references when determining good sources of information.

A study conducted by Bashorun, Bashorun and Akinbowale (2021) on IL competence in the use of EIRs among medical students in University of Ilorin, Nigeria found that respondents had demonstrated improved competences in IL. However, the study recommended that the university management should ensure that IL programme covered the entire period of study so that the development of IL competence can be reinforced throughout the whole of medical education not only on few occasions like orientation period in the beginning of studies. The study further recommended that university library management should organize more training to update students' IL skills.

Buba, Song and Abdullahi (2021) study investigated the level of ILS and use of EIRs by undergraduate students of Federal universities in Nigeria through the application of Kuhlthau's information search process. Quantitative research methodology was adopted in the study while 2402 undergraduate students were sampled. The data were collected using questionnaire and analyzed through descriptive statistics. The findings of the study revealed that undergraduate students had adequate knowledge about IL programme and search terminologies but they experienced heightened uncertainty with inconsistent information that required construction and interpretation. This study concentrated only on undergraduate students, hence the need for similar study to cover postgraduate students.

Ozor and Toner's (2022) assessed the IL behavior of undergraduate students at Ada College of Education, Accra, Ghana using survey research methodology. The findings revealed that the respondents attended library orientation programmes provided by the library. They could define, modify and document their search strategy. The respondents could also evaluate sources of information. The study recommended that the college should introduce a stand-alone IL programme that will cover topics on searching skills, evaluation of electronic/printed materials, citation, reference, information retrieval and plagiarism. This study is geographically specific as the study was conducted in Ghana; hence, the need for similar study in the Nigerian context.

Victor-Aigbodion (2022) assessed the ILS of PG education students in Nigeria using descriptive survey design. A total of 412 PG students were sampled from 3 public universities in Nigeria. Questionnaire was used for data collection and the data were analyzed using descriptive statistics. The findings revealed that the respondents demonstrated moderate ILS and there were no significant differences in IL skills levels among the respondents. Furthermore, female respondents exhibited more ILS than their male counterparts. In addition, PhD students showed more ILS than masters students. the study recommended that university management should organize workshops for the PG education students from time to time to enhance their ILS.

Tachie-Donkor and Ezema (2023) conducted a study on the effects of ILS on university students' information seeking behavior and lifelong learning skills in higher educational institutions in Ghana. Using a mixed method approach, while 278 students were sampled for the study. Questionnaire, interview and document analysis were used to collect data for the study. Pearson product moment correlation coefficient was used to determine the relationships between the independent and the dependent variables. The Findings revealed that the respondents developed substantial skills in IL and lifelong skills; thus they adopted positive attitude in information seeking. The study recommended that academic libraries should run programmes to introduce students to information sources in order to facilitate their competency levels in IL.
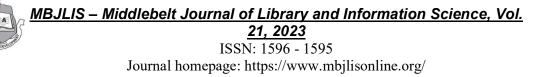
The study conducted by Ndou, and Zimu-Biyela (2023) aimed to establish the level of knowledge about the IL content of the existing IL programmes and to explore the perceptions regarding opportunities and challenges regarding IL as a credit-bearing module into first-year level academic programmes at the UNIVEN. The study adopted mixed method and used purposive sampling technique to select eight deans of schools and six information librarians, while stratified sampling technique was used to select adopter and non-adopter academics within the 8 schools. Online Google form questionnaire and interview guides were used to collect quantitative and qualitative data respectively. Findings revealed that adopter academics have some knowledge regarding the IL programmes. The study therefore, recommended the need to for IL programmes to be integrated into all first-year level academic programmes. There is also need to develop sting IL institutional policies that takes cognizance of contextual conditions.

Philip (2023) conducted a study on the information literacy development and competencies of high school students in Accra using survey research design with a mixed method approach and a post positivist paradigm. A total of 454 high school students, 3 librarians and 3 heads of ICT departments participated. The data collection tool used was a semi structured interview schedule and a questionnaire. The findings revealed that the high school students had low IL competencies. The study also revealed that inadequate infrastructure and lack of formalized IL instructions in schools hindered the IL development of students. the study therefore, recommend the need to integrate IL instructions in high schools.

From all that have been reviewed so far, one could see that in spite of the relevance of these studies to the present study, there were missing pieces with regards to the level of ILS possessed by PG students, as well as factors facilitating acquisition of ILS among PG students of public universities in North Geopolitical Zone, Nigeria. The write-ups were mostly case studies; which findings cannot be generalized to larger settings. Thus, this study sought to fill this identified knowledge gap by addressing the research concern this has brought about.

Methodology

The study adopted quantitative research approach using cross-sectional survey research design. The population of the study comprised 1416 PG students that registered with the universities' e-resources units. Proportionate stratified random sampling technique was used to select 425 PG students as sample size for the study, using 30% sampling fraction. Questionnaire

was the only instrument used for data collection. Out of the 425 copies of the questionnaire administered, only 387 representing 91% were returned and found usable. The data generated was analyzed using descriptive statistics, with the aid of Statistical Package for Social Science (SPSS version 22) while the hypothesis was analyzed using Pearson Product Moment Correlation, tested at 5% level of significance.

Analysis and Results

Table 2 1: Demographic Distribution of the respondents

S/N	Variables	Frequency	Percentage (%)
1	**Gender**		
	Male	213	55.04
	Female	174	44.96
	Total	**387**	**100**
2	**Age**		
	25-34 years	214	55.29
	35-44 years	130	33.59
	45-54 years	39	10.07
	55 years and Above	4	1.03
	Total	**387**	**100**
3	**Programme**		
	Masters	281	72.61
	Ph.D.	106	27.39
	Total	**387**	**100**
4	**Process of information literacy skills acquisition**		
	Self-study	344	88.9
	IL programme in the department	55	14.2
	Workshops/Seminars	310	80.1
	Trial and error	313	80.9
	Assistance from colleagues	278	71.8
	Guidance from library staff	75	19.4

Source: Field Survey, 2019

Table 1 indicates that out of the 387 respondents in the study, 213(55.04%) were male while 174(44.96%) were female. Apparently, there was almost an equal gender representation. The age distribution of the respondents showed that there were more PG students within the age group of 25-44 years. This implies that majority 344(88.88%) of the respondents pursued PG programme in their early thirties, which is equally within their productive age. The result of programme of study indicates that 281(72.61%) of the respondents enrolled for masters' degree while only 106 (27.39%) enrolled for PhD programme. This indicates that the numbers of PG students who are undergoing Masters programme were more than those undergoing PhD programme in the public universities studied. On the processes through which they acquired ILS,

findings revealed that majority 344(88.9%) of the respondents indicated that they acquired ILS through self-study. While 313(80.9%) acquired through trial and error, 310(80.1%) acquired through attending workshops/seminars and 278(71.8%) acquired through assistance from colleagues. Few respondents 55(14.2%) and 75(19.4%) indicated that they received training in the department and guidance from the library staff respectively. This implies that IL training in the department and guidance from library staff had the lowest frequencies.

Table 2: Level of Information Identification Skills of the Respondents

S/ N	Information Identification Skills	X	SD
1	Ability to recognize a lack of knowledge in a subject area	4.03	0.82
2	Ability to formulate questions and define limits to the information need	3.97	0.82
3	Ability to articulate current knowledge on a topic	3.86	0.94
4	Ability to use background information to under pin a search	3.82	0.98
	Weighted Average	**3.92**	

Source: Field Survey, 2019,   **Criterion Mean =** 2.50- 3.49;
Key: X = Mean, **SD** = Standard Deviation.

In Table 2, the mean rating of all the 4 items ranging from 3.82 to 4.03 with weighted average of 3.92, clearly indicate that all the responses are above the average acceptable mean of 2.50-3.49 out of the maximum obtainable score of 5.00 points decision rule benchmark. It can be deduced from the findings that the respondents' information identification skill was high. In the present context, the PG students were in the process of developing from novice to experts. It is also obvious from the data collected that this skill would likely continue to develop when the students continue to exhibit habits of investigating and seeking new information all the time.

Table 3: Level of Strategic Skills Strategic Skills of the Respondents

S/N	Strategic Skills	X	SD
1	Ability to use search engines such as Google, Yahoo etc.	4.26	0.89
2	Capable of formulating the right keywords and concepts	3.81	0.88
3	Ability to use Boolean Operators AND, OR and NOT	3.71	1.00
4	Ability to use parenthesis effectively	3.62	1.04
5	Ability to use truncation search technique (asterisk '*' effectively	3.53	1.09
6	Ability to effectively apply phrase search technique effectively	3.54	1.09
7	Ability to use Online Public Access Catalogue (OPAC) effectively	3.94	0.93
8	Ability to use online/offline databases	3.91	0.95
9	Ability to use electronic index and online reference tools	3.78	1.09
10	Ability to use browsers such as Chrome, Firefox, Internet explorer, Opera, Safari, Opera mini.	4.07	0.97
	Weighted Average	**3.82**	

Source: Field Survey, 2019, **Criterion Mean** = 2.50-3.49;
Key: X = Mean, **SD** = Standard Deviation

Data on Table 3 revealed that the mean ratings ranging from 3.53 to 4.26 with weighted average mean score of 3.82 indicates that all the 10 items are above the mean of 2.50- 3.49 out of the maximum obtainable score of 5.00 points. It can be deduced from the findings that the respondents' strategic skills were high. This outcome may be as a result of the fact that the respondents are familiar with the virtual environment, which exposes them to the issue of precision in information searching and retrieval.

Table 4: Level of Information Evaluation Skills of the Respondents

S/N	Evaluation Skills	X	SD
1	Capable of assessing the quality, accuracy, relevance, bias and credibility of information	3.91	0.92
2	Ability to critically identify key points	3.81	0.87
3	Ability to review multiple points of view to construct an opinion	3.58	0.98
4	Ability to select, analyze and summarize the main ideas found	3.83	0.97
5	Ability to relate information found to the original search strategy	3.74	1.00
	Weighted Average	**3.77**	

Source: Field Survey, 2019, **Criterion Mean** = 2.50-3.49;
Key: X = Mean, **SD** = Standard Deviation.

In Table 4, the mean rating ranging from 3.58 to 3.91 with weighted average mean score of 3.77 out of the maximum obtainable score of 5.00 connotes that the respondents' level of information evaluation skills was relatively high.

Table 5: Level of Information Use Skills of the Respondents

S/N	Use Skills	X	SD
1	Ability to competently cite and acknowledge other people's works using suitable referencing styles	4.03	0.90
2	Ability to paraphrase the information found in electronic format	3.96	0.92
3	Ability to identify useful information to be used as a lead to produce an article, book or thesis	3.82	0.93
4	Ability to view and extract relevant information found in in electronic format	3.93	0.92
5	Ability to strictly observe research ethics (e.g. avoiding plagiarism)	3.83	0.95
6	Ability to summarize arguments from various EIRs	3.80	1.00
	Weighted Average	**3.90**	

Source: Field Survey, 2019, **Criterion Mean** = 2.50-3.49;
Key: X = Mean, **SD** = Standard Deviation

Interestingly, on Table 5, the mean rating of all the 6 items ranging from 3.80 to 4.03; with weighted average mean score of 3.90 out of the maximum obtainable score of 5.00 indicates that the level of information use skills of the respondents was equally high in this dimension. This

could be as a result of the fact that they attend workshops and seminars. It could also be as a result of the fact that the students had prior knowledge of IL training at undergraduate level.

Table 6: Factors Facilitating Acquisition of ILS of the Respondents

S/N	Factors	X	SD
1	Provision of dedicated institutional IL policy	4.24	0.77
2	Provision of motivational talks on IL acquisition	4.18	0.73
3	Provision of IL workshops, conferences and seminars	4.30	0.75
4	Adequate Provision of ICT infrastructures	4.28	0.74
5	Availability of curriculum and well developed syllabus to guide IL practices	4.25	0.75
6	Regular assessment of ILS	4.22	0.74
7	Availability of qualified information professionals to guide and teach IL	4.18	0.85
	Weighted Average	**4.24**	

Source: Field Survey, 2019,

   Key: X – Mean, SD – Standard Deviation

   In Table 6, it could be seen from the analysis that all the 7 items had mean scores ranging from 4.18 to 4.30. The grand weighted mean of 4.24 is above the criterion mean 2.50-3.49 out of the scale of maximum of 5 points. This apparently indicates that majority of the respondents unanimously perceived that all the factors identified in the study were facilitating conditions to effective acquisition of ILS.
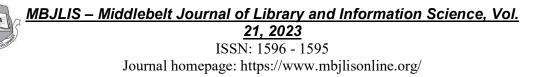
Results of the Tested Hypothesis

   The researcher used PPMC coefficient to determine the relationship between the four constructs of IL and demographic characteristics of the respondents. There were three outcome variables for this test; i.e. gender, age and programme of study. Table 8 presents the results.

Table 7: Relationship between ILS and Demographic Variables

Constructs		Gender	Age	Programme
	Pearson Correlation	.033	.005	.054
Identification	Sig. (2-tailed)	.522	.927	.288
	N	387	387	387
	Pearson Correlation	.095	.084	.005
Strategic	Sig. (2-tailed)	.063	.100	.926
	N	387	387	387
	Pearson Correlation	.118*	.020	.044
Evaluation	Sig. (2-tailed)	.020	.701	.390
	N	387	387	387
	Pearson Correlation	.017	.056	.094
Use	Sig. (2-tailed)	.737	.271	.064
	N	387	387	387

*. Correlation is significant at the 0.05 level (2-tailed)

The result on table 7 shows the relationship between the 4 constructs of IL and demographic characteristics of the respondents. On the relationship between information identification skills and demographic variables, the result showed that the p-values for gender, age and programme of study are (0.522, 0.927 and 0.288) respectively, which are all greater than 0.05 (p>0.05), while the r-values showed weak, positive correlation (r=0.033, 0.005 and 0.054) between the variables. This implies that the null hypothesis is accepted at 0.05 level of significance. Hence, there is no significant relationship between the level of information identification skills possessed by the PG students and their gender, age as well as programme of study.

On the relationship between strategic skills and demographic variables, the result showed that the p-values for gender, age and programme are 0.063, 0.100 and 0.926, respectively, which are all greater than 0.05 (p>0.05), while the r- values showed weak, positive correlation (r=0.095, 0.084 and 0.006) between the variables. Therefore, the null hypothesis is accepted at 0.05 level of significance. Hence, there is no significant relationship between the level of strategic skills possessed by the PG students and their gender, age or programme of study.

On the relationship between information evaluation skills and the demographic variables of the respondents, the results showed that the p-values for gender, age and programme of study are (0.020, 0.701 and 0.390) respectively, which are all greater than 0.05 (p>0.05), while the r-values showed weak, positive correlation (r=0.118, 0.020 and 0.044) between the variables. This implies that the null hypothesis is accepted at 0.05 level of significance. Hence, there is no significant relationship between the level of information evaluation skills possessed by the PG students and their gender, age as well as programme of study.

On the relationship between information use Skills and demographic variables, the result shows that there is a week, positive correlation (r=0.017, 0.056 and 0.094) between the variables. The p-values are (0.737, 0.271 and 0.64), which are all greater than 0.05 (p>0.05). This implies that the relationship is not significant. The null hypothesis is, therefore, accepted at 0.05 level of significance. Hence, there is no significant relationship between the level of information use skills possessed by the PG students and their gender, age or programme of study.

The findings with regards to gender, age and programme of studies were found to have no significant relationship with ILS of PG students. This implies that gender, age and programme of study do not influence PG students' information identification skills, strategic skills and information use skills. The finding in this study is contrary to that of Naveed and Rafique (2018) who found that there was positive correlation between ILS and the demographic characteristics of the respondents. Thanuskodi (2019) found that there was significant difference among various age groups, educational level, designation as well as the location of the respondents and ILS.

Discussion of the Findings

The findings with regards to the demographic distribution of the respondents apparently indicated that there was almost an equal gender representation. This could be attributed to the fact that gender stereotype, which often have societal implication in the Northern states of Nigeria

is gradually reducing. This could probably be the reason why the gap between male and female is now reducing gradually. It could also be labeled that females in this part of the country are gaining more relevance, opportunities and chance to pursue their studies just like their male counterparts. Be that as it may, gender characteristics of the respondents have provided insight into the gender participation in the study.

The age distribution of the respondents implied that majority of the respondents pursued PG programme in their early thirties, which is equally within their productive age. This could also be as a result of the fact that the students had more opportunities such as scholarship to pursue further studies. The result of programme of study indicated that the numbers of the respondents who are undergoing Masters programme were more than those undergoing PhD programme. The finding is in line with that of Omeluzor, Bamidele, Onuoha and Alarape (2013) and Odede (2018), where they found that majority of their respondents were Masters' students.

On the processes through which they acquired ILS, the findings implied that IL training in the department and guidance from library staff had the lowest frequencies. This result is expected as Okpala, Benneh, Sefu and Kalule (2017) observed that PG students were not taught the required IL skills they needed for their day-to-day lives as researchers because efforts to improve IL levels in academic institutions were often focused on undergraduate students. Even the training offered at undergraduate levels, the content of the programme is not rich and relevant enough to guide the students through quality information search. The finding of the present study corroborates the work of Omeluzor, Bamidele, Onuoha and Alarabi (2013) where they found that PG students of Babcock University, Nigeria, acquired ILS through tutorials and seminars among others. The implication of the finding in this study is that the PG students may not have opportunities to facilitate acquisition of ILS, as effective methods of acquiring the skills, such as IL programme, were limited.

The findings with regards to the level of ILS indicated that the level of information identification skills of the respondents was high. These findings concur with Omeluzor, Bamidele, Onuoha and Alarabi's (2013) study where they found that majority of their respondents could identify and address their information needs. The implication of this finding is that the respondents would be able to situate their information needs in the relevant context. They will also be able to investigate and seek for information as well as be involved in more problem solving learning activities that will make them exhibit more confidence in their ability to recognize information. However, as information and data are constantly being produced, new information would be sought for at all times; hence, there will be need to always learn more.

The findings also revealed that the level of strategic skills of the respondents was high. This finding confirm earlier findings in a study conducted by Omeluzor, Bamidele, Onuoha, and Alarabi (2013); Okpala, Benneh, Sefu and Kalule (2017), where they found that the respondents were skilled in identifying search terms and they could use search engines and knew how to search online databases using search parameters such as Boolean operators. The implication of this finding is that the high level of strategic skills possessed by the PG students would assist them in their quest for information. This calls for urgent action in the provision of continuous robust practical aspects of training on how to search, locate and access information in order to

continuously sustain the skills to become more competent lifelong learners in this fast changing sophisticated technological world we live in.

The findings further indicated that the level of evaluation skills of the respondents was equally high. This finding concurs with that of Ozor and Toner (2022) studies where the respondents stated that they could evaluate sources of information using several range of indicators. A similar kind of trend, which relates with this finding, is seen in Keboh and Baro's (2020) study where it revealed that the respondents verified information before using it. However, the findings of this study is contrary to the study of Ngo, Pickard and Walton (2019) where it revealed that information evaluation was the area where students performed most poorly. The implication of the findings is that with enhanced information evaluation skills, PG students would exhibit more confidence in their ability to evaluate information for its authenticity, critically assess the quality, accuracy, relevance, value and credibility of information.

The findings nevertheless, indicated that the level of information use skills of the respondent was high. The present findings did not agree with the findings in the study conducted by Malanga (2017), as well as those of Okpala, Benneh, Sefu and Kalule (2017), where they found that the respondents were not familiar with citation and reference styles. They were deficient in correctly paraphrasing ideas to avoid plagiarism and referencing authors whose ideas were used in them. However, the findings indicate that the respondents possessed these skills. The implication of this finding is that the respondents would require continuous training programme on practical aspects of higher-level skills to sustain and improve their information use skills.

The findings with regards to the factors facilitating acquisition of ILS indicated that the respondents agreed that all the items identified were considered as factors that would facilitate acquisition of ILS. The findings concur with that of Onwuchekwa (2017) who found that the respondents agreed that universities need to put policies in place to promote development of ILS as well as more training and orientation should be conducted towards IL process. The finding of this study is also in line with the submission of Munshi and Nagar (2016) in their study that lack of workshops; conferences, seminars, IL programme etc. are factors, which may affect acquisition of skills; therefore, suggested their provision in order to facilitate acquisition of skills. Further the study of Victor-Aigbodion (2022) also recommended workshops to be provided to PG students to enhance their ILS. The implication of this finding is that it would influence decision-making, policy formulation and practice with regards to devising means of advancing PG students' level of IL.

Conclusion

The study concludes that PG students of public universities in North Geopolitical zone, Nigeria possess ILS. However, much needs to be done with regards to areas of facilitating acquisition of ILS, as effective methods of acquisition of ILS were not provided to the students. The study also concludes that the demographic characteristic of the respondents does not affect their acquisition of ILS.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. The management of the public university libraries should identify various IL training programmes and provide such training to the PG students. This will expose the students to more practical aspects of IL; consequently, helping them develop higher level of ILS.

2. In order to lay a strong foundation for IL and provide more advanced positive experiences at PG level, the university management, library management committee and education planners should re-evaluate their separate and joint roles to collectively work together tirelessly towards inculcating IL to PG students.

3. There should be a dedicated institutional IL policy; moreover, IL programme should be integrated into the curriculum and a well-developed syllabus should be designed to include courses in information searching and evaluation; various methods of teaching IL should be developed and librarians should be at the forefront of the processes.

4. Information infrastructure for teaching IL should be adequately provided. University Libraries and Faculties should organize workshops, motivational talks and regularly assess students' skills. This would expose students to more practical aspects of higher-level skills and further facilitate acquisition of ILS; consequently, more information literate PG students would be developed.

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Lami Umar Abdullahi was born on 21 August 1969. She has a B. A. Degree in Library and Information Science from Bayero University, Kano (BUK) (2001), a Master's Degree in Library and Information Science from BUK (2008) and Ph.D. in Library and Information Science from BUK (2023). She is a certified Librarian. She worked as Higher Executive Officer at Federal Medical Center Gusau, in 2005, Education Officer (Economics Teacher), Federal Government Girls' College Gusau (2005-2007). She also worked at Federal College of Education Technical, Gusau, 2005-2011 and served as the head of the Serials unit of its library. In addition, she served as the head of Serials, Research, and Documents Department in Bayero University Library, Kano, between 2012-2019 and between 2019-2021, she served as HoD, User Services, University Library, BUK. She is currently a Lecturer, working in the Department of Library and Information Sciences, BUK. She is computer literate; an experienced Librarian with a passion for promoting academic development and creating positive reading environments. She has several publications to her credit. She is self-driven and can function in a flexible manner to ensure productivity, success and growth. Her research interests include Information Management and Information Science.