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**ASSESSMENT OF INFORMATION LITERACY SKILLS OF POSTGRADUATE  
EDUCATION STUDENTS IN NIGERIA**

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**Abstract**

Information literacy (IL) skills play a significant role in postgraduate students' academic development and research ability. Literature about postgraduate education students' information literacy is scarce, resulting in little knowledge about their level of information literacy skills. This study aimed to assess the information literacy skills of postgraduate education students at selected Nigerian public universities. A descriptive survey design was used for this study, which included 412 postgraduate education students from 3 Nigerian public universities. In the process of analyzing the data collected from the questionnaire, mean, standard deviation, and analysis of variance statistics were used. Students in postgraduate education demonstrated moderate information literacy skills. Based on institution, there were no significant differences in IL skills levels among postgraduate education students. Furthermore, female postgraduate education students exhibited more information literacy skills than their male counterparts. In addition, master's and Ph.D students showed significant differences in information literacy skills, with Ph.D students demonstrating more IL skills than master's students. It was recommended, among other things, that university management organize workshops for postgraduate education students from time to time to enhance their information literacy skills.

*Keywords:* Information literacy skills, Library skills, Postgraduate students.

## **INTRODUCTION**

Information literacy (IL) refers to the ability to recognize how to engage oneself in the digital world, describe the type of information required, discover the needed information, derive meaning from it, evaluate its credibility, assess its influence, and understand one's role in scholarly communication in the digital world (Madison College Libraries, 2021). Information literacy is defined by the American Library Association (2000) as a set of skills that require people to recognize and find required information at the right time and to assess and utilize such information effectively. In addition, information literacy includes an integrated set of abilities that include the reflective discovery of information, an understanding of how information is produced and valued, as well as the use of information to create new knowledge and to participate ethically in communities of learning (Association of College and Research Libraries, 2016). Skyline College (2002) noted that information literacy is the ability to synthesize research, critical thinking, computer technology, and communication skills to solve problems. As Taylor and Dalal (2017) explained, information literacy skills are the abilities that enable people to identify relevant information sources using different search criteria.

Information literacy skills are often determining factors that affect the academic growth and research abilities of postgraduate students across disciplines. Because of the lack of literature about postgraduate education students' information literacy in Nigeria, little is known about the skills they possess. Information literacy skills are generally necessary for postgraduate students to successfully use online library resources and conduct research. A growing concern, however, is postgraduate students' nonchalant attitude towards workshops, seminars, classes, and orientation programs organized by the postgraduate school and university library on information literacy (Omeluzor, Bamidele, Onuoha, & Alarape, 2013). Additionally, research indicates that postgraduate education students face challenges with

information literacy skills as a result of the overwhelming number of information sources available to them and the absence of institutional support for native scholars (Switzer & Perdue, 2011). According to Sosin and Deleo (2005), most postgraduate education students do not possess sufficient knowledge of how to use appropriate technology skills to search, evaluate, and use scientific literature. According to Deleo, Eichenholtz, and Sosin (2009), most postgraduate education students are not familiar with the basics of online library classification and cataloging. Without the ability to use information literacy skills, it has become increasingly difficult to achieve academic goals since information literacy has been shown to boost people's ability to become independent life-long learners (Ranaweera, 2008).

Students learn problem-solving and critical thinking skills through information literacy (Scottish Information Literacy Project, 2013). Students who can utilize different materials to distinguish credible sources from elements that can affect their authenticity could be considered information literate, according to the Association of College and Research Libraries (2016). Information-literate students can also recognize that even though research outputs and scholars in certain specializations are widely acknowledged, other scholars may question the legitimacy of their work. When students are information literate, they recognize that scientific content can be derived from both formal and informal sources, including media sources. An information literate student is aware that they are on a path to building their own authoritative voice within their field of study that includes some professional and ethical responsibilities. Additionally, students who possess information literacy are able to comprehend that the information environment is rapidly developing into a social network where scholars are able to connect and share authoritative content with one another. Students who are information literate are capable of developing and sustaining an open mind when confronted with a wealth of diverse and often conflicting ideas, and inspire themselves to identify scholarly sources taking into account that these sources can be presented in a variety

of formats. When students possess information literacy, they can comprehend the need for conducting content evaluation and have some reservations about it, as well as acknowledge their own prejudices and values. Information literacy allows students to challenge conservative perspectives and acknowledge the relevance of information diversity. Students who are information literate know that being positive towards information diversity requires regular self-audits (Association of College and Research Libraries, 2016). Ranaweera (2008) argues that the explosion of information has led to a growing inability for students to find, assess, utilize and disseminate information. The rapid growth of internet services has led to a lack of evaluation of several information sources, which result in a lack of originality, accuracy, and consistency. A study by Dorvlo and Dadzie (2016) found that many postgraduate students lack adequate information literacy skills. In this study, the information literacy skills of postgraduate students in selected Nigerian public universities were assessed.

### **Research Objectives**

The purpose of this study is to assess the information literacy skills of postgraduate students in public Nigerian universities. The study specifically sought to determine the following:

1. The level of information literacy among postgraduate education students by institution.
2. The difference in information literacy skills between male and female postgraduate education students.
3. The difference between master's and Ph.D students' information literacy abilities.

### **Research Questions**

1. What is the level of information literacy among postgraduate education students by institution?

2. What is the difference in information literacy skills between male and female postgraduate education students?
3. What is the difference between master's and Ph.D students' information literacy abilities?

### **Research Hypothesis**

1. The level of information literacy skills among postgraduate education students is not significantly different by institution.
2. There is no significant mean difference in information literacy skills between male and female postgraduate education students.
3. There is no significant difference in information literacy skills between master's and Ph.D students.

### **METHOD**

This descriptive survey sampled 412 postgraduate education students from three Nigerian public universities (University of Nigeria, University of Benin, and Federal University, Oye). Using the simple random method, 137 graduate students from the faculty of education at the University of Nigeria (UNN), 138 graduate students from the University of Benin (UNIBEN), and 137 graduate students from the Federal University, Oye (FUO) were selected. In terms of their geographical locations, UNN is located in the south-east part of Nigeria, whereas UNIBEN is in the south-south and FUO is in the south-west.

The faculty of education research ethics committee, University of Nigeria, granted permission for this study to be conducted. Informed consent was obtained from all the postgraduate education students who took part in this study. Respondents' ages ranged from 24 to 50. The Perception of Information Literacy Scale (PILS) developed by Doyle, Foster, and Yukhymenko-Lescroart (2019) was used for data collection. The PILS is a 7-point Likert scale instrument: 1 = novice, 2 = advanced novice, 3 = emerging, 4 = advanced emerging, 5 =

developing, 6 = advanced developing, and 7 = expert with 7 clusters(Authority is constructed and contextual =6 items, Information creation as a process=5 items, Information has value=5 items, Research as inquiry =5 items, Scholarship as conversation =4 items, Searching as strategic exploration – tools & tasks =6 items, and Searching as strategic exploration – mindset =5 items ) containing a total of 36 items. There were significant factor loadings ranging from .81 to .95. The Cronbach's alphas ranged from .94 to .97, indicating high reliability and convergent validity (Doyle, Foster, Yukhymenko-Lescroart, 2019).

Two research assistants assisted with the administration and retrieval of the PILC to the targeted group. Every administered instrument was retrieved on the spot in order to minimize loss. However, only the data from 405 respondents (98.3%) were included in the analysis, while 7 respondents (1.7%) were excluded due to incomplete data. The research questions were answered with the mean and standard deviation, while the hypotheses were tested with analysis of variance at a 0.05 significant level.

## RESULTS

Research Question 1: What is the level of information literacy skills among postgraduate education students by institution?

Table 1: Mean information literacy skills among postgraduate education students by institution

Institution	Mean	Standard Deviation	N
University of Nigeria	3.09	0.29	139
University of Benin	3.12	0.25	137
Federal University Oye	3.08	0.23	129
Total PILS scores	3.09	0.26	405

As shown in Table 1, postgraduate education students from UNN had a mean IL skills score of 3.09 with a standard deviation of 0.29; postgraduate education students from UNIBEN had a mean IL skills score of 3.12 with a standard deviation of 0.25; and

postgraduate education students from FOU had a mean IL skills score of 3.08 with a standard deviation of 0.23. It appears that postgraduate education students from the sampled universities had similar opinions about their IL skills. The overall PILS score of 3.09 and the standard deviation of 0.26 among postgraduate education students suggest that they have moderate information literacy skills.

Research Question 2: What is the difference in information literacy skills between male and female postgraduate education students?

Table 2: Mean information literacy skills among postgraduate education students in the studied universities by gender

Gender	Mean	Standard Deviation	N
Male	3.01	0.26	194
Female	3.18	0.22	211

Table 2 also revealed a mean difference in information literacy skills between male ( $3.01 \pm 0.26$ ) and female postgraduate education students, with females ( $3.18 \pm 0.22$ ) demonstrating greater IL skills. As indicated by differences in standard deviation scores, male and female postgraduate education students at the sampled universities felt differently about their literacy skills.

Research Question 3: What is the difference in information literacy skills between master's and Ph.D students?

Table 3: Mean difference among postgraduate education students in information literacy skills between master's and Ph.D students.

Program type	Mean	Standard Deviation	N
Ph.D	3.14	0.29	127
Master's	3.08	0.24	278

Table 3 shows a mean difference in information literacy skills between master's and Ph.D students, with Ph.D students ( $3.14 \pm 0.29$ ) demonstrating more skills than master's



students ( $3.08 \pm 0.24$ ). The standard deviation scores suggest that master's and Ph.D students from the sampled universities had differing opinions about their IL skills.

Hypothesis 1: The level of information literacy skills among postgraduate education students is not significantly different by institution.

Table 4: Analysis of variance for the mean difference in the level of information literacy skills among postgraduate education students by institution

			Sum of Squares	df	Mean Square	F	Sig.
Overall PILS score	Between	(Combined)	.114	2	.057	.858	.425
* Institution	Groups						
	Within Groups		26.741	402	.067		
	Total		26.855	404			

Based on the F-test analysis, Table 4 shows the mean level of information literacy skills among students enrolled in postgraduate degree programs by institution. There was an F-value of .858 with degrees of freedom 2,404 and a significant value of .425. As such, the results suggest that the level of information literacy skills among postgraduate education students was not significantly different by institution ( $F(2,404)=.858, p=.425, \eta^2=0.065$ ). The null hypothesis is therefore accepted that the level of information literacy skills among postgraduate students is not significantly different by institution.

Hypothesis 2: There is no significant mean difference in information literacy skills between male and female postgraduate education students.

Table 5: Analysis of variance for the mean difference in information literacy skills between male and female postgraduate education students

			Sum of Squares	Df	Mean Square	F	Sig.
Overall PILS score *	Between Groups	(Combined)	2.991	1	2.991	50.52	.000
Gender	Within Groups		23.864	403	.059		
	Total		26.855	404			

The F-test analysis in Table 5 compares the mean difference between male and female postgraduate education students' information literacy skills. A F-value of 50.52 with degrees of freedom 1,404 and a significance level of .000 were obtained. Consequently, the results revealed that there was a significant mean difference between male and female students in terms of information literacy skills ( $F(1,404)=50.52$ ,  $p=.000$ ,  $\eta^2=0.33$ ). In this sense, the null hypothesis, which asserts that there is no significant difference in information literacy skills between male and female students of postgraduate education, is rejected.

Hypothesis 3: There is no significant difference in information literacy skills between master's and Ph.D students.

Table 6: Analysis of variance for the mean difference in information literacy skills between master's and Ph.D students

			Sum of Squares	df	Mean Square	F	Sig.
Overall PILS score *	Between Groups	(Combined)	.297	1	.297	4.50	.034
Program type	Within Groups		26.558	403	.066		
	Total		26.855	404			

An F-test is used in Table 6 to analyze the mean difference between master's and PhD students in terms of information literacy. The F-value was 4.50 with 1,404 degrees of freedom and a significant value of 0.034. Therefore, the results indicated that there was a

significant difference in information literacy skills between master's and Ph.D students, with Ph.D students demonstrating more IL skills ( $F(1,404)=4.50$ ,  $p=0.034$ ,  $\eta=0.11$ ). Therefore, the null hypothesis, that there is no significant difference in information literacy skills between master's and Ph.D students, is rejected.

## **DISCUSSION**

Information literacy skills of postgraduate education students of public universities in Nigeria were assessed in this study. A moderate level of information literacy skills was found among postgraduate education students. Postgraduate education students showed similar levels of information literacy regardless of the institution. Dorvlo and Dadzie (2016) also discovered that some postgraduate students do not possess sufficient information literacy skills. In Lampert (2005)'s opinion, most postgraduate students do not fully appreciate the relevance of information literacy. Islam and Tsuji (2010) found that postgraduate students needed more training to improve their information literacy skills. Murry, McKee, and Hammons (1997) recommended a synergy between university library authorities and the postgraduate school to train postgraduate students on the use of different resources to improve their information literacy skills.

The study observed that there were significant differences between the information literacy skills of male and female postgraduate education students, with the females demonstrating greater skills. This finding concurs with Michalak, Rysavy, and Wessel (2017), who reported that female students perceived themselves as being better at information literacy than male students. According to Taylor and Dalal (2017), female students are more confident about their ability to evaluate scholarly content than their male counterparts. Additionally, the researchers found that male students were fairly discerning when deciding whether authoritative content from the Internet was reliable and authentic. Females slightly outperformed the males in the study by Punter, Meelissen, and Glas (2017) when it came to

demonstrating information literacy skills. In spite of these results, Liu and Sun (2012) found no gender differences in information literacy among students.

Additionally, there were significant differences in information literacy skills between master's and Ph.D students, with Ph.D students demonstrating more skills. It is in line with the findings of Kousar and Mahmood (2015), who found that doctoral students possess greater information literacy skills than master's students. Harrington (2009), however, showed that master's students were more likely to demonstrate information literacy skills than doctoral students. As a result, the current research suggests that students need good information literacy skills in order to be successful. University management, in conjunction with ICT library staff, is strongly recommended to organize workshops for postgraduate students on information literacy from time to time.

The motivation for females possessing more skills needs to be explored. Further research on this topic will enhance the body of knowledge. As male postgraduate students showed lower levels of information literacy, it could be argued that applying a problem-based learning model could help improve their skills in this area, as suggested by Mahanal, et al. (2020). Lecturers should engage students in online academic activities that can enhance the development of their information literacy skills at the master's level. Collaboration between university librarians, faculty, and graduate students can positively affect students' attitude towards information literacy (Switzer & Perdue, 2011). The fact that postgraduates have a moderate level of information literacy skill implies that the university administration needs to exert more effort to improve the students' IL skills.

In the data collection process for this study, there were challenges such as lack of enthusiasm on the part of postgraduate students about IL skills, resulting in some of them not completing the questionnaire, and others, providing incomplete responses to the questions. The survey design of this study may have led some students to underestimate or overestimate

the problem. It is suggested that future researchers could use behavioral incentives as a way of encouraging postgraduate students to participate in IL skills studies. In future research, information literacy skills can be examined among pre-service and in-service teachers.

## **CONCLUSION**

At the universities studied, there is a moderate level of information literacy skills among postgraduate education students. The level of information literacy among postgraduate education students did not differ significantly by institution. The information literacy skills of male and female postgraduate education students differ significantly, with females demonstrating more IL skills. Master's and Ph.D students also demonstrated different levels of information literacy skills, with Ph.D students demonstrating higher levels of IL skills than master's students. Postgraduate education students must possess adequate information literacy skills to succeed academically. To improve these postgraduate students' information literacy skills, university management, together with the library staff, should organize frequent workshops. The finding that female postgraduates have a higher level of IL skills suggests that postgraduate students need to be engaged through a problem-solving model by the university leadership and the library in order to help reinforce IL skills in male postgraduate students.

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