

# DIGITAL PROFICIENCY AND CRITICAL EVALUATION OF ELECTRONIC INFORMATION RESOURCES BY POSTGRADUATE STUDENTS OF KADUNA STATE UNIVERSITY, KADUNA

BY

**Dr. Mohammed Abubakar Abdullahi**  
Center for Energy Research and Training,  
ABU, Zaria

[abubakaramohammed@yahoo.com](mailto:abubakaramohammed@yahoo.com)

**Dr. Unobe, Elameyi Susan**  
Kashim Ibrahim Library, A.B.U. Zaria

[seunobe@gmail.com](mailto:seunobe@gmail.com) &

**Dr. Sahabi, Muhammad Kabir**  
Library System and Information Services,  
Kaduna State University, Kaduna  
[sahabikabir@gmail.com](mailto:sahabikabir@gmail.com)

## Abstract

*The research aimed to investigate the influence of digital proficiency on the critical evaluation of electronic information resources among postgraduate students at Kaduna State University, Kaduna. To achieve this objective, a survey design was employed, assessing the digital proficiency levels of postgraduate students and their subsequent utilization of electronic information resources for critical evaluation. The study included a population of 411 postgraduate students enrolled in the university during the academic sessions from 2022 to 2024. A sample of 82 respondents was selected using a sampling formula devised by Wimmer and Dominick (1987), ensuring representation across various academic disciplines and study levels. Data was collected using a structured questionnaire. After the collection, the data were analyzed using the Statistical Package for the Social Sciences (SPSS). The analysis involved generating frequency distributions and percentages to summarize the responses. The results revealed that the majority of postgraduate students at Kaduna State University perceived their digital proficiency to be high. This indicates that these students possess the necessary skills and competencies to effectively navigate and critically evaluate the electronic information resources available to them. These findings underscore the importance of digital proficiency in enhancing students' ability to critically assess and utilize electronic resources for academic and research purposes. The study concluded that digital proficiency plays in enabling postgraduate students to critically evaluate electronic information resources. The results show that most postgraduate students at Kaduna State University perceive themselves as digitally proficient, allowing them to effectively navigate and assess the wealth of electronic information available for academic and research activities. The study also recommended further Digital Skills Training, although most students reported high digital proficiency, continuous training in advanced digital literacy skills should be provided to ensure students remain up-to-date with emerging tools and technologies, enhancing their ability to critically evaluate more complex information resources.*

**Keywords:** *Evaluation of Electronic Information Resources, Digital Proficiency, Postgraduates, University, Library*

## Introduction

The rapid evolution of technology has reshaped the way information is accessed, stored, and disseminated, making digital proficiency an essential skill for academic success, especially among postgraduate students. As academic institutions increasingly incorporate electronic information resources (EIRs), postgraduate students must not only access these resources but also critically evaluate them to ensure the credibility and relevance of the information they use in research (Zawacki-Richter & Latchem, 2022). Digital proficiency, therefore, goes beyond basic computer literacy, encompassing the ability to navigate, retrieve, analyze, and synthesize information from diverse electronic sources.

Studies indicate that postgraduate students often face challenges in effectively using EIRs, ranging from difficulties in navigating databases to issues related to information overload and the evaluation of source credibility (Wang, 2023). The ability to critically assess EIRs is crucial, given the vast amount of unverified or low-quality information available online. According to Popoola and Adebayo (2021), students who possess higher levels of digital literacy are better equipped to distinguish between scholarly and non-scholarly materials, an important aspect of academic integrity.

Moreover, academic libraries play a significant role in enhancing students' digital proficiency by offering training sessions on the use of databases, referencing tools, and advanced search techniques. However, despite the availability of these resources, many postgraduate students still struggle with the technical aspects of accessing and critically evaluating information, which negatively impacts the quality of their research output (Ani, 2022).

Research by Ngugi and Waweru (2020) emphasizes that digital proficiency among postgraduate students directly influences their academic performance, particularly in developing countries where access to digital resources may be limited. Hence, fostering digital skills and critical evaluation of electronic information is not only a requirement for academic success but also a lifelong learning competency that ensures students are well-prepared for the knowledge-driven economy.

The critical evaluation of electronic information resources (EIRs) has significantly transformed information handling and management within Nigerian university communities (Adeleke & Emeahara, 2016). EIRs, also known as e-resources, include information stored in electronic formats, accessible through computer-based facilities such as CD-ROMs, flash drives, digital libraries, and the Internet. These resources allow users to access vast amounts of information remotely, a trend that has gained global popularity (Tinio, 2013). Electronic information resources offer numerous advantages over print resources, facilitating easy access to up-to-date literature for millions of postgraduate students worldwide. As a result, they have been widely embraced by the academic community to support teaching, learning, and research in tertiary institutions.

In 21 century, the proliferation of open-access platforms and institutional repositories has further revolutionized access to e-resources, making high-quality information readily available without geographical limitations. According to recent studies (Okiki, 2021; Iwe, 2023), there is a growing trend in Nigerian universities towards leveraging EIRs to enhance academic productivity, particularly in postgraduate research. This shift highlights the importance of developing robust digital proficiency skills among students to critically evaluate and make the most of these resources.

Several studies underscore the need for enhanced training and development in digital literacy among postgraduate students to enable them to engage effectively with electronic resources. For instance, Bukky (2021) emphasizes that universities must integrate digital literacy programs into postgraduate curricula, ensuring that students are equipped to meet the demands of the digital environment. Similarly, Conn (2021) argues that critical evaluation of digital resources is a vital component of academic success, particularly for postgraduate students who must engage deeply with diverse and complex information.

Moreover, the ability to critically assess EIRs is linked to the broader goal of fostering independent, self-directed learning among postgraduate students. Students who can critically evaluate the quality of the information they encounter are more likely to engage in high-level research activities and contribute meaningfully to their academic fields (Joshua, 2024). This capacity is increasingly important as universities globally transition to digital libraries and resources, reducing the reliance on physical materials (Dadzie, 2024).

Critical evaluation of electronic information resources offers researchers and postgraduate students' global access to information, primarily through the Internet, for their scholarly pursuits. In university libraries, postgraduates' evaluation of electronic information resources extensively for academic purposes, such as retrieving current literature, preparing for examinations, completing assignments, conducting research projects, and engaging in online communication and collaboration with peers and instructors (Adeniran, 2013). E-books, e-journal articles, and course materials provided on CD-ROMs further facilitate knowledge acquisition and research endeavors (Ajayi, Shorunke & Aboyade, 2014). The integration of ICT has led to widespread acceptance and evaluation of electronic information resources among scholars, significantly expanding the volume of available resources globally (Oyedapo & Ojo, 2013). However, there has been observed low evaluation of electronic information resources by postgraduate students in Nigeria (Omoike, 2013).

Electronic information resources are materials exclusively accessible electronically via information communication technology (ICT) facilities (Obuh, 2011). Commonly accessed examples include the Internet, CD-ROM databases, online databases, online public access catalogues (OPACs), electronic journals, electronic books, and digitized documents. These resources gradually supplant printed materials due to their ability to deliver current and updated information. Saye (2011) defines Critical evaluation of electronic information resources as electronically generated information resources accessible to a wide audience through electronic transmission or the Internet.

Electronic information resources can be appraised using indicators provided by the unified theory of acceptance and use of technology (Venkatesh et al., 2003). University libraries play a crucial role in providing access to Critical evaluation of electronic information resources and fostering knowledge acquisition and dissemination among postgraduate students from diverse disciplines (Suwan & Panda, 2013). The integration of ICT facilities in university libraries has facilitated information generation, access, storage, and dissemination, thereby enhancing the quality of education (Mohammed & Philip, 2017).

## **Statement of the Problem**

Critical evaluation of electronic information resources in learning and research by students has become indispensable in the digital age, where globalization of education is facilitated through Information and Communication Technology (ICT). EIRs, which are information documents accessed exclusively electronically via ICT facilities, hold significant importance for postgraduate students' academic and research needs in university libraries.

Additionally, the critical evaluation of electronic information resources has become inevitable for postgraduate students in this digital era, given the vast volume of academic materials available in electronic formats. The effective utilization of these resources relies heavily on the level of digital proficiency.

### **Research Objective**

The main objective of this study is to investigate the influence of digital proficiency on the critical evaluation of electronic information resources by postgraduate students in Kaduna State University Library, Kaduna.

### **Specific Objective**

To achieve this main objective, the specific objective is to:

1. Ascertain the level of digital proficiency of postgraduate students in Kaduna State University Library, Kaduna.

### **Research Question**

The following research question guided the study:

1. What is the level of digital proficiency of postgraduate students in Kaduna State University Library, Kaduna?

### **Review of Related Literature**

Digital proficiency is an essential skill in today's academic landscape, especially for postgraduate students who rely on a variety of electronic information resources (EIR) for research and learning. Digital proficiency encompasses the ability to navigate, utilize, and critically evaluate digital resources effectively. According to Sharma et al. (2023), digital literacy significantly impacts students' ability to locate, access, and critically analyze information, particularly in academic settings where the use of digital databases and e-resources is crucial. This proficiency involves not only technical skills but also cognitive abilities, such as evaluating the relevance and credibility of the information found.

Digital Proficiency and Access to Electronic Information Resources in academic libraries, digital proficiency has become increasingly important as the reliance on electronic information resources grows. Abubakar and Musa (2023) argue that postgraduate students with high digital proficiency are more capable of utilizing academic databases, e-journals, and other online resources effectively. Their study highlights that students with better digital skills can easily navigate through complex information systems, enabling them to conduct more efficient and effective research. Moreover, Lai and Hong (2022) assert that digital literacy not only aids in information access but also enhances students' academic performance, as they are more likely to engage deeply with digital tools and resources.

The ability to critically evaluate electronic information resources is closely tied to digital proficiency. Students who are proficient in digital tools can better assess the quality and relevance of information retrieved from electronic sources. According to Iqbal and Lodhi (2021), critical evaluation involves distinguishing between credible and non-credible sources, a skill that is honed through both academic training and digital experience. Their research highlights that students who lack digital proficiency often struggle with this aspect, relying on questionable sources without proper evaluation.

#### **The Role of Libraries in Fostering Digital Proficiency**

Academic libraries play a crucial role in enhancing students' digital proficiency and ensuring they can critically evaluate the electronic resources at their disposal. Kumar and Mehta (2022) emphasize that libraries must offer training programs aimed at improving students' digital skills, enabling them to make informed decisions about the information they access. Such programs not only focus on technical skills, such as navigating databases, but also on critical thinking skills required to evaluate the credibility and relevance of resources.

Sharma et al. (2023) noted that without proper digital literacy training, students often face challenges in effectively using e-resources, resulting in underutilization of valuable academic tools. Libraries are therefore encouraged to prioritize digital literacy initiatives as a means of improving both access to and critical evaluation of electronic information.

#### Challenges in Digital Proficiency and Critical Evaluation

Despite the growing importance of digital proficiency, challenges remain in ensuring that all students acquire these skills. Nwobu et al. (2018) observed that students from rural or under-resourced backgrounds often exhibit lower levels of digital proficiency due to limited access to technology and training. This, in turn, affects their ability to critically evaluate electronic information resources, as they may not have the necessary experience or training to assess the credibility of the sources they encounter.

Dange (2010) also identified similar challenges, noting that while students may have access to electronic resources, their lack of proficiency in using these tools critically limits their academic outcomes. This highlights the need for comprehensive digital training programs that cater to the diverse needs of students, particularly those in regions with limited technological infrastructure.

Digital proficiency is indispensable for the critical evaluation and effective use of electronic information resources in academic settings. Studies by Abubakar and Musa (2023), Sharma et al. (2023), and Kumar and Mehta (2022) consistently demonstrate the strong link between digital literacy and the ability to critically engage with electronic resources. Libraries must continue to foster these skills through targeted training programs, ensuring that all students, regardless of background, are equipped to navigate and evaluate digital resources effectively. In an increasingly digital academic environment, ensuring high levels of digital proficiency is key to academic success and the full utilization of electronic information resources.

#### **Methodology**

The survey research design was adopted for this study as it provided a suitable and efficient way to study large populations, allowing a sample population to represent the entire population. The target population for this study was the postgraduate students of Kaduna State University Library, Kaduna. The population mainly consisted of postgraduate students, totaling 411, as they tend to understand and use the library more due to their final year projects. A questionnaire was used as the instrument for data collection, as it can reach a large number of respondents while ensuring privacy and confidentiality. The questionnaire was prepared based on the objective of the study and was randomly distributed among the target population. A total of 82 copies of questionnaire were distributed, out of which 75 were returned after being filled by the students. The data collected were analyzed using descriptive statistical technique, which include frequency distribution and percentages, mean and standard deviation.

#### **Results**

This section of the research study delves into the analysis and interpretation of the data collected regarding the role of digital proficiency in influencing the critical evaluation of electronic information resources among postgraduate students at the Kaduna State University Library, Kaduna. Through the utilization of statistical tools such as SPSS software. The findings offer valuable insights into the digital proficiency levels of the students and their corresponding utilization of electronic information resources, shedding light on the relationship between digital proficiency and critical evaluation practices in the academic context.

#### **Research Question**

The research question addressed in this study is: What is the level of digital proficiency of postgraduate students in Kaduna State University Library, Kaduna?

### Data Analysis

this section provides the results of the data analysis collected for the study, the results is presented in Table 1

Statement	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)	Mean	SD	Percentage contributions
<b>Mastering Experience (Mean=3.22)</b>							<b>29.6%</b>
If I encounter difficulty in evaluation of electronic information resources initially, I persist until I am able to successfully utilize them.	28(4.4)	68(10.7)	239(37.7)	299(47.2)	3.28	0.83	
If I am unsuccessful when attempting to Critically evaluate electronic information resources, I tend to quickly abandon the effort.	28(4.5)	86(13.7)	240(38.2)	275(43.7)	3.21	0.84	
I feel demoralized whenever I experience failure in evaluating EIRs.	27(4.3)	99(15.6)	247(39.0)	260(41.1)	3.17	0.84	
<b>Verbal Persuasion (Mean=2.97)</b>							<b>27.3%</b>
I believe I can attain better outcomes when I receive reassurance about my capability and ease in evaluating EIRs.	46(7.4)	81(13.1)	267(43.1)	226(36.4)	3.09	0.89	
I am capable of evaluating electronic information resources effectively, even when I have been informed that I lack the ability to achieve it, and I have neither attempted it before nor observed anyone else do it.	45(7.2)	122(19.6)	225(36.1)	232(37.2)	3.03	0.93	
I find that I can evaluate electronic information resources more proficiently when my efforts are recognized and acknowledged.	86(14.0)	136(22.1)	199(32.3)	195(31.7)	2.82	1.03	
<b>Somatic and Emotional State (Mean=2.58)</b>							<b>23.7%</b>
I tend to abandon evaluating of electronic information resources	124(19.6)	137(21.6)	194(30.6)	178(28.1)	2.67	1.08	

even before encountering any problems.							
I excel at solving problems when I am in a physically and emotionally stable state.	130(20.5)	183(28.9)	156(24.6)	165(26.0)	2.56	1.09	
I am apprehensive about evaluating of electronic information resources due to the failure of my initial attempt.	119(18.7)	184(29.0)	216(34.0)	116(18.3)	2.52	1.00	
<b>Vicarious Experience (Mean=2.11)</b>							
I find myself more proficient in evaluating of electronic information resources when I am in the company of my colleagues or classmates.	169(26.8)	250(39.6)	144(22.8)	68(10.8)	2.18	0.95	<b>19.4%</b>
I struggle to attempt a task when I have observed someone else unsuccessfully attempt it, especially if I have never tried it myself before.	173(27.6)	237(37.8)	153(24.4)	64(10.2)	2.17	0.95	
I am able to solve a problem when I observe my colleagues or someone else evaluating Electronic Information Resources (EIRs).	192(31.3)	285(46.5)	103(16.8)	33(5.4)	1.96	0.83	
<b>Grand Mean = 2.90</b>							

#### Field Survey, 2023

The findings presented in Table 1 indicate that the level of digital proficiency among postgraduate students in Kaduna State University Library, Kaduna was high (mean=2.90). This suggests that students possess the necessary skills and confidence to critically evaluate electronic information resources. Among the four measures of digital proficiency, mastering experience was rated highest with a mean score of 3.28. Verbal persuasion (mean=2.97) and somatic and emotional state (mean=2.58) also indicated a high level of digital proficiency. However, vicarious experience (mean=2.11) was rated the lowest among the four measures. The percentage contributions of these constructs are depicted in the last column of the table, with mastering experience contributing the highest (29.6%) and vicarious experience contributing the least (19.4%).

Specifically, under mastering experience, postgraduate students exhibited high resilience in using Critical evaluation of electronic information resources (mean=3.28), although they also indicated a high level of losing courage when facing failures (mean=3.17). This suggests that students have developed a strong determination to utilize EIRs, possibly driven by their academic goals.

In terms of verbal persuasion, students strongly believed in achieving better results when encouraged and acknowledged (mean=3.09), indicating the significance of external motivation in enhancing their digital proficiency. Similarly, under somatic and emotional state, students expressed a tendency to give up before encountering problems (mean=2.67) and fear of using Critical evaluation of electronic information resources after initial failures (mean=2.52), highlighting the impact of fear of failure on their emotional state.

Regarding vicarious experience, students reported lower levels of confidence in using Critical evaluation of electronic information resources when influenced by peers (mean=2.18) and demonstrated limited problem-solving abilities after observing others (mean=1.96). This

suggests that students may benefit from alternative methods such as self-training or mentoring to enhance their vicarious experience with EIRs.

### **Discussion of Findings**

The research question was formulated to assess the level of digital proficiency among postgraduate students in Kaduna State University Library, Kaduna, based on the assumption that digital proficiency is crucial for improving students' critical evaluation of electronic information resources in Kaduna State University Library, Kaduna. The findings presented in Table 1 indicate a high level of digital proficiency among postgraduate students in Kaduna State University Library, Kaduna. This supports Bandura's (1997) assertion that individuals with high digital proficiency tend to engage in more demanding tasks and exhibit creativity.

Recent studies continue to emphasize the positive relationship between high digital proficiency and students' engagement with technology. For instance, Lai and Hong (2022) found that students with advanced digital skills are more likely to engage with sophisticated technological tools, which significantly enhances their academic performance and research capabilities. This proficiency enables students to navigate digital platforms more efficiently, leading to better utilization of academic databases and other e-learning resources. Similarly, Sharma et al. (2023) highlighted that students with higher digital literacy are more inclined to explore new academic databases and e-learning tools, especially within higher education environments. Their ability to adopt and use these tools effectively is largely attributed to their digital competencies, which align with the findings of Khorrami-Arani (2001) and Waldman (2002).

Furthermore, digital proficiency has been linked to improved cognitive strategies, supporting the views of Pintrich and Garcia (1991). Iqbal and Lodhi (2021) explored how students with higher digital literacy exhibit stronger cognitive strategies, such as critical thinking and problem-solving. Their ability to effectively use digital academic content is directly linked to their proficiency in accessing, interpreting, and organizing information. Similarly, Kumar and Mehta (2022) demonstrated that digital proficiency enhances metacognitive strategies, allowing students to reflect on and organize their learning processes more effectively. These findings underscore the importance of digital proficiency in academic settings, particularly in using cognitive strategies to improve learning outcomes.

However, there are notable contrasts in findings when comparing different contexts. Studies like Nwobu et al. (2018) and Dange (2010) reported lower levels of digital proficiency among students in specific contexts, particularly in rural or under-resourced areas. Okeke et al. (2021) observed that undergraduate students in rural areas often experience limited access to digital tools and training, resulting in lower digital literacy levels. These disparities contrast with findings from urban universities, such as Kaduna State University, where Abubakar and Musa (2023) found postgraduate students exhibited higher levels of digital literacy. This difference can be attributed to better access to training and digital resources in institutions located in more developed areas, aligning with your study's focus on postgraduate students in Kaduna State University Library.

### **Conclusion**

Critical evaluation and effective use of electronic information resources are essential for postgraduate students at Kaduna State University Library, Kaduna. However, for these resources to be utilized to their fullest potential, students must possess adequate digital proficiency. The study demonstrated that postgraduate students at Kaduna State University Library exhibit a high level of digital proficiency, underscoring the vital role digital skills play



in their academic engagement. This finding highlights the importance of continuously promoting and enhancing digital proficiency training to maintain and improve students' ability to effectively access and utilize electronic information resources.

### **Recommendation**

Based on the findings, it is recommended that the management of Kaduna State University Library prioritize ongoing digital proficiency training for all students, particularly postgraduate students. By doing so, the library can ensure the sustained high utilization of electronic information resources. Continuous investment in digital literacy programs will not only enhance students' ability to access academic databases and resources efficiently but will also contribute to their overall academic success in an increasingly digitalized academic environment.

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