

DIGITAL SKILLS AND RESEARCH SKILLS AS INFORMATION USERS' CHARACTERISTICS FOR EFFECTIVE UTILIZATION OF DIGITAL LIBRARY BY LECTURERS IN PUBLIC UNIVERSITIES IN ANAMBRA STATE

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Abstract: The study investigated digital skills and research skills as information users' characteristics for effective utilization of digital library by lecturers in public universities in Anambra State. Two research questions guided the study and two hypotheses were tested at 0.05 level of significance. The study adopted the descriptive survey research design. The population of the study comprised 128 lecturers in the Department of Educational Management, Faculty of Education in Nnamdi Azikiwe University, Awka and Department of Educational Foundations in Faculty of Education in Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus. The entire population of the study was used without sampling because the population of the study was manageable. Two structured validated questionnaires were used to collect data for the study. The reliability of the instrument was achieved through a trial test. To achieve this, copies of the instrument were administered on 20 lecturers in Delta State. The data were collated to determine the internal consistency of the items of the instrument. The reliability coefficient of 0.89 and 0.80 were obtained for clusters 1 and 2 respectively with an overall reliability co-efficient of 0.85 for IUCQ and reliability coefficient of 0.87 was attained for EUELQ. The data collected for the study was analyzed using mean, standard deviation and one sample t-test. Finding of the study revealed that users' digital skills and research skills are information users' characteristics for effective utilization of electronic library by lecturers in public universities in Anambra State. It was also revealed that users' digital skills and research skills are significantly effective for the utilization of electronic library by lecturers in public universities in Anambra State. The researcher recommended that lecturers in public universities should proactively engage in continuous digital literacy and research skills development through workshops, seminars and self-directed learning.

Keywords: Digital Library, Digital Skill, Information Users Characteristics, Research Skill, Universities

Introduction

Information serves as the bedrock of every progressive society, underpinning advancements in education, research and socio-economic development. In the contemporary digital era, the accessibility and effective utilization of information are pivotal for innovation and societal transformation. Information is life because it provides the foundation upon which knowledge is built, decisions are made and progress is attained (Ugwulebo & Okuonghae, 2021). The role of information users is central in this dynamic ecosystem. In today's digitally-driven world, one

of the primary means of accessing electronic information is through the use of electronic libraries. These libraries play an essential role in academic settings, where their consistent utilization by users significantly contributes to the success of scholarly activities. For lecturers, students and researchers, electronic libraries have become indispensable tools, supporting various academic functions such as teaching, learning and research.

An electronic library is defined as a system that delivers both primary and secondary information in digital formats via communication networks, serving as a critical platform for academic engagement (Bankole et al., 2023). Ofordile et al. (2019) stated that an electronic library may operate with minimal physical infrastructure, such as books, journals, reading rooms, or staff and instead delivers information directly to dispersed users through electronic means. Common resources available in electronic libraries include CD-ROM databases, email services, Online Public Access Catalogues (OPAC) and Internet browsing facilities (Eravwoke, 2018). The role of electronic libraries in academia has grown significantly, particularly among university lecturers who depend on these digital resources for access to vast and current scholarly content. To fully leverage the advantages of electronic libraries, it is crucial to examine the attributes and competencies of their users especially lecturers in universities in Nigeria, since these user characteristics can greatly influence the extent and effectiveness of digital library utilization.

An information user can be described as an individual who actively seeks, receives and utilizes information, regardless of their age, gender, or occupational status. According to Madu et al. (2019), information users can be categorized based on several factors such as their profession, educational background, gender, geographical location and language. Each of these categories tends to have distinct approaches to accepting and using information. Consequently, information professionals have long been interested in identifying the factors that motivate individuals to search for and engage with information. In order to encourage more effective use of library resources, especially electronic resources, it is important to understand the specific traits that influence usage behavior. These traits are commonly referred to as user characteristics. Iyishu (2019) identified several of these characteristics, including demographic factors such as age and gender, environmental influences, frequency of library visits, as well as users' levels of self-efficacy, skill and experience.

In essence, user characteristics are the various personal attributes and competencies that define how individuals or groups interact with information systems and digital technologies. These characteristics may include education level, cultural background, language proficiency, technological ability, cognitive skills and academic discipline. In the present study, the primary user characteristics that may influence how lecturers use electronic libraries include their digital skills and research skills.

Digital skills is another important concept that refers to an individual's ability to understand media content, search for information critically and engage with the broader knowledge society through various digital platforms. Udoh et al. (2020) stated that digital skills involve not only technical knowledge but also the appropriate attitudes and communication skills needed to function effectively in a digital environment. Kaeophanuek et al. (2018) described digital skills in terms of three key proficiencies. The first involves knowledge of digital tools and technologies, the second includes the ability to apply relevant digital skills and the third relates to the development of critical thinking and responsible attitudes towards the use of technology.

In addition to digital skills, digital skills refer to the technical abilities needed to manage and use information and communication technologies effectively. Udo et al. (2020) noted that digital skills involve the ability to collect, process, store and share information using digital devices. These skills enable lecturers and researchers to use various tools such as statistical software, internet browsers and social media to access necessary information and collaborate with others. Moreover, researchers who are proficient in digital tools can analyze data more efficiently and communicate their findings more effectively within the academic community.

Research skills are also fundamental to the successful use of electronic libraries. These skills include the ability to identify research problems, locate and evaluate relevant sources and integrate information from different materials to produce original academic work. Allahmagani and Babalola (2024) emphasized that research skills encompass all competencies required during the execution of a research project. Similarly, Easterby-Smith et al. (2019) explained that effective research involves forming clear questions, choosing appropriate keywords, assessing source credibility and citing information properly. For lecturers, developing strong research skills not only improves the quality of their research activities but also increases their motivation to explore areas of personal and professional interest more deeply. These views are theoretical and have not been empirically proven in universities in Anambra State. It is against this background that the researcher investigated digital skills and research skills as information users' characteristics for effective utilization of digital library by lecturers in public universities in Anambra State.

Statement of the Problem

Public universities in Anambra State are increasingly integrating digital library services to support academic research and teaching activities, particularly for lecturers. However, there remains a significant gap in understanding the user characteristics that may influence how effectively these digital libraries are utilized. This lack of insight into the traits of information users has limited the development of tailored strategies that could enhance the use of digital library resources among lecturers in Anambra State.

Although digital libraries offer convenient and wide-ranging access to electronic information, observations during the course of this academic engagement suggest that many lecturers are not fully leveraging the digital resources provided by their institutions. Furthermore, existing literature points to generally low levels of digital library usage among university lecturers. This raises important questions: Could this underutilization be linked to their level of digital skills and research skills? Therefore, this study investigated digital skills and research skills as information users' characteristics for effective utilization of digital library by lecturers in public universities in Anambra State.

Purpose of the Study

The main purpose of the study was to investigate digital skills and research skills as information users' characteristics for effective utilization of digital library by lecturers in public universities in Anambra State. Specifically, the study investigated:

1. lecturers' digital skills as information users' characteristics for effective utilization of digital library in public universities in Anambra State.

2. lecturers' research skills as information users' characteristics for effective utilization of digital library in public universities in Anambra State.

Research Questions

The following research questions guided the study:

1. What are the users' digital skills as information users' characteristics for effective utilization of digital library by lecturers in public universities in Anambra State?
2. What are the users' research skills as information users' characteristics for effective utilization of digital library by lecturers in public universities in Anambra State?

Hypotheses

The following hypotheses were formulated and tested at 0.05 level of significance:

1. Users' digital skill is not significantly effective in the utilization of electronic library by lecturers in public universities in Anambra State.
2. Users' research skill is not significantly effective in the utilization of electronic library by lecturers in public universities in Anambra State.

Methodology

The descriptive survey research design was adopted for the study. The study was conducted in Anambra State. The population of the study comprised 128 lecturers in the Department of Educational Management, Faculty of Education in Nnamdi Azikiwe University, Awka and Department of Educational Foundations in Faculty of Education in Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus. The entire population of the study was used without sampling because the population of the study was manageable.

The instruments that were used for data collection are two questionnaires developed by the researcher. The instruments are titled Information Users' Characteristics Questionnaire (IUCQ) and Effective Utilization of Electronic Library Questionnaire (EUELQ). The instrument on Information Users' Characteristics Questionnaire (IUCQ) has two parts A and B. Part A elicits information on the personal data of the respondents like gender and age. Part B contains 20 items spread in two clusters according to the research questions guiding the study. Cluster B1 contains 10 items on digital skills and Cluster B2 contains 10 items on research skills. The instrument is structured on a four point rating scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) with a numerical value of 4, 3, 2 and 1 respectively. Effective Utilization of Electronic Library Questionnaire (EUELQ) contains 15-item statements on effective utilization of digital library. The instrument is structured on a four point rating scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) with a numerical value of 4, 3, 2 and 1 respectively. The instruments were validated by three experts, two experts from Educational Planning and one in Library and Information Science in the Department of Educational Foundation, Faculty of Education, Chukwuemeka Odumegwu Ojukwu University, Igbariam Campus.

The reliability of the instrument was achieved through a trial test. To achieve this, copies of the instrument were administered on 20 lecturers in Delta State. The data were collated to determine the internal consistency of the items of the instrument. The reliability coefficient of 0.89 and 0.80 were obtained for clusters 1 and 2 respectively with an overall reliability co-efficient of 0.85 for IUCQ and reliability coefficient of 0.87 was attained for EUELQ.

Out of 128 copies of questionnaires administered, 109 copies were retrieved in good condition. The data collected for the study was analyzed using mean, standard deviation and one sample t-test. The mean scores obtained from the respondents were used to answer the research questions, while the standard deviation was employed to determine the degree of agreement or variation among the responses. The decision rule was based on the real limits of numbers on the four-point Likert rating scale. Accordingly, any item with a mean score of 2.50 and above was interpreted as agreement with the statement, indicating that the respondents agreed that the item was a valid characteristic or condition. On the other hand, any item with a mean score below 2.50 was interpreted as disagreement, suggesting that the respondents did not consider the item to be a valid characteristic or did not support the statement. This interpretation guideline provided a clear basis for analyzing and interpreting the respondents' views on the various indicators under investigation.

The null hypotheses in this study were tested using a one-sample t-test at the 0.05 level of significance, taking into account the appropriate degrees of freedom for each test. The decision rule guiding the interpretation of the results was based on the comparison of the calculated t-value with the critical value, as well as the p-value derived from the test. Specifically, the null hypothesis was rejected when the t-value exceeded the critical value and the p-value was less than 0.05, indicating a statistically significant difference. Conversely, the null hypothesis was not rejected when the t-value was less than the critical value or when the p-value was greater than 0.05, suggesting that there was no significant difference and the observed result could have occurred by chance. This procedure provided a rigorous statistical basis for determining the significance of the findings.

Research Question 1

What are the users' digital skills as information users' characteristics for effective utilization of digital library by lecturers in public universities in Anambra State?

Table 1: Respondents' Mean Responses on Users' Digital Skills as Information Users' Characteristics for Effective Utilization of Digital Library by Lecturers in Public Universities in Anambra State
(N=109)

S/N	Item Statements: As a lecturer, I:	Mean	SD	Remark
1	can effectively use search engines to locate relevant academic materials.	3.33	0.71	Agree
2	am proficient in using digital library databases for academic research.	3.17	0.84	Agree
3	can download, save, retrieve academic resources from the digital library.	3.28	0.70	Agree
4	can assess credibility, relevance of academic materials found online.	3.17	0.72	Agree
5	am confident in using academic software tools for research tasks.	3.09	0.75	Agree
6	can navigate the digital library portal of the university without difficulty.	3.24	0.67	Agree
7	frequently use digital tools to carry out collaborative academic projects.	3.15	0.69	Agree
8	can resolve minor technical problems when using digital academic resources.	3.12	0.78	Agree
9	regularly improve my digital literacy skills through training or tutorials.	3.05	0.74	Agree
10	understand ethical practices related to digital academic content usage.	3.18	0.78	Agree
Cluster Mean		3.18		Agree

Data in Table 1 revealed the users' digital skills for effective utilization of digital library by lecturers in public universities in Anambra State. Table 1 showed that the respondents agreed that items, 1 - 10 with mean ratings ranging between 3.05 and 3.33 are the digital skills for effective utilization of electronic library by lecturers in public universities in Anambra State. The standard deviation scores ranging between 0.67 and 0.84 indicated that the respondents' opinions were related. The mean of means of 3.18 indicated that users' digital skills are information users characteristics for effective utilization of electronic library by lecturers in public universities in Anambra State.

Research Question 2

What are the users' research skills as information users' characteristics for effective utilization of digital library by lecturers in public universities in Anambra State?

Table 2: Respondents' Mean Responses on Users' Research Skills as Information Users' Characteristics for Effective Utilization of Digital Library by Lecturers in Public Universities in Anambra State

S/N	Item Statements: As a lecturer, I:	Mean	SD	Remark
1	can formulate clear research questions to guide my search for academic materials.	3.35	0.66	Agree
2	can select relevant keywords to retrieve specific information from the e-library.	3.29	0.72	Agree
3	am able to identify appropriate sources for different academic purposes.	3.21	0.69	Agree
4	can evaluate the reliability and relevance of academic materials.	3.30	0.68	Agree
5	can summarize and integrate information from various digital sources.	3.14	0.73	Agree
6	am capable of properly citing electronic sources in academic writing.	3.22	0.70	Agree
7	can organize information collected from the e-library for academic tasks.	3.17	0.71	Agree
8	regularly use digital library resources to support my research activities.	3.28	0.67	Agree
9	am skilled in documenting and presenting research findings using electronic tools.	3.10	0.75	Agree
10	can apply appropriate research methods when using information from digital sources.	3.19	0.74	Agree
Cluster Mean		3.23		Agree

Data in Table 2 revealed the users' research skills for effective utilization of digital library by lecturers in public universities in Anambra State. Table 2 showed that the respondents agreed that items, 1 - 10 with mean ratings ranging between 3.10 and 3.35 are the research skills for effective utilization of electronic library by lecturers in public universities in Anambra State. The standard deviation scores ranging between 0.67 and 0.84 indicated that the respondents' opinions were related. The mean of means of 3.18 indicated that users' research skills are information users characteristics for effective utilization of electronic library by lecturers in public universities in Anambra State.

Hypothesis 1: Users' digital skill is not significantly effective in the utilization of electronic library by lecturers in public universities in Anambra State.

Table 3: Test of Significance on Users' Digital Skills (UDS) and Effective Utilization of Electronic Library by Lecturers (EUELL) in Public Universities in Anambra State

Variables	N	t-value	Df	p-value	Decision
UDS– EUELL	109	9.1203	108	0.000	Significant

**significant at $p < .05$*

Data in Table 3 showed the one sample t-test of lecturers on the significance of users' digital skills as an effective utilization of electronic library by lecturers in public universities in Anambra State. The result showed that the p-value of 0.000 is less than 0.05 level of significance which means that users' digital skills is significantly effective for the utilization of electronic library by lecturers in public universities in Anambra State. Based on this result, the null hypothesis was rejected. This means that users' digital skill is significantly effective for the utilization of electronic library by lecturers in public universities in Anambra State.

Hypothesis 2: Users' research skill is not significantly effective in the utilization of electronic library by lecturers in public universities in Anambra State.

Table 4: Test of Significance on Users' Research Skills (URS) and Effective Utilization of Electronic Library by Lecturers (EUELL) in Public Universities in Anambra State

Variables	N	t-value	Df	p-value	Decision
URS– EUELL	109	8.7603	108	0.000	Significant

**significant at $p < .05$*

Data in Table 4 showed the one sample t-test of lecturers on the significance of users' research skills as an effective utilization of electronic library by lecturers in public universities in Anambra State. The result showed that the p-value of 0.000 is less than 0.05 level of significance which means that users' research skill is significantly effective for the utilization of electronic library by lecturers in public universities in Anambra State. Based on this result, the null hypothesis was rejected. This means that users' research skill is significantly effective for the utilization of electronic library by lecturers in public universities in Anambra State.

Discussion

The finding of the study revealed that users' digital skill is an information user characteristic for effective utilization of electronic library by lecturers in public universities in Anambra State. This indicates that lecturers who possess sufficient digital skills are more likely to effectively engage with electronic library resources for academic and research purposes. One possible explanation for this result is that digital competence enables lecturers to confidently explore online databases, use academic search engines and retrieve scholarly information with ease. With sound digital skills, lecturers can conduct advanced searches, manage academic software tools and navigate through e-library interfaces effectively. Another possible reason for this finding is that digital literacy empowers lecturers to troubleshoot basic technical issues, use relevant information systems productively and

engage more actively in continuous academic development through digital platforms. Lecturers with digital proficiency experience less frustration, face fewer barriers in accessing digital content and are more likely to integrate e-resources into their teaching and research workflows. This finding is in agreement with Babalola (2019) who revealed that ICT skills had a significant impact on the way undergraduates accessed and used e-books and digital resources for their academic tasks. Similarly, Shafiu et al. (2019) highlighted that lack of digital skills was a major obstacle to the utilization of electronic resources among both staff and students in Nigerian universities. Also, Ekong and Ekong (2018) confirmed that digital skills, as a component of information literacy, significantly contribute to the quality of research output, academic writing and timely completion of scholarly tasks. This aligns with the present study's conclusion that digital skill is a critical factor that shapes the level of engagement with electronic libraries among lecturers. In a related study, Ankrah and Atuase (2018) found that even though students were aware of e-resources, many still opted for open-access platforms due to usability challenges associated with institutional digital libraries, implying that skill level affects choice and usage patterns. Furthermore, the finding of this study showed that users' digital skill is significantly effective for the utilization of electronic library by lecturers in public universities in Anambra State. This finding is in line with Adeniran and Onuoha (2018) who found a strong positive relationship between information literacy and postgraduate students' use of e-resources in private universities. Their study reinforces the broader understanding that digital skills, as part of information literacy, are indispensable for accessing up-to-date academic materials and enhancing scholarly productivity.

The finding of the study revealed that users' research skill is an information user characteristic for effective utilization of electronic library by lecturers in public universities in Anambra State. This means that lecturers with well-developed research skills are more likely to make efficient and purposeful use of e-library resources. The possession of research skills allows lecturers to formulate relevant research questions, identify credible sources, synthesize information from multiple digital platforms and critically evaluate scholarly content. These competencies are essential for academic and professional success and they significantly shape the way lecturers engage with electronic resources. Lecturers with strong research skills are not only more effective in locating useful academic materials but also in assessing the quality and applicability of those materials to their teaching and research work. This finding is in line with Shafiu et al. (2019), who revealed that human factors such as insufficient research and computer skills directly impact the level of electronic library usage, which in turn affects the quality of academic output and overall institutional effectiveness. In a similar vein, Ekong and Ekong (2018) demonstrated that individuals with strong information literacy, which includes research capability, tend to produce more accurate and comprehensive academic work. The result of the tested hypothesis showed a significant relationship between users' research skill and the effective utilization of electronic library resources. This implies that as lecturers' research skill levels improve, their capacity to access, analyze and apply e-library resources also increases. This result reinforces the assertion that research competence, alongside digital literacy, is essential for optimizing the academic benefits provided by electronic library systems.

Conclusion

Based on the findings of the study, the researcher concluded that users' digital skills and research skills are information users' characteristics for effective utilization of electronic library by lecturers in public universities in Anambra State. Hence, users' digital skills and research skills are significantly effective for the utilization of electronic library by lecturers in public universities in Anambra State. It is therefore imperative that necessary are put in place to improve utilization of electronic library in universities in Nigeria.

Recommendations

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

1. Lecturers in public universities should proactively engage in continuous digital literacy and research skills development through workshops, seminars and self-directed learning. Enhancing their competence in using digital library tools will improve their research output and teaching effectiveness.
2. Lecturers should collaborate with library staff to identify relevant electronic resources and provide feedback on usability challenges. This partnership can help tailor digital library services to better meet lecturers' academic and research needs.

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