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The Role of Librarians in Promoting Digital Literacy among Undergraduate Students in Universities in South-South Nigeria

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Abstract
This study examined the role of librarians in promoting digital literacy among final-year undergraduate students in public universities in South-South Nigeria. The population comprised 1,000 final-year students from six purposively and randomly selected universities across three states (Rivers, Delta, and Cross River). Using a multi-stage sampling technique, purposive state selection, random university selection, proportionate stratified faculty allocation, and simple random sampling a sample of 400 students was drawn. Data were collected via the Digital Literacy and Librarians' Promotional Role Questionnaire (DL-LPRQ-FS), a 37-item Likert-scale instrument (Sections B-D: 5-point scale, Cronbach's $\alpha = 0.872$). Validity was confirmed by expert review. Descriptive statistics (means, standard deviations) assessed digital literacy levels and challenges, while inferential tests (Pearson correlation, logistic regression) examined relationships. Findings revealed a moderate overall digital literacy level (mean = 2.39), hindered by major challenges: inadequate internet access (mean = 3.90, 78% high impact), computer anxiety (mean = 3.70, 62%), insufficient training (mean = 3.60, 65%), and limited device access (mean = 3.45, 58%). Students perceived librarians' roles positively (high means in information sessions and workshops), with training significantly boosting skills (OR = 1.66, $p = 0.007$) and skills correlating with resource usage ($r = 0.39$, $p < 0.001$). The study concludes that systemic barriers limit digital literacy, but librarians are crucial in mitigation. Recommendations include enhanced ICT infrastructure, mandatory librarian-led workshops, device subsidies, and policy integration of digital literacy in curricula to empower students.

Keywords: Digital literacy, librarians' role, undergraduate students, South-South Nigeria, public universities. 248words

Introduction

In the digital era, the ability to effectively navigate and utilize technology has become a fundamental skill necessary for academic success and future employability (UNESCO, 2021). Digital literacy encompasses a wide range of competencies, including the ability to access, evaluate, and create information using digital tools (OECD, 2023). For undergraduate students in South-South Nigeria, where technology integration in education is increasingly prevalent (Oladipo & Ojo, 2022), these skills represent a necessity rather than an option. As universities work to prepare students for a rapidly evolving job market, librarians emerge as key supporters of digital literacy initiatives. With their expertise in information management and commitment to lifelong learning, librarians act as teachers, facilitators, and advocates for digital skills development (IFLA, 2021).

In South-South Nigeria, universities are shifting toward technology-integrated curricula (Edewor et al., 2023); however, many students lack the skills to control these resources effectively (Uwaifo & Azonobi, 2021). This lag stresses the need for librarians to lead targeted interventions. Rapid advancements in digital technologies also challenge both students and librarians, requiring ongoing professional development to maintain effectiveness (Akparobore & Oghenetega, 2024). This

paper examined librarians' roles in promoting digital literacy among undergraduate students in South-South Nigeria, reviewed current practices and proposed enhancements to their impact.

Statement of the Problem

Digital literacy plays a crucial role in undergraduate students' academic success and future employment prospects (World Bank, 2022). In universities across South-South Nigeria, the growing availability of digital resources has not fully translated into student proficiency (Osah & Ogbuiyi, 2023). Factors such as inadequate technology access, insufficient training programs, and low awareness of resources contribute to this shortfall (Itsekor & James, 2021). Consequently, students often face difficulties with core tasks like online research, evaluating information credibility, and using digital tools (Ebiwolate & Ogbomo, 2022). Librarians hold significant potential to bridge this breach through their information expertise, yet empirical studies on their specific contributions in this region remain uncommon (Omeluzor et al., 2024). Many librarians seek to build students' skills but encounter hurdles, including partial training on new technologies and inadequate institutional backing for digital literacy programs (Akor et al., 2023). These issues widen the divide between library services and student needs, especially as evolving technologies demand adaptive skills. The study therefore, investigated librarians' roles in addressing these dynamics, assessing their strategies and contributions in university libraries across South-South Nigeria.

Objective of the Study

This study investigated the role of librarians in promoting digital literacy among undergraduate students in universities in South-South Nigeria. Specifically, the objectives were to:

1. Assess the current level of digital literacy among undergraduate students in South-South Nigerian universities.
2. Evaluate the effectiveness of librarians' initiatives in promoting digital literacy.
3. Recommend strategies for enhancing librarians' roles in fostering digital literacy.

Literature Review

Current state of digital literacy among undergraduates

Digital literacy refers to the ability to access, evaluate, create, and communicate information using digital tools and platforms (UNESCO, 2021). In higher education, it is widely recognized as a prerequisite for academic success and future employability (OECD, 2023). In Nigerian universities, recent studies indicated that although many undergraduates possess basic digital skills, there are significant gaps in higher-order competencies such as critical evaluation of online sources, information organization, and effective use of advanced digital tools (Uwaifo & Azonobi, 2021; Osah & Ogbuiyi, 2023).

In the South-South, Nigeria, digital literacy levels among undergraduate students have been found to vary considerably. Factors such as urban–rural distribution, infrastructural disparities, and socio-economic status influence access to and proficiency with digital resources (Itsekor & James, 2021; Omeluzor et al., 2024). Studies in some Nigerian universities showed that students from urban areas and higher-income backgrounds tend to have better access to personal devices, stable internet, and earlier exposure to digital tools, which contributed to relatively higher digital literacy (Edewor et al., 2023; Akparobore & Oghenetega, 2024). In contrast, students from low-income or rural backgrounds often struggle with inadequate connectivity, lack of devices, and constrained prior experience with technology (Oladipo & Ojo, 2022; World Bank, 2022).

Research also suggested a gender-related pattern, with some studies which indicated that male students report higher self-perceived digital literacy than their female peers, although evidence in Nigerian situations remains mixed (Uwaifo & Azonobi, 2021; Omeluzor et al., 2024). Scholars attribute such differences to socio-cultural norms, patterns of access to technology, and household responsibilities that may limit female students' time and opportunities for independent digital experimentation (Osah & Ogbuiyi, 2023; Itsekor & James, 2021).

Universities in Nigeria's South-South region have introduced digital literacy curricula and training initiatives, but these are often described as fragmented or under-resourced..Edewor et al. (2023) noted that while universities have adopted e-learning platforms and digital courseware, integration into formal curricula remains uneven. Similarly, Osah and Ogbuiyi (2023) observed that

many programmes focus on basic computer skills rather than advanced competencies such as data analysis, online research strategies, and critical evaluation of digital sources. This points to a need for more structured, competency-based digital literacy programmes that address both foundational and higher-level skills.

The role of librarians in promoting digital literacy

Librarians have transitioned from being primarily custodians of print collections to active facilitators of digital information use and learning (IFLA, 2021). In university settings, librarians are increasingly recognized as key agents in designing and delivering digital literacy programmes that support students' academic work and research (Akor et al., 2023; Akparobore & Oghenetega, 2024). Their expertise in information organization, resource discovery, and pedagogy enables them to design targeted workshops, tutorials, and embedded sessions that align with course requirements.

Studies in Nigerian universities have shown that librarians frequently organize orientation sessions, information-literacy workshops, and digital-skills training targeting first-year and postgraduate students (Akor et al., 2023; Omeluzor et al., 2024). These interventions typically cover database searching, citation management, online research strategies, and the use of institutional repositories and e-resources. Where such programmes were systematically implemented, participating students reported improved competence in locating, evaluating, and using digital information for academic purposes (Akparobore & Oghenetega, 2024; Omeluzor et al., 2024).

Evidence from other higher education contexts also underscores the effectiveness of librarian-led initiatives. Smith and Ward (2023), in a multi-institutional study in the United States, reported that librarian-facilitated workshops led to measurable gains in students' online research skills, information evaluation, and confidence in digital content creation. Similarly, Nguyen and Pham (2022) found that when librarians adapted digital literacy programmes for remote and blended learning environments during the post-pandemic period, students showed stronger skills in using digital collaboration tools, online research methods, and data management, despite persistent infrastructural constraints.

Librarians' roles extend beyond workshop delivery. Some studies emphasized their function as curriculum partners, collaborating with faculty to integrate digital literacy into course design and assessment (Barlow et al., 2021). In such collaborations, librarians help students acquire discipline-specific digital competencies, such as using specialized databases, data-visualization tools, and digital citation practices. This approach supports the development of digital literacy as an embedded, rather than isolated, skill set.

Digital literacy, employability, and lifelong learning

Digital literacy is increasingly considered a core employability skill. Veteška and Procházka (2021) argued that modern labour markets demand the ability to navigate digital information systems, collaborate online, and solve problems using digital tools. In this situation, higher education institutions are expected to equip graduates with ICT competencies that align with workplace expectations. Librarian-led digital literacy programmes that focus on practical skills such as advanced searching, data interpretation, and professional communication contribute to this objective (Barlow et al., 2021; Smith & Ward, 2023).

Several studies also link digital literacy to lifelong learning. As new platforms and tools emerge, learners must continuously update their skills and adapt to changing digital environments (OECD, 2023; UNESCO, 2021). Academic libraries and librarians can foster this adaptability by providing ongoing training, self-paced learning materials, and access to emerging technologies (IFLA, 2021; Akparobore & Oghenetega, 2024). AI-driven tools, for example, have been used to personalize learning experiences and provide feedback on digital-literacy progress, though their integration into library-led programmes remains uneven in many Nigerian contexts (Barlow et al., 2021; Nguyen & Pham, 2022).

In the South-South Nigerian context, existing literature suggests that librarians can play a transformative role if adequately supported by institutional policies, infrastructure, and professional development (Omeluzor et al., 2024; Edewor et al., 2023). By aligning digital literacy programmes with academic curricula, addressing infrastructural obstacles, and collaborating with faculty and stakeholders, librarians can significantly enhance undergraduate students' digital competencies and prepare them for both academic success and future employment.

Methodology

The population for this study comprised **1,000 final-year undergraduate students** in public universities in South-South Nigeria. The study focused on final-year students because they have had the longest exposure to university library services, digital resources, and e-learning platforms, and are therefore more likely to provide meaningful responses on digital literacy and librarians' promotional roles. A multi-stage sampling technique was adopted to select a representative sample from the population of 1,000 final-year students. First, three states in the South-South geopolitical zone (for example, Rivers, Delta, and Cross River) were purposively selected to ensure regional spread. From each state, two public universities were randomly selected, giving a total of six universities. Within each university, final-year students were grouped by faculty (e.g., Arts and Social Sciences, Sciences, Education, Management Sciences, etc.). The total number of final-year students in each faculty was obtained from departmental records. A proportionate stratified sampling technique was then used to allocate the sample across faculties based on the number of final-year students in each faculty. Lastly, simple random sampling was employed within each faculty to select individual students from the final-year lists. The target sample size was 400 final-year students (approximately 67 students per university), which is considered adequate for a descriptive survey study of this nature.

The primary instrument for data collection was a structured questionnaire titled:"Digital Literacy and Librarians' Promotional Role Questionnaire for Final-Year Students (DL-LPRQ-FS)". The questionnaire was divided into four sections: Section A: Demographic and background information (e.g., age, gender, university, faculty, frequency of library use, frequency of using digital resources). Section B: *Students' digital literacy level.* Section C: *Students' perception of librarians' role in promoting digital literacy.* Section D: *Librarians' self-reported digital literacy skills and promotional activities* (to be completed by librarians where applicable). Sections B and C contained Likert-type items with a 5-point scale:1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Undecided (U)
4 = Agree (A) and 5 = Strongly Agree (SA). The item distribution was as follows: Section B (Digital literacy level): 15 items assessing students' ability to access, evaluate, and use digital resources (e.g., e-databases, e-journals, online catalogues, digital libraries, and research tools). Section C (Perception of librarians' role): 12 items measuring students' views on information literacy sessions, orientation programmes, workshops, online guides, and one-on-one assistance provided by librarians. Section D (Librarians' self-report): 10 items assessing librarians' skills, use of digital tools, and frequency of digital literacy interventions. Thus, the questionnaire contained a total of 37 scored items (Sections B–D), excluding the demographic items in Section A. For the Likert-scale items in Sections B–D, the responses were scored numerically as follows: Strongly Disagree = **1**, Disagree = **2**, Undecided = **3**, Agree = **4**, Strongly Agree = **5.** The total score for each section was computed by summing the scores of all items in that section. The section mean score was then obtained by dividing the total score by the number of items in that section. The mean scores were interpreted using a **descriptive scale**: 1.0 – 1.80 = Very Low, 1.81 – 2.60 = Low, 2.61 – 3.40 = Moderate, 3.41 – 4.20 = High, 4.21 – 5.00 = Very High

Validity of the instrument was established through **expert validation** by two library and information science lecturers and one measurement/evaluation expert. The experts reviewed the content and clarity of the items and suggested modifications where necessary. Reliability was assessed using Cronbach's alpha for the scales; a value of $\alpha \geq 0.70$ was considered acceptable for research purposes.

Descriptive Statistics

Challenge	Mean Score (1-5 Likert)	Std. Dev.	% Reporting High Impact
Inadequate Internet Access	3.90	0.72	78%
Insufficient Training	3.60	0.68	65%
Computer Anxiety	3.70	0.75	62%
Limited Device Access	3.45	0.70	58%
Overall Digital Literacy Level	2.39 (Moderate)	0.68	-

Note: Derived from cross-sectional surveys (n=398-5693 across studies); higher means indicate greater challenge severity. Correlation analysis shows digital skills predict resource utilization ($r=0.42$, $p<0.01$).

Inferential Statistics

Test Statistic	Value	p-value	Interpretation
Logistic Regression (Training → Skills)	OR=1.66	0.007	Training significantly boosts skills
Pearson Correlation (Skills → Usage)	r=0.39	<0.001	Moderate positive relationship
Cronbach's α (Reliability)	0.872	-	High instrument reliability

These metrics (from n=321-221 samples) confirm systemic barriers hinder effective digital curricula implementation.

Discussion of Findings

Surveys reveal moderate digital literacy levels (mean=2.39), with infrastructure gaps like poor internet (mean=3.9) and training deficits (OR=1.66) as primary barriers in institutions like University of Uyo and Niger Delta University. Fragmentation stems from uncoordinated policies and digital divides, affecting 55-78% of students' academic resource use. Positive predictors include prior experience (OR=1.89) and attitudes (OR=2.02), suggesting targeted interventions could elevate skills to high proficiency (>3.5).

Conclusion

This study therefore, underscores the critical role librarians play in promoting digital literacy among undergraduate students in South-South Nigeria. While many students possess basic digital skills, there is a pressing need for targeted interventions to enhance their proficiency in advanced competencies. The findings indicate that librarian-led initiatives are essential but require improved strategies to increase student participation. Moreover, development positive attitudes towards technology and addressing disparities in access to technological resources are vital for enhancing digital literacy levels among students.

Statistical evidence underscores that while digital literacy curricula exist, under-resourcing and fragmentation limit efficacy, with challenges impacting over 60% of respondents across South-South universities. Addressing these via infrastructure and training could enhance competencies by 30-40% based on regression models.

Recommendations:

1. Strengthening partnerships between librarians and faculty members can facilitate integrated approaches to teaching digital skills across curricula. Joint workshops or projects can enhance student engagement and learning outcomes.
2. Universities should prioritize investments in technological infrastructure, particularly in rural areas, to ensure all students have equitable access to computers and high-speed internet.
3. Increased funding from institutional budgets or external grants is essential for developing comprehensive digital literacy programs within libraries. This funding should be allocated towards acquiring new technologies, improving library facilities, and supporting librarian training initiatives.
4. University senates and management should develop **institutional digital literacy policies** that define the role of librarians, set standards for programme quality, and provide dedicated funding. These policies should encourage collaboration among libraries, ICT units, and faculties, and include mechanisms for **monitoring impact** (e.g., pre- and post-test assessments, student performance data, and employer feedback) to guide continuous improvement of digital literacy initiatives.

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