



A Descriptive Survey Study of Search Strategy and Critical Evaluation of Information Skills as Correlates of Electronic Database Utilization at Bayero University, Kano

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Abstract

This study investigates the relationship between information literacy competencies, specifically search strategy formulation and critical evaluation of information, and electronic database utilization among undergraduate students at Bayero University, Kano (BUK), Nigeria. Despite significant institutional investments in digital resources, preliminary observations indicate persistent underutilization of scholarly databases. A descriptive survey design was employed, with data collected from 384 undergraduates (96% response rate) using a structured questionnaire based on the American Library Association's Framework for Information Literacy. Findings revealed that students demonstrate high competence in critical evaluation (overall mean = 3.80), particularly in assessing source credibility and distinguishing scholarly from non-scholarly content. However, search strategy skills remain moderate (mean = 3.28), with notable deficiencies in using Boolean operators, advanced search features, and database filters. Major barriers to database use include poor internet connectivity (61.5%), lack of awareness (56.3%), and inadequate training (51.3%). The study underscores the need for curriculum-integrated information literacy instruction, improved ICT infrastructure, and proactive awareness campaigns to bridge the gap between resource availability and effective use. These findings contribute to ongoing discourse on digital scholarship in Nigerian higher education and offer actionable insights for librarians, faculty, and policymakers.

Keywords: Information literacy, Search strategy, Critical evaluation, Electronic databases, Undergraduate students, Nigeria, Bayero University Kano.

Introduction

The proliferation of electronic databases has transformed access to scholarly information in higher education. Yet effective use of these resources depends critically on students' information literacy (IL), particularly their ability to formulate search strategies and evaluate sources. The Association of College & Research Libraries (ACRL) defines IL as the capacity to "recognize when information is needed and to locate, evaluate, and use it effectively" (American Library Association, 2020), a skill set increasingly vital in digital learning environments. In Nigeria, despite growing institutional investments in electronic resources, studies show that undergraduate students often lack the competencies to use them effectively (Abdulrahman & Sadiq, 2024; Okoye & Yusuf, 2023). Barriers include limited Wi-Fi access, insufficient IL instruction, and overreliance on general search engines (Ezeani & Igwe, 2022; Tella & Oyedokun, 2023). Consequently, many students struggle with database navigation, keyword selection, and source credibility assessment, skills directly linked to research quality and academic performance (Owolabi & Aina, 2024; Martínez & Gómez, 2024).

At Bayero University, Kano, electronic databases are available through the library, preliminary observations suggest underutilization. Empirical data on students' search and evaluation skills, and how these correlates with actual database use, are lacking (Buba et al, 2021; Echem & Wokoma, 2022) This study addresses that gap by examining: (1) undergraduates' proficiency in search strategy formulation, (2) their critical evaluation abilities, and (3) key challenges affecting electronic database utilization. Findings aim to inform targeted IL interventions and support evidence-based improvements in digital resource engagement within Nigerian universities.

Statement of the Problem

Despite substantial institutional investments in electronic databases, undergraduate students in Nigerian universities, including Bayero University, Kano (BUK), often underutilize these resources, relying instead on general search engines (Ezeani & Igwe, 2022; Abdullahi, Usman & Shehu, 2025). This trend reflects persistent gaps in information literacy, particularly in formulating effective search strategies (e.g., Boolean operators, filters) and critically evaluating retrieved sources (Abdulrahman & Sadiq, 2024; Mensah et al., 2023; Martínez & Gómez, 2024). While awareness of electronic resources may exist, competence in advanced database navigation remains limited (Suleiman et al., 2024; Okoye & Yusuf, 2023).

Compounding these issues are infrastructural constraints, unreliable internet, limited ICT access, and insufficient training, which hinder optimal database use (Tella & Oyedokun, 2023; Owolabi & Aina, 2024). Although information literacy is linked to academic performance (Owolabi & Aina, 2024) and research quality (Ali & Hassan, 2025), evidence specific to BUK remains absent. Without context-sensitive data on how search strategy proficiency and critical evaluation skills correlate with database utilization, targeted instructional or policy interventions cannot be effectively designed.

Thus, this study addresses a critical gap: examining the relationship between these core information literacy competencies and electronic database use among undergraduates at BUK, in alignment with the American Library Association's (2020) Framework for Information Literacy and recent global insights (Head et al., 2023; Kurbanoğlu et al., 2022).

Research Objectives

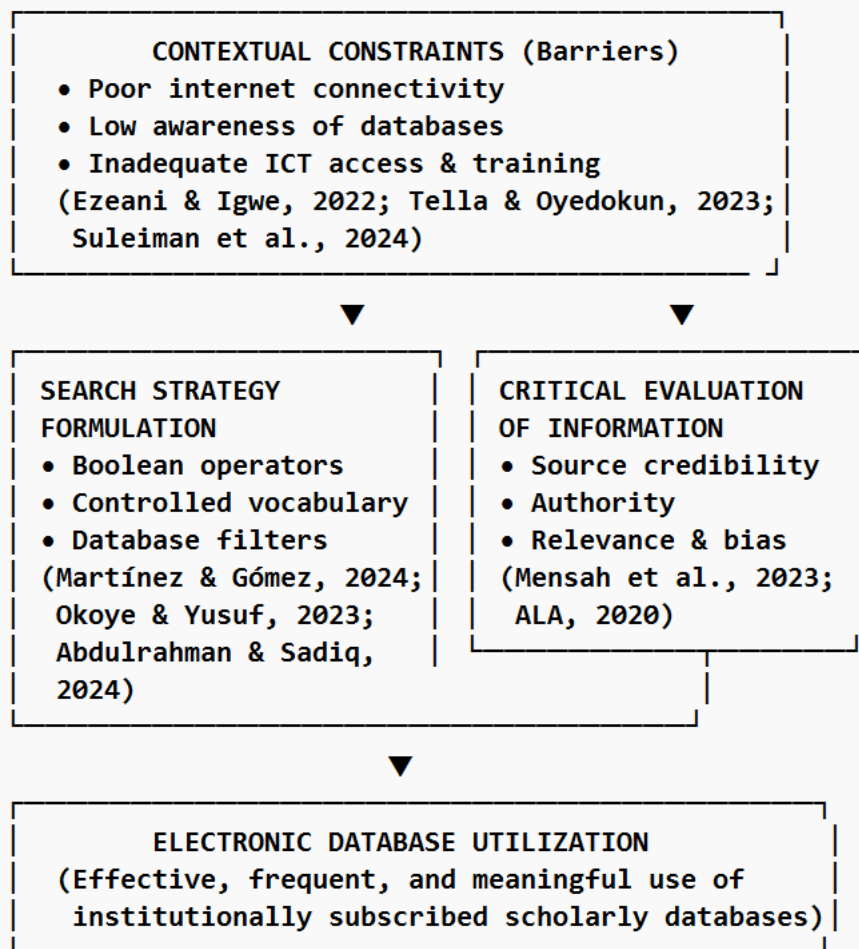
- i. To determine the undergraduate students' skills in the formulation of search strategies in Bayero University Kano.
- ii. To investigate undergraduate students' skills in the critical evaluation of information in Bayero University Kano.
- iii. To determine the challenges associated with the use of electronic databases among undergraduate students.

Conceptual Framework

This study examines electronic database utilization among undergraduate students as a function of two interrelated information literacy competencies: search strategy formulation and critical evaluation of information. Search strategy skills, encompassing the use of Boolean operators, controlled vocabulary, and database filters, are essential for efficient retrieval of scholarly content, yet many Nigerian undergraduates rely on simplistic keyword searches or general search engines due to limited training (Martínez & Gómez, 2024; Okoye & Yusuf, 2023; Abdulrahman & Sadiq, 2024). Concurrently, critical evaluation involves discerning source credibility, authority, and relevance, a skill increasingly vital in digital environments saturated with misinformation (Mensah et al., 2023; American Library Association, 2020). Despite institutional investments in electronic resources, utilization remains suboptimal in Nigerian universities, hindered by infrastructural deficits (e.g., poor internet), low awareness, and inadequate ICT

access (Ezeani & Igwe, 2022; Tella & Oyedokun, 2023; Suleiman et al., 2024). Thus, effective database use is conceptualized not merely as access but as a literacy-mediated practice shaped by both cognitive and procedural abilities within contextual constraints.

Figure 1: Electronic database utilization among undergraduate students



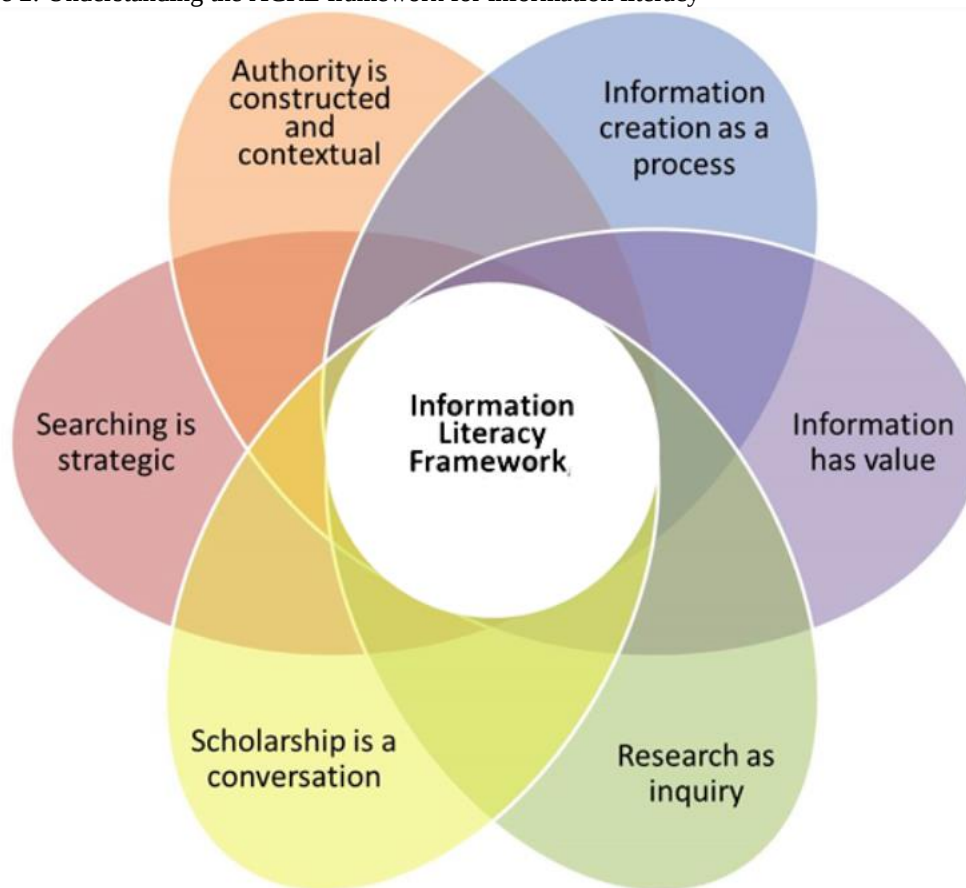
Source: Researcher (2026)

Theoretical Review

The study is anchored in the Framework for Information Literacy for Higher Education (American Library Association, 2020), which posits that information literacy develops through threshold concepts such as “Searching as Strategic Exploration” and “Authority Is Constructed and Contextual.” These concepts frame search proficiency and source evaluation as dynamic, reflective practices rather than technical tasks. Empirical support comes from global studies showing that students’ information behaviors are influenced by algorithmic environments and

convenience-driven habits (Head et al., 2023), while Nigerian research confirms that weak integration of information literacy into curricula exacerbates underutilization of scholarly databases (Ali & Hassan, 2025; Owolabi & Aina, 2024; Abdullahi, Usman & Shehu, 2025). Together, theory and evidence position database utilization as an outcome of situated literacy practices, requiring pedagogical and infrastructural alignment to foster meaningful engagement.

Figure 2: Understanding the ACRL framework for information literacy



Source: El Hassani (2017).

According to the Association of College and Research Libraries (ACRL, 2016), information literacy is grounded in threshold concepts that shape students' engagement with information. This diagram illustrates that search strategy and critical evaluation are not isolated but embedded within these interconnected frames, making them strong correlates of electronic database utilization. Empirical studies (e.g., in information behaviour research) often find that training based on the ACRL Framework improves these skills, leading to higher database proficiency,

reduced information overload, and better academic performance (Association of College and Research Libraries [ACRL], 2016).

Review of Related Literature

Search Strategy Skills

Effective search strategy formulation is a foundational component of information literacy, yet studies consistently reveal gaps among undergraduates in developing and applying advanced search techniques. Martínez and Gómez (2024) found that students often struggle with database-specific syntax, Boolean logic, and controlled vocabulary, leading to inefficient or irrelevant retrieval. In Nigerian universities, Okoye and Yusuf (2023) observed that many undergraduates rely on basic keyword searches in Google rather than leveraging structured features of academic databases such as filters, subject headings, or citation trails. Similarly, Abdulrahman and Sadiq (2024) reported low competence in query construction despite high awareness of electronic resources, suggesting a disconnect between access and skill. This aligns with Head et al. (2023) findings that students prioritize speed and convenience over precision, often bypassing library databases due to perceived complexity.

Critical Evaluation of Information

The ability to critically evaluate digital information is increasingly vital in an era of algorithmic curation and misinformation. Mensah, Badu, and Opoku (2023) demonstrated that many undergraduates lack the capacity to assess source credibility, authority, or scholarly relevance, often accepting top search results as trustworthy without scrutiny. The American Library Association's (2020) Framework for Information Literacy emphasizes that "authority is constructed and contextual," requiring learners to interrogate sources within disciplinary frameworks, a skill rarely mastered without explicit instruction. Head et al. (2023) further noted that students frequently conflate popularity with reliability, especially when using commercial platforms. In Nigeria, this challenge is compounded by limited exposure to peer-reviewed content and minimal integration of evaluation criteria into curricula (Owolabi & Aina, 2024; Abdullahi, Usman & Shehu, 2025).

Challenges in Electronic Database Utilization

Despite institutional investments, utilization of electronic databases remains low in many Nigerian universities due to multifaceted barriers. Tella and Oyedokun (2023) identified poor internet connectivity, inadequate ICT infrastructure, and restricted access to computers as key systemic constraints. Ezeani and Igwe (2022) added that even when resources are available, students often lack awareness or training, leading to underuse. Suleiman, Mohammed, and Abdullahi (2024) confirmed that fewer than half of surveyed undergraduates could name specific databases subscribed by their institutions. These challenges are exacerbated by insufficient librarian-led instruction and the absence of embedded information literacy modules in academic programs (Ali & Hassan, 2025; Sambo et al., 2021). Consequently, students default to freely accessible but less reliable sources, undermining research quality and academic performance (Owolabi & Aina, 2024).

Methodology

This study used a descriptive survey design to assess undergraduate students' information literacy skills at a single point in time (Kumar & Sharma, 2023). The population comprised over 35,000 undergraduates across 17 faculties at Bayero University, Kano (BUK). A sample of 400 students was selected using Yamane's (1967) formula as cited in Abdullahi, Usman & Shehu (2025). Stratified random sampling ensured proportional representation by faculty and gender, reducing bias and improving generalizability (Pinto et al., 2022). Data were collected via a structured questionnaire grounded in the American Library Association's (2020) Framework for Information Literacy and adapted from validated instruments (Abdulrahman & Sadiq, 2024; Okoye & Yusuf, 2023). After institutional approval, the researcher and assistants administered the questionnaire in person; participation was voluntary, anonymous, and responses were retrieved immediately to ensure completeness. Data were analyzed using SPSS Version.26.0. Descriptive statistics (frequencies, percentages, means and Standard Deviations) summarized demographics and levels of search strategy skills, critical evaluation abilities, and database use challenges (Owolabi & Aina, 2024; Suleiman et al., 2024), consistent with prior Nigerian studies (Abdullahi, Usman & Shehu, 2025; Tella & Oyedokun, 2023).

Results

Of the 400 questionnaires distributed, 384 were fully completed and returned, yielding a 96% response rate, sufficient for robust analysis.

Table 1

Demographic Information of Respondents by Gender

Gender	Frequency (n)	Percentage (%)
Male	196	51.0
Female	188	49.0
Total	384	100.0

Note. Percentages are based on the total number of valid responses (N = 384).

Table 1 presents the gender distribution of the respondents, of the 384 undergraduate students who participated in the study, 196 (51.0%) were male, while 188 (49.0%) were female. This near-equal representation indicates a balanced gender composition of the sample, thereby reducing gender-related bias and enhancing the representativeness of the findings.

Table 2

Distribution of Respondents by Level of Study

Level of Study	Frequency (n)	Percentage (%)
100 Level	72	18.8
200 Level	88	22.9
300 Level	102	26.6
400 Level	90	23.4
500 Level	32	8.3
Total	384	100.0

Note. Percentages are calculated based on the total number of valid responses (N = 384).

Table 2 shows the distribution of respondents by level of study. The largest proportion of respondents were in 300 level (n = 102, 26.6%), followed by those in 400 level (n= 90, 23.4%) and 200 level (n = 88, 22.9%). Students in 100 level accounted for 18.8% (n=72) of the sample, while 500-level students constituted the smallest group (n=32, 8.3%). This distribution indicates adequate representation across all undergraduate levels, with a higher concentration in the middle academic years, which is appropriate given the study's focus on information literacy competencies that typically develop with academic progression. This skew toward mid- and upper-level undergraduate students typically engaged in research-intensive coursework, suggests respondents had meaningful exposure to academic information tasks, lending credibility to their self-reported information literacy experiences.

Table 3

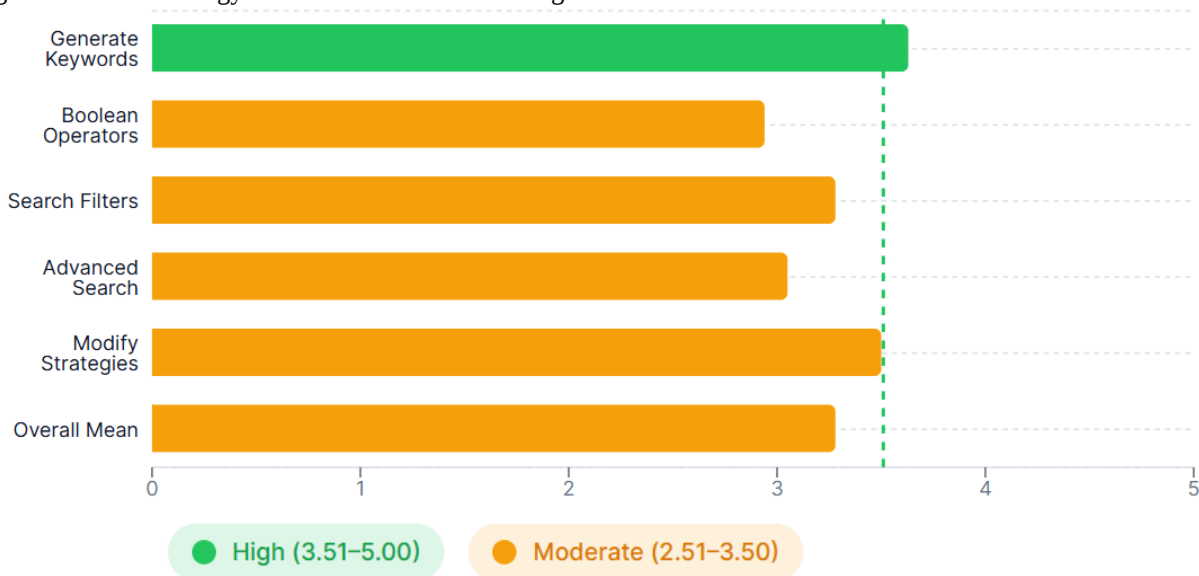
Search Strategy Formulation Skills of Undergraduate Students

Statement	SD/D n (%)	N n (%)	A/SA n (%)	Mean	SD
Ability to generate appropriate keywords	90 (23.4)	90 (23.4)	204 (53.2)	3.63	1.11
Use of Boolean operators (AND, OR, NOT)	158 (41.2)	100 (26.0)	126 (32.8)	2.94	1.19
Use of search filters (date, subject, format)	116 (30.2)	104 (27.1)	164 (42.7)	3.28	1.16
Use of advanced search options	148 (38.5)	102 (26.6)	134 (34.9)	3.05	1.24
Ability to modify search strategies when necessary	84 (21.8)	92 (24.0)	208 (54.2)	3.50	1.13
Overall Mean				3.28	

Note. SD/D = Strongly Disagree/Disagree; N = Neutral; A/SA = Agree/Strongly Agree. Responses were measured on a 5-point Likert scale, where higher mean scores indicate higher levels of search strategy competence.

Decision-Rule of Search Strategy Formulation Skills

Figure 3: Search Strategy Formulation Skills of Undergraduate Students



Mean scores on a 5-point scale (n = 400) & Dashed line indicates threshold for "High" skill level (≥ 3.51)

Table 3 presents respondents' levels of proficiency in search strategy formulation. The overall mean score of 3.28 indicates a moderate level of competence in search strategy skills among the undergraduate students. This level of proficiency, however, is lower than that reported for information need recognition, suggesting a relative weakness in procedural search capabilities. More than half of the respondents agreed that they could generate appropriate keywords for database searching (53.2%, $M = 3.63$, $SD = 1.11$) and modify their search strategies when necessary (54.2%, $M = 3.50$, $SD = 1.13$). These findings suggest stronger performance in basic and adaptive search behaviors. In contrast, more advanced search techniques were less frequently utilized. The use of Boolean operators recorded the lowest mean score ($M = 2.94$, $SD = 1.19$), with only 32.8% of respondents indicating competence. Similarly, advanced search features were underutilized, as only 34.9% agreed that they employed such

techniques ($M = 3.05$, $SD = 1.24$). The use of database filters also reflected moderate engagement ($M = 3.28$, $SD = 1.16$).

Overall, these results indicate that while students are relatively comfortable with basic keyword searching and search modification, they experience difficulty applying more sophisticated database search techniques. This limitation may hinder their ability to retrieve precise, comprehensive, and high-quality scholarly information from electronic databases.

Table 4

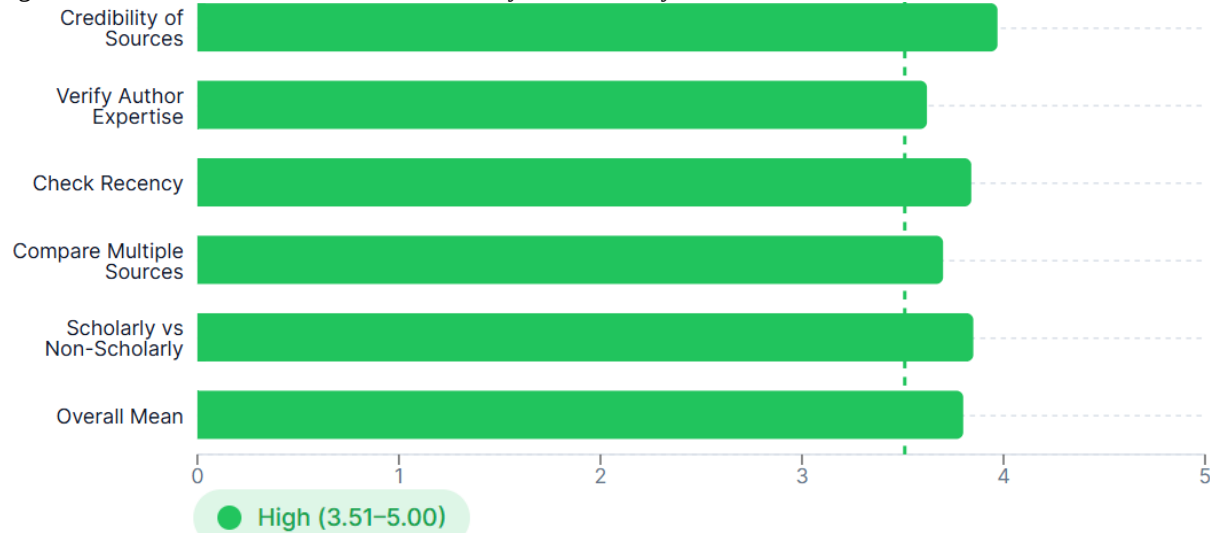
Critical Evaluation of Information Skills of Undergraduate Students

Statement	SD/D n (%)	N n (%)	A/SA n (%)	Mean	SD
Determine credibility of information sources	50 (13.0)	74 (19.3)	260 (67.7)	3.97	0.97
Verify author expertise	88 (22.9)	82 (21.6)	218 (56.8)	3.62	1.14
Check recency of information	60 (15.6)	84 (21.9)	240 (62.5)	3.84	1.02
Compare information from multiple sources	70 (18.2)	88 (22.9)	226 (58.9)	3.70	1.09
Distinguish scholarly from non-scholarly information	50 (13.0)	78 (20.3)	256 (66.7)	3.85	0.98
Overall Mean				3.80	

Note. SD/D = Strongly Disagree/Disagree; N = Neutral; A/SA = Agree/Strongly Agree. Responses were measured on a 5-point Likert scale; higher means indicate higher skill competence.

Decision-Rule of Critical Evaluation of Information Skills

Figure 4: Evaluation of Information Skills at Bayero University Kano



All critical evaluation skills rated at "High" level, students demonstrate strong information literacy & Mean scores on a 5-point scale ($n = 400$). Mean scores above 3.51 are interpreted as high.

Table 4 shows that respondents demonstrate strong critical evaluation skills, with an overall mean score of 3.80, indicating high competence. The ability to determine the credibility of information sources received the highest level of agreement (67.7%, $M = 3.97$, $SD = 0.97$). Similarly, distinguishing scholarly from non-scholarly information was rated highly (66.7%, $M =$

3.85, SD = 0.98). While most items reflected high competence, verifying author expertise recorded a relatively lower mean (M = 3.62, SD = 1.14), suggesting some uncertainty among students when assessing author authority. Nonetheless, the general pattern indicates that students are reasonably critical consumers of information, particularly in evaluating credibility, recency, and scholarly relevance.

Table 5

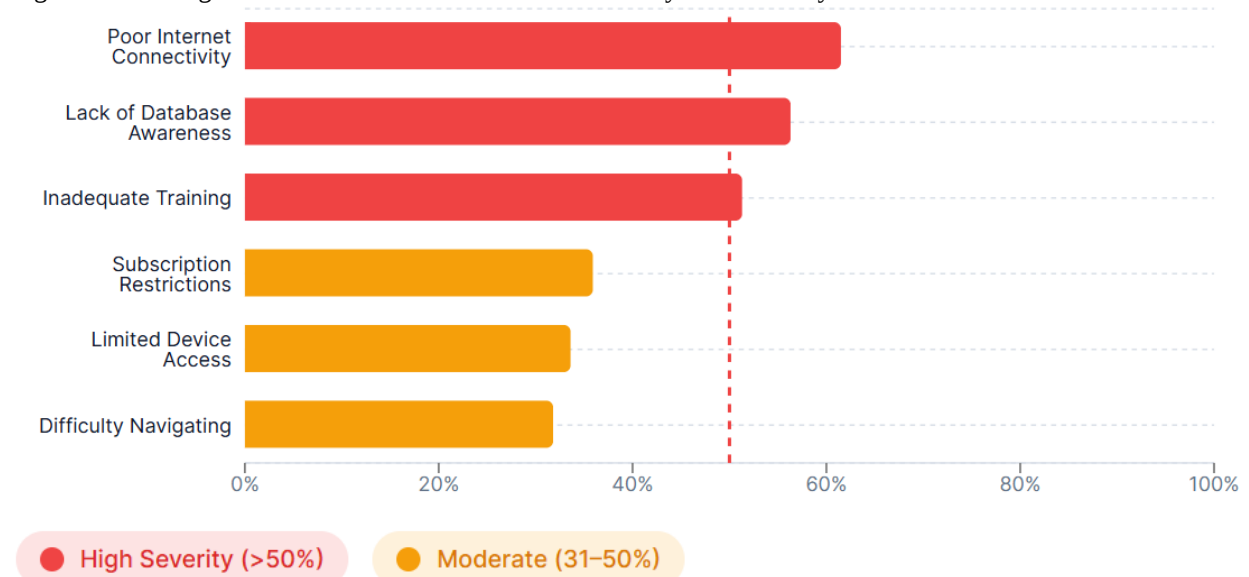
Challenges Associated with the Use of Electronic Databases

S/N	Electronic Database Challenges	Yes n (%)	No n (%)	Total
1	Poor internet connectivity	236 (61.5)	148 (38.5)	384 (100)
2	Lack of awareness about available electronic databases	216 (56.3)	168 (43.7)	384 (100)
3	Inadequate training on database searching skills	197 (51.3)	187 (48.7)	384 (100)
4	Difficulty navigating electronic interfaces and search functions	122 (31.8)	262 (68.2)	384 (100)
5	Limited access to computers or personal devices	129 (33.6)	255 (66.4)	384 (100)
6	Subscription/access restrictions to key scholarly databases	138 (35.9)	246 (64.1)	384 (100)

Note. Percentages are based on the total number of valid responses (N = 384).

Decision-Rule of Challenges in Electronic Database Utilization

Figure 5: Challenges in Electronic Database Utilization at Bayero University Kano



Percentage of students reporting each challenge (n = 400) & Dashed line indicates threshold for "High" severity level (>50%)

Table 5 presents the challenges associated with the use of electronic databases. Poor internet connectivity emerged as the most frequently reported barrier, with 61.5% of respondents indicating that it significantly hindered database access. Similarly, lack of awareness of available electronic databases (56.3%) and inadequate training on database searching skills (51.3%) were identified as major challenges, suggesting that infrastructural and capacity-building factors are

more critical than user motivation. Other challenges, including difficulty navigating electronic interfaces (31.8%) and limited access to computers or personal devices (33.6%), were less prevalent but still noteworthy. Subscription or access restrictions to key scholarly databases were reported by 35.9% of respondents, indicating institutional limitations in resource provision. Overall, these findings point to a combination of infrastructural, awareness, and training-related barriers that limit effective electronic database utilization among undergraduate students.

Discussion

The findings of this study revealed a nuanced picture of undergraduate students' information literacy competencies at Bayero University, Kano (BUK), particularly in relation to search strategy formulation, critical evaluation of information, and barriers to electronic database utilization. These results both corroborate and extend existing literature on information literacy in Nigerian higher education.

The moderate overall proficiency in search strategy skills (mean = 3.28) aligns with prior studies showing that while students can perform basic keyword searches and adapt queries when needed, they struggle with advanced techniques such as Boolean operators and advanced search functions (Martínez & Gómez, 2024; Okoye & Yusuf, 2023). The low adoption of Boolean logic (only 32.8% agreement) is especially concerning, as it directly limits precision and recall in scholarly retrieval, core requirements for academic research. This gap reflects a broader trend documented by Project Information Literacy (Head et al., 2023), where students prioritize speed and simplicity over methodological rigor, often defaulting to Google due to the perceived complexity of academic databases. At BUK, this suggests that access alone is insufficient; without structured instruction in procedural search competencies, students cannot fully leverage institutional database subscriptions.

In contrast, students demonstrated high competence in critical evaluation skills (overall mean = 3.80), particularly in assessing source credibility (67.7%) and distinguishing scholarly from non-scholarly content (66.7%). This finding partially challenges assumptions about universal digital naivety among undergraduates and resonates with the ACRL's threshold concept that "authority is constructed and contextual" (American Library Association, 2020). It suggests that exposure to academic coursework, especially among mid- and upper-level students who dominate the sample, has fostered discernment in evaluating information quality. However, the relatively

lower confidence in verifying author expertise (mean = 3.62) indicates a lingering gap in domain-specific source appraisal, possibly due to limited engagement with peer-reviewed literature or disciplinary citation norms (Mensah et al., 2023; Abdullahi, Usman & Shehu, 2025).

Critically, the challenges to database utilization are predominantly systemic rather than motivational. Over 60% cited poor internet connectivity, and more than half reported lack of awareness and inadequate training, echoing Tella and Oyedokun's (2023) findings on infrastructural deficits in African universities. Notably, only about one-third struggled with interface navigation, implying that usability is less of a barrier than access and preparedness. This supports Ezeani and Igwe's (2022) observation that even when databases are available, students remain underinformed about their existence or functionality. The fact that subscription restrictions were cited by 35.9% further underscores institutional limitations in resource provisioning, a concern also raised by Suleiman et al. (2024).

The disconnect between strong evaluative judgment and weak technical search ability suggests a mismatch between cognitive and procedural dimensions of information literacy, a gap that cannot be bridged by awareness campaigns alone. As Ali and Hassan (2025) and Chen et al. (2022) argue, sustainable improvement requires embedding IL instruction into the curriculum, not just offering one-off library sessions. At BUK, this could involve discipline-specific workshops co-taught by librarians and faculty, focusing on Boolean logic, database filters, and citation tracing within authentic research tasks.

Summary

While BUK students possess the critical thinking capacity to assess information quality, their inability to efficiently retrieve high-quality sources, due to skill gaps and systemic constraints, undermines research quality and academic performance (Owolabi & Aina, 2024). Addressing this requires coordinated investment in infrastructure (e.g., stable Wi-Fi), training (e.g., mandatory IL modules), and awareness (e.g., database orientation during registration). Only then can institutional investments in electronic resources translate into meaningful learning outcomes.

Conclusion

This study examined the interplay between information literacy competencies, specifically search strategy formulation and critical evaluation, and electronic database utilization among undergraduate students at Bayero University, Kano (BUK). The findings reveal a dual reality: students demonstrate strong critical evaluation skills and a clear ability to recognize information needs, consistent with the ACRL threshold concept that “authority is constructed and contextual” (American Library Association, 2020). However, their search strategy proficiency remains moderate, marked by limited use of Boolean operators, advanced search functions, and database filters, skills essential for efficient scholarly retrieval (Martínez & Gómez, 2024; Okoye & Yusuf, 2023). Moreover, systemic barriers, particularly poor internet connectivity, low awareness of available databases, and inadequate training, significantly constrain database utilization, echoing challenges documented across Nigerian universities (Tella & Oyedokun, 2023; Ezeani & Igwe, 2022). These infrastructural and pedagogical gaps undermine institutional investments in digital resources and limit students’ capacity to translate evaluative judgment into effective information retrieval.

The results affirm that access alone is insufficient; without targeted, curriculum-integrated information literacy instruction (Ali & Hassan, 2025; Chen et al., 2022) and improved ICT infrastructure, students will continue to rely on convenient but less reliable sources like general search engines (Head et al., 2023). To bridge this gap, BUK should embed discipline-specific database training into academic programs, enhance Wi-Fi reliability, and launch sustained awareness campaigns about subscribed resources. Such interventions would align practice with the ALA’s Framework and ultimately strengthen research quality, academic performance, and digital scholarship among undergraduates.

Recommendations

Integrate Curriculum-Embedded Information Literacy Instruction

Bayero University, Kano should embed discipline-specific information literacy modules into undergraduate curriculum particularly in research-intensive courses, to systematically teach advanced search strategies (e.g., Boolean logic, database filters, controlled vocabulary). This approach aligns with Ali and Hassan’s (2025) call for integrating IL into academic programs and

reflects best practices from Project Information Literacy (Head et al., 2023), which emphasizes contextualized learning over one-off library sessions.

Strengthen Librarian-Faculty Collaboration

Academic librarians and teaching faculty should co-design and co-deliver workshops on electronic database navigation, source evaluation, and scholarly communication. Such collaboration ensures that IL instruction is relevant to disciplinary norms and research expectations (Chen et al., 2022; Owolabi & Aina, 2024).

Improve ICT Infrastructure and Internet Reliability

The university must prioritize stable, high-speed Wi-Fi connectivity across campuses, especially in libraries and computer labs, as poor internet was identified as the most critical barrier (61.5% of respondents). This echoes Okoye and Yusuf (2023) and Tella and Oyedokun (2023), who stress that digital resource investments are futile without functional infrastructure.

Launch a Database Awareness Campaign

Given that 56.3% of students were unaware of available databases, the library should implement an ongoing orientation program, during matriculation, departmental seminars, and online portals, highlighting subscribed resources, access protocols, and unique features of key platforms (e.g., EBSCOhost, JSTOR). Suleiman et al. (2024) found similar awareness gaps in Nigerian universities and recommended proactive outreach.

Mandate Information Literacy Training for All Undergraduates

The university should consider making a foundational IL course or certified training module compulsory for all students, particularly in the first or second year. This would address the gap in procedural search skills while building on students' existing strength in critical evaluation (Mensah et al., 2023; American Library Association, 2020).

Advocate for Policy-Level Support

Following the recommendation of Okike and Oyeniyi (2024) and drawing from broader Nigerian studies, BUK should lobby national accreditation bodies, such as the National Universities Commission (NUC), to adopt minimum standards for ICT and IL infrastructure in academic libraries, as suggested in related research on Wi-Fi availability in Southeast Nigeria (Okoye & Yusuf, 2023, citing similar policy needs).

Implications and Future Research

This study reinforces the American Library Association's (2020) Framework for Information Literacy by demonstrating that search strategy and critical evaluation are distinct yet interrelated dimensions of IL, both essential for effective electronic database use. The finding that students excel in evaluation but lag in procedural search skills challenges assumptions that digital nativity equates to research competence, echoing PIL's conclusion that students often prioritize convenience over rigor in information seeking (Head et al., 2023). Practically, the results underscore that infrastructural deficits, especially poor Wi-Fi, can nullify both user competence and institutional investment. As Okoye and Yusuf (2023) argue, without reliable connectivity, even trained users cannot access subscribed resources, rendering literacy efforts ineffective. This validates their call for national accreditation bodies (e.g., NUC) to mandate ICT infrastructure, including Wi-Fi, as a baseline standard for academic libraries.

The findings imply that BUK must adopt a dual-track approach: (1) enhance ICT infrastructure to enable access, and (2) embed discipline-specific IL instruction to build advanced search competencies. Librarians should move beyond generic orientations to co-teach with faculty, aligning with Ali and Hassan's (2025) model of curriculum-integrated IL.

Directions for Future Research

- i. Employ mixed methods to explore why students underuse Boolean operators, whether due to lack of training, interface complexity, or cognitive overload.
- ii. Conduct longitudinal or experimental designs to assess the impact of embedded IL instruction on actual database usage logs (not just self-reports), as suggested by PIL's methodological rigor (Head et al., 2023).
- iii. Expand to other Nigerian universities to test the generalizability of these findings, particularly regarding the link between Wi-Fi availability and database utilization, a gap highlighted by Okoye and Yusuf (2023).
- iv. Investigate faculty perspectives on IL integration, as instructor buy-in is critical for sustainable curriculum embedding (Chen et al., 2022).
- v. Such research would deepen understanding of the contextual, pedagogical, and technological levers needed to transform electronic databases from underused assets into active engines of academic inquiry in Nigerian higher education.

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