

Influence of Information Literacy Programme on Undergraduate Students' Use of Information Resources in Tertiary Institutions in Yobe State

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ABSTRACT

This study investigated the influence of information literacy programmes on undergraduate students' use of information resources in tertiary institutions. A quantitative research approach employing a cross-sectional survey design was adopted. The study was conducted in three purposively selected institutions: Yobe State University, Damaturu; Federal Polytechnic, Damaturu; and the College of Education (Technical), Potiskum. Data were collected using structured questionnaires, a total of 400 undergraduate students constituted the study population out of which 288 valid responses were analysed using descriptive statistics, where frequencies and percentages were used in analyzing the data. Simple random sampling technique was used to ensure a representative from the selected tertiary institutions in Yobe State. The findings revealed that information literacy programmes positively influenced students' use of information resources by increasing library patronage, promoting the use of electronic resources and academic databases, improving students' research competencies, encouraging independent learning, enhancing confidence in conducting research, and strengthening the ability to identify and utilize scholarly information. The study also identified challenges affecting the acquisition of information literacy skills, including inadequate ICT facilities, insufficient numbers of trained librarians, limited awareness of information literacy programmes, difficulty understanding information literacy concepts, inadequate practical sessions, poor scheduling of training programmes, and low student motivation. The study concludes that information literacy programmes play a significant role in improving undergraduate students' effective utilization of information resources. It recommends strengthening ICT infrastructure, integrating information literacy into institutional curricula, increasing practical training opportunities, and providing continuous professional development for librarians to enhance programme effectiveness.

Keywords: Information Literacy Programme; Information Resources; Information Resource Utilization; Undergraduate Students; Tertiary Institutions in Yobe State

1. Introduction

Information literacy has become an essential competency for undergraduate students in higher education, enabling them to identify, access, evaluate, and effectively utilize information for learning, research, and lifelong learning. With the rapid growth of digital information resources, academic libraries have expanded beyond their traditional roles by providing structured information literacy programmes that equip students with the skills needed to navigate both print and electronic information sources (Chukwusa, 2021; Oseghale, 2023; Tachie-Donkor & Ezema, 2023). These programmes enhance students' research capabilities, critical thinking, independent learning, and effective use of scholarly resources, thereby contributing to improved academic performance.

Information literacy programmes are designed to equip undergraduate students with the knowledge and skills needed to identify information needs, locate relevant resources, evaluate the credibility of information, and use information ethically and effectively for learning and research (UNESCO, 2013; Association of College and Research Libraries [ACRL], 2016). Despite the availability of such programmes and diverse information resources in tertiary institutions, many students still experience difficulties in effectively utilizing library resources due to inadequate information literacy skills. Ambrose and Ogunbodede (2022) found that information literacy skills were associated with the use of electronic resources among undergraduate students in Nigeria. Similarly, Buba and Kamba (2022) reported that undergraduate students in Nigerian universities possessed information literacy skills that supported their utilisation of electronic resources, and Oseghale (2023) established that digital information literacy skills could enhance the effective utilisation of electronic resources among humanities graduate students at the University of Ibadan. These findings suggest that information literacy programmes are important for developing students' competencies in accessing, evaluating, and effectively using academic information resources. However, the effectiveness of such programmes can be constrained by inadequate ICT infrastructure, limited institutional support, insufficient staff capacity, and variations in programme implementation. Baro and Zuokemefa (2011) identified inadequate facilities, insufficient human resources, limited institutional support, and the absence of information literacy policies as major barriers to effective information literacy programmes in Nigerian university libraries, while Ekeh (2024) similarly identified institutional support as a significant factor shaping the effectiveness of information literacy programmes.

In Yobe State, tertiary institutions have introduced information literacy programmes to improve students' information-seeking and research competencies, yet a limited number of empirical studies have examined the relationship between information literacy and undergraduate students' use of information resources in the state. Babalola et al. (2022) examined information literacy skills as predictors of the use of electronic information resources among undergraduate students at Bayero University Kano and found that students' information literacy skills were important to their utilisation of electronic information resources. Buba and Kamba (2022) investigated information literacy skills and the use of electronic resources among undergraduate students in Nigerian universities and reported that students were aware of information literacy programmes and possessed skills for utilising electronic resources. More recently, Abdullahi et al. (2025) examined information literacy and information-resource use among students at Bayero University Kano and reported that, although students demonstrated basic information literacy knowledge, they still required further development in areas such as database searching and information evaluation. These studies, however, have not sufficiently examined the extent to which participation in structured information literacy programmes influences undergraduate students' actual use of information resources across universities in Yobe State, a gap the present study addresses.

Existing scholarship in Nigeria and elsewhere has established the general importance of information literacy programmes in developing students' ability to access, evaluate, and use academic information resources (Ovokeyen & Baro, 2019; Oyewo, 2020; Mungwabi, 2020; Adebayo-Atchimi et al., 2022), but most of this work has focused on individual institutions, specific regions, or discrete information literacy skills rather than on how structured programmes

translate into actual resource use across a state's tertiary institutions. Despite the provision of library services, electronic databases, and information literacy programmes in tertiary institutions in Yobe State, previous studies indicate that undergraduate students continue to experience challenges in effectively accessing and utilising available information resources. Bulau and Hassan Elbadawy (2025), for instance, found that although information literacy programmes such as library orientation, library week, and use-of-library and study-skills programmes were provided in universities in Yobe State, several digital library resources remained underutilised by undergraduate students. Ibrahim, Muhammad, and Kachallah (2025) reported variations in the availability and utilisation of electronic information resources among students in tertiary institution libraries in Yobe State and identified factors affecting their use, while Daya et al. (2025) found that inadequate library resources, poor internet connectivity, power interruptions, and insufficient awareness of searching skills were among the factors affecting students' utilisation of library information resources in the state. Taken together, these findings suggest that the availability of information resources and information literacy programmes does not necessarily guarantee their effective utilisation by students, who may continue to depend on readily accessible internet sources while struggling to systematically search, evaluate, and select appropriate academic information resources for their learning and research.

It is against this background that the present study examines the influence of information literacy programmes on undergraduate students' use of information resources in tertiary institutions in Yobe State. Specifically, the study assesses the influence of information literacy programmes on undergraduate students' use of information resources in these institutions, and identifies the challenges associated with the acquisition of information literacy skills within them. In pursuit of these objectives, the study asks what influence information literacy programmes have on undergraduate students' use of information resources in tertiary institutions in Yobe State, and what challenges are associated with the acquisition of information literacy skills in these institutions, and it tests the null hypothesis that there is no significant relationship between information literacy programmes and undergraduate students' use of information resources in tertiary institutions in Yobe State, Nigeria.

The study is anchored on the Big6 Skills Model developed by Eisenberg and Berkowitz (1990) as a systematic approach to information problem-solving. The model comprises six major components: task definition (defining the information problem and identifying the information needed), information-seeking strategies (identifying and selecting appropriate sources), location and access (locating sources and finding relevant information), use of information (engaging with and extracting relevant information), synthesis (organising and presenting information), and evaluation (assessing the effectiveness of the information product and the efficiency of the process). The model is well suited to this study because it provides a structured framework for examining students' abilities to identify information needs, locate and access information resources, use and synthesise information, and evaluate the outcomes of their information-seeking activities, competencies that are central to understanding how information literacy programmes influence undergraduate students' use of information resources in tertiary institutions.

2. Literature Review

Information literacy programmes are designed to equip students with the knowledge, skills, and competencies required to effectively identify, locate, evaluate, organize, and use information resources for academic and research purposes. The influence of such programmes on the use of information resources has been widely documented, particularly in higher education, where students are expected to engage in independent research, critical analysis, and lifelong learning (Tachie-Donkor & Ezema, 2023; Ahmed, Wan Mokhtar, & Baharuddin, 2024). Well-structured information literacy programmes equip students with practical strategies for searching, retrieving, and synthesizing information from diverse sources, thereby increasing their confidence and self-efficacy in navigating complex information landscapes (Shannon, Skira, Chen, & Shreffler, 2025). The effectiveness of information literacy programmes is evident in their ability to improve students' resource utilization behaviours. Students who participate in these programmes demonstrate greater proficiency in database navigation, advanced search techniques, and the evaluation of information quality, authority, and relevance. For instance, Sulieman (2025) found that students who received digital literacy and information literacy training were significantly more likely to utilize electronic resources effectively, although infrastructural limitations such as limited internet access and database subscriptions sometimes constrained full engagement. Similarly, Hamizak and Uzir (2024) reported that undergraduates with information literacy skills were more competent in accessing and using electronic resources for academic assignments and research projects, emphasizing the critical role of structured IL programmes in shaping student behaviours. These findings are consistent with Sahabi (2023), who revealed that students with higher information literacy skills in northern Nigerian universities were significantly more likely to use academic resources effectively, demonstrating that IL competence directly influences resource utilization outcomes.

Prior research confirms that information literacy (IL) programmes significantly enhance students' resource utilization by improving their ability to locate, evaluate, and apply scholarly information. However, literature reveals distinct contextual variations regarding the primary determinants of programme success. Sulieman (2025) highlights infrastructural constraints, such as inadequate ICT facilities and restricted database access, as major barriers, whereas Shannon et al. (2025) contend that curriculum integration and instructional design serve as the principal drivers of effective outcomes. This divergence underscores that while IL instruction yields universal benefits, its overall efficacy remains heavily contingent upon environmental and institutional factors.

IL instruction drives resource utilization through five primary mechanisms:

- i. *Technical Proficiency*: Developing search strategies to navigate institutional repositories and electronic databases efficiently.
- ii. *Critical Evaluation*: Equipping learners to assess source credibility, authority, and relevance.
- iii. *Research Self-Efficacy*: Reducing information anxiety and fostering confidence in independent scholarly inquiries.
- iv. *Curricular Application*: Embedding competencies into authentic academic deliverables, including thesis work and course assignments.
- v. *Infrastructural Facilitation*: Leveraging digital infrastructure, expert librarian guidance, and dedicated ICT tools to sustain engagement (Tachie-Donkor & Ezema, 2023; Sulieman, 2025).

Substantial empirical evidence supports these pathways across developing economies. Ahmed et al. (2024) demonstrated that IL skills among Nigerian undergraduates significantly increased electronic resource usage, directly elevating academic performance. Correspondingly, Tachie-Donkor and Ezema (2023) in Ghana and Hamizak and Uzir (2024) in Malaysia observed that structured IL training significantly heightened engagement with scholarly databases and online journals. Expanding this perspective, Nna Etuk et al. (2024) established that media literacy, a core dimension

of IL, exerts both cognitive and behavioural influences on digital resource adoption.

Despite these shared positive outcomes, crucial contextual distinctions persist. Studies in Nigeria (Ahmed et al., 2024; Sahabi, 2023; Nna Etuk et al., 2024) focus predominantly on baseline skill deficits and utilization barriers within local universities. In contrast, research from Ghana and Malaysia prioritizes systemic technological readiness, faculty collaboration, and formal curriculum integration. Given these structural disparities in ICT infrastructure and institutional governance, findings from broader international settings cannot be generalized wholesale to tertiary institutions in Yobe State.

Ultimately, the transformative potential of IL instruction is moderated by external variables. Unstable connectivity and subscription shortfalls frequently restrict practical application (Suliman, 2025). Furthermore, isolated orientation seminars prove far less impactful than sustained, scaffolded instruction integrated into core academic curricula (Shannon et al., 2025), necessitating tailored, context-specific institutional frameworks.

3. Methodology

This study adopted a cross-sectional survey design to examine information literacy programmes and undergraduate students' use of information resources in selected tertiary institutions in Yobe State, Nigeria. The study population comprised 875 second-year undergraduate students from Yobe State University, Federal College of Education (Technical), Potiskum, and Federal Polytechnic Damaturu.

Table 1: Population of the Study

S/N	Name of Institution	No. of Year Two Students
1	Yobe State University	360
2	Federal College of Education (Technical) Potiskum	215
3	Federal Polytechnic Damaturu	300
	Total	875

Source: Preliminary Study (2026)

These institutions were purposively selected because they offer structured information literacy programmes, while second-year students were chosen as respondents because they had already been exposed to such programmes. Using Yamane's (1967) sample size determination formula at a 5% margin of error, a sample size of 400 students was obtained. The sample was proportionately allocated to the selected institutions using Bowley's proportional allocation formula, after which individual respondents were selected through simple random sampling.

$$n = 875 / (1 + 875 \times 0.0025) = 875 / 2.19 = 400$$

The sample size of the study is 400 based on values from Yamane's (1967) formula.

Data were collected using the adapted structured questionnaire that was subjected to face and content validity by experts in Library and Information Science and educational research. The instrument was pilot-tested among 30 second-year undergraduate students at Federal University Dutse, and its internal consistency was established using Cronbach's Alpha, yielding an overall reliability coefficient of 0.878. A total of 400 questionnaires were administered, of which 288 were returned and found usable, representing a 72.0% response rate.

The data were analysed using SPSS Version 22.0. Descriptive statistics (frequencies and percentages) were used to summarize the data and answer the research questions, while Pearson Product Moment Correlation (PPMC) was employed to test the hypotheses on the relationships between the study variables. All statistical tests were conducted at

the 0.05 level of significance. Ethical standards were observed throughout the study by obtaining permission from the relevant authorities, securing informed consent from participants, and ensuring respondents' anonymity, confidentiality, and voluntary participation.

4. Results and Discussion

4.1 Influence of the Information Literacy Programme on the Use of Information Resources

The respondents were asked to indicate the effect of information literacy programmes on the use of information resources. Options were provided with instructions to tick all that applied to them. Table 2 provided a summary of their responses.

Table 2: Influence of Information Literacy Programmes on the Use of Information Resources

S/N	Influence Indicators	SA/A	U	D/SD
1	IL programmes increase frequency of library use	194 (67.3%)	44 (15.3%)	50 (17.3%)
2	IL training encourages use of electronic resources	198 (68.7%)	40 (13.9%)	50 (17.3%)
3	Students who attend IL training use more diverse information resources	194 (67.3%)	42 (14.6%)	52 (17.0%)
4	IL programmes improve effectiveness of academic research	192 (66.6%)	46 (16.0%)	50 (17.0%)
5	IL programmes motivate independent learning	198 (68.7%)	40 (13.9%)	50 (17.3%)
6	IL programmes enhance students' ability to solve academic problems	190 (65.9%)	48 (16.7%)	50 (17.3%)
7	IL programmes positively influence students' overall academic engagement	194 (67.3%)	44 (15.3%)	50 (17.3%)
8	IL programmes improve students' ability to integrate information from multiple sources	190 (65.9%)	50 (17.4%)	48 (16.6%)
9	IL programmes increase students' confidence in conducting research independently	196 (68.0%)	42 (14.6%)	50 (17.3%)
10	IL programmes encourage students to use credible and scholarly information sources	202 (70.1%)	38 (13.2%)	48 (16.6%)
11	IL programmes promote regular use of online academic databases	202 (70.1%)	36 (12.5%)	50 (17.3%)
12	IL programmes increase students' ability to locate relevant academic materials	198 (68.7%)	40 (13.9%)	50 (17.3%)

Table 2 highlights respondents' perceptions regarding the influence of information literacy (IL) programmes on information resource utilization across tertiary institutions in Yobe State, Nigeria. Overall, respondents strongly affirmed the positive impact of IL instruction across all measured indicators. Specifically, 198 (68.7%) respondents agreed that IL training encourages the use of electronic resources and fosters self-directed, independent learning. Increased frequency of library visits, greater usage of diverse information formats, and enhanced overall academic engagement were each affirmed by 194 (67.3%) respondents. Furthermore, 196 (68.0%) reported increased confidence in conducting independent research, while 192 (66.6%) affirmed that IL instruction improves overall academic research effectiveness. In terms of information synthesis and retrieval, 190 (65.9%) acknowledged an improved ability to integrate information from multiple sources. High agreement levels were similarly recorded for students' enhanced capacity to locate relevant materials, navigate online academic databases, and select credible, scholarly information sources. These findings demonstrate that information literacy programmes play a crucial role in strengthening research self-efficacy, promoting scholarly resource selection, and fostering self-directed learning among undergraduate students in Yobe State.

4.2 Challenges Associated with the Acquisition of Information Literacy Skills

The respondents were asked to indicate the challenges they faced on acquisition of information literacy skills and use of available information resources in their university libraries. The summary of their responses is presented in Table 3.

Table 3: Challenges Faced on Acquisition of Information Literacy Skills

S/N	Challenges	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	Inadequate ICT facilities hinder IL training	106 (36.8%)	94 (32.6%)	38 (13.2%)	28 (9.7%)	22 (7.6%)
2	Insufficient number of trained librarians for IL instruction	100 (34.7%)	92 (31.9%)	44 (15.3%)	32 (11.1%)	20 (6.9%)
3	Lack of awareness about IL programmes among students	98 (34.0%)	90 (31.3%)	50 (17.4%)	30 (10.4%)	20 (6.9%)
4	Difficulty understanding IL concepts during training sessions	92 (31.9%)	94 (32.6%)	52 (18.1%)	32 (11.1%)	18 (6.3%)
5	Limited opportunities for hands-on practice during IL training	100 (34.7%)	96 (33.3%)	44 (15.3%)	28 (9.7%)	20 (6.9%)
6	Poor scheduling or timing of IL training sessions	90 (31.3%)	92 (31.9%)	54 (18.8%)	34 (11.8%)	18 (6.3%)
7	Insufficient motivation among students to participate in IL programmes	88 (30.6%)	94 (32.6%)	52 (18.1%)	36 (12.5%)	18 (6.3%)

Table 3 presents the key challenges constraining information literacy (IL) skill acquisition in tertiary institutions across Yobe State, Nigeria. Both institutional deficits and student-level barriers significantly impede effective training delivery. Inadequate ICT facilities emerged as the primary constraint, with 200 (69.4%) respondents agreeing or strongly agreeing. Human resource and operational limitations also proved substantial: 196 (68.0%) cited limited opportunities for hands-on practice, 192 (66.6%) noted shortages of trained librarians, and 188 (65.3%) highlighted low student awareness of available IL offerings.

Additionally, instructional and personal factors restrict skill acquisition. Difficulty in understanding complex IL concepts was reported by 186 (64.5%) respondents, while 182 (63.2%) pointed to poor session scheduling and low student motivation (182, 63.2%) as major hurdles. Overall, the findings demonstrate that IL skill acquisition is hindered by systemic infrastructural deficits, staffing shortages, and suboptimal pedagogical design, alongside student-related engagement challenges.

4.3 Analysis of Inferential Statistics

This section tests the hypotheses developed in this study. PPMC test was used to test hypotheses raised in this study using SPSS version 22.0 of the Statistical Product and Service Solution (SPSS). In conducting the test, 0.05 was used as the level of significance in testing the hypotheses. For the interpretation of the test, the decision rule is that if the computed p-value is greater than the critical p-value ($p = 0.05$), the null hypothesis is accepted and the alternative hypothesis is rejected; conversely, if the computed p-value is less than or equal to the critical p-value ($p = 0.05$), the null hypothesis is rejected and the alternative hypothesis is accepted.

H_0 : There is no significant relationship between information literacy programmes and undergraduate students' use of information resources in tertiary institutions in Yobe State, Nigeria. The result of the test is presented in Table 4.

Table 4: Relationship between Information Literacy Programme and the Use of Information Resources

		Information Literacy Programme	Use of Information Resources
Information Literacy Programme	Pearson Correlation	1	.167**
	Sig. (2-tailed)		.005
	N	288	288
Use of Information Resources	Pearson Correlation	.167**	1
	Sig. (2-tailed)	.005	
	N	288	288

**, Correlation is significant at the 0.05 level (2-tailed).

The result presented in Table 4 shows the relationship between information literacy Programme and the use of information resources among students in tertiary institutions in Yobe State, Nigeria. The analysis revealed a very weak positive correlation between information literacy Programme and the use of information resources among students in tertiary institutions in Yobe State, which was statistically significant ($r = .167$, $n = 288$, $p = .005$, i.e. $p < 0.05$). Therefore, the study rejects the null hypothesis and accepts the alternative hypothesis since $p < 0.05$, indicating a statistically significant, though very weak, relationship between information literacy Programme and the use of information resources among students in tertiary institutions in Yobe State, Nigeria.

4.4 Discussion of Findings

This study demonstrates that information literacy (IL) programmes significantly enhance undergraduate students' utilization of library facilities, electronic resources, and online academic databases in Yobe State, Nigeria. Participation in IL instruction strengthened students' abilities to locate, evaluate, and integrate scholarly information, thereby improving research confidence and self-directed learning.

These outcomes align closely with the Big6 Skills Model, providing empirical support for its theoretical relevance in higher education. Reported improvements in finding materials map directly to the *Location and Access* stage, while the increased reliance on credible sources reflects the *Evaluation* stage. Furthermore, students' ability to synthesize information across sources aligns with the *Synthesis* dimension, confirming that structured instruction translates theoretical stages into practical academic competencies.

The empirical findings corroborate existing literature. Tachie-Donkor and Ezema (2023), Ahmed et al. (2024), and Hamizak and Uzir (2024) similarly established that IL instruction equips undergraduates with superior competence in navigating electronic resources. Furthermore, Shannon et al. (2025) and Sahabi (2023) confirmed that sustained IL training strengthens critical thinking, information evaluation, and resource utilization.

Despite these positive outcomes, the study revealed that IL programmes exert a statistically significant yet relatively weak overall influence on resource use. This indicates that instruction alone is insufficient. Institutional constraints, such as inadequate ICT infrastructure, limited database subscriptions, understaffing, poor scheduling, and insufficient practical, hands-on training, hinder students from applying acquired skills effectively. Underlying these challenges is chronic underfunding, which restricts institutional capacity to maintain digital infrastructure and support staff training (Julien & Barker, 2020; Bawden & Robinson, 2018). Consequently, optimizing IL effectiveness requires expanding physical and digital resources alongside active collaboration between academic librarians and instructional faculty.

5. Conclusion and Recommendations

5.1 Conclusion

This study concludes that information literacy programmes significantly and positively influence undergraduate students' use of information resources in tertiary institutions in Yobe State. Participation in these programmes enhances students' ability to locate, evaluate, and effectively utilize print and electronic information resources for academic and research purposes. The programmes also strengthen independent learning, research confidence, academic engagement, and the use of credible scholarly sources and electronic databases. However, their effectiveness is constrained by inadequate ICT infrastructure, limited availability of trained librarians, insufficient awareness, inadequate practical training, inappropriate scheduling, and low student motivation. These challenges require sustained institutional attention to maximize the educational benefits of information literacy programmes. Information literacy should therefore be recognized as an integral component of higher education and embedded within academic curricula rather than treated solely as a library orientation activity. Adequate funding, improved ICT facilities, curriculum integration, practical instruction, and continuous professional development for librarians are essential for developing students' competencies for effective participation in an increasingly information-driven academic environment.

5.2 Recommendations

The study recommends that tertiary institutions in Yobe State integrate information literacy programmes into undergraduate curricula to ensure systematic development of students' competencies. Institutions should provide modern ICT facilities, reliable internet connectivity, and adequate access to electronic databases to support effective information use. University and college libraries should conduct regular practical training, workshops, and refresher sessions focusing on information searching, evaluation, and utilization. Qualified librarians should receive continuous professional development to strengthen their capacity to deliver effective information literacy instruction. Libraries should also increase awareness through student orientations, social media, institutional websites, and collaboration with academic faculties. Information literacy sessions should be appropriately scheduled within academic calendars to encourage attendance and participation. Academic staff should collaborate with librarians by incorporating information literacy skills into assignments and research activities. Finally, institutions should establish regular monitoring and evaluation mechanisms to assess programme effectiveness and guide evidence-based improvements in information literacy provision and student learning outcomes.

5.3 Limitations and Directions for Future Research

This study has several limitations that should guide how its findings are interpreted. The cross-sectional design captures students' information literacy skills and resource use at a single point in time and cannot establish that programme participation caused improved utilization, since more resourceful students may simply be more inclined to participate. The reliance on self-reported questionnaire data also introduces risks of social desirability bias and recall inaccuracy, as actual usage was not verified through library circulation records or database login statistics. Further, the sample, 288 valid responses from three purposively selected institutions in Yobe State, limits generalisability to other Nigerian states, private institutions, or postgraduate populations, whose infrastructure and research demands may differ considerably. Finally, the largely descriptive analysis, supported by a single hypothesis test, establishes that a significant relationship exists but offers limited insight into which specific programme components, such as database training or citation instruction, drive that relationship, or how factors like discipline and year of study might moderate it; the weak effect size found despite significance suggests unmeasured variables remain at play.

Future research should adopt longitudinal or quasi-experimental designs comparing resource use before and after structured training to clarify causal direction, and mixed-methods approaches combining surveys with interviews or observed search behaviour to explain why some students translate training into consistent use while others do not.

Comparative studies spanning more states and institution types, including private universities and postgraduate students, would test whether these patterns generalise beyond Yobe State. Disaggregating programmes into their component parts would also help identify which elements most strongly support effective information resource use.

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