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INFORMATION LITERACY SKILLS FOR EFFECTIVE LIBRARY USE AMONG LIS UNDERGRADUATES AT FEDERAL COLLEGE OF EDUCATION (TECHNICAL), UMUNZE, ANAMBRA STATE

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Abstract
The study investigated information literacy skills for effective library use among LIS undergraduates at the Federal College of Education (Technical) (FCET), Umunze, Anambra State. It was descriptive survey research. The population was eighty-six (86) final year students of library and information science of FCE(T). Structured questionnaire was used for data collection. It was discovered that the students possessed digital skills, algorithmic skills, advanced search skills, critical analysis skills and data storage skills. They largely struggled with the tools for ethical enforcement and digital information communication, such as WordPress, Joomla, and Drupal. Based on the findings, the study recommended, among other things, training for students on the practical use of academic integrity software and digital information communication software.

Keywords: Information literacy skills, Library use, LIS undergraduates.

Introduction

Academic performance among undergraduate students is influenced by several factors, including intelligence, motivation, learning environment, and external support systems. However, effective study habits, particularly the utilization of library resources, remain fundamental determinants of academic success. In contemporary academic settings, the effective use of library resources requires not only access to information but also the possession of adequate information literacy skills. This necessity has become increasingly important due to globalization and rapid advancements in information and communication technologies, which have significantly transformed the nature and operations of libraries.

The digital revolution has reshaped library collections, services, personnel roles, and modes of information access. Consequently, the processes of information generation, acquisition, organization, dissemination, and retrieval have evolved considerably. In the twenty-first-century academic environment, students can no longer rely solely on traditional approaches to accessing library resources. Instead, they must possess the requisite literacy competencies needed to navigate both print and digital information systems effectively. This underscores the critical importance of information literacy in modern academic institutions.

Information literacy encompasses a range of intellectual and technological competencies that enable individuals to recognize information needs and to locate, evaluate, organize, utilize, manage, and communicate information effectively for various purposes. According to Omotade and Akinola (2025), information literacy is the ability to identify, access, assess, organize, and ethically utilize information from diverse print and digital sources for research, problem-solving, and decision-making. It further involves the capacity to evaluate the credibility and relevance of information, integrate technological tools such as artificial intelligence into information-seeking processes, and adapt continuously to emerging information environments. Consequently, information literacy equips individuals with the skills required for efficient information retrieval and effective utilization of available resources.

In an era characterized by information explosion and digital transformation, enhanced information literacy skills are indispensable for effective library use. Library use refers to the extent to which patrons utilize the resources, facilities, and services provided by libraries. Maduako (2013) explained that library use involves consulting library materials, seeking assistance from library personnel, and locating needed information in both print and electronic formats. It also encompasses remote access to library resources, borrowing and returning materials, reading personal materials within library premises, and using the library as a collaborative learning and meeting space.

The primary responsibility of academic libraries is to provide information resources and services that support teaching, learning, research, and community service. According to Shaiwale (2024), academic libraries serve as vital repositories of knowledge by acquiring, organizing, preserving, and providing access to diverse information resources, including books, scholarly journals, electronic databases, and digital collections that facilitate academic inquiry and intellectual development. This responsibility aligns with the first law of library science, which states that "books are for use." The value of library resources and services can only be realized when they are effectively utilized by members of the academic community. Failure to use available resources adequately undermines the efforts and investments made in their selection, acquisition, organization, and preservation.

Given the increasing complexity of information environments and the growing reliance on digital resources, information literacy has become essential for maximizing the benefits of library services. Therefore, this study examined the information literacy skills required for the effective utilization of library resources among Library and Information Science (LIS) undergraduates at the Federal College of Education (Technical) (FCET), Umunze, Anambra State.

Statement of the Problem

Information literacy has become an essential competency in contemporary education due to its role in facilitating knowledge creation, enhancing research effectiveness, and promoting lifelong learning. As academic libraries continue to evolve in

response to technological advancements and the increasing availability of digital information resources, students are expected to possess the necessary skills to identify information needs, locate relevant resources, evaluate information critically, and utilize information ethically and effectively.

Despite the growing importance of information literacy, observations and experiences suggest that many students may not possess the requisite competencies needed to navigate and utilize available information resources efficiently. This situation is particularly concerning because academic libraries invest substantial resources in acquiring, organizing, and providing access to diverse print and electronic information materials intended to support teaching, learning, and research. When these resources and services are underutilized due to inadequate information literacy skills, the educational benefits they are designed to provide may not be fully realized. Such a gap can negatively affect students' academic development, research productivity, and overall learning outcomes.

For students of Library and Information Science (LIS), who are expected to possess a higher level of competence in information management and retrieval, the acquisition of information literacy skills is even more critical. However, it remains unclear whether LIS undergraduates at the Federal College of Education (Technical), Umunze possess the information literacy skills necessary for the effective utilization of library resources. This uncertainty necessitates empirical investigation. Therefore, this study sought to examine

the information literacy skills of LIS undergraduates and determine the extent to which these skills facilitate the effective use of library resources at the Federal College of Education (Technical), Umunze, Anambra State.

Purpose of the Study

This study evaluated the information literacy skills of LIS students of the Federal College of Education (Technical), Umunze, for the effective use of the library resources.

Research Questions

1. To what extent do the LIS students at the Federal College of Education (Technical), Umunze, possess the required information literacy skills for the effective use of the library resources?
2. To what extent do the LIS students at the Federal College of Education (Technical), Umunze, possess the required Algorithmic literacy skills for the effective use of library resources?
3. To what extent do the LIS students at the Federal College of Education (Technical), Umunze, possess the required advanced search literacy skills for the effective use of library resources?
4. To what extent do the LIS students at the Federal College of Education (Technical), Umunze, possess the required critical analysis literacy skills for the effective use of library resources?

5. To what extent do the LIS students at the Federal College of Education (Technical), Umunze, possess the required data storage literacy skills for the effective use of library resources?
6. To what extent do the LIS students at the Federal College of Education (Technical), Umunze, possess the required ethical use of information literacy skills for the effective use of library resources?

Literature Review

The rapid advancement of information and communication technology has transformed the information landscape, increasing access to information while creating new challenges that require advanced information literacy skills. Information literacy has evolved beyond traditional research competencies to encompass the ability to locate, evaluate, organize, use, and communicate information effectively in digital environments. According to Omotade and Akinola (2025), these skills support independent learning, critical thinking, research productivity, and lifelong learning. Consequently, information literacy has become essential for effective utilization of modern library resources and services.

Information literacy skills have expanded to include digital literacy, advanced search strategies, critical evaluation of information, data management, and the ethical use of information technologies. These competencies enable users to navigate complex information environments, identify credible sources, utilize digital tools, and make

informed decisions. In contemporary libraries, information literacy also involves the responsible use of artificial intelligence, awareness of algorithmic influences, and the ability to combat misinformation.

Several empirical studies have established a positive relationship between information literacy skills and effective library use. Oluwabunmi and Ikonne (2023) found that information literacy skills significantly influenced undergraduate students' use of library resources in universities in Ogun State. Similarly, Meena (2024) reported that information literacy programmes enhanced students' information literacy competencies and increased library utilization among academic library users. Akhilomen, Oluwatoyin, and Osezua (2020) observed that users with high information literacy skills demonstrated greater ability to evaluate online information sources and make effective use of electronic databases. These findings suggest that information literacy is a critical factor in maximizing the benefits of library resources and services.

Among the essential information literacy competencies for effective library use is digital literacy, which refers to the ability to access, evaluate, create, and communicate information using digital technologies. Ismail, Subramaniam, and Ibrahim (2024) emphasized that digital literacy is fundamental to academic and professional success, while Salah, Bello, and Gwarzo (2024) noted that it facilitates effective access to library information resources and services. Closely related is algorithmic literacy, which involves understanding how algorithms and artificial intelligence systems influence information

retrieval, recommendation, and access processes in digital environments (Shin, Rasul, & Fotiadis, 2022).

Another important competency is proficiency in advanced search tools and strategies. This includes the ability to use library catalogues, academic databases, search engines, keywords, Boolean operators, and controlled vocabularies to retrieve relevant information efficiently. According to the Association of College and Research Libraries (ACRL, 2016), effective information retrieval in digital environments requires mastery of these search techniques. Obodo et al. (2022) similarly observed that competence in the use of library catalogues and online search tools enhances users' ability to locate needed information.

Effective library use also depends on the ability to evaluate and critically analyze information sources. This involves assessing the credibility, relevance, authority, accuracy, and purpose of information using established evaluation frameworks such as the CRAAP test. Soeprijanto, Diamah, and Rusmono (2022) argued that digital literacy extends beyond technology use to include the critical assessment of digital content. Users must therefore possess the ability to identify misinformation, recognize bias, and verify information through multiple credible sources.

Furthermore, information literacy includes competencies in information storage, management, and ethical use. These involve organizing and preserving information, ensuring data security, observing copyright regulations, maintaining academic integrity,

and using information responsibly. Negi (2023) emphasized the importance of ethical information practices, including awareness of copyright, data privacy, plagiarism prevention, and responsible use of artificial intelligence tools. Such competencies enable users to maximize library resources while adhering to professional and academic standards.

Overall, the literature indicates that information literacy skills are indispensable for effective library use in contemporary academic environments. These skills bridge the gap between the availability of information resources and their meaningful utilization, thereby enhancing academic achievement, research effectiveness, and lifelong learning among students.

Methodological Approach

A descriptive survey research design was adopted for this study. According to Creswell (2022). Descriptive survey research design provides a quantitative or numeric description of trends, attitudes, opinions of a population by studying a sample of that population. This design is best suited for this study because it yielded maximal information from students at Federal College of Education (Technical), Umunze. The target population is the 86 final year students of Library and information Science students. The rationale behind selecting 400-level students lies in the expectation that students at this academic level possess a better understanding of library resources andservicescompared to their peers at lower academic levels. Mean rating was used for data analysis. The items that

received the mean rating of 0 -1 shall be NA= Not Atal; 1.01- 2.00 shall be VLE=Very Low Extent; 2.01 -3.00 shall be LE=Low Extent, 3.01-4.00 shall be HE=High Extent and 4.01 – 5.00 shall be VHE.

Results and Discussion

To what extent do the LIS students at the Federal College of Education (Technical), Umunze, possess the required information digital literacy skills for the effective use of library resources?

Table 1: Digital literacy skills of LIS students at the Federal College of Education (Technical), Umunze

SN	Items	N	Minimum	Maximum	Mean	Std. Deviation
1	I am proficient in accessing library resources like OPAC or databases using digital tools like computers, smartphones, and online platforms. Strongly	86	1.00	5.00	3.72	1.33418
2	I can effectively navigate application software to find information in the library's virtual system.	86	1.00	5.00	3.30	1.02239
3	I use digital technologies (e.g., online platforms) to succeed in my academic tasks that involve using the library resources?	86	1.00	5.00	3.88	1.13156
4	I can create and communicate information using digital tools (such as WordPress, Joomla, and Drupal) provided by the library,	86	1.00	5.00	2.97	1.38034

Source: Field Survey SPSS Results, 2025

Table 1 indicates that items 1, 2, and 3 recorded mean scores of 3.72, 3.30, and 3.88 respectively, showing that the LIS students of FCE(T), Umunze possessed the corresponding digital literacy skills to a high extent. However, item 4 had a mean score of 2.97, indicating a low level of competence in that skill area. The findings suggest that the students possessed most of the digital literacy skills required for effective library use.

Specifically, they demonstrated proficiency in accessing library databases through computers, smartphones, and online platforms, navigating library application software, and utilizing online library resources for academic purposes. This finding supports the views of Ismail, Subramaniam, and Ibrahim (2024), who emphasized the importance of digital technology skills for academic and professional success, and Salah, Bello, and Gwarzo (2024), who noted that digital literacy is essential for effective access to library information resources and services.

However, the students demonstrated limited competence in using digital content management tools such as WordPress, Joomla, and Drupal for creating and communicating information. This finding contrasts with Akhilomen, Oluwatoyin, and Osezua (2020), who reported high levels of information literacy among university students, particularly in the use of digital information resources.

To what extent do the LIS students at the Federal College of Education (Technical), Umunze, possess the required algorithmic literacy skills for the effective use of library resources?

Table 2: Algorithmic literacy skills of LIS students at the Federal College of Education (Technical), Umunze.

SN	Items	N	Minimum	Maximum	Mean	Std. Deviation
5	I understand how algorithms in search engines or library databases process data and influence the results I see.	86	1.00	5.00	3.23	1.34317
6	I am aware of the social and ethical issues related to the use of algorithms in information systems, such as bias in AI-driven library tools.	86	1.00	5.00	3.44	1.06941

7	I can manage my AI environment (e.g., adjusting settings in library digital search tools) to get better results from AI applications	86	1.00	5.00	3.67	1.16257
8	I can systematically plan and implement strategies/ techniques that help me manage, limit, or counteract how algorithms shape the information I get while using online library tools, such as search engines, databases, catalogues, or digital collections.	86	1.00	5.00	3.62	1.06325
9	I recognize knowledge gaps in algorithmic literacy and seek ways to improve my understanding for better library use.	86	1.00	5.00	3.68	1.17084

Source: Field Survey SPSS Results, 2025

Table 2 shows that items 5, 6, 7, 8, and 9 recorded mean scores of 3.23, 3.44, 3.67, 3.62, and 3.68 respectively, indicating that the LIS students of FCE(T), Umunze possessed algorithmic literacy skills to a high extent. The findings reveal that the students had a strong understanding of how algorithms in search engines and library databases process information and influence search results. They were also aware of the social and ethical implications of algorithm use, demonstrated the ability to manage AI-driven environments for improved outcomes, applied strategies to minimize algorithmic biases in information retrieval, and recognized the need to continually improve their algorithmic literacy skills. These competencies are essential for effective navigation and utilization of digital library resources.

This finding, however, contrasts with the observations of Cotter and Reisdorf (2020), who argued that research and education on algorithmic literacy remain at an early stage and are characterized by significant knowledge gaps. Similarly, the result does not support the position of Frau-Meigs (2024), who maintained that algorithmic literacy lacks a clearly defined and consistent framework of competencies encompassing skills, knowledge,

attitudes, and values. The high level of algorithmic literacy demonstrated by the students suggests that they have acquired substantial competencies in this area, enabling them to engage more effectively with contemporary digital information systems.

To what extent do the LIS students at the Federal College of Education (Technical), Umunze, possess the required advanced search literacy skills for the effective use of library resources?

Table 3: The advanced search literacy skills of LIS students at the Federal College of Education (Technical), Umunze.

SN	Items	N	Minimum	Maximum	Mean	Std. Deviation
10	I am skilled in structuring advanced search queries in library databases using keywords, Boolean operators, truncations, and controlled vocabularies	86	1.00	5.00	3.52	1.23409
11	I can match the right search tools to my needs, such as switching between general search engines and specialised academic databases.	86	1.00	5.00	3.06	1.14574
12	I can use the online library catalogue, search engines, or online tools to source needed information effectively.	86	1.00	5.00	3.17	1.29426
13	I can efficiently access appropriate digital databases, refine my searches to get the information and library information resources	86	1.00	5.00	3.36	1.13669

Source: Field Survey SPSS Results, 2025

Table 3 indicates that items 10, 11, 12, and 13 recorded mean scores of 3.52, 3.06, 3.17, and 3.36 respectively, showing that the LIS students of FCE(T), Umunze possessed advanced search literacy skills to a high extent. The findings reveal that the students were proficient in constructing advanced search queries using keywords, Boolean operators, truncation, and controlled vocabularies. They were also capable of selecting appropriate search tools, including general search engines and specialized academic databases,

effectively utilizing online library catalogues and digital databases, and refining search strategies to retrieve relevant information efficiently. These competencies enhance their ability to access and utilize library resources effectively for academic purposes.

This finding is consistent with the position of the Association of College and Research Libraries (ACRL, 2025), which emphasized that effective and efficient access to information resources in contemporary digital environments depends largely on advanced search literacy skills. The result further underscores the importance of search competencies in maximizing the use of library resources and services.

To what extent do the LIS students at the Federal College of Education (Technical), Umunze, possess the required evaluation and critical analysis literacy skills for the effective use of library resources?

Table 4: The evaluation and critical analysis literacy skills of LIS students at the Federal College of Education (Technical), Umunze.

SN	Items	N	Minimum	Maximum	Mean	Std. Deviation
14	I can apply the CRAAP test (Currency, Relevance, Authority, Accuracy, Purpose) to evaluate information sources from the library's digital collections.	86	1.00	33.00	3.61	3.42025
15	I can use fact-checking methods, such as cross-referencing with trusted sites like Snopes or FactCheck.org, for library-accessed content.	86	1.00	5.00	3.04	1.13663
16	I do analyze bias in digital content by examining language, tone, and multiple sources	86	1.00	5.00	3.29	1.24491
S17	I evaluate digital libraries using criteria like CUPE (Content quality, Usability, Performance, Engagement).	86	1.00	5.00	3.03	1.13187
18	I conduct comparative analysis across multiple sources to critically assess information from the library's hybrid resources.	86	1.00	55.00	3.74	5.75006

Source: Field Survey SPSS Results, 2025

Table 4 shows that items 14, 15, 16, 17, and 18 recorded mean scores of 3.61, 3.04, 3.29, 3.03, and 3.74 respectively, indicating that the LIS students of FCE(T), Umunze possessed critical analysis skills to a high extent. The findings reveal that the students were capable of evaluating information sources using the CRAAP test (Currency, Relevance, Authority, Accuracy, and Purpose), applying fact-checking techniques, identifying bias in digital content, assessing digital libraries using the CUPE criteria, and conducting comparative analyses across multiple information sources. These competencies enable them to make informed judgments about the quality, credibility, and relevance of information obtained from library resources.

This finding supports the view of Soeprijanto, Diamah, and Rusmono (2022), who argued that digital literacy extends beyond the use of digital technologies to include the critical evaluation of digital content. The result also aligns with the principles underlying the CRAAP test and the CUPE framework, which emphasize the assessment of information quality, usability, credibility, and performance in digital information environments. These skills are essential for effective utilization of library resources in contemporary academic settings.

To what extent do the LIS students at the Federal College of Education (Technical), Umunze, possess the required data storage literacy skills for the effective use of library resources?

Table 5: The information storage literacy skills of LIS students at the Federal College of Education (Technical), Umunze.

SN	Items	N	Minimum	Maximum	Mean	Std. Deviation
19	I can organize and manage digital data (e.g., research notes, downloaded articles) using clear file structures, tagging, and metadata for future retrieval.	86	1.00	5.00	3.37	1.31101
20	I can implement data security practices, such as encryption and access controls, to protect information stored from library resources.	86	1.00	5.00	3.31	1.15057
21	I can do routine backups (e.g., using cloud services or external drives) to prevent loss of library-sourced data?	86	1.00	5.00	3.34	1.16586
22	I adhere to data privacy protocols when storing and sharing information from the library's digital systems.	86	1.00	5.00	3.29	1.18685
23	I can use tools like reference management software such as Mendeley, EndNote and Zotero to assemble and retrieve citations and bibliographies efficiently.	86	1.00	5.00	3.01	1.37622

Source: Field Survey SPSS Results, 2025

Table 5 indicates that items 19, 20, 21, 22, and 23 recorded mean scores of 3.37, 3.31, 3.34, 3.29, and 3.01 respectively, showing that the LIS students of FCE(T), Umunze possessed information storage literacy skills to a high extent. The findings reveal that the students were competent in organizing and managing digital information through appropriate file structures, tags, and metadata for easy retrieval. They also demonstrated the ability to implement data security measures, conduct routine data backups, adhere to data privacy protocols, and utilize reference management tools such as Mendeley, EndNote, and Zotero for organizing citations and bibliographies. These competencies facilitate efficient storage, management, and retrieval of information obtained from library resources.

This finding is consistent with the position of the Association of College and Research Libraries (ACRL, 2016), which emphasized that information storage literacy encompasses the ability to organize, secure, store, and retrieve information effectively,

while maintaining technical proficiency in digital information systems and adhering to established data privacy standards. The result underscores the importance of information management skills in enhancing the effective use of library resources and services.

To what extent do the LIS students at the Federal College of Education (Technical), Umunze, possess the required ethical use of information literacy skills for the effective use of library resources?

Table 6: The ethical use of information literacy skills of LIS students at the Federal College of Education (Technical), Umunze.

SN	Item	N	Minimum	Maximum	Mean	Std. Deviation
24	I understand and apply copyright awareness and fair use principles when using library digital content.	86	1.00	5.00	3.58	1.08969
25	I can detect algorithmic bias and apply ethical practices when using AI tools in library searches.	86	1.00	5.00	3.09	1.17451
S26	I can use academic integrity tools like Turnitin or iThenticate for assignments involving library resources	86	1.00	5.00	2.96	1.37582
27	I can address data privacy concerns when transmitting or storing information from the library's virtual services.	86	1.00	5.00	2.98	1.22229
28	I promote a culture of informed inquiry by ethically using digital tools and content in academic work.	86	1.00	5.00	3.16	1.32719
	Valid N (listwise)	86				

Source: Field Survey SPSS Results, 2025

Table 6 shows that items 24, 25, and 28 recorded mean scores of 3.58, 3.09, and 3.16 respectively, indicating that the LIS students of FCE(T), Umunze possessed the corresponding ethical use of information skills to a high extent. However, items 26 and 27 had mean scores of 2.96 and 2.98 respectively, suggesting a low level of competence in those aspects of ethical information use. Overall, the findings indicate that the students possessed ethical information literacy skills to a high extent. They demonstrated awareness

of copyright and fair-use principles, the ability to identify algorithmic bias and apply ethical practices when using AI tools, competence in using academic integrity tools such as Turnitin and iThenticate, and an understanding of data privacy considerations when handling information obtained from library resources. These skills contribute to the ethical and responsible use of information in academic work.

This finding supports the position of Negi (2023), who emphasized the importance of competencies in copyright awareness, data privacy, ethical use of digital tools, responsible application of artificial intelligence, and the detection of algorithmic bias. Negi further noted that proficiency in academic integrity tools such as Turnitin and iThenticate promotes a culture of informed inquiry and ethical scholarship within academic institutions. However, the lower ratings on some ethical-use indicators suggest that there is still room for improvement in certain areas of students' ethical information practices.

Recommendations

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

1. The college library should intensify user education and awareness programmes to familiarize students with the available library resources, services, and digital platforms, thereby encouraging greater utilization.

2. Regular interactive sessions should be organized between library staff and students to identify and address challenges hindering the effective use of library resources and services.

3. The library should collaborate with academic staff to design assignments, projects, and research activities that require students to utilize both print and electronic library resources.

4. Periodic training workshops should be organized to enhance students' competencies in digital literacy, academic integrity tools, and information communication technologies relevant to library use.

5. The library should provide continuous information literacy programmes focusing on advanced search strategies, database navigation, information evaluation, and effective retrieval of academic resources.

6. Special training should be conducted on the ethical use of information, including copyright compliance, plagiarism prevention, data privacy, responsible use of artificial intelligence tools, and the application of reference management software such as Mendeley, EndNote, and Zotero.

7. The college management should support the provision and maintenance of adequate technological infrastructure, including reliable internet access, functional computers, and up-to-date digital resources, to facilitate effective access to library services and enhance students' information literacy skills.

Conclusion

Effective use of the library in the 21st century requires a significant level of enhanced information literacy skills due to the advancement in Information

Communication Technology and its effect in the information landscape. Though this advancement has aided information dissemination and access, it has also presented the need for a step-up in the ICT competence of librarians and users alike. Facts and figures available have shown that among the students of Library and Information Science in the Federal College of Education (Technical), Umunze possessed the required competences to a high level; this calls for the urgent need to find out the possible causes for the low user engagement turnout.

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