

ARTIFICIAL INTELLIGENCE LITERACY FOR LIBRARY AND INFORMATION SCIENCE EDUCATORS IN THE 21ST CENTURY: IMPERATIVENESS FOR TEACHING AND RESEARCH

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Abstract

Artificial **Intelligence** (AI) is among the major tools for teaching and research in higher education. This study explored AI literacy for LIS educators in the 21st century and its importance for teaching and research. The descriptive study employed a structured questionnaire to collect data from LIS educators in universities in Delta, Edo, and Rivers States, Nigeria. The study employed descriptive statistical tools for data analysis. The study found a high level of relevance of AI literacy to teaching effectiveness among LIS educators and that AI literacy enhances research productivity among the educators to a great extent. Also, the level of AI literacy among the LIS educators is high. The study concluded that improving AI literacy among LIS educators is essential for strengthening teaching effectiveness and enhancing research productivity. It was recommended that LIS departments should **organize** regular training, workshops, and professional development programmes on AI tools and applications to improve educators' AI literacy. Universities and LIS departments should integrate AI literacy into teaching practices, while institutional management should provide access to AI tools and digital infrastructure to support research activities.

Keywords: Artificial Intelligence, Artificial Intelligence literacy, Library and Information Science educators, Research, Teaching

Introduction

In recent years, efforts have been made to apply modern innovations to drive societal development and improve people's quality of life. Nearly every day, global media are reporting how digital technologies are transforming, and usually disrupting, education, as innovations replace traditional systems and reshape educational practices. The education sector, like other sectors, has experienced the impact of technologies such as artificial intelligence (AI), with varying levels of adoption and success (Adekoya et al., 2024). Library and Information Science (LIS) educators are not immune to this, as they have recognised the need to embrace modern innovations, especially AI, for teaching and research to maintain their relevance and enhance performance. AI is

the development of intelligent machines capable of performing tasks that typically require human intelligence, such as learning, reasoning, understanding language, interpreting visual data, and executing complex activities (Jenis et al., 2023).

AI is emerging as the central driver of educational innovation in the 21st century. The rapid advances in AI have driven a technological transformation in LIS teaching and research. As such, the discussion about incorporating AI into LIS teaching and research is gaining momentum among LIS educators worldwide, as AI is reshaping traditional LIS practices, such as information **organization**, retrieval, and service delivery. In Nigeria, as academic institutions integrate digital tools into teaching and research, the need for educators to possess adequate AI literacy has become more vital than ever. AI literacy, which encompasses the knowledge, skills, and ethical understanding required to use and engage with AI technologies effectively, is now essential for LIS educators to remain relevant and competitive in a rapidly evolving information environment.

Contemporary university practice involves integrating AI into teaching and research, which requires AI literacy. Despite the emphasis on AI competencies, there is inadequate empirical evidence regarding the level of AI literacy among LIS educators in Nigeria. Most LIS educators were trained in predominantly traditional systems that did not incorporate AI-driven tools. This creates a gap between current technological demands and existing competencies. This raises important concerns about whether LIS educators possess the requisite knowledge and skills to effectively integrate AI into their teaching and research. Meanwhile, the ability of LIS educators to leverage these technologies can significantly improve instructional quality (e.g., clarity of instruction, lesson **organization** and structure, assessment and feedback effectiveness) and research productivity (e.g., literature discovery, academic writing, and research dissemination). However, inadequate AI literacy may make it difficult for educators to integrate these tools meaningfully. This study, therefore, seeks to examine the imperativeness AI literacy for teaching and research among LIS educators. Specifically, it examines the level of AI literacy among LIS educators, its relevance to teaching effectiveness, and its relevance to research productivity.

Statement of the Problem

Research on the role of AI in education is increasing in modern times. However, there is a contextual gap, particularly in developing countries such as Nigeria. Existing studies have primarily focused on technologically advanced countries with stable digital infrastructure and access to AI tools. As such, these studies provide inadequate knowledge into how LIS educators in Nigeria, who usually operate within constrained technological frameworks, apply AI literacy in their teaching and research practices. This inhibits understanding regarding the preparedness of LIS educators in Nigeria to use AI innovations. More importantly, insufficient attention has been paid to assessing the level of AI literacy among LIS educators in Nigeria and to how such literacy translates into improved teaching effectiveness and enhanced research productivity. Therefore, this study addresses these gaps by examining the level of AI literacy among LIS educators in Nigeria and its relevance to both teaching effectiveness and research productivity. By situating the investigation within the Nigerian higher education environment, this study contributes to a more context-sensitive understanding of AI literacy. The findings of this study will enable universities to make informed policy development and capacity-building initiatives aimed at strengthening the integration of AI into LIS education and research.

Research Questions

The following research questions guided the study:

1. What is the level of AI literacy among LIS educators in the 21st century?
2. What is the level of relevance of AI literacy to teaching effectiveness among LIS educators?
3. What is the level of relevance of AI literacy to research productivity among LIS educators?

Literature Review

AI Literacy among LIS Educators

In the current era of technology, AI is rapidly transforming how information is **organized**, accessed, and disseminated. As a result, LIS educators must be equipped with AI literacy to effectively teach, deliver instruction, and guide students to navigate AI-enabled information environments. This shift highlights the necessity for LIS educators to move beyond traditional teaching approaches toward more innovative, technology-driven pedagogies that reflect current industry realities. Moreover, AI literacy enhances research productivity as it enables educators to **utilize** advanced tools for data analysis and academic writing, thereby improving the quality of scholarly outputs (Oladokun et al., 2026).

The rapid improvements in AI have heralded a technological revolution in the practice of LIS (Adekoya et al., 2024). Among the major evolving trends identified in the Association of College and Research Libraries 2023 Environmental Scan, “emerging technologies”, including AI as highlighted by Steiger (2024), feature prominently. The rapid advancement of technological innovations, particularly AI, demands that LIS educators are adaptive and responsive to current changes. Consequently, LIS educators are expected to integrate AI-related instruction into teaching and research environments. The discussion regarding incorporating AI in LIS education is drawing impetus among LIS educators all over the world (Senthilkumar et al., 2024). This requires being AI literate. AI literacy is a foundational competency in the digital age (Chiu et al, 2024). This is because educators are expected to teach and demonstrate the practical application of AI tools in class. More so, there is a growing necessity for LIS educators to incorporate AI components and topics in their programmes to prepare students for emerging technologies. The topics comprise information retrieval systems, research data management, and machine learning. This advancement strengthens the competencies of aspiring LIS professionals in utilizing AI technologies for effective library service delivery.

Recognizing this paradigm shift, academic institutions are **prioritizing** the integration of AI literacy into LIS education to strengthen both teaching effectiveness and research capacity (Munyoru & Mutula, 2018). This effort is aligned with global educational trends that **emphasize** digital competence and lifelong learning. As Laupichler et al. (2022) argue, embedding AI literacy within LIS education is not merely an option but a necessity for ensuring that educators are relevant in a digital landscape. Also, findings from the Caruana et al. (2026) reveal a growing demand among students for AI-related training, which highlights the urgency for educators to possess the requisite knowledge and skills to meet these expectations.

Despite the growing awareness of AI in research and teaching, there is still inadequate practical proficiency. A study by Adekoya et al. (2024) found that although LIS professionals are aware of AI-powered services, the teaching and application of AI tools are low in Nigerian universities. A similar study by Oladokun and Umar (2026) highlights that AI competencies

among librarians are still developing, with a need for structured training and continuous professional development. Hossain (2025) further **emphasizes** that AI literacy must go beyond basic awareness to include critical understanding and human-centered application. The adoption of AI in LIS is still at an early stage, with challenges such as limited infrastructure and inadequate training affecting literacy levels. These findings mean that while LIS educators recognize the importance of AI, their literacy levels are insufficient for effective integration.

Relevance of AI Literacy to Teaching Effectiveness

AI holds a transformative influence in education (Huang, 2022), with growing recognition among LIS educators of its critical role in enhancing instructional quality and efficiency in LIS (Sallu et al., 2024). AI literacy is highly relevant to teaching effectiveness, as it equips educators with the competencies required to integrate intelligent tools into pedagogy, thereby improving content delivery and instructional outcomes. Thus, LIS literacy reflects a significant shift from traditional instructional methods toward more innovative and evidence-based approaches that strengthen teaching effectiveness (Ou, 2024). AI literacy enhances teaching effectiveness in LIS education. Educators equipped with AI skills can integrate intelligent tools into instructional design, thereby improving content delivery. According to Fan and Jia (2024), AI enables adaptive learning systems that personalize instruction and improve learning outcomes. Chisunka and Nsibirwa (2026) argue that integrating AI into LIS curricula prepares students for emerging professional demands, making teaching more relevant and future-oriented. AI tools such as automated grading systems, virtual assistants, and data analytics also streamline teaching processes and improve assessment accuracy.

AI literacy contributes to teaching effectiveness as it enhances research assistance, digital library management, and information literacy instruction. However, the study also reveals that the actual level of AI literacy among most university educators is limited, which may restrict its full impact on teaching. Ajani et al. (2025) stress that without adequate AI literacy, educators may struggle to effectively incorporate these tools into their teaching practices. Thus, AI literacy is essential for improving instructional quality and aligning LIS education with technological advancements.

Relevance of AI Literacy to Research Productivity

AI literacy is essential to research productivity, as it equips scholars with the competencies to efficiently discover, **analyze**, and generate knowledge using advanced digital tools and intelligent systems. Research productivity refers to the quantity and quality of scholarly outputs produced by a researcher within a given period. (Ogbomo & Adekoya, 2019). As academic researchers make discoveries that promote global advancement, the integration of AI literacy into research is crucial, particularly for LIS educators who play a pivotal role in shaping future professionals (Chen et al., 2020). Long et al. (2021) **conceptualize** AI literacy as a set of competencies that enable individuals to understand, use, evaluate, and critically reflect on AI technologies. For LIS educators, AI literacy extends beyond basic awareness. It includes the pedagogical capacity to integrate AI tools into teaching and the research competence to apply AI-driven methods in scholarly inquiry. Scott-Branch et al. (2023) further **emphasize** that AI literacy encompasses not only knowledge and technical skills but also awareness of the ethical, social, and professional implications of AI, together with a readiness to explore emerging innovations.

Fan and Jia (2024) averred that generative AI tools can improve research efficiency by automating repetitive tasks and providing analytical insights. Hossain (2025) notes that AI literacy enables educators to evaluate AI-generated outputs, ensuring research quality and ethical compliance. Evidence from research indicates that AI tools contribute to research productivity through functions such as research data management, automated cataloguing, and information retrieval. Chigwada (2024) **emphasizes** that developing AI literacy is essential for empowering researchers to leverage digital tools effectively. Without such competencies, educators may be unable to maximize the potential of AI in research activities.

Methodology

This study adopted a descriptive survey research design to examine AI literacy among LIS educators and its relevance to teaching and research. The population of the study was 67 LIS educators in **5 public** universities offering LIS programmes in Delta, Edo, and Rivers States, Nigeria. A total enumeration sampling technique was used due to the small and manageable size of the population. A structured questionnaire **titled “Artificial Intelligence Literacy for Library and Information Science Educators”** was used for data collection, covering three major areas: level of AI literacy, relevance to teaching effectiveness, and relevance to research productivity. The instrument was validated by experts in LIS and educational technology to ensure content validity. Reliability was established using Cronbach’s alpha, yielding a coefficient above the acceptable threshold of 0.78. **The researcher and 4 research assistants administered the questionnaire face-to-face to the respondents.** Out of the 67 educators, 51 responded to the survey, making 75% response rate. Data were analysed using descriptive statistics such as mean and standard deviation. The criterion mean was 3.00.

Results

RQ1: What is the level of AI literacy among LIS educators in the 21st century?

Table 1: Level of AI Literacy among LIS Educators

AI literacy	VHE	HE	ME	LE	VLE	Mean (\bar{x})	Std Dev.
I can integrate AI tools into my teaching and research activities	16	26	3	6	0	4.02	0.95
I am aware of the basic concepts and terminologies related to AI	9	33	3	5	1	3.86	0.89
I can use AI-powered tools (e.g., chatbots, recommendation systems) for academic purposes	10	27	2	7	5	3.59	1.16
I actively update my knowledge and skills in AI	12	19	6	11	3	3.51	1.19
I can guide students on the appropriate and responsible use of AI technologies	11	21	5	8	6	3.45	1.20
I understand the ethical issues associated with the use of AI(e.g., bias, privacy, misinformation)	9	22	6	9	5	3.41	1.18
I can identify different types of AI tools used for information organization and retrieval	7	15	2	14	13	2.78	1.36

I understand how AI is applied in LIS practices	5	17	0	16	13	2.71	1.33
I am confident in applying AI knowledge to solve information-related problems in my field	7	14	1	15	14	2.71	1.37
I can evaluate the accuracy of outputs generated by AI systems	6	13	2	17	13	2.65	1.34
Average Mean						3.27	
Criterion Mean						3.00	

Note: VHE = Very High Extent, HE = High Extent, ME = Moderate Extent, LE = Low Extent, VLE = Very Low Extent

As shown in Table 1, the average mean ($\bar{x} = 3.27$) is above the criterion mean of 3.00. That indicates that LIS educators possess a high level of AI literacy. This means their proficiency is highly advanced. The item with the highest competency level is the ability to integrate AI tools into teaching and research activities ($\bar{x} = 4.02$). This indicates a high level of practical application of AI in academic work. This is followed by awareness of basic AI concepts and terminologies ($\bar{x} = 3.86$) and use of AI-powered tools for academic purposes ($\bar{x} = 3.59$). However, identifying AI tools for information **organization** and retrieval ($\bar{x} = 2.78$), understanding how AI is applied in LIS practices ($\bar{x} = 2.71$), confidence in applying AI to solve information-related problems ($\bar{x} = 2.71$), and evaluating the accuracy of AI-generated outputs ($\bar{x} = 2.65$) fall below the criterion mean. This shows areas of weakness. The finding implies that although LIS educators demonstrate strong basic awareness and usage of AI, their low level of advanced competencies may hamper their effectiveness in fully integrating AI into teaching and research.

RQ2: What is the level of relevance of AI literacy to teaching effectiveness among LIS educators?

Table 2: Level of Relevance of AI Literacy to Teaching Effectiveness among LIS Educators

Relevance	VHR	HR	MR	SR	NR	Mean (\bar{x})	Std Dev.
AI literacy improves my efficiency in preparing teaching materials and resources	16	26	2	7	0	4.00	0.94
AI literacy is essential for achieving general teaching effectiveness in LIS	12	26	5	8	0	3.82	1.05
AI literacy enables me to access and utilize relevant academic resources more effectively	11	22	3	11	4	3.49	1.20
AI literacy contributes to better communication and interaction with students	9	19	7	13	3	3.35	1.13
AI literacy improves my confidence in integrating digital tools into teaching	9	16	2	13	11	2.98	1.35
AI literacy helps me design more engaging and interactive learning experiences	6	17	0	17	11	2.80	1.33
AI literacy supports my ability to assess students' performance effectively	5	18	0	17	11	2.78	1.32
AI literacy improves my teaching methods and instructional strategies	7	14	1	16	13	2.73	1.36
AI literacy enhances my ability to deliver	6	13	9	18	14	2.65	1.31

course content effectively									
AI literacy enhances my ability to personalize learning for students	4	14	2	18	13	2.57	1.30		
Average Mean						3.12			
Criterion Mean						3.00			

Note: VHR = Very Highly Relevant, HR = Highly Relevant, MR = Moderately Relevant, SR = Slightly Relevant, NR = Not Relevant

As shown in Table 2, the average mean ($\bar{x} = 3.12$) is above the criterion mean of 3.00. This indicates that AI literacy is generally perceived as relevant to teaching effectiveness among LIS educators. The results reveal an overall high level of relevance. The most highly rated relevance is that AI literacy improves efficiency in preparing teaching materials and resources ($\bar{x} = 4.00$). This indicates a strong impact on instructional preparation. This is followed by the perception that AI literacy is essential for achieving general teaching effectiveness ($\bar{x} = 3.82$), AI literacy enables access and utilization of relevant academic resources more effectively ($\bar{x} = 3.49$), and AI literacy contributes to better communication and interaction with students ($\bar{x} = 3.35$). However, confidence in integrating digital tools ($\bar{x} = 2.98$), designing engaging learning experiences ($\bar{x} = 2.80$), assessing students' performance ($\bar{x} = 2.78$), improving teaching methods ($\bar{x} = 2.73$), effective content delivery ($\bar{x} = 2.65$), and personalizing learning ($\bar{x} = 2.57$) reveals lower perceived relevance in core pedagogical functions. These findings imply that while AI literacy supports teaching preparation, its impact on core pedagogical practices is low.

RQ3: What is the level of relevance of AI literacy to research productivity among LIS educators?

Table 3: Level of Relevance of AI Literacy to Research Productivity among LIS Educators

Relevance	VHR	HR	MR	SR	NR	Mean (\bar{x})	Std Dev.
AI literacy improves the quality of my research outputs	7	17	8	11	8	3.98	1.30
AI literacy enhances my ability to identify relevant research topics and problems	12	27	6	5	1	3.86	0.96
AI literacy improves my efficiency in conducting literature searches and reviews	9	25	4	11	2	3.55	1.10
AI literacy enables me to use advanced research tools and databases effectively	10	22	2	13	4	3.41	1.19
AI literacy reduces the time required to complete research tasks	12	17	4	13	5	3.35	1.30
AI literacy increases my productivity in writing and publishing academic papers	11	19	3	12	6	3.33	1.28
AI literacy helps me generate ideas for scholarly publications	13	13	4	13	8	3.20	1.42
AI literacy is essential for improving overall research productivity in LIS	8	18	6	12	7	3.16	1.29
AI literacy supports data collection and analysis in my research activities	5	13	2	22	9	2.67	1.27
AI literacy enhances collaboration and communication in research activities	4	11	3	22	11	2.51	1.25

Average Mean	3.31
Criterion Mean	3.00

Note: VHR = Very Highly Relevant, HR = Highly Relevant, MR = Moderately Relevant, SR = Slightly Relevant, NR = Not Relevant

Table 3 reveals that the average mean ($\bar{x} = 3.31$) is above the criterion mean of 3.00. This shows that AI literacy is perceived to have a high level of relevance to research productivity among LIS educators. The highest rated relevance is that AI literacy improves the quality of research outputs ($\bar{x} = 3.98$). This indicates a strong perceived impact on research productivity. This is followed by identifying relevant research topics and problems ($\bar{x} = 3.86$), efficiency in literature searches and reviews ($\bar{x} = 3.55$), and the use of advanced research tools and databases ($\bar{x} = 3.41$). However, support for data collection and analysis ($\bar{x} = 2.67$) and enhancement of collaboration and communication in research ($\bar{x} = 2.51$) fall below the criterion mean, indicating lower perceived relevance. These findings indicate that while AI literacy is valued for improving research quality, efficiency, and idea generation, it is perceived as less impactful in collaborative and data-intensive aspects of research. These findings imply that AI literacy enhances individual research performance but has low impact on collaborative and data-intensive research activities.

Discussion

This study found a high level of AI literacy among LIS educators in Delta, Edo, and Rivers States, Nigeria. However, there are noticeable variations in the competencies. In general, the findings show that while educators have high foundational awareness and some practical use of AI, advanced application and critical evaluation skills are lacking. The highest mean score was recorded for the ability to integrate AI tools into teaching and research activities, followed closely by awareness of basic AI concepts. This means that LIS educators are familiar with AI terminology and are also incorporating AI tools into their professional practices. There is an agreement between this finding and that of Adekoya et al. (2024), who observed a growing awareness of AI technologies among LIS professionals, even though the depth of application varies. Also, the high use of AI-powered tools for academic purposes indicates a positive disposition toward adopting AI-driven solutions in scholarly activities.

A high level of competence in updating AI knowledge, guiding students on responsible AI use, and understanding ethical issues was found in this study. That means a growing awareness of the implications of AI, particularly in areas such as ethics and responsible use. This supports the position of Biagini (2025), who **emphasizes** that AI literacy must encompass technical skills and ethical and critical understanding. The findings also mean that LIS educators are gradually aligning with global expectations of digital competence and responsible AI integration. However, low mean scores were observed in more technical and applied competencies, such as understanding how AI is applied in LIS practices, confidence in solving information-related problems using AI, and evaluating the accuracy of AI outputs. These results indicate that although educators are aware of AI and can use some tools, they may lack practical expertise and critical evaluation skills. This finding is in agreement with that of Oladokun and Umar (2026), who reported that AI competencies among librarians are still developing. It also corroborates Udoh and Jimmy (2024), who noted that the adoption of AI in LIS is at an early stage due to challenges such as inadequate training and limited infrastructure.

Also, the low mean for identifying AI tools for information **organization** and retrieval means an inability to use AI in practical areas of librarianship. Meanwhile, effective integration of AI into LIS education requires not just general awareness but also contextual understanding of how AI tools support core library functions (Senthilkumar, 2024). The finding shows that LIS educators possess a foundational level of AI literacy, with strengths in awareness and basic usage, but weaknesses in advanced application and critical evaluation. This supports the argument by Kumar and Sangwan (2024) that embedding AI literacy in education is essential for ensuring relevance in a rapidly evolving digital landscape. It also reinforces the need for continuous professional development, as highlighted by Alemayehu (2021), to enhance both teaching effectiveness and research capacity.

This study found that AI literacy is generally perceived as relevant to teaching effectiveness among LIS educators in Delta, Edo, and Rivers States, Nigeria. This indicates a positive perception of AI literacy. However, its relevance varies across different aspects of teaching. The highest-rated item, improving efficiency in preparing teaching materials, indicates that AI literacy is mainly valued for enhancing instructional preparation. This agrees with the findings of a study by Singh and Pathania (2024), which highlights the role of AI in supporting content development and resource curation. Also, the perception that AI literacy is essential for general teaching effectiveness reinforces its growing importance in contemporary education (Caruana et al., 2026).

The findings that AI literacy enables educators to access and **utilize** relevant academic resources more effectively, and contributes to better communication and interaction with students, indicate that AI literacy enhances information use and interaction. This is consistent with findings that AI tools improve information retrieval and student engagement (Kumar & Sangwan, 2024). However, lower ratings for integrating digital tools, designing engaging learning experiences, assessing students, and improving teaching strategies indicate low application in core pedagogical practices. This supports an earlier study by Mehdaoui (2024), which notes that educators usually lack the pedagogical skills required for effective AI integration. Also, the low scores for content delivery and personalized learning further indicate underutilization of the transformative potential of AI. Although AI is known to support adaptive learning (Fedorka et al., 2025), its practical use appears low among LIS educators.

This study found that AI literacy is perceived as highly relevant to research productivity among LIS educators in Delta, Edo, and Rivers States, Nigeria. This finding agrees with that of Alemayehu (2021), who found that AI literacy is relevant for efficiency and preparatory tasks. Also, the finding that AI literacy improves the quality of research output corresponds with the earlier finding by Kohnke et al. (2025) that AI literacy enhances efficiency in preparing teaching materials. This means that LIS educators consistently associate AI literacy with improving output quality in both teaching and research. This finding is supported by a study by Khalifa and Albadawy (2024), which shows that AI tools enhance academic writing, editing, and knowledge production. Also, the high rating for identifying research topics is a finding by Senthilkumar et al. (2024), that AI literacy supports access to academic resources. This indicates that AI strengthens exploratory and information-seeking processes in both teaching and research.

The high ratings for literature search efficiency, use of advanced tools, and reduced research time also show teaching-related findings, in which AI improved access to resources and instructional preparation. This finding indicates that AI literacy enhances efficiency across

academic tasks, which supports a finding by Senthilkumar et al. (2024), who note that AI restructures information retrieval and academic workflows. However, lower ratings for data analysis and research collaboration reflect a similar pattern in teaching, where core pedagogical functions also recorded lower relevance. A study by Popa et al. (2024) attributes this to inadequate technical skills and insufficient training in applied AI use. However, in general, the findings show that AI literacy is mainly valued for improving individual productivity, such as writing, preparation, and information access, rather than collaborative or data-intensive research tasks.

Conclusion

This study examined the level of AI literacy and its relevance to teaching effectiveness and research productivity among LIS educators in Delta, Edo, and Rivers States, Nigeria. The findings show that LIS educators have a generally high level of AI literacy, especially in basic knowledge and practical use, such as integrating AI tools and understanding AI concepts. However, advanced skills such as critical evaluation of AI outputs and problem-solving remain weak. For teaching effectiveness, AI literacy was perceived as relevant, mainly in improving the preparation of teaching materials, access to academic resources, and communication with students. However, its relevance was low in core pedagogical areas such as instructional design, assessment, content delivery, and personalized learning, indicating limited deep integration into teaching practice. Also, AI literacy was rated as relevant to research productivity, particularly in improving research quality, identifying research problems, and supporting literature searches. However, it was less relevant in data analysis and research collaboration. Overall, AI literacy among LIS educators is mainly used for efficiency and basic tasks rather than advanced pedagogical or research applications. The study concludes that although LIS educators demonstrate positive AI literacy levels, there is a notable difference in basic knowledge and advanced application. Bridging this gap is necessary for meaningful integration of AI into teaching and research in LIS education.

Recommendations

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

1. Universities and the LIS departments should **organize** regular workshops, seminars, and training that focus on advanced AI skills. These should move beyond basic awareness to practical applications such as AI-assisted data analysis, research collaboration tools, and intelligent instructional design.
2. LIS curricula should be updated to include courses on applied AI in librarianship, such as AI for teaching, research analytics, information retrieval systems, and ethical AI use. This will help bridge the gap between basic knowledge and advanced competencies identified in the study.
3. LIS educators should be encouraged to apply AI tools in teaching activities such as lesson planning, assessment design, personalized learning, and interactive content delivery. Institutional support should be provided to facilitate experimentation and classroom integration.
4. Universities should provide access to advanced AI-driven research platforms, such as tools for data analysis, bibliometrics, and collaborative writing. This will help improve areas where AI literacy was found to be weak, particularly in data analysis and research collaboration.

5. LIS departments should create AI support units or digital innovation hubs that provide technical assistance, guidance, and resources for educators. This will help sustain effective AI adoption in both teaching and research.

References

- Adekoya, C. O., & Adedimeji, A. A. (2023). Enhancing library performance by exploiting the potentials of disruptive innovations. *VINE Journal of Information and Knowledge Management Systems*, 53(6), 1119-1134.
- Adekoya, C. O., et al. (2024). Teaching artificial intelligence: Implications for library practice. *FUOYE International Journal of Education*, 7(1), 26–39.
- Ajani, Y. A., Tella, A., Oladokun, B. D., Jacob, P. A., & Umar, L. (2025). Artificial intelligence competency and ethical considerations: Strategies for sustainable adoption among librarians in the fifth industrial revolution. *Journal of Librarianship and Information Science*, 09610006251372651.
- Alemayehu, E. (2021). Does continuous professional development (CPD) improve teachers performance? Evidences from public schools in Addis Ababa, Ethiopia. *Research & Reviews: Journal of Educational Studies*, 7(9), 1-17.
- Biagini, G. (2025). Towards an AI-literate future: A systematic literature review exploring education, ethics, and applications. *International Journal of Artificial Intelligence in Education*, 1-51.
- Caruana, I., Gilar-Corbi, R., & Palomar, M. (2026). Bridging the AI Skills Gap for Sustainable Education: A Structural Model of In-Service Teachers' Learning Intentions and Behaviors. *Sustainability*, 18(6), 3133.
- Chen, L., Chen, P., & Lin, Z. (2020). Artificial intelligence in education: A review. *Ieee Access*, 8, 75264 75278.
- Chigwada, J. (2024). A proposed framework for a digital literacy course for artificial intelligence in academic libraries. *South African Journal of Libraries and Information Science*, 90(2), 1-8.
- Chisunka, C. P., & Nsibirwa, Z. (2026). Proposed curriculum for LIS education to meet emerging trends in AI. *Digital Library Perspectives*, 42(2), 226–245.
- Chiu, T. K., Ahmad, Z., Ismailov, M., & Sanusi, I. T. (2024). What are artificial intelligence literacy and competency? A comprehensive framework to support them. *Computers and Education Open*, 6, 100171.
- Fan, Y., & Jia, L. (2024). Opportunities, challenges, and future directions for generative artificial intelligence in library information literacy education: A scoping Review. *Journal of Library and Information Sciences in Agriculture*, 36(9), 44.
DOI:[10.13998/j.cnki.issn1002-1248.24-0614](https://doi.org/10.13998/j.cnki.issn1002-1248.24-0614)
- Fedoraka, P., Buchuk, R., Klymenko, M., Saibert, F., & Petrushyn, A. (2025). The use of adaptive artificial intelligence (AI) learning models in decision support systems for smart regions. *J Res. Innov. Technol.*, 4, 99-115.
- Hossain, Z. (2025). Integrating AI literacy into LIS education and practice: A human-centered approach. *Library Hi Tech News*. DOI:[10.1108/LHTN-05-2025-0089](https://doi.org/10.1108/LHTN-05-2025-0089)
- Huang, Y. H. (2022). Exploring the implementation of artificial intelligence applications among academic libraries in Taiwan. *Library Hi Tech*.doi: 10.1108/lht-10-2021-0259

- Jenis, J., Ondriga, J., Hrcek, S., Brumerick, F., Cuchor, M., & Sadovsky, E. (2023). Engineering Applications of Artificial Intelligence in Mechanical Design and Optimization. *Machines*, 11(6), 577. <https://doi.org/10.3390/machines11060577>
- Khalifa, M., & Albadawy, M. (2024). Using artificial intelligence in academic writing and research: An essential productivity tool. *Computer methods and programs in biomedicine update*, 5, 100145.
- Kohnke, L., Zou, D., Ou, A. W., & Gu, M. M. (2025). Preparing future educators for AI-enhanced classrooms: Insights into AI literacy and integration. *Computers and Education: Artificial Intelligence*, 8, 100398.
- Kumar, A., & Sangwan, S. R. (2024). Conceptualizing AI literacy: Educational and policy initiatives for a future-ready society. *International Journal of All Research Education & Scientific Methods*, 12(4), 1543-1551.
- Laupichler, M. C., Aster, A., Schirch, J., & Raupach, T. (2022). Artificial intelligence literacy in higher and adult education: A scoping literature review. *Computers and Education: Artificial Intelligence*, 100101.
- Long, D., Blunt, T., & Magerko, B. (2021). Co-designing AI literacy exhibits for informal learning spaces. *Proceedings of the ACM on Human-Computer Interaction*, 5(CSCW2). <https://doi.org/10.1145/3476034>
- Mehdaoui, A. (2024). Unveiling barriers and challenges of AI technology integration in education: Assessing teachers' perceptions, readiness and anticipated resistance. *Futurity Education*, 4(4), 95-108.
- Mondal, H., Marndi, G., Behera, J. K., & Mondal, S. (2023). ChatGPT for teachers: Practical examples for utilizing artificial intelligence for educational purposes. *Indian Journal of Vascular and Endovascular Surgery*, 10(3), 200-205.
- Munyoro, P. K., & Mutula, S. (2018). Impact of ICT Integration into the LIS Curricula in Zimbabwe. *Mousaion*, 36(1). <https://doi.org/10.25159/0027-2639/1976>.
- Ogbomo, M. O., & Adekoya, C. O. (2019). Influence of academic workload on research productivity of librarians in Southwest, Nigeria. *African Journal of Studies in Education*, 14(3), 69-79.
- Okunlaya, R. O., Abdullah, N. S., & Alias, R. A. (2022). AI library services framework for digital transformation. *Library Hi Tech*, 40(6), 1869–1892.
- Oladokun, B. D., & Umar, L. (2026). Artificial intelligence skills and competencies among librarians in 5IR libraries: Systematic review. *Information Services and Use*, 18758789261418488.
- Oladokun, B. D., Ajani, Y. A., Enakrire, R. T., & Adefila, E. K. (2026). AI literacy and ethical use of generative AI in academic writing among LIS scholars in Nigeria. *Journal of Information, Communication and Ethics in Society*, 1-21.
- Ou, S. (2024). Transforming education: The evolving in the students' academic role of artificial performance. *International intelligence Journal of Education and Humanities*, 13(2), 163-173.
- Popa, I., Cioc, M. M., Breazu, A., & Popa, C. F. (2024). Identifying sufficient and necessary competencies in the effective use of artificial intelligence technologies. *Amfiteatru economic*, 26(65), 33-52.
- Sallu, S., Raehang, R., & Qammaddin, Q. (2024). Exploration of artificial intelligence (AI) application in higher education: A research study in Kolaka, Southeast Sulawesi. *Journal*

- of Computer Networks, Architecture and High Performance Computing*, 6(1). doi: 10.47709/cnahpc.v6i1.3396.
- Scott-Branch, J., Laws, R., & Terzi, P. (2023). The Intersection of AI, Information and Digital Literacy: Harnessing ChatGPT and Other Generative Tools to Enhance Teaching and Learning. <https://repository.ifla.org/rest/api/core/bitstreams/54750fdf-5d4c-4674-8e08-a18ff4e36f4b/content>
- Senthilkumar, K. R., Jagajeevan, R., & Sangeetha, S. (2024). Impact of AI on library and information science in higher institutions in India: A comprehensive analysis of technological integration and educational implications. In *AI-assisted library reconstruction* (pp. 21-33). IGI Global Scientific Publishing.
- Singh, B., & Pathania, A. K. (2024). AI-driven content creation and curation in digital marketing education: Tools and techniques. *International Journal of Engineering Science & Humanities*, 1(1), 14-26.
- Steiger, K (2024). Artificial intelligence in higher education and academic libraries: A literature review. *Endnotes: The Journal of the New Members Round Table*, 12(1), 25–36.
- Udoh, I., & Jimmy, K. (2024). Artificial intelligence (AI) potentials and the skills for adoption by librarians in university libraries in Akwa Ibom State, Nigeria. *Artificial Intelligence (AI) Potentials and the Skills for Adoption by Librarians in University Libraries in Akwa Ibom State, Nigeria* (July 12, 2024). *The Lancet*, 403(10423), 10-1016.