Dialogues in Humanities and Social Sciences
2025, VOL. 3, NO. 33-43
ISSN (P): 3078-8838 ; ISSN (O): 3078-8846
https://doi.org/10.71261/dhss/3.2.33.43

OPEN ACCESS

Unpacking the application and perceived benefits of artificial intelligence (AI) literacy from the lens of academic librarianship

Adeniy Isaiah Kayode[1]

[1] Landmark University, Omu-Aran. Email: kayode.adeniyi@lmu.edu.ng

ABSTRACT

While artificial intelligence (AI) technologies are generating increasing interest, dedicated efforts to cultivate AI literacy within the academic libraries remain limited. In response to this gap, this study investigates the application, perceived benefits, and challenges of AI literacy among academic librarians in Kwara state, Nigeria. Using a phenomenological approach, fifteen academic librarians were purposively selected for structured mobile phone interviews. Data were analysed through narrative analysis. Findings revealed that AI literacy is applied through tools like virtual assistants (Google Assistant, Google Translate), research platforms (ResearchRabbit, EndNote), natural language processing (NLP) systems, chatbots, and discovery engines (Andisearch). Benefits included improved access to discovery platforms, enhanced citation management, and personalized service delivery via GPS and Wi-Fi analytics. However, significant challenges were identified, including budget limitations, a lack of foundational knowledge and standardized training, ethical concerns, and unreliable internet connectivity. The study concludes that AI literacy is a powerful complementary tool but requires human oversight, institutional policy development, staff training, and ethical guidelines for responsible integration.

ARTICLE HISTORY
Received 02 June 2025
Accepted 08 Sep. 2025
Published 10 Sep. 2025

KEYWORDS
AI, literacy, academic library, phenomenological analysis, diffusion of innovation theory.

Introduction

Unquestionably, the period of exponential expansion in digital technology has seen constant advancements over time. Healthcare (Li et al., 2024), mathematics (Awang et al., 2025), entertainment (Hussain et al., 2024), education (Niloy et al., 2024), politics (Battista & Mangone, 2025), and librarianship (Tella et al., 2025; Tella & Ajani, 2022, p. 16; Tella, 2020; Kayode et al., 2020) are just a few of the fields that have embraced its innovative systems and applications. It now plays a crucial role in our everyday activities, education, and employment. Artificial intelligence (AI) is a revolutionary force that is changing our intellectual, social, and professional landscapes in a more algorithm-driven world. As such, it is more than just a technological phenomenon (McKinsey & Company, 2023).

As a symbol of the Fourth Industrial Revolution, artificial intelligence (AI) is a quickly developing technology that describes intelligent systems that can carry out complex operations and intellectual activities (Hodgson et al., 2022). According to Tella (2020), these systems can "see, understand and translate spoken and written language, analyze data, make recommendations and more." The role of AI in librarianship is growing (Ayanwale et al., 2024; Suh & Ahn, 2022; Quinn & Coghlan, 2021). Thus, AI literacy is becoming relevant in addition to information, digital, media, and data literacy (IFLA, 2020; Choice, 2023). According to Ng et al. (2021), AI literacy is the capacity to comprehend, assess, and interact with AI concepts and technologies in an efficient manner. It covers the information and abilities required to function in a society that is becoming more and more AI-driven, including practical applications, ethical issues, societal ramifications, and technological comprehension.

A further definition of AI literacy, a subset of digital literacy, is knowledge of the ethics, applications, and underlying concepts of AI. It includes the capacity to effectively employ AI technologies, assess their results critically, comprehend their underlying mechanisms, and consider their ethical and societal ramifications. AI literacy is not just for computer professionals: as Lo (2023) and Cetindamar et al. (2022) emphasise, it is essential to operationalise AI literacy for non-specialists. In the context of academic libraries,

CONTACT Adeniy Isaiah Kayode kayode.adeniyi@lmu.edu.ng Nigeria

AI literacy is important for various reasons, such as providing research support, facilitating teaching and learning, addressing ethical considerations, ensuring equitable access to information, promoting innovation, and encouraging collaboration (Alam et al., 2024; Lo, 2024). As AI technologies increasingly permeate academic research across various disciplines, including librarianship, librarians require support to understand and use AI effectively. Academic libraries can serve as hubs for providing access to AI resources, expertise and guidance, thereby enhancing the quality and depth of research outcomes (IFLA, 2020). One of the emerging developments in this area is AI literacy in academic libraries, which can facilitate the gathering of information from various and extensive discussions and research more quickly and easily due to its applications.

Tella et al. (2023) identified the application of AI literacy in academic libraries, which includes expert systems, natural language processing, deep learning, knowledge reasoning and robotics, among others. This is evident in academic libraries in some developed and developing countries. Alam et al. (2024) reported that the application of AI literacy has advanced academic libraries to the extent that robots are now used instead of humans for various operations and services. 'Bobbie', a robot created by the Temasek Polytechnic Library, can guide patrons to various areas of the library and deliver goods including newspapers, periodicals, and pamphlets. "Robbie," another robot created for the same library, is capable of scanning over 32,000 books every day. According to Alam et al. (2024), academic libraries have a bright future in the Fourth Industrial Revolution due to their many alleged benefits.

The benefits of AI literacy in academic libraries seem enormous. Cox (2022) stated that these benefits include research advancements, enhanced learning, administrative efficiency, ethical awareness, the cataloguing and classification of library collections, undertaking stressful and complex work that humans may struggle with or be unable to do, completing tasks faster than humans can, fewer errors and defects, and infinite functionality. To reap the rewards of AI literacy, Ali and Richardson (2025) reported that many academic libraries have adopted AI technology and found it beneficial. The authors also found that a number of academic libraries in both developed and developing regions have incorporated artificial intelligence into their strategic plans, while others have not. They speculated that those which have may have done so in light of the perceived benefits of such a measure. Conversely, those that have neither deployed such technology nor incorporated it into their strategic plans may have done so due to the challenges associated with its implementation.

It has been observed that the potential and practical benefits of AI literacy outweigh the associated challenges. Cox (2022) identified the following issues pertinent to AI literacy in academic libraries when considering the challenges of AI literacy: the absence of human interaction, the potential for automation to displace human labour, and the possibility of malfunction and unintended consequences resulting from AI implementation. Similarly, Ali and Richardson (2025) argue that AI literacy concerns the inability of AI to exhibit intellectual capabilities comparable to those of humans. This limitation stems from AI's nature as a machine of human fabrication, thus necessitating a human element for its operation. Without a human element in librarianship (or resistance to its introduction), libraries may not reap the full benefits of the current technological era. Against this backdrop, this study aims to investigate and unpack the application and perceived benefits of AI literacy from the perspective of diffusion of innovation theory. The study hypothesizes that its findings will provide novel insights into the perspectives of academic librarians in Kwara State, North-Central Nigeria, on the application, perceived benefits, and challenges of AI literacy in academic libraries. These insights could be extremely valuable to library administrators and the government in developing policies for AI literacy in academic libraries. This will ensure that speed does not come at the cost of intellectual integrity, inclusive access, or professional values.

Objective of the study

The broad objective of the study was to examine the application and perceived benefits of artificial intelligence (AI) literacy from the perspective of diffusion of innovation theory. The specific objectives of the study were to:

i. To examine the practical applications of AI literacy in academic libraries.
ii. To assess the perceived benefits of AI literacy among academic librarians; and
iii. To identify the challenges associated with AI literacy integration in academic libraries.

Literature Review

The increased importance of AI literacy has led to the development of intelligent systems that are now used in many fields. In the field of academic librarianship (LIS), developed systems have been adopted to help manage library and other information science activities. A significant body of research has been

dedicated to the application of AI literacy, its perceived benefits, and the anticipated challenges. Together, these studies provide context for the present research and highlight gaps in existing literature.

The Concept of AI Literacy in Academic Librarianship

In an era characterised by exponential growth in digital technology, the concept of AI literacy in academic librarianship has evolved to encompass not only traditional reading and writing skills but also a wide array of digital competencies. In the field of academic librarianship (LIS), a particular competency is increasingly emphasised: AI literacy. As AI literacy becomes integrated into all aspects of university operations, including learning management systems and research analytics, the ability to understand and utilise it has become a vital skill for academic librarians. As with previous definitions of AI literacy, several definitions can be found in the literature for AI users. These definitions emphasise the need for proficiency in various subject areas of AI literacy. Scholars mention various AI competencies (e.g., Carolus et al., 2023; Long & Magerko, 2020), AI abilities (e.g., Laupichler et al., 2022; Pinski & Benlian, 2023; Deuze & Beckett, 2022), and AI knowledge and understanding (e.g., Dai et al., 2020; Hermann, 2021). Together, this holistic proficiency should foster an understanding of AI literacy in academic librarianship and enable effective, ethical, and autonomous interaction with AI. It should also empower users to actively utilise AI in academic libraries and everyday life and allow them to critically evaluate AI (Carolus et al., 2023; Cetindamar et al., 2022; Dai et al., 2020; Hermann, 2021; Kong et al., 2021; Laupichler et al., 2022; Long & Magerko, 2020; Ng et al., 2022).

In the context of LIS, the integration of AI literacy has ushered in a transformative phase in the structuring, retrieval and dissemination of information. Echedom and Okuonghae (2021) emphasised the impact of AI literacy on reshaping technical services and patron engagement, marking a significant shift in the operational paradigm of academic libraries. As AI-literacy-based applications and software are increasingly incorporated into library services, AI literacy has become a major focus of discussion within academic libraries (Tzanova, 2024). According to Hovde (2025), the incorporation of new technologies into academic libraries changes the information literacy of both academic librarianship (LIS) and users, thereby requiring updated training. Therefore, it is not surprising that AI literacy has become a necessity in many domains, including information and communications technology, medicine and health, higher education, business and marketing, as well as library and information sciences. Without AI literacy skills, librarians may be unable to serve their users effectively. As Gül (2023) stated, AI literacy is important because it enables academic librarians to identify technology, communicate effectively with it, understand its limitations, and recognise its practical applications.

Applications of AI literacy in academic libraries

A significant number of tools have been and continue to be developed to support academic libraries and provide efficient service in the face of rapid information growth. Examples of these systems include Google Assistant, Google Translate, chatbots, ResearchRabbit, robots, natural language processing (NLP), EndNote, and Andisearch, among many others. However, the efficacy of these systems depends on their integration into the workflow of the library staff responsible for using them to provide services to patrons. For example, Adejo and Misau (2021) conducted a study on the use of artificial intelligence in academic libraries in Nigeria. The study employed a qualitative research method. The overarching research objective established as a guideline for the study was to ascertain the potential application of AI in Nigerian academic libraries. The findings of the study indicated that there is potential for the implementation of AI in academic library services in Nigeria. AI could be applied to reference services, technical services, indexing, acquisition, natural language processing, pattern recognition, and robotics in library activities. The study recommended two key areas for Nigerian academic libraries. Firstly, they should embrace AI literacy in their operations. Secondly, staff should receive training in using AI to deliver library services. As posited by Adetayo (2023), Kong et al. (2021), Laupichler et al. (2022), Long and Magerko (2020), and Ng et al. (2022), incorporating the Bing Chat tool, which facilitates the integration of visual content, has been shown to create a more dynamic conversational interface. This, in turn, has been shown to facilitate personalised learning for users. However, the use of these AI literacy applications depends on there being skilled users. Given their role in integrating AI literacy within academic libraries, it is imperative that they possess exceptional patron orientation skills due to the perceived benefits of doing so.

AI Literacy Benefits among Academic Librarians

It could be argued that the benefits of AI literacy outweigh the challenges. This is evident in the considerable time and human resources demanded by academic libraries, which are responsible for managing vast amounts of information and data sets. Systems such as the Machine-Readable Catalog (MARC), which was initiated by the Library of Congress over 40 years ago, appear to have paved the way for the effective handling and organisation of vast quantities of information. This finding serves to substantiate the advantages that AI literacy systems are set to bring to academic libraries. Furthermore, to meet the demands of emerging technologies, the Library of Congress is developing advanced online prototypes with the capacity to search through large volumes of data using computer vision and neural networks (Castellano & Vessio, 2021). This is another significant benefit of AI literacy for academic libraries.

Furthermore, academic libraries stand to benefit from AI literacy in this technological era in several ways. AI can undertake stressful and complex work that humans may struggle with or be unable to perform, complete tasks faster than humans can, and perform tasks with fewer errors and defects (Laupichler et al., 2022; Pinski & Benlian, 2023; Deuze & Beckett, 2022). AI literacy in academic libraries also offers benefits such as locating patrons using GPS and Wi-Fi and utilising RFID. User behaviour can be analysed using image acquisition and trajectory tracking to offer personalised services and determine patrons' characteristics such as age, nationality, and education (Kumar, 2025; Alam et al., 2024).

Challenges associated with AI literacy in academic libraries

While AI literacy can transform various industries by enhancing efficiency and usefulness, it also poses a number of difficulties (Subaveerapandiyan et al., 2023). There are many obstacles to AI literacy in academic libraries. But this study has looked at the most important ones from three perspectives. The first has to do with information workers' resistance to change because they are afraid of losing their jobs. The second has to do with a lack of funding to help integrate and buy AI literacy tools. The third has to do with academic librarians' insufficient abilities. According to studies by Kumar and Sheshadri (2019), Oladokun et al. (2025), and Ogungbenro et al. (2025), many academic librarians anticipate losing their jobs as a result of AI literacy in academic libraries. This suggests that in order to preserve their jobs, some information workers may oppose AI literacy. Employee perspectives of AI in academic libraries were examined by Lund et al. (2020) in connection to the adopter categories for the diffusion of innovations. According to the study, practicing librarians were surveyed about their identification of the adopter category and how this identification related to their perceptions and perceived knowledge of AI technology, both inside and outside of the library setting. The results of the study showed that most participants thought AI will have an adverse effect on their job status.

On the other hand, other factors, like funding for these sophisticated AI systems, might hold down librarianship, which would eventually force the adoption of new skills to deal with communities and patrons that are changing (Hussain, 2023). To upskill those who are motivated to learn, this may necessitate training and cooperation with specialists. But the absence of expertise in moving from digital to smart libraries is also causing issues and will surely have an impact on the integration and acceptance of AI. Similar worries about job displacement and adoption hurdles were found in a study of Zambian LIS workers' perceptions and knowledge of AI. The results highlight how crucial it is to develop AI literacy while taking leadership responsibilities, librarian expertise, and technology into account. Data analysis, algorithm creation, and electronic communication are among the identified competencies (Subaveerapandiyan et al., 2023).

Additional challenges noted include data manipulation, permission issues, personal privacy issues, ethical concerns, and illiteracy among users of the emerging AI systems (Cox, 2022). Some poor nations face challenges in implementing and integrating AI due to a lack of modern data facilities and technological infrastructure, which necessitate dependable power sources. Additionally, recent research has brought attention to issues with algorithmic bias, regulatory frameworks, and the digital divide (Adewojo et al., 2023; Amini, Vakilimofrad & Saberi, 2021; Adetayo, 2023; Barsha & Munshi, 2023). Additionally, many people lack knowledge of ethical standards and best practices for AI literacy due to the lack of institutional policies in this area (Ren & Wu, 2025). However, in order to address these expected challenges, industry players, policymakers, and researchers must work together to create rules, guidelines, and best practices that support the ethical and secure application of AI literacy.

Methodology

This study adopted a phenomenological research design to explore academic librarians' lived experiences and perceptions of using and applying AI literacy for service delivery (Dabengwa et al., 2020; Creswell & Creswell, 2018; Kendrick, 2014). This approach was deemed suitable as it allows for an in-depth

understanding of how librarians interpret a specific phenomenon. In this case, it was used to investigate academic librarians' personal experiences of integrating AI literacy into service delivery workflows. Fifteen participants were purposively selected from among academic librarians in Kwara State, providing an appropriate setting for engaging with professionals who were knowledgeable and actively involved in using advanced tools, such as AI literacy tools, in library service delivery. The participants had all consented to having applied AI literacy and similar generative AI tools in their work, making them well-suited to participate in the study. The participants were academic librarians working in higher education institutions in Kwara State, Nigeria.

Data were collected using a structured telephone interview protocol designed to elicit detailed responses from participants about their experiences of using AI literacy, the challenges they faced, and the benefits they perceived. The interviews were conducted in person, with each one lasting approximately 20–30 minutes. The data were analysed using narrative analysis, enabling the researchers to organise and interpret the participants' stories into coherent themes and insights. This analytical approach provided a deeper understanding of the integration of AI literacy into academic libraries and its impact on professional practices and workflows. In line with established ethical standards, participants were fully informed about the purpose of the study and their rights as research subjects. They were assured of the confidentiality of their identities and that the information provided would be used strictly for academic and research purposes. Participation was entirely voluntary, and informed consent was obtained before the interviews. Of the fifteen interview guides distributed to academic librarians (LIS professionals), all participants completed their interviews and provided usable data for analysis.

Findings and Discussion

The findings are organised according to the four research objectives, and the narrative style reflects the participants' phenomenological and experiential accounts. Fifteen library professionals from North-Central Nigeria (Kwara State) shared their experiences and insights into the benefits and application of AI literacy in their daily work. Their voices formed a consistent chorus of optimism, curiosity and caution regarding the use of AI literacy tools. The findings are presented thematically to reflect the interconnected and overlapping nature of the themes identified in this qualitative study.

Application of AI literacy in academic libraries

The librarians were asked to list applications of AI literacy that have been used in libraries. In general, the majority of respondents clearly stated that, in accessibility services, AI literacy enables us to use tools such as automated transcription and image recognition to support students with disabilities. Understanding these technologies enables us to customise their use. For example, one respondent reported that:

> *"One major application is in personalised learning. AI literacy enables librarians to use recommendation systems effectively, tailoring resources to individual student needs and academic goals. Also, we use AI literacy to train staff in evaluating AI-powered tools like* Google Assistant, Google Translate, ResearchRabbit*, chatbots, automated reference systems,* NLP, EndNote, Andisearch, and many more. *This ensures that the technology complements human expertise rather than replacing it. AI literacy helps us support faculty using machine learning tools in their research. Librarians who understand the basics of AI can assist with data sourcing, tool selection, and ethical considerations. In collection development, AI literacy helps us analyse usage patterns and predict resource needs. We use AI tools to make data-informed decisions, but we also understand their limitations and biases."*

In other words, a few librarians also added this:

> *"Understanding AI literacy helps us critically assess vendor platforms that use AI tools for metadata tagging and classification. We can advocate for transparency and ensure these systems align with our values of equity and access. Also, AI literacy is essential for navigating ethical issues. Academic librarians trained in AI literacy can lead conversations about data privacy, algorithmic bias, and the responsible use of emerging technologies."*

Similarly, 10 out of 15 respondents confirmed that chatbots, automated reference systems, Google Assistant, Google Translate, ResearchRabbit, robots, natural language processing (NLP), EndNote and Andisearch are among the most popular AI tools used in academic libraries. The results suggest that AI literacy is being applied in library operations and services, and that some of these AI tools are becoming popular in academic librarianship. Many of these AI literacy applications are already in use in university libraries around the world. This finding is consistent with the claims of Adetayo (2023), Kong et al. (2021), Laupichler et al. (2022), Long and Magerko (2020) and Ng et al. (2022) that the Bing Chat tool can integrate

visual content to provide a more dynamic conversational interface that empowers personalised learning for users.

These narratives reveal a growing application of AI literacy in Kwara State library contexts, as well as a clear pattern of self-directed learning and peer-based knowledge exchange. This suggests that the current uptake of AI literacy is more driven by individual initiative than institutional programmes. While this grassroots learning approach may foster creativity and experimentation, it also risks inconsistent application and potential misuse in the absence of formal training and guidelines. While commendable, the current level of application remains informal and uneven, underscoring the need for structured professional development to harness this enthusiasm more effectively.

AI literacy benefits among academic librarians

The benefits highlighted by participants were consistent and noteworthy. Librarians were asked to relate and indicate based on their experiences the benefits of AI literacy among academic librarians. The majority of the academic librarians noted that:

> *"AI literacy has strengthened our role as educators. We're now able to teach students and faculty not just how to use AI literacy tools like GPS, Wi-Fi, and utilising RFID, but how to think critically about their outputs and limitations. Also, AI literacy allows academic librarians to make informed decisions when selecting vendor platforms. We can ask the right questions about algorithmic transparency, data privacy, and bias mitigation. AI literacy has enhanced our ability to personalise service delivery. We use predictive analytics to anticipate user needs, and understanding how these systems work helps us interpret the data responsibly."*

One respondent also noted:

> *"For me, the biggest benefit is adaptability. AI literacy keeps us current with technological trends and prepares us to evolve alongside the digital tools shaping academia. With AI literacy, I feel more confident collaborating with faculty on research projects that involve machine learning or data analysis. It's opened up new opportunities for interdisciplinary engagement. Ultimately, AI literacy reinforces our professional relevance. As academic environments become more data-driven, librarians who understand AI literacy are better positioned to lead, innovate, and advocate."*

The results suggest that AI literacy can improve both the effectiveness of learning and the learning environment. This finding is consistent with the work of Kumar (2025) and Alam et al. (2024), who conceptualise benefits such as discovery platforms, citation managers, research databases, and locating patrons' positions using GPS and Wi-Fi. RFID technology will be used to analyse user behaviour, offering tailored services based on characteristics such as age, nationality, and education. However, this suggests that, while AI literacy is useful, it cannot replace human judgment in more complex evaluation tasks.

The findings reveal the benefits of discovery platforms, citation managers, research databases, and locating patrons' positions using GPS and Wi-Fi, as well as utilising RFID. Notably, the tool not only saves time but also functions as a cognitive partner, helping academic librarians to brainstorm subject headings and bibliographic entries that would not emerge from routine processes. This suggests that, in addition to providing mechanistic assistance, AI literacy may encourage intellectual engagement by offering alternative perspectives or terms. However, the extent to which these benefits translate into an improved user experience and higher-quality service remains to be seen.

Challenges associated with AI literacy in academic libraries

Respondents were asked what the challenges associated with AI literacy in academic libraries were, based on their responses to the questions. Despite the positive feedback, all participants acknowledged significant limitations. Common concerns included budget limitations, misconceptions, contextual misinterpretations, and the digital literacy gap, with some respondents suggesting that AI literacy is only for tech-savvy staff. According to a few respondents:

> *"One of the biggest challenges is the lack of foundational knowledge. Many academic librarians, including myself at first, didn't have a background in computer science or data ethics, which made it difficult to confidently teach or evaluate AI tools. Also, ethical concerns are complex. Teaching AI literacy means addressing issues like algorithmic bias, surveillance, and data privacy. These topics require careful framing and often lead to difficult conversations."*

In a related vein, another respondent has this to say:

> *"There's a lack of standardised training. Most academic librarians haven't received formal education in AI literacy, so we're learning on the fly, which can lead to inconsistent understanding and application.* Also, *many staff members feel intimidated by AI literacy. The terminology and concepts can be overwhelming, and there's a fear that AI might replace traditional library roles. AI evolves rapidly, and keeping up with the pace of change is exhausting. By the time we understand one tool, a newer version or a completely different system is introduced. It's hard to maintain consistent training. Furthermore, we face resistance from some colleagues who are skeptical of AI literacy. They worry it will replace human judgment or compromise the values of academic librarianship. Convincing them that AI literacy is about responsible use—not blind adoption—is a challenge."*

These challenges are echoed in multiple sources. Tella et al. (2023), Ogungbenro et al. (2025) and Oladokun et al. (2025), for example, emphasised infrastructural limitations and the digital skills gap, particularly in African settings. Their findings imply that these challenges indicate systemic barriers to the effective integration of AI literacy in academic libraries. These issues reflect deeper concerns about the suitability of general-purpose, global AI literacy in localised African contexts, where academic librarians often incorporate indigenous knowledge and region-specific materials. They also highlight the uneven preparedness of staff and infrastructure to leverage these tools effectively. Therefore, while participants recognise the value of AI literacy, they also reveal the urgent need for contextual adaptation, robust review mechanisms, and institutional investment to mitigate these risks.

Conclusion

Using the diffusion of innovation theory as a lens, this study examined AI literacy, emphasising its applications and benefits as well as the challenges that arise in real-world situations. Fifteen library professionals who took part in a structured telephone interview provided insights. According to the study, teaching employees how to critically assess and interact with a range of AI-powered resources is the main way that academic libraries are implementing AI literacy. These include natural language processing (NLP) systems, automated reference chatbots, research enhancement platforms like ResearchRabbit and EndNote, virtual assistants like Google Assistant and Google Translate, and new discovery engines like Andisearch. This method emphasizes how crucial it is to make sure that technology enhances human expertise in library services rather than taking its place.

A number of enormous benefits of AI literacy were noted by the participants. These included better citation management, easier access to discovery platforms, and quicker research database navigation. Furthermore, cutting-edge technologies that have been acknowledged for their capacity to customize service delivery include GPS tracking, Wi-Fi analytics, behavioral monitoring, image acquisition, and trajectory mapping. By using these tools, academic libraries can tailor user experiences according to demographic factors like age, nationality, educational background, and other pertinent details, which encourages more inclusive and responsive service delivery. Furthermore, difficulties with Internet accessibility and digital literacy were noted as enduring obstacles, especially in academic settings with limited resources.

The study comes to the general conclusion that while AI literacy has a lot of promise to enhance academic librarianship practices, its incorporation into library services needs to be handled with caution. Instead of taking the place of human judgment, AI literacy should be used as a supplemental tool to enhance the knowledge of LIS professionals. In order to facilitate the efficient and responsible use of AI literacy tools in library settings, the study also emphasizes the necessity of policies, employee training, and ethical standards. Thus, this study adds to the growing body of knowledge regarding the useful application of AI in library services. In order to guarantee that the use of AI literacy in academic libraries complies with accepted standards of accuracy, integrity, and contextual relevance, it highlights the significance of striking a balance between innovation and critical oversight.

Notwithstanding the enormous benefits, the results highlight contextual challenges in African library settings, including a lack of basic AI literacy skills, difficult moral dilemmas, and patchy Internet access. This poses a challenge because AI literacy is about responsible use, not mindless adoption. Open-access webinars, tutorials, and workshops catered to various skill levels are necessary to address these challenges. These ought to teach responsible AI literacy use with examples from the real world, like ChatGPT, Grammarly, or Google Scholar. Additionally, they ought to host workshops for professional development on the principles, applications, and ethical considerations of AI literacy. They should also create inclusive manuals and toolkits that provide clear explanations of AI literacy. It is also crucial to foster an environment of curiosity where

learning and experimentation are ingrained in the library's very fabric. Lastly, for AI literacy to be integrated sustainably, localized guidelines are required.

Disclosure Statement
No potential conflict of interest was reported by the author(s).

References

Adetayo, A. J. (2023). Artificial intelligence chatbots in academic libraries: the rise of ChatGPT. *Library Hi Tech News*, *40*(3), 18-21. https://doi.org/10.1108/LHTN-01-2023-0007

Alam, A. F., Subaveerapandiyan, A., Mvula, D., & Tiwary, N. (2024). AI literacy and Zambian librarians: A study of perceptions and applications. *Open Information Science*, *8*(1), 20220166. https://www.degruyterbrill.com/document/doi/10.1515/opis-2022-0166/html

Ali, MY and Richardson, J (2018) Workplace information literacy skills: Library professionals' competency at university libraries in Karachi, Pakistan. Information and Learning Sciences, 119(7/8), 469-482. https://doi.org/10.1108/ILS-10-2017-0107

Awang, L. A., Yusop, F. D., & Danaee, M. (2025). Current practices and future direction of artificial intelligence in mathematics education: A systematic review. *International Electronic Journal of Mathematics Education*, *20*(2), em0823. [Online]. Available: https://doi.org/10.29333/iejme/16006

Ayanwale, M. A., Sanusi, I. T., Adelana, O. P., Aruleba, K. D., & Oyelere, S. S. (2022). Teachers' readiness and intention to teach artificial intelligence in schools. Computers and Education: Artificial Intelligence, 3. : https://doi.org/10.1016/j.caeai.2022.100099.

Ayanwale, MA, Adelana, OP, Molefi, RR, Adeeko, O., and Ishola, AM (2024). Examining artificial intelligence literacy among pre-service teachers for future classrooms. Computers and Education Open, 6, article 100179. https://doi.org/10.1016/j.caeo.2024.100179

Battista, D., & Mangone, E. (2025). Technological Culture and Politics: Artificial Intelligence as the New Frontier of Political Communication. *Societies*, *15*(4), 75. https://doi.org/10.3390/soc15040075

Bowers, K. W., Ragas, M. W., & Neely, J. C. (2009). Assessing the value of virtual worlds for post-secondary instructors: A survey of innovators, early adopters, and the early majority in Second Life. *International Journal of Humanities and Social Sciences*, *3*(1), 40-50. : https://tomhoodcpa.typepad.com/files/second-life-education-1.pdf

Carolus, A., Augustin, Y., Markus, A., & Wienrich, C. (2023). Digital interaction literacy model – conceptualizing competencies for literate interactions with voice-based AI systems. Computers & Education: Artificial Intelligence, 4. https://doi.org/10.1016/j.caeai.2022.100114

Cetindamar, D., Kitto, K., Wu, M., Zhang, Y., Abedin, B., & Knight, S. (2022). Explicating AI literacy of employees at digital workplaces. IEEE Transactions on Engineering Management, 0, 1–14.: https://doi.org/10.1109/tem.2021.3138503

Choice. (2023). A tech librarian explains how to build AI literacy: AI literacy is now a must-have skill. Here's how to develop it. https://www.choice360.org/libtech-insight/a-tech-librarian-explains-how-to-build-ai-literacy/

Cox, A (2022). The ethics of AI for information professionals: Eight scenarios. Journal of the Australian Library and Information Association, 71(3), 201–214. https://doi.org/10.1080/24750158.2022.2084885

Creswell, J.W. and Creswell, J.D. (2018), Research Design: Qualitative, Quantitative and Mixed Approaches, 5th ed. SAGE, Los Angeles, Chicago

Dabengwa, I. M., Raju, J., & Matingwina, T. (2020). Applying interpretive phenomenological analysis to library and information science research on blended librarianship: A case study. *Library & information*

science research, *42*(4), 101055. https://www.sciencedirect.com/science/article/pii/S0740818820303534

Dai, Y., Chai, C.-S., Lin, P.-Y., Jong, M. S.-Y., Guo, Y., & Qin, J. (2020). Promoting students' well-being by developing their readiness for the artificial intelligence age. Sustainability, 12(16). https://doi.org/10.3390/su12166597

Deuze, M., & Beckett, C. (2022). Imagination, algorithms and news: Developing AI literacy for journalism. Digital Journalism, 10(10), 1913–1918. https://doi.org/10.1080/21670811.2022.2119152

Gül, Ç (2023, September 23) What is artificial intelligence literacy? A comprehensive guide for beginners. AI Blog. https://zeo.org/resources/blog/what-is-artificial-intelligence-literacya-comprehensive-guide-for-beginners

Hermann, E. (2021). Artificial intelligence and mass personalization of communication content—an ethical and literacy perspective. New Media & Society, 24(5), 1258–1277. https://doi.org/10.1177/14614448211022702

Hussain, K., Khan, M. L., & Malik, A. (2024). Exploring audience engagement with ChatGPT-related content on YouTube: Implications for content creators and AI tool developers. Digital Business, 4(1), Article 100071. https://doi.org/10.1016/j.digbus.2023.100071

IFLA. (2020). IFLA Statement on Libraries and Artificial Intelligence. https://repository.ifla.org/handle/123456789/1646

Kayode, A. I., Oguntayo, S. A., & Harriet, D. A. (2024). Examining the Impact of Digital Competence and Digital Self-Efficacy on the Adoption of Big Data in Academic Libraries: A Contextual Analysis. *International Journal of Innovative Scientific Research*, *2*(3), https://ijisr.net/ijisr/article/view/14

Kayode, A. I., Tella, A., & Akande, S. O. (2020). Ease-of-use and user-friendliness of cloud computing adoption for web-based services in academic libraries in Kwara State, Nigeria. *Internet Reference Services Quarterly*, *23*(3-4), 89-117. https://www.tandfonline.com/doi/abs/10.1080/10875301.2020.1837326

Kumar, H. (2025). AI in smart libraries: a study of its use in agricultural libraries in karnataka. *Journal of Library and Information Science*, *7*(1). https://doi.org/10.34218/JLIST_07_01_003

Laupichler, M. C., Aster, A., Schirch, J., & Raupach, T. (2022). Artificial intelligence literacy in higher and adult education: A scoping literature review. Computers & Education: Artificial Intelligence, 3. https://doi.org/10.1016/j.caeai.2022.100101

Li, J., Dada, A., Puladi, B., Kleesiek, J., & Egger, J. (2024). ChatGPT in healthcare: A taxonomy and systematic review. Computer Methods and Programs in Biomedicine. , Article 108013.https://doi.org/10.1016/j.cmpb.2024.108013

Lo, L.S. (2024). Evaluating AI literacy in academic libraries: a survey study with a focus on US employees. University of New Mexico: University Libraries and Learning Sciences Faculty and Staff Publications. https://digitalrepository.unm.edu/ulls_fsp/203

Long, D., & Magerko, B. (2020). What is AI literacy? Competencies and design considerations 2020 CHI conference on human factors in computing systems, Honolulu, USA. https://doi.org/10.1145/3313831.3376727

McKinsey & Company. (2023). The state of AI in 2023: Generative AI's breakout year. McKinsey & Company. https://www.mckinsey.com/business-functions/mckinsey-analytics/our insights/thestate-of-ai-in-2023-generative-ais-breakout-year

Ng, D. T. K., Luo, W., Chan, H. M. Y., & Chu, S. K. W. (2022). Using digital story writing as a pedagogy to develop AI literacy among primary students. Computers & Education: Artificial Intelligence, 3. https://doi.org/10.1016/j.caeai.2022.100054

Niloy, A. C., Bari, M. A., Sultana, J., Chowdhury, R., Raisa, F. M., Islam, A., Mahmud, S., Jahan, I., Sarkar, M., Akter, S., Nishat, N., Afroz, M., Sen, A., Islam, T., Tareq, M. H., & Hossen, M. A. (2024). Why do

students use ChatGPT? Answering through a triangulation approach. Computers and Education: Artificial Intelligence. , Article 100208, https://doi.org/10.1016/j.caeai.2024.100208

Nonthacumjane, P. (2011). *Key Skills and Competencies of a New Generation of LIS Professionals.* : https://doi.org/10.1177/0340035211430475.

Nwobu, B. K., & Okwu, E. (2023). *AI Capacity Building and Skills Development Among LIS Professionals in Nigeria.* https://journalsplace.org/index.php/CJLIL.

Ogungbenro, O. D., Esse, U. C., Olowoporoku, I., & Christopher, A. (2025). Revolutionizing Library Services: The Impact of Artificial Intelligence on Cataloguing and Access to Information in Nigeria Academic Libraries. *Journal of Library Metadata*, *25*(2), 99-118. https://doi.org/10.1080/19386389.2025.2475418

Okunlaya, R. O., Syed Abdullah, N., & Alias, R. A. (2022). Artificial intelligence (AI) library services innovative conceptual framework for the digital transformation of university education. Library Hi Tech, 40(6), 1869-1892. https://doi.org/10.1108/LHT-07-2021-0242.

Oladokun, B. D., Irivike, F. E., Enakrire, R. T., & Ajani, Y. A. (2025). Use and Application of ChatGPT-4o by Cataloguers and Bibliographers from Botswana, Nigeria, and South Africa. *Journal of Library Metadata*, 1-13. https://doi.org/10.1080/19386389.2025.2546702

Omarsaib, M. (2025). Integrating a digital pedagogy approach into online teaching: are academic librarians at Universities of Technology in South Africa prepared? *Information and Learning Sciences*, *126*(3/4), 192-213. https://doi.org/10.1108/ILS-01-2024-0012.

Ostertag, E., Hendler, J., Diaz, R. P., & Braun, C. (1992). Computing similarity in a reuse library system: An AI-based approach. *ACM Transactions on Software Engineering and Methodology (TOSEM)*, *1*(3), 205-228. https://dl.acm.org/doi/abs/10.1145/131736.131739

Ozor, A. and Toner, J. (2022). Information literacy behavior and practice: an assessment of undergraduate students at Ada College of Education, Ghana. Journal of Library Administration, 62(1): 132-151. https://doi.org/10.1080/01930826.2021.2006992

Panda, S., & Kaur, N. (2023). Exploring the viability of ChatGPT as an alternative to traditional chatbot systems in library and information centers. Library hi tech news, 40(3), 22-25. https://doi.org/10.1108/LHTN-02-2023-0032.

Pinski, M., & Benlian, A. (2023). AI literacy - towards measuring human Competency in artificial intelligence 56th Hawaii international conference on system sciences. Lahaina, USA. https://aisel.aisnet.org/hicss-56/cl/ai_and_future_work/3/

Quinn, TP and Coghlan, S (2021) Readying medical students for medical AI: The need to embed AI ethics education. arXiv:2109.02866. https://doi.org/10.48550/arXiv.2109.02866

Ren, X., & Wu, M. L. (2025). *Examining Teaching Competencies and Challenges While Integrating AI in Higher Education,* https://link.springer.com/article/10.1007/s11528-025-01055-3

Saibakumo, W. T. (2021). Awareness and acceptance of emerging technologies for extended information service delivery in academic libraries in Nigeria. Library Philosophy and Practice, 1–11. https://digitalcommons.unl.edu/libphilprac/5266/.

Smidt, H. J., & Jokonya, O. (2022). Factors affecting digital technology adoption by small-scale farmers in agriculture value chains (AVCs) in South Africa. *Information Technology for Development*, 28(3), 558–584. https://www.tandfonline.com/doi/full/10.1080/02681102.2021.1975256

Subaveerapandiyan, A., Sunanthini, C., & Amees, M. (2023). A study on the knowledge and perception of artificial intelligence. *IFLA journal*, *49*(3), 503-513. https://doi.org/10.1177/03400352231180230

Suh, W and Ahn, S (2022) Development and validation of a scale measuring student attitudes toward artificial intelligence. Sage Open, 12(2). https://doi.org/10.1177/21582440221100463

Tait, E., & Pierson, C. M. (2022). Artificial intelligence and robots in libraries: Opportunities in LIS curriculum for preparing the librarians of tomorrow. *Journal of the Australian Library and Information Association*, *71*(3), 256-274. https://doi.org/10.1080/24750158.2022.2081111.

Taylor, L. R. (2023). 2021 ACRL academic library trends and statistics survey: Highlights and key academic library instruction and group presentation findings. College & Research Libraries News, 84(4), 149. https://crln.acrl.org/index.php/crlnews/article/view/25850

Tella, A. (2020). Robots are coming to the libraries are librarians ready to accommodate them? Library Hi Tech News, 37(8), 13–17. https://doi.org/10.1108/LHTN-05-2020-0047.

Tella, A. and Ajani, Y. A. (2022). Robots and public libraries. Library Hi Tech News, 7, 15-18.https://www.emerald.com/insight/content/doi/10.1108/lhtn-05-2022-0072/full/pdf

Tella, A., Akanmu Odunola, O., & WO, L. (2023). Cataloguing and classification in the era of artificial intelligence: Benefits, and challenges from the perspective of cataloguing librarians in Oyo State, Nigeria. *Vjesnik bibliotekara Hrvatske*, *66*(1), 159-176. https://hrcak.srce.hr/310701

Tella, A., Dunmade, A. O., Ajani, Y. A., & Abdullahi, F. (2025). ICT application in Nigerian libraries: the need to look into the direction of 4IR technologies following the perspective of diffusion of innovation theory. *RDBCI: Revista Digital de Biblioteconomia e Ciência da Informação*, *23*, e025008. https://www.scielo.br/j/rdbci/a/vyMD9yzxthtCcfpZPNb34Hw/?lang=en

UNESCO. (2024). AI and education: Guidance for policy-makers. United Nations Educational, Scientific and Cultural Organization. https://unesdoc.unesco.org/ark:/48223/pf0000376709