



ARTIFICIAL INTELLIGENCE AS A TOOL FOR PROMOTING INFORMATION LITERACY AMONG LIBRARY USERS

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ABSTRACT

The emergence of Artificial Intelligence (AI) has transformed information creation, access, organization, retrieval, and dissemination across academic, public, and special libraries. As information environments become increasingly complex, information literacy has become a critical competency for library users. Information literacy enables individuals to identify information needs, locate relevant information, evaluate sources critically, and use information ethically. Artificial Intelligence technologies, particularly generative AI systems, machine learning algorithms, intelligent search engines, recommender systems, chatbots, and virtual assistants, have introduced new opportunities for enhancing information literacy instruction and service delivery in libraries. This opinion paper examines AI as a strategic tool for promoting information literacy among library users. The paper argues that AI can significantly improve information literacy outcomes through personalized learning, intelligent information retrieval, research support services, and real-time user engagement. However, concerns relating to misinformation, algorithmic bias, privacy, ethical use, and overdependence on AI necessitate critical information literacy education. The paper concludes that librarians must play a leadership role in integrating AI into information literacy programs while ensuring ethical, transparent, and responsible use of AI technologies.

Keywords: Artificial Intelligence, Information Literacy, Library Users, Academic Libraries, Digital Literacy, Generative AI, Library Services

Introduction

The twenty-first century information ecosystem is characterized by an unprecedented growth in digital information resources. The proliferation of online databases, digital repositories, social media platforms, and AI-generated content has fundamentally altered how individuals seek, evaluate, and use information. Within this environment, information literacy has become an essential skill for academic success, lifelong learning, informed citizenship, and professional development. Information literacy refers to the ability to recognize information needs and effectively locate, evaluate, organize, and utilize information for decision-making and problem-solving. Traditionally, libraries have served as centers for information literacy instruction through bibliographic education, user education, orientation programs, and digital literacy training.

Recent advances in Artificial Intelligence have created new possibilities for information access and learning. AI technologies can automate information retrieval, provide personalized



recommendations, facilitate natural language searching, and support users throughout the research process. Contemporary libraries increasingly employ AI-powered tools such as virtual reference assistants, intelligent catalogues, recommendation systems, and generative AI applications to enhance user experiences and information literacy competencies. The growing integration of AI into library environments raises important questions regarding its role in promoting information literacy among library users. This presents a scholarly opinion on how AI can be strategically utilized to strengthen information literacy while highlighting associated challenges and ethical considerations.

Conceptual Clarification

Artificial Intelligence

Artificial Intelligence (AI) has emerged as one of the most transformative technologies of the twenty-first century, influencing virtually every aspect of human life, including education, healthcare, business, governance, communication and library services. Artificial Intelligence goes beyond viewing AI merely as a technological innovation; rather, it considers AI as a multidisciplinary phenomenon that integrates computational systems, human cognition, ethical considerations, social interactions and organizational applications. This broad perspective recognizes AI as both a technological tool and a socio-technical system that shapes and is shaped by human activities. Artificial Intelligence refers to the capability of computer systems to perform tasks that traditionally require human intelligence, such as learning, reasoning, problem-solving, decision-making, language understanding and pattern recognition (Russell & Norvig, 2021). Recent advancements in machine learning, deep learning, natural language processing and generative AI have significantly expanded the capabilities of AI systems, enabling them to generate text, images, audio and complex analytical outputs that resemble human-created content. Ubana et al (2024) sees artificial intelligence (AI) as a tool for combating unethical practices in social works education.

From a holistic standpoint, AI encompasses technological, cognitive, social, economic and ethical dimensions. Technologically, AI involves the development of algorithms and computational models that enable machines to learn from data and improve performance over time. According to Kaplan and Haenlein (2020), AI systems are designed to interpret external data correctly, learn from such data and use acquired knowledge to achieve specific goals through flexible adaptation. This technological dimension forms the foundation upon which AI applications are built. The cognitive dimension of AI focuses on the simulation of human intelligence and learning processes. AI systems increasingly mimic human cognitive functions such as memory, perception, language comprehension and decision-making. Generative AI models such as large language models demonstrate sophisticated capabilities in understanding and producing human language, thereby blurring the distinction between human and machine intelligence (Bommasani et al., 2024). However, despite these advancements, AI lacks genuine consciousness, emotional intelligence and contextual understanding that characterize human cognition.

Socially, AI has transformed how individuals interact with information and technology. AI-powered recommendation systems, virtual assistants, chatbots and search engines influence users' access to information, communication patterns and learning experiences. In educational and library environments, AI facilitates personalized learning, intelligent information retrieval and adaptive user support services. As noted by Ng et al. (2024), AI literacy has become an essential competency



because individuals increasingly interact with AI-mediated information environments in their daily activities. Ubana et al (2025) observes that harnessing security approach and artificial intelligence (AI) as tools to combat corrupt/unethical practices significantly improve social work education. Economically, AI serves as a catalyst for innovation, productivity enhancement and digital transformation. Organizations across industries utilize AI to automate routine tasks, optimize operations and improve decision-making processes. The global adoption of AI technologies has created new opportunities for economic growth while simultaneously raising concerns about workforce displacement and the future of employment. Consequently, the holistic understanding of AI requires consideration of both its benefits and potential socioeconomic implications.

The ethical dimension is perhaps one of the most critical aspects of a holistic AI perspective. As AI systems become increasingly integrated into society, concerns regarding privacy, transparency, accountability, bias, fairness and data security have intensified. Researchers argue that responsible AI development should prioritize human values, inclusiveness and ethical governance to ensure that AI technologies benefit society while minimizing potential harms (UNESCO, 2023). Ethical AI frameworks emphasize the need for transparency in algorithmic decision-making and the protection of fundamental human rights. Furthermore, a holistic perspective recognizes AI as an evolving ecosystem rather than a standalone technology. AI functions through the interaction of data, algorithms, computational infrastructure, human expertise, organizational policies and societal norms. This interconnected nature highlights the importance of interdisciplinary collaboration among computer scientists, educators, librarians, policymakers, ethicists and other stakeholders in shaping the future of AI.

Information Literacy

Information literacy is widely recognized as a fundamental competency in the contemporary information society. In an age characterized by information abundance, digital technologies, social media, artificial intelligence and rapidly evolving communication systems, individuals require more than the ability to access information; they must also possess the skills necessary to evaluate, interpret, manage and ethically utilize information. Helen et al (2025) opined that building digital literacy through social work education promote sustainable development. A holistic perspective of information literacy views it as a multidimensional concept that encompasses cognitive, technological, social, ethical and lifelong learning competencies essential for effective participation in modern society.

Traditionally, information literacy was defined as the ability to recognize when information is needed and to locate, evaluate and use information effectively. However, contemporary scholars argue that information literacy extends beyond technical information-searching skills to include critical thinking, digital competence, media awareness, ethical reasoning and knowledge creation (Mackey & Jacobson, 2022). Thus, a holistic understanding of information literacy recognizes it as an integrated set of abilities that empowers individuals to navigate complex information environments confidently and responsibly. From a cognitive perspective, information literacy involves the development of critical thinking and analytical skills. Information-literate individuals are capable of identifying information needs, formulating relevant questions, assessing the credibility of sources, comparing multiple viewpoints and synthesizing information to solve problems and make informed decisions. Igajah et al (2023) opined that enhancing information delivery services is a tool for distance education programmes. According to the Association of



College and Research Libraries (ACRL, 2023), information literacy promotes reflective discovery of information and critical understanding of how information is produced, valued and used. This cognitive dimension is particularly important in combating misinformation, disinformation and information overload in digital environments.

The technological dimension of information literacy reflects the increasing role of digital technologies in information creation and dissemination. Modern information users interact with online databases, digital libraries, search engines, social media platforms and artificial intelligence systems. Consequently, information literacy requires competence in using digital tools to access, retrieve, organize and communicate information effectively. Andong et al (2025) assert that incorporating digital technology to adult literacy education programmes helps to improve learning. Recent studies emphasize that digital literacy and information literacy are increasingly interconnected, particularly in educational and professional contexts where technology mediates information access and knowledge production (Julien & Gross, 2024). A holistic perspective also highlights the social dimension of information literacy. Information practices are influenced by cultural, institutional and social contexts. Individuals engage with information within communities, workplaces, educational institutions and social networks. Therefore, information literacy involves understanding how information is created, shared and interpreted within different social environments. Lloyd (2024) argues that information literacy is a socially situated practice that develops through participation in various information landscapes and communities of practice. This perspective acknowledges that information literacy is not merely an individual skill but also a social and collaborative process.

The ethical dimension of information literacy is equally important in contemporary information ecosystems. Information users must understand issues relating to intellectual property, copyright, plagiarism, privacy, data protection and responsible information use. The proliferation of artificial intelligence and generative technologies has further intensified the need for ethical information practices. Information-literate individuals are expected to evaluate the reliability of information sources, acknowledge authorship appropriately and use information in ways that promote academic integrity and social responsibility (UNESCO, 2023). Furthermore, information literacy is increasingly regarded as a lifelong learning competency. The rapid evolution of information technologies and knowledge systems requires continuous learning and adaptation. Information literacy enables individuals to remain informed, acquire new knowledge and respond effectively to changing personal, academic and professional demands. In this regard, information literacy serves as a foundation for lifelong learning, self-directed education and active citizenship. According to UNESCO (2023), information literacy is indispensable for achieving inclusive knowledge societies and sustainable development goals because it empowers individuals to participate meaningfully in social, economic and democratic processes.

Library Users

Library users constitute the central focus of library and information services. The existence, development and sustainability of libraries are fundamentally linked to the needs, expectations and information-seeking behaviors of their users. Traditionally, library users were viewed primarily as individuals who visited libraries to access books and other information resources. Edeh et al (2025) sees online resources as a significant component for private secondary schools. However, the rapid advancement of information and communication technologies, digital libraries, online databases



and artificial intelligence has expanded the concept of library users beyond physical library patrons. Olu and Christopher (2014) assert that personal variables of reference librarians in academic libraries are vital tool for dispatching information. Anake et al (2026) family variables and deviant behaviour tendency among students can hinder the effective utilization of libraries. A holistic perspective of library users recognizes them as diverse individuals and groups who interact with library resources, services, technologies and information systems to fulfill educational, professional, research, recreational and lifelong learning needs.

From a broad perspective, library users are individuals who utilize library resources, facilities and services to satisfy their information requirements. According to International Federation of Library Associations and Institutions (IFLA), library users encompass all categories of people who seek access to information, knowledge and learning opportunities through library systems. These users may include students, researchers, faculty members, professionals, policymakers, entrepreneurs, children, persons with disabilities and members of the general public. Ushie et al (2026) asserts that staff training and manpower development promote research commitment. The diversity of library users highlights the need for libraries to provide inclusive and user-centered services that accommodate varying information needs and abilities. A holistic understanding of library users incorporates the cognitive dimension of information seeking. Library users engage in information-seeking activities to solve problems, make decisions, acquire knowledge and achieve personal or professional goals. Information needs vary according to users' educational backgrounds, experiences, motivations and contexts. According to Case and Given (2023), information-seeking behavior is influenced by cognitive processes through which individuals recognize information gaps and actively search for resources to bridge those gaps. Consequently, libraries must understand users' information needs and behaviors to design effective services and information literacy programs.

The social dimension is another important aspect of the holistic concept of library users. Users do not seek information in isolation; rather, their information practices are shaped by social, cultural, educational and organizational contexts. Information needs and usage patterns often reflect the communities and environments in which users operate. Lloyd (2024) argues that information use is socially situated, meaning that individuals develop information competencies through interactions with others and participation in various social contexts. Libraries therefore serve not only as information centers but also as social and collaborative learning spaces that support community engagement and knowledge sharing. Technological developments have further expanded the concept of library users. Modern users increasingly access library resources through digital platforms, online catalogues, institutional repositories, electronic databases and mobile applications. As a result, library users are no longer limited to physical visitors but include remote and virtual users who interact with library services electronically. The emergence of digital libraries and AI-powered information systems has transformed user expectations, requiring libraries to provide seamless, accessible and technology-driven services (Corrall & Jolly, 2023). This technological dimension underscores the importance of digital literacy and information literacy among contemporary library users.

A holistic perspective also recognizes the educational and lifelong learning roles of library users. Libraries support formal education, informal learning, professional development and personal enrichment. Users engage with library resources to develop knowledge, skills and competencies



throughout their lives. According to UNESCO (2023), libraries contribute significantly to lifelong learning by providing equitable access to information and learning opportunities for diverse populations. Consequently, library users are viewed not merely as consumers of information but as active learners and knowledge creators. The ethical dimension of library use is equally important. Library users are expected to utilize information responsibly, respecting principles of intellectual freedom, academic integrity, copyright and ethical information use. In contemporary digital environments, users must also understand issues relating to privacy, data protection and the responsible use of emerging technologies such as Artificial Intelligence. Information literacy programs play a crucial role in equipping users with these ethical competencies.

Rationale of Artificial Intelligence and Information Literacy among users

The rapid advancement of digital technologies and the unprecedented growth of information resources have transformed the way individuals access, evaluate and utilize information. In contemporary information environments, users are confronted with vast quantities of information from diverse sources, including websites, social media platforms, digital repositories, online databases and artificial intelligence (AI)-generated content. While these developments have increased access to information, they have also created challenges related to information overload, misinformation, disinformation and difficulties in identifying credible sources. Consequently, there is a growing need for information literacy and the strategic application of Artificial Intelligence to support users in navigating complex information ecosystems effectively.

The rationale for integrating Artificial Intelligence into information literacy initiatives stems from the increasing complexity of information-seeking processes in the digital age. Information literacy equips individuals with the competencies required to recognize information needs, locate relevant information, evaluate information critically and use information ethically. However, traditional methods of information retrieval and evaluation may no longer be sufficient to address the scale and complexity of contemporary information environments. AI technologies provide innovative solutions that can enhance information access, support decision-making and facilitate the development of information literacy skills among users (Ng et al., 2024).

One major rationale for the application of AI in information literacy is its ability to improve information discovery and retrieval. The vast amount of information available online often makes it difficult for users to locate relevant and reliable resources. AI-powered search engines and discovery systems utilize machine learning algorithms and natural language processing techniques to understand user queries more effectively and provide accurate search results. These technologies enable users to retrieve information more efficiently and reduce the challenges associated with information overload (Liu, Sullivan, & Sinnamon, 2024). As a result, AI enhances users' capacity to access information and supports the development of effective information-seeking behaviors.

Another rationale lies in the ability of AI to provide personalized learning experiences. Users differ in their information needs, learning styles, educational backgrounds and levels of information literacy. AI-driven systems can analyze user behavior and preferences to deliver customized learning resources, tutorials and recommendations. Such personalized support enables users to acquire information literacy skills at their own pace and according to their individual needs. According to Long and Magerko (2024), AI-based educational tools promote learner engagement



and facilitate the development of competencies necessary for navigating AI-mediated information environments.

The increasing prevalence of misinformation and disinformation further justifies the integration of AI into information literacy programs. The digital information landscape contains a significant amount of inaccurate, misleading, or manipulated content, which can negatively influence decision-making and public understanding. AI technologies can assist users in identifying questionable information, verifying facts and evaluating source credibility. Through automated fact-checking systems and content analysis tools, AI contributes to the development of critical evaluation skills that are fundamental to information literacy (Hirvonen, 2024). According to Ettah et al (2025) analysis of net returns and mean difference improves efficiently the use artificial intelligence. However, users must also learn to critically assess AI-generated outputs, as AI systems may produce errors or biased information.

The rationale for AI in information literacy is also evident in its capacity to support research and lifelong learning. In educational and professional settings, users increasingly rely on AI tools for literature searching, data organization, content summarization and academic writing support. These technologies enable users to engage more effectively with information resources and enhance their research capabilities. AI-powered learning environments encourage independent learning, problem-solving and knowledge creation, all of which are essential components of information literacy. Wetzel and Kani (2024) argue that generative AI can strengthen information literacy instruction by fostering inquiry-based learning and improving access to educational resources.

Furthermore, the growing influence of AI in society has created the need for AI literacy as a complementary aspect of information literacy. AI literacy involves understanding how AI systems function, recognizing their limitations, evaluating their outputs and using them responsibly. As AI technologies become integrated into everyday activities, users must develop the competencies required to interact effectively with AI-driven systems. Ng et al. (2024) emphasize that AI literacy is increasingly essential for informed participation in contemporary digital societies and should be incorporated into broader information literacy frameworks.

Libraries and educational institutions also have strong reasons to adopt AI technologies as part of their information literacy initiatives. AI-powered virtual assistants, chatbots and intelligent recommendation systems can provide users with immediate access to information and learning support. These tools enhance service delivery, improve user engagement and facilitate the acquisition of information literacy skills. Moreover, AI can help libraries extend their services beyond physical boundaries, making information resources more accessible to diverse user populations.

Major Challenges of Artificial Intelligence and Information Literacy among Users

The integration of Artificial Intelligence (AI) into information environments has transformed the way users access, retrieve, evaluate, and utilize information. AI-powered technologies such as search engines, recommendation systems, chatbots, and generative AI tools have enhanced information accessibility and learning opportunities. However, despite these benefits, the increasing reliance on AI presents significant challenges for information literacy among users.



Information literacy, which involves the ability to identify information needs, locate relevant information, critically evaluate sources, and use information ethically, is becoming more complex in AI-mediated environments. Users must not only evaluate traditional information sources but also assess the accuracy, reliability, and ethical implications of AI-generated content. Consequently, several challenges hinder the effective integration of AI and information literacy.

One of the most significant challenges is the problem of misinformation and AI-generated inaccuracies. Generative AI systems can produce content that appears convincing and authoritative but may contain factual errors, fabricated references, or misleading information. These inaccuracies, often referred to as “AI hallucinations,” can mislead users who lack adequate information literacy skills to verify information independently. According to Hirvonen (2024), the proliferation of AI-generated content has intensified the need for critical evaluation skills because users may mistakenly perceive machine-generated outputs as accurate and trustworthy. This challenge is particularly concerning in academic, healthcare, and research contexts where inaccurate information can have serious consequences. According to Anake et al (2026) personality traits affect deviant behaviour tendencies among students through the use information. Another major challenge is algorithmic bias. AI systems are trained on large datasets that may contain social, cultural, political, or historical biases. As a result, AI tools may unintentionally reinforce stereotypes, marginalize certain groups, or prioritize specific perspectives while excluding others. Users who are unaware of these biases may accept AI-generated recommendations and search results without questioning their fairness or representativeness. Long and Magerko (2024) emphasize that understanding algorithmic bias is an essential component of AI literacy because biased outputs can influence decision-making and information consumption patterns. Therefore, users require advanced information literacy skills to critically assess the neutrality and reliability of AI-generated information.

Privacy and data security concerns also represent significant challenges. Many AI systems rely on the collection and analysis of user data to provide personalized services and recommendations. While these features enhance user experiences, they raise concerns regarding confidentiality, surveillance, and unauthorized use of personal information. Users often lack awareness of how their data are collected, stored, and utilized by AI applications. According to UNESCO (2023), digital literacy and information literacy programs must address privacy and data protection issues to ensure that users can engage safely with AI technologies. Failure to understand these risks may expose users to identity theft, data breaches, and other cybersecurity threats.

Another challenge is the digital divide and unequal access to AI technologies. Although AI offers numerous educational and informational benefits, access to AI-powered tools is not evenly distributed across populations. Factors such as limited internet connectivity, inadequate technological infrastructure, economic constraints, and insufficient digital skills can prevent some users from benefiting from AI-enhanced information services. This disparity may widen existing inequalities in access to information and educational opportunities. Ng et al. (2024) argue that equitable access to AI technologies is necessary to ensure inclusive participation in digital knowledge societies and to prevent the exclusion of disadvantaged groups.

Overreliance on AI systems is another growing concern. Many users increasingly depend on AI tools for information retrieval, content generation, academic writing, and decision-making. While AI can improve efficiency and productivity, excessive dependence on automated systems may



reduce users' motivation to engage in critical thinking, independent research, and analytical reasoning. Users may become passive consumers of information rather than active evaluators and creators of knowledge. Wetzel and Kani (2024) caution that information literacy programs must emphasize the complementary role of AI rather than encourage unquestioning reliance on machine-generated outputs.

The lack of adequate AI literacy among users also poses a significant challenge. Many individuals utilize AI applications without fully understanding how these systems operate, their limitations, or the factors influencing their outputs. Without AI literacy, users may be unable to recognize biased information, identify inaccuracies, or evaluate the credibility of AI-generated content. Recent studies suggest that AI literacy should be integrated into information literacy education to prepare users for effective participation in AI-driven information environments (Ng et al., 2024).

Prospects and Benefits of Artificial Intelligence and Information Literacy among Library Users

The integration of Artificial Intelligence (AI) into library services has created unprecedented opportunities for enhancing information literacy among library users. As libraries continue to adapt to the demands of the digital age, AI technologies are increasingly being utilized to improve information access, support learning, facilitate research and promote user engagement. Information literacy, which encompasses the ability to identify information needs, locate relevant information, evaluate sources critically and use information ethically, remains a fundamental competency for effective participation in contemporary knowledge societies. The convergence of AI and information literacy offers numerous prospects and benefits that can significantly improve users' information experiences and learning outcomes.

One of the major benefits of AI in promoting information literacy is enhanced information retrieval and access. Modern libraries provide access to vast collections of digital and print resources, making it challenging for users to locate relevant information efficiently. AI-powered search engines and discovery tools employ machine learning and natural language processing techniques to understand user queries, predict information needs and retrieve accurate results. These intelligent systems enable users to access relevant information quickly and effectively, thereby reducing information overload and improving the overall information-seeking experience (Liu, Sullivan, & Sinnamon, 2024). As a result, library users can spend more time evaluating and utilizing information rather than searching for it.

Another significant prospect is personalized learning and information services. AI technologies can analyze users' information needs, preferences and learning behaviors to provide customized recommendations and support. Personalized learning environments enable users to receive targeted instructional materials, research guidance and resource recommendations tailored to their specific interests and knowledge levels. According to Ng et al. (2024), AI-driven educational systems facilitate individualized learning experiences that promote engagement and improve the acquisition of information literacy skills. This personalized approach enhances users' ability to develop competencies necessary for effective information use.

AI also improves the quality and accessibility of library reference services. AI-powered chatbots and virtual assistants provide instant responses to user inquiries, assist with database searching,



recommend relevant resources and guide users through information-seeking processes. These services are available twenty-four hours a day, increasing access to library support beyond traditional operating hours. Miltenoff (2024) notes that AI-enhanced reference services contribute to user satisfaction and information literacy development by offering immediate and continuous assistance. Such technologies are particularly beneficial for remote users who may not have direct access to physical library facilities.

A further benefit of AI is its capacity to support critical thinking and information evaluation. In contemporary information environments characterized by misinformation, disinformation and AI-generated content, users require advanced skills to assess information credibility. AI-powered fact-checking tools, content verification systems and source evaluation applications can assist users in identifying unreliable information and evaluating the trustworthiness of information sources. These technologies complement information literacy instruction by encouraging critical analysis and informed decision-making (Hirvonen, 2024). Consequently, users become more capable of distinguishing between credible and misleading information.

The promotion of research and academic productivity represents another important advantage. AI tools can assist library users with literature searches, citation management, content summarization, data organization and academic writing support. Researchers and students can utilize AI technologies to streamline research processes, identify relevant scholarly materials and generate insights from large datasets. Wetzel and Kani (2024) argue that generative AI applications can enhance information literacy instruction by supporting inquiry-based learning and facilitating deeper engagement with scholarly resources. These capabilities contribute to improved research efficiency and academic performance.

AI and information literacy also promote lifelong learning and continuous professional development. In rapidly changing information environments, individuals must continuously acquire new knowledge and skills. AI-powered learning platforms provide flexible and adaptive learning opportunities that support lifelong education. Libraries can leverage AI technologies to deliver online tutorials, digital learning resources and personalized educational content that encourage self-directed learning. According to UNESCO (2023), information literacy is a critical foundation for lifelong learning and AI can significantly expand access to educational opportunities across diverse populations.

Furthermore, AI contributes to digital inclusion and accessibility. Advanced AI applications such as speech recognition, text-to-speech systems, language translation tools and accessibility technologies enable users with disabilities and diverse linguistic backgrounds to access information more effectively. These innovations promote equitable access to library resources and information services, ensuring that broader segments of society can benefit from information literacy programs. Such inclusivity aligns with the fundamental mission of libraries to provide universal access to knowledge and information.

Another emerging prospect is the development of AI literacy as an extension of information literacy. As AI technologies become integrated into everyday life, users require knowledge and skills to understand how AI systems function, evaluate their outputs and use them responsibly. Long and Magerko (2024) emphasize that AI literacy complements traditional information literacy



by preparing individuals to engage critically with AI-generated information and automated decision-making systems. This combination equips library users with competencies needed to thrive in AI-mediated information environments.

Conclusion

The emergence of Artificial Intelligence (AI) has significantly transformed the information landscape and created new opportunities for enhancing information literacy among library users. In an era characterized by rapid technological advancements, information abundance, and increasing digital interconnectedness, the traditional approaches to information access and utilization are no longer sufficient to meet the evolving needs of users. Libraries, as centers of knowledge creation, preservation, and dissemination, are increasingly adopting AI-driven technologies to improve information services and strengthen information literacy competencies among diverse user populations. This paper has examined the relationship between Artificial Intelligence and information literacy from multiple perspectives, highlighting the concepts, rationale, roles, benefits, challenges, and prospects associated with the integration of AI into library services.

From a holistic perspective, Artificial Intelligence represents more than a technological innovation; it is a transformative tool that enhances the capacity of libraries to deliver user-centered services, facilitate information access, and support learning and research activities. Through technologies such as machine learning, natural language processing, intelligent search systems, recommendation algorithms, chatbots, and generative AI applications, libraries can provide more efficient, personalized, and accessible information services. These technologies enable users to locate relevant information quickly, engage with digital resources effectively, and develop essential information literacy skills required for navigating contemporary information environments.

Information literacy remains a fundamental competency in the digital age because individuals are continually exposed to vast amounts of information from diverse sources. The ability to identify information needs, locate information efficiently, evaluate sources critically, and use information ethically is essential for academic success, professional development, lifelong learning, and informed citizenship. AI contributes significantly to the promotion of these competencies by simplifying information retrieval processes, supporting personalized learning experiences, facilitating research activities, and providing continuous user support through virtual reference services. Consequently, AI has become an important enabler of information literacy development in libraries and educational institutions.

The study also demonstrates that AI can enhance user engagement and learning outcomes by offering adaptive and personalized services tailored to individual information needs. Through intelligent recommendation systems and AI-assisted learning platforms, users can access relevant resources and instructional content that align with their interests and learning preferences. Such personalization improves user satisfaction and encourages active participation in information-seeking and knowledge-creation processes. Furthermore, AI-powered tools support researchers and students in conducting literature searches, organizing information, managing citations, and generating research insights, thereby strengthening academic productivity and scholarly engagement.



Despite these considerable benefits, the integration of AI into information literacy initiatives is accompanied by significant challenges. Issues such as misinformation, algorithmic bias, privacy concerns, data security risks, ethical dilemmas, digital inequality, and overreliance on automated systems highlight the complexities associated with AI adoption. The increasing prevalence of AI-generated content further underscores the importance of critical evaluation skills and responsible information use. Library users must therefore be equipped not only with traditional information literacy competencies but also with AI literacy skills that enable them to understand, assess, and utilize AI technologies effectively and ethically.

The role of librarians remains indispensable in this evolving information ecosystem. Rather than replacing librarians, AI serves as a complementary tool that enhances their capacity to support users. Librarians are uniquely positioned to guide users in evaluating information sources, interpreting AI-generated outputs, promoting ethical information practices, and fostering critical thinking. As information professionals, librarians must continue to adapt to emerging technologies through continuous professional development and the acquisition of AI-related competencies. Their expertise in information organization, retrieval, and evaluation remains essential for ensuring the responsible integration of AI into library services.

Looking toward the future, the successful implementation of AI in libraries will depend on the development of policies, frameworks, and educational strategies that promote ethical and inclusive use of AI technologies. Libraries must invest in infrastructure, staff training, digital literacy programs, and AI literacy initiatives to ensure that users are adequately prepared for participation in AI-mediated information environments. Collaboration among librarians, educators, policymakers, technology developers, and other stakeholders will be critical for maximizing the benefits of AI while minimizing potential risks.

In conclusion, Artificial Intelligence has emerged as a powerful tool for promoting information literacy among library users. Its ability to enhance information access, personalize learning, support research, improve user services, and facilitate knowledge creation positions it as a valuable asset in modern library environments. However, the effectiveness of AI in promoting information literacy depends on its responsible and ethical application, supported by strong information literacy frameworks and professional guidance. By embracing AI while maintaining a commitment to critical thinking, ethical information use, and user empowerment, libraries can continue to fulfill their mission of fostering informed, knowledgeable, and lifelong learners in an increasingly digital world.

REFERENCES

- Anake, P. M, Okoi, Margaret Innocent, Anake Godwin Akepu, & Ubana, Ubana Michael. (2026). Personality Traits and Deviant Behaviour Tendencies Among Secondary School Students in Cross River State, Nigeria. *African Journal of Educational Management, Teaching and Entrepreneurship Studies*, 18(1). <https://doi.org/10.65360/ajemates.v18i1.989>
- Anake, P. M., Akpan, M. I., Anake, G. A. & Ubana, U. M. (2026). Family variables and deviant behaviour tendency among students of catholic secondary schools in Calabar Education Zone of Cross River State, Nigeria. *Unizik Journal of Educational Research, Science and Vocational Studies (UJERSVOCS)* 5 (1); <https://unilaws.org/ujervs>



- Andong, H. A., Ubana M. U., Igboke, S.B. & Arikpo, S. O. (2025). Incorporating digital technology to adult literacy education programmes in Cross River State. *Unizik Journal of Educational Research, Science and Vocational Studies (UJERSVOCS)* Vol. 2 (1); Pp. 321-338.
- Association of College and Research Libraries (ACRL). (2023). Framework for information literacy for higher education. American Library Association.
- Bommasani, R., Hudson, D. A., Adeli, E., Altman, R., Arora, S., von Arx, S., ... & Liang, P. (2024). On the opportunities and risks of foundation models. *Communications of the ACM*, 67(7), 78–90.
- Case, D. O., & Given, L. M. (2023). Looking for information: A survey of research on information seeking, needs, and behavior (5th ed.). Emerald Publishing.
- Corrall, S., & Jolly, L. (2023). User-centered library services in digital environments. *Library Management*, 44(6/7), 421–436.
- Edeh, S. O., Anashie, A. J. Ushie, G. I. (2025). Online resources and management of private secondary schools in Calabar Municipality, Cross River State, Nigeria. *Scientific Journal of Educational Research and Law*. 3(1), <https://journals.aemapp.org>
- Ettah, O. I. Abanyam, V. A., Agbachom, E. E., Odok, G. N., Igiri, J. A., Edet, O. G., Edet, E. O., Ifere, E. O., Abua, D. A., Offem, C. O. & Ettah, O. I. (2025). Analysis of net returns and mean difference of yam production in South-South Region, Nigeria. *African Journal of Food, Agriculture, Nutrition and Development*.
<https://doi.org/10.1897697/ajfand.141.25075>
- Helen A. A., Ubana M. U. & Grace B. B. A. (2025). Building digital literacy through social work education for sustainable development. *Scientific Journal of Educational Management, Research and Law*. Vol. 3 (1). Pp. 420-425.
- Hirvonen, N. (2024). Information literacy after the AI revolution. *Journal of Information Literacy*, 18(1), 1–12.
- Igajah, M. N., Offem, C. O., & Bassey, M. M. (2023). Enhancing Information Delivery Services For Distance Education Programmes In Cross River State, Nigeria: Library Philosophy and Practice (e-journal). 8065. Afrischolar Discovery Repository (Annex), 1-12. <https://doi.org/10.60951/afrischolar-203>
- Julien, H., & Gross, M. (2024). Information literacy and digital literacy in contemporary learning environments. *Journal of Information Science*, 50(2), 215–228.
- Kaplan, A., & Haenlein, M. (2020). Rulers of the world, unite! The challenges and opportunities of artificial intelligence. *Business Horizons*, 63(1), 37–50. <https://doi.org/10.1016/j.bushor.2019.09.003>
- Liu, Y., Sullivan, P., & Sinnamon, L. (2024). AI transparency in academic search systems: An initial exploration. arXiv Preprint. <https://arxiv.org/abs/2408.10229>
- Lloyd, A. (2024). Information literacy as a socially enacted practice: New perspectives for information studies. *Journal of Documentation*, 80(1), 1–17.
- Long, D., & Magerko, B. (2024). AI literacy for users: A comprehensive review and future research directions of learning methods, components, and effects. *Computers in Human Behavior: Artificial Humans*, 2(1), 100062.
- Mackey, T. P., & Jacobson, T. E. (2022). Metaliteracy in a connected world: Developing learners as producers. American Library Association.
- Miltentoff, P. (2024). Academic librarians in times of AI and AI literacy: Tasks, responsibilities, and leadership. *The International Information & Library Review*, 56(3), 296–305.



- Ng, D. T. K., Leung, J. K. L., Chu, S. K. W., & Qiao, M. S. (2024). Conceptualizing AI literacy: An exploratory review. *Educational Technology Research and Development*, 72(1), 45–72.
- Olu, O. L. & Christopher, O. (2014). Personal variables of reference librarians in academic libraries in Cross River State, Nigeria. *Continental J. Information Technology*, 8(1), doi:10.5707/cjit.2014.8.1.29.36
- Russell, S., & Norvig, P. (2021). *Artificial intelligence: A modern approach* (4th ed.). Pearson.
- Ubana M. U., Obeten, O. O., Musa, Z. & Eloma, A. S. (2025). Harnessing security approach and artificial intelligence (AI) as tools to combat corrupt/unethical practices in Social Work Education: A Paradigm Shift. *African Journal of Educational Management, Teaching and Entrepreneurship Studies*, Vol. 15 (2), 318 – 334. <https://ajemates.org>
- Ubana, M. U., Glory E. E., Undie, R. A. & Elizabeth O. P. (2024). Artificial Intelligence (AI) A tool for combating unethical practices in Social Works Education. *Journal of Environmental and Tourism Education*, Vol. 7. (3) 12 -28. ISSN: 2659-0794
- UNESCO. (2023). *Guidance for generative AI in education and research*.
- Ushie, G. B., Anthony, G. B., Emenyi, J. H. & Ituen, I. E. (2026). Staff training and manpower development in manufacturing companies in Calabar Municipality of Cross River State, Nigeria. *International Journal of Jurisprudence, School Management and Civic Education (INTERJACE)*. Vol. 1 (1)189-196. <https://unilaws.org/INTERJACE>.
- Wetzel, D. A., & Kani, J. (2024). Enhancing information literacy through generative AI in the library classroom. *Pennsylvania Libraries: Research & Practice*, 12(1), 1–16.