Chapter 6
Information Literacy in the Artificial Intelligence Sphere

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ABSTRACT

Artificial intelligence (AI) is a disruptive technology that has the potential to revolutionise how information is accessed, processed, and utilised. AI has the capability to personalise learning experiences, provide tailored recommendations, and enhance information retrieval processes, thereby contributing to the development of critical information literacy (IL) skills among library users. This study aims to examine the impact of AI on teaching and improving IL in higher education by determining the use and approaches used for IL provisioning in academic libraries. It also examines how IL pedagogy and librarian roles have evolved in response to new learning settings and AI technologies.

1. INTRODUCTION

The current landscape of AI education reveals disparities in preparedness and awareness, with a need for comprehensive AI education frameworks and ethical guidelines (Suh & Ahn, 2022; Quinn & Coghlan, 2021). In summary, the integration of AI in education has the potential to reshape learning experiences and career trajectories for students. However, it necessitates addressing ethical challenges, enhancing teacher preparedness, and developing comprehensive educational frameworks to ensure students are equipped with the necessary AI literacy for the future.

In this context, the broader context of AI as a disruptive technology includes social media, RFID Technology, Digital Technologies, 3D Printing, Big Data, Analytics, Battery and Hydrogen Fuel Cells, Internet of Things (IoT), Blockchain Technology, Machine Learning, Virtual Reality (VR), and Augmented Reality (AR). Similarly, the overarching meta-literacies underscore the need for encompassing various literacies that include information, media, technology, communication, digital content creation, data literacy, digital safety and security, digital health and well-being, digital problem-solving, communication literacy and digital citizenship, to navigate the digital age effectively (Bröder et al., 2019).

At the same time, disruptive technologies, such as robotics, have been emphasised in improving IL, with the development of robotic arm prototypes through FDM-based custom 3D printing being a notable example (Jia et al., 2022). Additionally, applying Big Data analytics has enhanced information retrieval and analysis, thereby improving IL practices in libraries (Li et al., 2022; Jia et al., 2021). The significance of AI in transforming IL pedagogy in libraries lies in its ability to revolutionise how information is accessed, processed, and utilised. AI technologies, such as machine learning and natural language processing, have the potential to personalise learning experiences, provide tailored recommendations, and enhance information retrieval processes, thereby contributing to the development of critical IL skills among library users (Ng et al., 2021).

Moreover, AI can facilitate the identification of relevant and credible information sources, enabling individuals to navigate the vast amount of information available in the digital age effectively. Furthermore, integrating AI-driven tools in library systems can streamline administrative tasks, optimise resource allocation, and improve user engagement, enhancing overall IL pedagogy and library services (Long & Magerko, 2020). Integrating AI technologies in libraries and their application methods offers numerous potential benefits. These technologies can empower library professionals to streamline operations, enhance user experience, and foster innovative services by leveraging AI's capabilities for automated information retrieval, personalised recommendations, and natural language processing to improve search functionalities (Adesina, 2024; Gasparini & Kautonen, 2022; Ikenwe & Udem, 2022). Understanding the applications of AI in libraries is crucial for strategically planning and adopting new technologies, ensuring that libraries remain at the forefront of information management and access (Alam, 2024; Barsha & Munshi, 2023; Subaveerapandiyan, 2023). Moreover, this knowledge can facilitate the development of skill sets required for future librarianship, promoting a culture of continuous learning and adaptation to technological advancements (Donkor & Afrane, 2023; Su & Chen, 2022).

Implementing AI in libraries can lead to efficiency in library operations, enhance research visibility and productivity, provide quick and round-the-clock access to information sources, save space, maximise staff effort, and promote a better user experience (Ikenwe & Udem, 2022). Furthermore, AI applications in libraries can improve access to information, increase efficiency and productivity, and enhance user experience, particularly in developing countries (Barsha & Munshi, 2023).

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