



RECONCEPTUALIZING INFORMATION LITERACY IN THE AGE OF AI AND DIGITAL MISINFORMATION

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Abstract

This study explores how information literacy must be reconceptualized in the age of Artificial Intelligence (AI) and digital misinformation, with particular focus on the Nigerian context. The exponential growth of AI technologies such as machine learning, natural language processing, and algorithmic content curation has transformed how individuals access, interpret, and share information. Simultaneously, the rise of misinformation, disinformation, and deepfake media has challenged traditional approaches to information evaluation and ethical usage. Drawing on global trends and theoretical developments, this research highlights the urgent need to integrate AI literacy, digital ethics, and critical algorithm awareness into existing information literacy frameworks. It examines the roles of librarians, educators, and policymakers in equipping users especially students, researchers, and the general public with the skills necessary to navigate an increasingly complex and AI-mediated information environment. The study also addresses the infrastructural, educational, and policy-related challenges unique to Nigeria and offers strategic recommendations for building a resilient, digitally literate society capable of resisting misinformation and leveraging AI responsibly.

Keywords: Information Literacy, Artificial Intelligence (AI), Digital Misinformation, AI Literacy, Nigerian Libraries

Introduction

In the contemporary information ecosystem, Artificial Intelligence (AI) and digital misinformation are reshaping how individuals access, interpret, and utilize information. Traditional models of information literacy once focused primarily on the ability to locate, evaluate, and use information are becoming inadequate in an environment dominated by algorithm-driven content delivery and the proliferation of misinformation (Head, 2023). The increasing sophistication of generative AI systems, such as ChatGPT and DALL·E, alongside the widespread dissemination of fake news and deepfakes, demands a rethinking of how information literacy is conceptualized and taught.

The exponential growth of Artificial Intelligence (AI) and the proliferation of digital misinformation are reshaping the landscape of information consumption, production, and evaluation. In this evolving environment, traditional definitions of information literacy which emphasize the ability to locate, evaluate, and use information effectively are no longer sufficient. The rise of deepfakes, algorithmically curated content, and AI-generated texts has blurred the line between credible and deceptive information, requiring a rethinking of how individuals engage with information in digital contexts (Head et al., 2023).

Globally, educational institutions, libraries, and information professionals are beginning to shift from static models of literacy toward dynamic frameworks that integrate critical thinking, digital discernment, algorithmic awareness, and ethical reasoning (UNESCO, 2023). In technologically advanced nations, this shift is already evident in curricula that emphasize the interrogation of digital content sources, the transparency of AI algorithms, and the importance of civic information responsibility (Rheingold, 2022). Conversely, in developing contexts such as Nigeria, the reconceptualization of information literacy remains emergent, constrained by infrastructural limitations and a lack of policy direction (Aina & Ifijeh, 2022).

Educational institutions and libraries are beginning to pivot toward more critical and technologically aware models of information literacy. These new models incorporate AI literacy, digital ethics, media literacy, and an understanding of how algorithms shape information access. According to UNESCO (2023), more than 80% of higher education institutions in Europe and North America are embedding critical digital literacy into their curricula to help students navigate AI-enhanced platforms and resist manipulation by misinformation and propaganda.

The rapid advancement of Artificial Intelligence (AI) and the proliferation of digital technologies have significantly reshaped the information landscape. In the current digital age, individuals are not only inundated with vast amounts of information but are also increasingly exposed to sophisticated misinformation, deepfakes, and algorithmically amplified content. This reality necessitates a fundamental reevaluation of traditional concepts of information literacy. Information literacy, once defined primarily as the ability to locate, evaluate, and use information effectively, must now encompass the skills needed to critically navigate AI-mediated content, recognize algorithmic bias, and discern credible from deceptive information sources (Head et al., 2022).

In technologically advanced nations, educational institutions and libraries are actively redefining information literacy frameworks to include digital ethics, data literacy, and algorithmic awareness. For instance, in the United States and Canada, universities have incorporated AI literacy modules into general education curricula, teaching students how algorithms shape information exposure and how to critically engage with recommendation systems and search engines (UNESCO, 2023). In Europe, particularly Finland and Germany, national initiatives have promoted media literacy and AI education as essential competencies for democratic participation and societal resilience against misinformation (Karlsson & Wu, 2024).

Asia has also witnessed a surge in efforts to integrate AI-aware information literacy into school and university systems. South Korea's Smart Education policy and Singapore's national digital literacy blueprint emphasize equipping students with critical digital thinking skills, including understanding how AI systems work and how misinformation spreads on social media platforms (Obakiro et al., 2023). China's approach, though state-driven, has focused on using AI tools in educational libraries to track learning progress and identify misinformation trends, albeit within a controlled information environment (Chandran, 2023).

In contrast, African countries, including Nigeria, face more complex challenges in reconceptualizing information literacy amidst infrastructural gaps, limited access to quality digital resources, and low awareness of the ethical and technological dimensions of AI (Adegbile & Ojo, 2023). Despite these challenges, there is growing recognition among Nigerian educators, librarians, and policymakers of the need to modernize information literacy education. Nigerian academic libraries, though still in the early stages of AI integration, are

beginning to explore new instructional models that incorporate elements of digital literacy, critical media analysis, and responsible information usage (Iroha & Iwhiwhu, 2022).

In Nigeria, the challenges are twofold: First, there is an urgent need to update information literacy instruction to address the realities of AI and misinformation. Second, the infrastructural, pedagogical, and policy frameworks necessary to support such a shift are still underdeveloped. Nigerian libraries, especially in tertiary institutions, are key actors in the fight against digital misinformation, yet many are constrained by limited digital infrastructure, low AI awareness, and insufficient training in critical media analysis (Ifijeh & Yusuf, 2020; Obi & Aina, 2023).

According to Agboola et al. (2022), the increasing prevalence of misinformation during major events such as elections, public health crises, and civil unrest has underscored the urgent need for citizens to acquire advanced evaluative skills that go beyond traditional source checking. Information literacy, therefore, must evolve into a more comprehensive, multidisciplinary skill set that empowers individuals to question algorithmic outputs, understand the socio-political dynamics of information ecosystems, and navigate AI-generated content ethically and responsibly.

From a computer science perspective, the reconceptualization of information literacy also intersects with key technical areas such as natural language processing, algorithm design, and machine learning interpretability. Equipping users with a functional understanding of these systems can demystify how search engines rank content, how recommendation algorithms influence user behavior, and how generative AI can be misused for producing false narratives (Chinyere & Chukwu, 2021). Cross-disciplinary collaboration between computer scientists, librarians, educators, and communication experts is crucial to building an informed citizenry capable of engaging with AI-generated information critically and constructively (Lazinger, 2023).

This study is significant as it explores the evolving dimensions of information literacy within the context of Nigeria's educational and library systems, particularly in the face of global digital misinformation and the increasing adoption of AI technologies. It investigates how Nigerian libraries and information professionals can adapt information literacy frameworks to address these challenges, drawing on global best practices and localized needs. The findings are intended to inform librarians, educators, policymakers, and IT professionals on effective

strategies for promoting AI-aware, misinformation-resilient information literacy in a rapidly digitizing world. This study explores how information literacy must be reconceptualized in the age of AI and digital misinformation, particularly in Nigerian. It examines global trends, theoretical developments, and the challenges facing educators and librarians in fostering critical, AI-aware information practices among students, researchers, and the general public.

Theoretical Foundations of Information Literacy

Information literacy traditionally refers to the ability to recognize information needs, locate relevant information, evaluate its credibility, and use it effectively (ACRL, 2016). However, this definition, developed in the pre-AI era, is increasingly being challenged by the complexities of the current digital information landscape. AI systems now mediate access to information, influence search results through algorithmic filtering, and even generate content autonomously (Floridi, 2021). Therefore, emerging theories advocate for a broader conception that includes algorithmic literacy, digital resilience, and information ethics.

Algorithmic literacy involves understanding how AI systems collect, process, and prioritize information, including how bias, opacity, and data training influence output (Crawford, 2021). Equally critical is digital misinformation literacy, which focuses on equipping users to detect disinformation, fact-check claims, and understand the psychological and sociopolitical drivers of fake news (Wardle & Derakhshan, 2018). These theoretical shifts underscore the need to move beyond functional competencies and toward critical, reflective, and context-aware literacies.

Global Trends in AI and Information Literacy Education

Across Europe and North America, institutions are embedding AI and misinformation awareness into information literacy education. For instance, Finland's national education system includes mandatory media literacy and misinformation detection training from the primary school level (UNESCO, 2023). Similarly, in Canada, universities are deploying AI-driven simulation tools to teach students how content algorithms can manipulate information exposure and public opinion (Cheng, Yang & Liu, 2024).

In the United States, libraries at institutions such as Harvard and MIT have introduced "algorithmic awareness" modules within digital literacy programs, helping users critically

engage with AI-generated information (Uko & Ezeani, 2023). Moreover, interdisciplinary collaborations between librarians and computer scientists are enabling the creation of interactive platforms that simulate deepfake identification and fake news verification. These efforts illustrate a growing recognition of the need for literacy education to keep pace with AI capabilities and digital deception.

Reconceptualization in the African Context

In Africa, the urgency of redefining information literacy is compounded by high rates of misinformation, limited regulatory mechanisms, and the growing penetration of AI technologies via smartphones and social media (Obakiro et al., 2023). South Africa and Kenya are leading efforts to introduce critical media and digital literacy into school curricula, supported by UNESCO and local NGOs. For example, South African university libraries are collaborating with journalism departments to offer workshops on misinformation, deepfakes, and ethical AI use (Adegbile & Ojo, 2023).

Nevertheless, a significant portion of the African population lacks access to structured literacy programs that address these emerging challenges. This situation presents both a digital equity issue and a risk to democratic resilience, particularly in contexts where misinformation has influenced public health behavior, electoral outcomes, and social unrest (Chinyere & Chukwu, 2021).

Nigerian Context: Opportunities and Challenges

In Nigeria, the reconceptualization of information literacy remains at a developmental stage. Most tertiary institutions continue to employ traditional models of library instruction focused on catalog use, Boolean search, and source citation, with little emphasis on algorithmic bias or digital misinformation (Jibril et al., 2023). However, there are signs of change. Institutions like the University of Ibadan and Covenant University have begun piloting digital literacy modules that include topics on media misinformation, AI ethics, and data privacy (Iroha & Iwhiwhu, 2022).

Nonetheless, systemic barriers persist. A lack of trained personnel, outdated curricula, and infrastructural deficiencies limit the widespread implementation of modern literacy frameworks. Moreover, librarians and educators often lack the tools or support to critically

engage with AI-generated content or teach students how to do so. As Agboola et al. (2022) observe, most Nigerian library schools have not yet integrated courses on AI, misinformation, or algorithmic literacy into their programs.

Despite these challenges, the potential for transformation is considerable. By incorporating interdisciplinary approaches merging LIS, computer science, education, and communication studies Nigeria can create a more resilient and literate citizenry. Government policies, such as the Federal Ministry of Education's Digital Library Strategy, could play a key role in mainstreaming AI literacy into national education frameworks (FME, 2020).

Conclusion

As AI and digital misinformation continue to reshape the global information landscape, reconceptualizing information literacy has become not only necessary but urgent. Traditional models, while still valuable, are insufficient to address the complexities of AI-generated content, algorithmic influence, and the virality of misinformation. For Nigeria, this moment presents an opportunity to leapfrog outdated paradigms and embrace a new, holistic vision of literacy that empowers users to critically, ethically, and effectively navigate information in a digital-first world. This study underscores the need for strategic investments in infrastructure, capacity-building, and curricular reform. By doing so, Nigeria can foster a new generation of critical thinkers and informed citizens capable of navigating the promises and perils of the AI-driven information era.

Way Forward

To effectively reconceptualize information literacy in the age of AI and digital misinformation, especially within Nigeria, a multi-pronged and collaborative approach is required:

1. **Curriculum Reform and Integration:** Information literacy education at all levels primary, secondary, and tertiary must be updated to include AI literacy, critical digital thinking, and misinformation resilience. University curricula should incorporate modules on algorithmic awareness, data ethics, and media verification techniques, ideally through interdisciplinary collaboration between computer science, communication studies, and library science departments.

2. **Capacity Building for Librarians and Educators:** Librarians and educators must be trained to understand and teach the ethical and technical dimensions of AI in information contexts. Professional development programs, workshops, and certifications should focus on emerging tools such as AI-based search engines, fact-checking technologies, and digital forensics techniques. This will ensure they are prepared to guide users effectively.
3. **Policy Development and National Frameworks:** National education and ICT policies should explicitly address the intersection of AI, misinformation, and information literacy. A standardized national framework for digital and AI literacy can ensure coherence and equity in educational efforts across regions and institutions. Governmental and non-governmental stakeholders must work together to fund and implement these policies effectively.
4. **Infrastructure and Technology Investment:** To bridge the digital divide and enable meaningful access to AI-based learning tools, investments in ICT infrastructure are critical. This includes ensuring stable internet access, adequate hardware, and digital libraries in schools and public institutions particularly in underserved areas.
5. **Cross-sector Collaboration and Research:** Collaboration among librarians, computer scientists, journalists, civic organizations, and tech developers is essential to develop context-specific, ethical, and inclusive approaches to AI-aware information literacy. Continued academic research should also be encouraged to assess the effectiveness of new literacy models and technologies in combating misinformation.
6. **Public Awareness Campaigns:** Awareness campaigns using mass media, social networks, and community outreach programs should aim to educate the general public about the risks of misinformation and the importance of critical engagement with digital content. These efforts can help foster a culture of skepticism and informed citizenship in the broader society.

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