

Emerging LibraryTech Skills and the Reconfiguration of Professional Identity in Library and Information Science

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This article examines how libraries are responding to these changes and argues that traditional models of librarianship centred on information provision are no longer sufficient in an increasingly digital research environment. It contends that the profession stands at a crossroads between maintaining conventional roles and embracing a new identity in which librarians function as digital knowledge strategists and active contributors to research and digital scholarship.

Drawing on recent scholarship, the article identifies the emerging competencies required of contemporary library and information science (LIS) professionals, including digital literacy, prompt design, critical evaluation of machine-generated content, data and algorithmic awareness, research data management, scholarly communication and digital preservation. It further examines the gap between these expectations and the current level of professional preparedness, particularly within Nigeria and other African contexts where infrastructural and educational challenges remain significant.

The article concludes that the future relevance of Library and Information Science depends not simply on the adoption of new technologies, but on sustained reskilling, curricular reform and the development of the human capacities required to support ethical, critical and effective engagement with the changing research environment.

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Emerging LibraryTech Skills and the Reconfiguration of Professional Identity in Library and Information Science

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ABSTRACT

Library and Information Science is undergoing a profound transformation driven by digital scholarship, research data management, emerging technologies and changing patterns of researcher behaviour. Researchers increasingly use digital tools throughout the research process for idea generation, literature discovery, synthesis, data analysis and scholarly communication. These developments create new opportunities for libraries, while also raising concerns relating to ethics, transparency, information quality, academic integrity and unequal access.

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Keywords: Professional competency, library and information science, Library tech skill

INTRODUCTION

Academic libraries are operating within a research environment characterised by rapid technological change, expanding volumes of information and changing patterns of researcher behaviour. According to Cox, Pinfield and Rutter (2024), digital tools now shape almost every stage of the research lifecycle, from topic selection and literature discovery to data analysis, scholarly writing and dissemination. Dempsey (2023) similarly argues that the contemporary research environment is increasingly organised around digital platforms and networked systems rather than around traditional collections.

Researchers therefore expect libraries to provide more than access to information resources. They increasingly seek guidance in navigating complex digital environments, evaluating the reliability of information, managing research data, understanding emerging technologies and communicating research outputs effectively. Dempsey (2023) contends that this development is repositioning the library from a place of information storage to a site of research support and knowledge mediation. Finlay, Tsou and Sugimoto (2024) similarly observe that librarians are increasingly assuming collaborative roles within research and scholarly communication.

This paper argues that the profession is undergoing a decisive transition. One direction preserves traditional service models focused primarily on collection management and information provision. The other recognises that libraries must become active participants in the changing research landscape. Although Dempsey (2023) and Finlay, Tsou and Sugimoto (2024) agree that the role of the librarian is changing, Walter (2024) warns that the transition remains uneven because many libraries continue to rely upon professional identities and organisational structures developed for an earlier era. The future relevance of the profession therefore depends upon whether librarians are prepared to acquire the new competencies required by this transformation.

THE CHANGING RESEARCH LANDSCAPE

The research process has become increasingly shaped by digital platforms that assist with discovery, organisation, synthesis and communication. Cox, Pinfield and Rutter (2024) note that researchers now make extensive use of conversational search interfaces, automated literature mapping tools, reference management systems and data analysis applications in ways that were uncommon only a few years ago. Their study suggests that such technologies are altering not only how research is conducted, but also the kinds of support that researchers expect from libraries.

Tools such as ChatGPT, SciSpace, Consensus and Research Rabbit are increasingly being incorporated into research workflows for brainstorming, identifying relevant literature, summarising texts and exploring relationships between publications. Cox (2023) argues that these tools create opportunities for more efficient and expansive forms of scholarly discovery. However, Head, Fister and MacMillan (2024) caution that the growing reliance on machine-generated content may weaken critical engagement with sources if researchers lack the skills to evaluate credibility and accuracy.

There is broad agreement that these developments create important opportunities, but scholars differ in their assessment of the risks. Cox (2023) emphasises the potential of emerging technologies to extend the reach and relevance of academic libraries, whereas Head, Fister and MacMillan (2024) place greater emphasis on the dangers of inaccuracy, opacity, bias, plagiarism, copyright infringement and data privacy. Together, these studies suggest that libraries face a dual responsibility: they must help researchers benefit from new technologies while also ensuring that their use remains critical, ethical and informed.

LIBRARIES AS PARTNERS IN RESEARCH AND DIGITAL SCHOLARSHIP

The transformation of the research landscape requires a corresponding transformation in the role of libraries. Traditional library services centred on collection development, reference and circulation remain important, but they are no longer sufficient in isolation. Koltay (2024) argues that libraries are increasingly expected to support the full research lifecycle through services such as research data management, digital curation and data preservation.

Pinfield (2023) reaches a similar conclusion, observing that academic libraries now play a central role in open access publishing, institutional repositories and scholarly communication. Both Koltay (2024) and Pinfield (2023) therefore regard libraries as active participants in knowledge production rather than as passive providers of information resources. Finlay, Tsou and Sugimoto (2024) extend this argument by showing that librarians now contribute directly to literature searching, evidence synthesis, data management planning, publication strategies, copyright guidance and the evaluation of digital research tools.

Walter (2024) argues that the professional identity of the librarian is increasingly being redefined around collaboration, digital expertise and strategic engagement with research, replacing earlier conceptions of librarianship based primarily on intermediation.

EMERGING COMPETENCIES REQUIRED OF LIBRARIANS

The changing research environment demands a new set of professional competencies. Luo and Hostetler (2024) argue that traditional expertise in cataloguing, classification and collection management remains valuable, but is no longer sufficient on its own. Instead, contemporary librarians require broader technological, analytical and pedagogical capacities.

The most significant competencies identified in the literature include digital literacy and advanced information retrieval, understanding of conversational and machine-assisted search systems, prompt design, critical evaluation of machine-generated content, research data management, digital scholarship support, knowledge of open access and scholarly communication, digital preservation, and the ability to teach researchers how to use new technologies responsibly.

Luo and Hostetler (2024) emphasise the importance of technical competencies such as data management, digital curation and technological evaluation. By contrast, Head, Fister and MacMillan (2024) place greater emphasis on critical and ethical competencies, particularly the ability to assess credibility, recognise bias and distinguish reliable information from unsupported

claims. These perspectives are not contradictory; rather, they suggest that the future LIS professional requires both technical proficiency and critical judgement.

Particular attention should be given to the critical evaluation of machine-generated content. Head, Fister and MacMillan (2024) argue that new technologies can generate inaccurate, incomplete or misleading outputs and that researchers often overestimate their reliability. Cox (2023) similarly notes that librarians must understand the limitations as well as the possibilities of these tools if they are to guide researchers effectively.

Equally important is the ability to recognise the broader ethical and social implications of technological change. Cox (2023) stresses that librarians need to understand issues of transparency, bias, privacy and inclusion, especially in contexts where disparities in infrastructure and digital access remain significant.

CAPACITY BUILDING AND PROFESSIONAL DEVELOPMENT

The gap between the competencies now required and those currently possessed by many librarians remains substantial. In many institutions, librarians have limited opportunities for training and continuing professional development. Existing LIS curricula often place insufficient emphasis on digital scholarship, research data management, technological evaluation and emerging research tools (Luo & Hostetler, 2024).

A strategic approach to capacity building is therefore essential. Professional development should not be viewed as a one-time activity, but as a continuous process embedded within professional practice.

Several approaches are especially important. The first is self-directed learning through online courses, webinars and professional reading. Dube (2024) argues that librarians can no longer depend solely on the knowledge acquired during formal education because the technologies shaping library work are changing too rapidly. This view is supported by Akanda (2025), who observes that continuing self-directed learning is essential if librarians are to develop confidence and competence in relation to new tools.

Secondly, librarians need opportunities for practical experimentation with new tools in authentic research contexts. Opele (2023) maintains that technological competence develops most effectively when librarians engage directly with digital repositories, data management systems and research technologies rather than merely learning about them theoretically. Luo and Hostetler (2024) corroborate this argument and contend that hands-on experience is indispensable if librarians are to acquire the analytical and problem-solving skills required in contemporary research environments.

A third approach involves collaboration among librarians, researchers, information technology specialists and academic staff. Walter (2024) argues that professional development is most effective when librarians work in partnership with other groups and gain direct exposure to changing research practices. Peekhaus (2026) similarly suggests that such collaboration enables

librarians to move beyond traditional service roles and to participate more actively in research support and digital scholarship.

Peer learning, mentoring and communities of practice are equally important. Oladokun and Umar (2026) emphasise that librarians often develop new competencies more effectively through collaboration with colleagues than through isolated individual study. Their findings suggest that communities of practice provide opportunities for sharing knowledge, discussing challenges and exchanging examples of innovation.

Finally, these competencies need to be reinforced through continuing education and curricular revision. Opele (2023) argues that unless professional education reflects the realities of contemporary library practice, the gap between expectation and preparedness will continue to widen. Dube (2024) supports this position and stresses that curriculum reform and continuing professional development must work together if librarians are to remain relevant in increasingly technology-rich environments.

IMPLICATIONS FOR LIS EDUCATION

The transformation of the profession has significant implications for LIS education. Existing programmes need to be revised to reflect the changing realities of research and scholarship. Opele (2023) argues that many LIS curricula continue to prioritise traditional library routines while giving insufficient attention to digital scholarship, research data management and emerging technologies. Luo and Hostetler (2024) support this view and maintain that future librarians require broader preparation in technological evaluation, data management, digital literacy and research support.

Walter (2024), however, suggests that curricular reform should involve more than the addition of new technical subjects. In his view, the transformation of LIS education also requires a broader reconsideration of professional identity. Future librarians need to be prepared not simply as custodians of information, but for expanded professional roles within research, scholarly communication and digital knowledge environments.

Accordingly, LIS curricula should include stronger preparation in digital scholarship, research data management, information ethics, scholarly communication, copyright and licensing, digital preservation and the critical evaluation of machine-generated information. Opele (2023) contends that such changes are essential if LIS graduates are to remain professionally relevant in increasingly technology-rich environments.

Greater emphasis should also be placed on practical learning. Luo and Hostetler (2024) argue that students need opportunities to engage directly with digital tools, analyse authentic research problems and participate in interdisciplinary projects. Walter (2024) similarly maintains that closer collaboration between LIS schools, academic libraries and other disciplines is necessary if professional preparation is to reflect the realities of contemporary research environments.

The challenges and opportunities associated with this transformation are particularly significant within Nigeria and other African countries. Existing inequalities in technological

infrastructure, internet access, electricity supply and institutional funding continue to limit the ability of many LIS schools and libraries to provide adequate technological training. Ehoniyotan and Amzat (2023) identify inadequate infrastructure as one of the principal obstacles to innovation in African libraries, while Opele (2023) notes that many LIS programmes in developing contexts struggle to provide students with sufficient exposure to digital tools and practical technological experience.

At the same time, the African context presents important opportunities. Expanding access to higher education, growing digital adoption and the emergence of a younger and increasingly technologically aware workforce provide a strong basis for professional transformation. Ehoniyotan and Amzat (2023) argue that African libraries have the potential not only to adopt new technologies, but also to develop innovative and locally relevant approaches to their use.

The challenge, therefore, is not simply one of catching up with developments elsewhere. Rather, it is to ensure that curricular reform is accompanied by strategic investment, institutional support and contextually appropriate forms of professional development. Unless these conditions are addressed, the gap between professional expectations and existing capacity is likely to widen further.

IMPLICATIONS FOR PRACTICE

The discussion in this article has several implications for practice within Library and Information Science. First, LIS schools need to revise curricula to include stronger preparation in digital scholarship, research data management, digital preservation, scholarly communication and the ethical use of emerging technologies. Opele (2023) argues that existing LIS programmes continue to emphasise traditional library routines at the expense of the competencies required in contemporary information environments. Luo and Hostetler (2024) support this position and contend that future librarians need a broader combination of technological, analytical and pedagogical skills. Walter (2024), however, goes further by arguing that curriculum reform should not simply involve the addition of technical content, but should also encourage a broader rethinking of professional identity.

Secondly, academic libraries should establish structured professional development programmes that enable librarians to acquire new competencies through workshops, mentoring, collaborative learning and practical experimentation. Dube (2024) maintains that librarians require sustained and practice-oriented training if they are to function effectively in increasingly technology-rich environments. Akanda (2025) corroborates this view and emphasises that continuing education is particularly important in developing confidence and competence in relation to new tools. Together, these studies suggest that professional development must be understood as a continuous process rather than as a one-time intervention.

Thirdly, library leaders and policy makers should invest in technological infrastructure, institutional support and continuing education in order to reduce existing disparities in digital capacity. Ehoniyotan and Amzat (2023) identify inadequate infrastructure and weak institutional support as major barriers to the adoption of new technologies in libraries, particularly within developing contexts. Peekhaus (2026) similarly observes that librarians are often willing to

embrace technological change but are constrained by limited institutional resources and opportunities. These findings indicate that the success of professional transformation depends not only on individual effort, but also on the willingness of institutions to provide supportive environments.

Fourthly, libraries should strengthen collaboration with researchers, information technology specialists and academic departments. Walter (2024) argues that librarians who work collaboratively with other professional groups are better positioned to understand changing research practices and to contribute more effectively to research support and digital scholarship. Peekhaus (2026) supports this position and suggests that such collaboration enables librarians to move beyond traditional service roles and to become more active participants in knowledge production.

Finally, professional associations should play a more active role in supporting continuing education, promoting communities of practice and developing competency frameworks through which librarians can assess and strengthen their professional capacity. Oladokun and Umar (2026) argue that collaborative professional networks are essential in reducing inequalities in access to training and support across institutions and regions. Akanda (2025) similarly maintains that clearly articulated competency frameworks are necessary if libraries and educational institutions are to prepare librarians effectively for changing professional realities.

CONCLUSION

The future of LIS will not be determined by technology alone, but by how the profession responds to it. Libraries are no longer merely repositories of information; they are becoming dynamic centres of knowledge mediation, research support and digital engagement. Dempsey (2023) argues that this transformation is redefining the relationship between libraries and researchers, while Finlay, Tsou and Sugimoto (2024) show that librarians are increasingly assuming collaborative roles within research and scholarly communication.

The evidence reviewed in this article suggests that the traditional conception of the librarian is no longer sufficient in a digitally mediated knowledge economy. Luo and Hostetler (2024) contend that the future LIS professional requires a combination of technological fluency, analytical ability and pedagogical skill. Head, Fister and MacMillan (2024) reinforce this argument by emphasising the need for critical judgement and ethical awareness in the use of emerging technologies. Although these authors differ in emphasis, they agree that the future relevance of librarianship depends upon the acquisition of new competencies.

The central imperative is therefore clear: the profession must move from awareness to action. LIS professionals need to commit to continuous learning, educational institutions must modernise their curricula, and library leaders must create environments that support innovation and experimentation. Walter (2024) argues that the profession is undergoing a decisive transition between preserving traditional identities and embracing new roles within digital knowledge environments. Those who adapt will shape the future of librarianship; those who do not risk increasing professional marginalisation.

References

- Akanda, A. K. M. E. A. (2025). Investigating artificial intelligence literacy awareness and competencies among LIS professionals. *European Journal of Media, Art and Photography*.
- Ayinde, L. (2026). Adoption of artificial intelligence in academic libraries: Current practices, challenges and future directions. *The Journal of Academic Librarianship*.
- Contreras, M. L. (2024). Digital awareness, digital literacy skills, and digital proficiency among librarians. *University Library at a New Stage of Social Communications Development*.
- Cox, A. M. (2023). Artificial intelligence and the future of academic libraries. *Journal of Academic Librarianship*, 49(6), 102740.
- Cox, A. M., Pinfield, S., & Rutter, S. (2024). The impact of generative technologies on the research lifecycle and the role of academic libraries. *Library Hi Tech*, 42(1), 1–18.
- Dempsey, L. (2023). The library, the platform and the user: Repositioning libraries in the changing research environment. *Information Services and Use*, 43(2), 103–116.
- Dube, T. V. (2024). Skills and competencies of academic librarians to use information technology tools effectively in the digital age. *Information Development*.
- Ehoniyan, F. S., & Amzat, O. B. (2023). Impact of emerging technologies in libraries: Issues and opportunities. *Lokoja Journal of Information Science Research*.
- Finlay, S., Tsou, A., & Sugimoto, C. R. (2024). Research support in the age of digital scholarship: Emerging roles for librarians. *College & Research Libraries*, 85(2), 145–162.
- Head, A. J., Fister, B., & MacMillan, M. (2024). *Information literacy in the era of generated content*. Project Information Literacy Research Institute.
- Koltay, T. (2024). Research data management and the changing role of academic librarians. *Journal of Documentation*, 80(1), 45–60.
- Luo, L., & Hostetler, K. (2024). Competencies for librarians in technology-rich research environments. *Journal of Education for Library and Information Science*, 65(1), 25–41.
- Maron, N. L., & Pickle, S. (2023). *Supporting digital scholarship in academic libraries*. Association of Research Libraries.
- Oladokun, B., & Umar, L. (2026). Artificial intelligence skills and competencies among librarians in 5IR libraries: A systematic review. *Information Services and Use*.
- Opele, J. K. (2023). The impact of emerging technologies on library education: A global perspective. *University of Ibadan Journal of Library and Information Science*.
- Peekhaus, W. (2026). Revisiting perceptions of and experience using artificial intelligence among North American librarians. *The Journal of Academic Librarianship*.
- Pinfield, S. (2023). Scholarly communication and the future role of academic libraries. *Learned Publishing*, 36(3), 412–421.
- Subaveerapandian, A. (2024). Application of artificial intelligence in libraries and its impact on library operations: A review. *Humanities Commons*.
- Walter, S. (2024). Libraries at the crossroads: Professional identity and emerging competencies in academic librarianship. *Journal of Librarianship and Information Science*, 56(1), 72–85.

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