



Libraries as Civic-Epistemic Institutions Shaping Digital and Global Citizenship

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Abstract

The rapid digitization of contemporary society has transformed civic participation, knowledge production, and global interconnectedness, situating citizenship within algorithmically mediated digital environments. In this context, libraries must be reconceptualized not merely as information service providers but as civic-epistemic institutions that sustain democratic participation while safeguarding the integrity of knowledge. Drawing on scholarship in information literacy, digital citizenship, algorithmic literacy, artificial intelligence ethics, and global citizenship education, this conceptual study proposes an integrated framework linking digital literacy, digital citizenship, and global citizenship as interconnected dimensions of contemporary civic development. It argues that through equitable access, critical literacy pedagogy, ethical engagement with emerging technologies, and facilitation of intercultural dialogue, libraries shape the structural conditions under which informed, responsible, and globally aware citizenship emerges. By bridging technical competence with ethical reflection and global responsibility, libraries play a foundational role in cultivating reflective digital participants and globally engaged citizens within the networked knowledge society.

Keywords: Digital literacy; Digital Citizenship; Global Citizenship; Civic-Epistemic; Libraries

Introduction

Higher education and civic life today operate within environments shaped by rapid technological change and deepening global interconnectedness. Digital systems, including institutional repositories, learning platforms, social media networks, and artificial intelligence tools, now influence how people locate information, communicate ideas, and engage in public discourse. Information now circulates rapidly and is often organized and filtered by algorithmic systems that determine what is visible, prioritized, or recommended. Although this transformation has broadened access to knowledge, it has also introduced new concerns, including misinformation, algorithmic bias, privacy risks, and limited transparency in how digital platforms operate (Pasquale, 2015).

Students and citizens commonly depend on search engines and social platforms as primary sources of information. However, research suggests that many users do not critically examine how ranking systems and personalization features shape what appears authoritative or credible (Head et al., 2020). As a result, the educational challenge extends beyond teaching search skills. It now involves helping individuals understand how digital

systems structure knowledge, how online participation carries ethical implications, and how technological mediation influences public dialogue. Libraries have long been guided by principles of intellectual freedom, equitable access, and support for informed communities within democratic knowledge systems. In the current context, these principles take on renewed significance. Addressing contemporary digital challenges requires libraries to move beyond traditional service models and engage more actively in fostering critical awareness and responsible participation. Recent scholarship highlights their growing involvement in areas such as algorithmic literacy, artificial intelligence education, and institutional technology governance (Ridley & Pawlick-Potts, 2021). This evolving role positions libraries not only as information providers but also as contributors to the development of thoughtful and engaged digital citizens.

This paper first reviews relevant scholarship, then examines the convergence of digital and global citizenship, followed by an analysis of libraries as civic-epistemic institutions, before discussing institutional implications. This study advances existing scholarship by framing libraries not merely as instructional actors but as civic-epistemic institutions that structurally mediate knowledge integrity and democratic participation in digitally networked societies. This study contributes by developing an integrated conceptual framework that positions libraries as civic-epistemic institutions linking digital literacy, digital citizenship, and global citizenship.

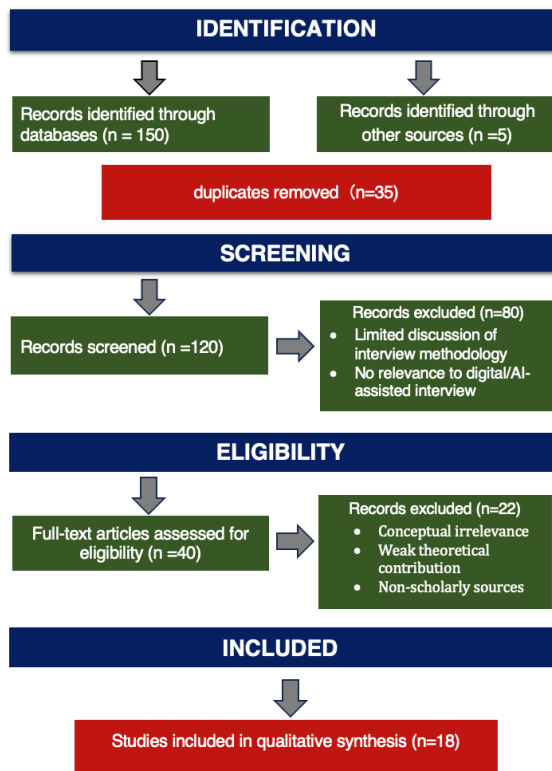
Methodology

This study adopts a conceptual and integrative review approach to examine the role of libraries in shaping digital and global citizenship within digitally mediated knowledge environments. To ensure methodological rigour and transparency, the review process was guided by the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework. A systematic literature search was conducted across major academic databases, including Scopus, Web of Science, and Google Scholar, using keywords such as digital literacy, digital citizenship, global citizenship, algorithmic literacy, and academic libraries. The search was limited to publications between 2011 and 2024 to capture recent developments in the field.

The study selection process followed four stages: identification, screening, eligibility, and inclusion, as illustrated in Fig. 1. A total of 155 records were identified (150 from databases and 5 from additional sources). After removing 35 duplicates, 120 records were screened based on titles and abstracts. Of these, 80 studies were excluded due to lack of relevance or insufficient conceptual contribution. The remaining 40 full-text articles were assessed for eligibility, leading to the exclusion of 22 studies due to

conceptual irrelevance, weak theoretical grounding, or non-scholarly nature. Ultimately, 18 studies were included in the final qualitative synthesis. Inclusion criteria required studies to be peer-reviewed, conceptually relevant, and directly related to digital literacy, digital citizenship, global citizenship, or algorithmic literacy within library and information science contexts. Exclusion criteria included non-scholarly sources, studies lacking theoretical depth, and works not aligned with the core themes of the study. The selected literature was analyzed using a thematic synthesis approach, identifying key domains such as digital literacy, algorithmic literacy, digital citizenship, and global citizenship. These themes were further integrated to develop a conceptual framework positioning libraries as civic-epistemic mediators of knowledge, technology, and citizenship. While the PRISMA-informed process enhances transparency and systematic selection, the study remains conceptual in nature and does not include empirical validation.

Fig. 1: Flow diagram of study selection process



Literature Review

Scholarly discourse on libraries and citizenship formation has progressively evolved from foundational models of digital responsibility to more complex frameworks that incorporate algorithmic awareness, ethical reasoning, and global civic engagement. This shift reflects the growing recognition of libraries as active agents in navigating the sociotechnical dimensions of the digital age.

Recent studies emphasize the importance of algorithmic literacy as a critical extension of information literacy. Users' "folk theories" of algorithms shape their perceptions of digital systems, and these pre-existing understandings can be leveraged to cultivate deeper critical awareness of algorithmic infrastructures within library instruction (Ridley, 2024). Algorithmic literacy is increasingly recognized as an emerging domain within library education, with libraries playing a crucial role in explaining the sociotechnical mechanisms underlying search engines, recommendation systems, and data analytics (Ridley & Pawlick-Potts, 2021). This expanded role enables libraries to move beyond access provision toward fostering critical engagement with digital environments.

The ethical implications of digital technologies, particularly artificial intelligence, further extend the responsibilities of libraries. Libraries are seen as key institutions for promoting transparency, accountability, and public understanding of AI systems (International Federation of Library Associations and Institutions, 2021). Similarly, ethical frameworks grounded in human rights principles emphasize the importance of aligning digital citizenship with broader concerns of governance and social responsibility (UNESCO, 2021).

Empirical research highlights gaps in users' understanding of algorithmically mediated information systems. Students often rely heavily on search engines while lacking awareness of ranking mechanisms and visibility structures, underscoring the need for integrating algorithmic literacy into library instruction (Head et al., 2020). The opacity of algorithmic systems, often described as "black boxes," further reinforces the need for critical awareness of technological power structures (Pasquale, 2015).

The transformation of academic libraries is evident in their expanding functional roles. Libraries are increasingly contributing to research data management, digital scholarship, and open science, reflecting their transition from traditional repositories to active participants in knowledge production (Cox et al., 2019). This evolution aligns with the view of libraries as institutions centered on knowledge creation and community engagement rather than passive information storage (Lankes, 2011).

At the pedagogical level, scholars advocate a shift from procedural to conceptual approaches in information literacy instruction. Traditional practices often focus on search techniques rather than deeper

understanding (Julien et al., 2018). In contrast, critical information literacy emphasizes questioning authority, power structures, and systemic inequalities embedded in information systems (Tewell, 2018). This shift is reinforced by the Framework for Information Literacy for Higher Education, which foregrounds threshold concepts such as “authority as contextual” and “information creation as a process” (Association of College and Research Libraries, 2016).

Information literacy is also understood as a socially situated practice shaped by context and experience, requiring more than technical competencies (Lloyd, 2017). The integration of digital and media literacy further highlights the importance of critical engagement and participatory culture in digital environments (Hobbs, 2017).

The concept of digital citizenship has evolved into a multidimensional construct encompassing ethical, technical, and civic dimensions. Early definitions emphasize responsible and ethical participation in digital environments (Ribble, 2011), while later studies expand this view to include safe and constructive online behavior (Jones & Mitchell, 2016) and the integration of critical thinking, technical competence, and democratic participation (Choi, 2016). At a broader level, global citizenship education promotes awareness of global interdependence, respect for diversity, and responsible civic engagement across multiple domains (UNESCO, 2015). Institutional evidence reinforces the importance of libraries in supporting student learning and success, thereby justifying their expanded role in critical and civic domains (Association of College and Research Libraries, 2017).

Collectively, these studies highlight the expanding and increasingly complex role of libraries in fostering critical literacy, ethical engagement, and civic participation. However, digital citizenship, algorithmic literacy, and global citizenship are often examined as separate constructs. Limited attention has been given to their integration within a unified framework. Addressing this gap forms the basis of the present study, which seeks to develop a holistic model integrating these interconnected dimensions within the context of contemporary academic libraries. Existing studies treat these domains as parallel rather than interdependent, and critically overlook the institutional role of libraries in structurally mediating this convergence.

Objectives of the Study

This conceptual study aims to:

- a) Reconceptualize libraries as civic-epistemic institutions in digitally mediated knowledge societies.
- b) Examine the convergence between digital and global citizenship in algorithmically structured environments.

- c) Analyze how libraries shape responsible digital and globally engaged citizenship through critical literacy and ethical technological practices.
- d) Propose an integrated framework linking digital literacy, digital citizenship, and global citizenship within library institutions.

Theoretical Convergence of Digital and Global Citizenship

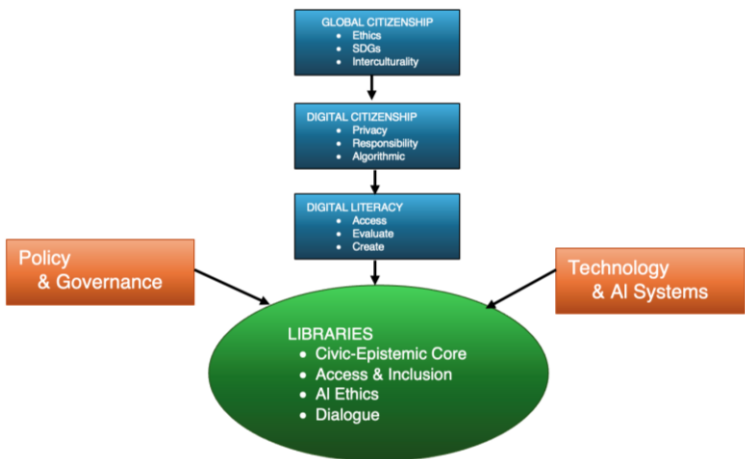
Digital citizenship and global citizenship are frequently conceptualized as distinct educational paradigms; however, in digitally networked societies, they increasingly intersect. Digital citizenship emphasizes ethical participation in online environments, including media literacy, privacy awareness, responsible communication, and critical understanding of algorithmic systems that shape information visibility (Choi, 2016; Ribble, 2011). Global citizenship, in contrast, foregrounds intercultural competence, social justice, democratic engagement, and awareness of transnational interdependence. While these frameworks originate from different pedagogical traditions, both aim to cultivate informed and responsible participation in complex social environments.

The convergence between these frameworks becomes evident when recognizing that global interaction is now largely mediated through digital infrastructures. Public discourse, civic mobilization, cross-cultural dialogue, and knowledge exchange increasingly occur on platforms structured by data-driven algorithms and recommendation systems. As Pasquale (2015) argues, these computational systems operate as “black boxes,” influencing perceptions of authority and relevance without transparency. Research indicates that students often rely on search engines and social platforms without critically examining how personalization and ranking mechanisms shape what they encounter (Head et al., 2020). In such contexts, meaningful global engagement depends not only on intercultural awareness but also on algorithmic literacy and critical digital discernment.

Failure to integrate these competencies may lead to technically skilled but ethically disengaged users or globally aware individuals lacking digital understanding. Scholars therefore emphasize the need to combine ethical reasoning with technological literacy (Lloyd, 2017; Ridley & Pawlick-Potts, 2021; Tewell, 2018; UNESCO, 2021). Building on this convergence, the proposed framework presents digital literacy, digital citizenship, and global citizenship as progressive and interconnected layers, as shown in Fig. 2. Digital literacy provides foundational skills, digital citizenship adds ethical and critical engagement, and global citizenship extends these toward global responsibility. The model is iterative, with feedback loops across levels. Libraries function as central mediators within this framework by enabling access, fostering critical and algorithmic literacy, and supporting ethical and globally engaged participation. Through this role, they facilitate the transition from functional digital skills to reflective and globally responsible citizenship.

This framework is grounded in sociotechnical and critical information literacy perspectives, which conceptualize knowledge systems as shaped by power, technology, and social interaction.

Fig. 2: Conceptual Framework of Digital and Global Citizenship Integration



Libraries as Agents of Digital Citizenship Formation

Libraries contribute to digital citizenship formation through interconnected pedagogical, advisory, and institutional practices that extend well beyond traditional information skills instruction. One of the most significant avenues is curriculum-embedded collaboration with faculty. Rather than offering isolated workshops, librarians increasingly integrate digital citizenship themes into disciplinary teaching, ensuring contextualized and sustained learning. For example, modules addressing algorithmic bias in social science research methods or privacy and data ethics in health sciences situate digital responsibility within disciplinary frameworks, strengthening relevance and retention (Julien et al., 2018). Such integration reflects a shift from episodic instruction toward embedded civic education within academic programs. In parallel, libraries have emerged as key facilitators of algorithmic and artificial intelligence literacy. As recommender systems, search algorithms, and generative AI tools increasingly shape knowledge production, libraries are developing instructional initiatives that demystify these technologies. Ridley and Pawlick-Potts (2021) emphasize the role of libraries in cultivating algorithmic literacy, while recent scholarship proposes responsible generative AI literacy models that foreground transparency, bias awareness, and ethical oversight (Cox et al., 2019). These initiatives position libraries at the forefront of helping users understand how computational systems influence visibility, authorship, and authority.

Libraries further advance digital citizenship through media and misinformation education. Instruction now extends beyond source evaluation to include critical examination of persuasive design, engagement metrics, and platform affordances that amplify particular narratives (Head et al., 2020). This enables libraries to equip users to recognize structural influences on information circulation rather than focusing solely on individual credibility judgments.

Beyond instruction, libraries contribute to institutional governance by advising on AI use policies, data management standards, and academic integrity frameworks. UNESCO (2021) underscores the importance of ethical AI governance in educational contexts, and recent studies note librarians' participation in institutional committees shaping responsible technology adoption. Additionally, libraries model ethical practice through privacy-respecting services, transparent discovery systems, and clear communication regarding embedded algorithmic tools.

Collectively, these pedagogical, advisory, and operational roles position libraries as instructors, mediators, and policy actors in digital citizenship formation, reinforcing their function as civic and epistemic institutions within digitally mediated societies.

Libraries as Agents of Global Citizenship Formation

Libraries contribute to global citizenship formation through practices that promote intercultural understanding, equitable knowledge access, and engagement with transnational issues. One foundational mechanism is the deliberate curation of diverse and multilingual collections. By providing access to international scholarship, global news sources, translated literature, and culturally varied materials, libraries expand the intellectual horizons of learners and expose them to multiple epistemic traditions. Such access fosters intercultural competence and supports the development of what global citizenship education identifies as perspective-taking and global awareness (UNESCO, 2015). In digitally interconnected societies, exposure to diverse viewpoints is essential for countering ethnocentrism and informational insularity.

Beyond collection development, libraries actively organize programming that connects local communities to global challenges. Dialogues, exhibitions, reading circles, and thematic events addressing issues such as climate change, migration, public health, and human rights situate global concerns within accessible civic spaces. These initiatives enable participants to understand how global phenomena intersect with local realities, reinforcing the relational dimension of global citizenship. Research on community-based library programming demonstrates that such interventions strengthen civic engagement and awareness of Sustainable Development Goals (SDGs) (IFLA, 2021).

Libraries also play a structural role in reducing global knowledge inequities. Through open access advocacy, institutional repository development, and international partnerships, libraries expand the availability of scholarly outputs beyond paywalled systems. Such efforts align with SDG 4 (quality education) and SDG 16 (inclusive institutions) by supporting equitable participation in global knowledge production. In contexts where libraries function as primary digital access points, particularly in underserved regions, their contribution to digital inclusion directly reinforces global citizenship objectives.

Finally, libraries serve as civic learning spaces that encourage respectful dialogue and collaborative inquiry across cultural differences. By maintaining environments grounded in intellectual freedom and pluralism, libraries nurture dispositions such as empathy, deliberation, and mutual respect, core attributes of global citizenship. Through these interconnected roles, libraries extend their mission beyond information provision to active cultivation of globally aware and socially responsible communities.

Digital to Global Citizenship

In contemporary society, citizenship unfolds within digitally mediated environments where participation, knowledge production, and civic discourse are shaped by technological infrastructures. It can therefore be understood as a layered progression that begins with digital literacy, expands into digital citizenship, and ultimately situates itself within global civic responsibility. These dimensions are not isolated constructs but interconnected stages of development that reflect the realities of networked knowledge societies.

At the foundational level lies digital literacy, which encompasses the technical and cognitive competencies required to locate, evaluate, interpret, and ethically use information within digital ecosystems. Information literacy frameworks emphasize the contextual nature of authority and the understanding that information creation is a process shaped by purpose and perspective (Association of College and Research Libraries, 2016). Digital literacy equips individuals with essential skills for navigating databases, evaluating sources, and managing digital content. However, while indispensable, this stage remains primarily functional unless accompanied by ethical and reflective awareness.

Building upon technical competence, digital citizenship introduces a normative and participatory dimension to digital engagement. It involves responsible communication, respect for digital rights and duties, awareness of privacy and data protection, and critical understanding of algorithmic systems that shape visibility and influence discourse (Choi, 2016; Ribble, 2011). In environments curated by search engines, recommendation systems, and artificial intelligence, users must recognize how technological

infrastructures mediate access to knowledge and construct perceptions of authority (Pasquale, 2015). Digital participation thus transforms from procedural interaction into reflective agency, characterized by ethical consideration and critical scrutiny of digital power structures.

Beyond ethical digital engagement lies a broader orientation toward global citizenship. As communication, scholarship, and civic dialogue transcend national boundaries, individuals participate in transnational digital publics. Global citizenship encompasses intercultural awareness, democratic participation, social justice consciousness, and recognition of global interdependence. In digitally networked societies, global responsibility is enacted through digital platforms; thus, digital citizenship functions as the operational means through which global civic engagement becomes practicable. Ethical digital practices, when aligned with global awareness, enable informed participation in conversations concerning sustainability, equity, governance, and human rights.

Within this layered understanding, academic libraries occupy a pivotal role. They facilitate equitable access to knowledge resources, provide inclusive digital infrastructures, and promote open pathways to information. Beyond access, libraries embed digital, media, and algorithmic literacy within instructional programs, fostering critical evaluation and contextual understanding of information systems (Julien et al., 2018; Ridley & Pawlick-Potts, 2021). They also create spaces for ethical dialogue and policy reflection, aligning educational practice with global principles of transparency, accountability, and human-centered technological governance (UNESCO, 2021). Through these interventions, libraries move beyond their traditional custodial role to function as civic and epistemic stewards within digital societies.

Understanding citizenship as a progression from technical literacy to ethical digital participation and ultimately to global civic consciousness allows for a more comprehensive interpretation of contemporary educational responsibilities. In higher education settings, particularly within academic libraries, this progression underscores the importance of cultivating not only digital skills but also reflective judgment, ethical reasoning, and globally informed civic engagement.

Illustrative Case Applications

To demonstrate the practical applicability of the proposed framework, selected national and international examples illustrate how libraries operationalize digital and global citizenship in practice. At the national level, the National Digital Library of India, developed by the Indian Institute of Technology Kharagpur under the Ministry of Education, provides extensive multilingual digital resources, thereby strengthening equitable access and digital literacy. Complementing this, the Digital India Programme enhances

digital infrastructure and enables citizens to engage with e-governance, online learning, and digital services through libraries and community access points, supporting informed and participatory digital citizenship.

Internationally, academic and public libraries have implemented initiatives focused on algorithmic literacy, artificial intelligence ethics, and digital inclusion. For example, the Harvard Library promotes open access through institutional repositories, while the Chicago Public Library advances community-based digital literacy and civic engagement programs. These efforts foster critical technological awareness and inclusive knowledge participation.

Collectively, these examples demonstrate that libraries function as active civic-epistemic institutions, enabling the progression from digital literacy to ethical digital participation and ultimately to globally informed citizenship.

Institutional and Policy Implications

Advancing digital and global citizenship through library practice demands deliberate institutional alignment across strategic planning, curricular integration, governance frameworks, and technological infrastructure. For higher-education institutions and public-library systems, digital and global citizenship must move from aspirational discourse to embedded organizational commitments. Strategic integration is essential. Libraries should incorporate digital and global citizenship objectives into mission statements, strategic plans, learning outcomes, and assessment frameworks. Embedding these competencies into measurable institutional goals ensures that citizenship formation is not treated as peripheral programming but as a core educational function.

Sustained faculty librarian partnerships represent another critical mechanism for implementation. Co-designed curricula that integrate algorithmic literacy, artificial intelligence awareness, and global ethical reflection across disciplines enable contextualized and sustained learning experiences (Julien et al., 2018). Rather than confining digital citizenship instruction to standalone workshops, embedding these themes within research methods, communication studies, social sciences, and professional programs strengthens disciplinary relevance and pedagogical continuity.

Institutional AI governance also requires active library participation. As universities develop policies addressing generative AI use, data governance, academic integrity, and algorithmic transparency, librarians possess expertise in information ethics and knowledge systems that can inform policy deliberations. International policy guidance emphasizes transparency, accountability, and human oversight in AI deployment (UNESCO, 2021), and emerging evidence suggests that librarians are increasingly being consulted in shaping responsible AI frameworks. Advocacy for privacy-preserving

discovery systems and transparent algorithmic tools aligns with libraries' longstanding commitments to intellectual freedom and user confidentiality. Professional development is equally critical. Librarians require ongoing training in AI systems, algorithmic bias, data ethics, and global pedagogy to effectively facilitate citizenship-oriented instruction. Institutional investment in such capacity building ensures that libraries remain responsive to evolving technological environments.

Finally, infrastructural commitments to digital inclusion and open access are central to equity-driven citizenship formation. Funding initiatives that expand broadband access, multilingual resources, and open scholarship infrastructures directly reduce global information inequalities. Recent case studies of public-library-led digital inclusion programs demonstrate tangible impacts on community engagement and SDG-aligned objectives. Through coordinated policy, partnership, and infrastructural investment, institutions can position libraries as strategic actors in cultivating digitally responsible and globally engaged citizens.

Conclusion

In an era where civic life unfolds through algorithmically mediated platforms and globally interconnected networks, citizenship can no longer be understood solely in national or analog terms. Meaningful participation requires the integration of digital competence, ethical discernment, and global awareness. The accelerating influence of artificial intelligence, data-driven infrastructures, and transnational communication systems has reshaped how individuals access information, engage in public discourse, and negotiate cultural differences. Within this landscape, the formation of responsible citizens demands more than technical proficiency; it requires structural understanding, normative reflection, and intercultural sensitivity. Libraries, grounded in longstanding commitments to intellectual freedom, equitable access, and democratic engagement, are uniquely positioned to address this multidimensional challenge. Emerging scholarship and institutional practice demonstrate that libraries are increasingly advancing algorithmic literacy, artificial intelligence ethics education, digital inclusion initiatives, and global engagement programming that collectively foster reflective, responsible, and globally engaged citizenship. These initiatives illustrate how libraries can translate foundational information skills into ethically informed digital participation and, ultimately, into globally conscious civic responsibility.

Realizing this expanded mission depends on strengthened institutional recognition, strategic policy engagement, and sustained professional development. When supported structurally and strategically, libraries function not merely as service units but as civic and epistemic stewards within the knowledge society. Repositioning libraries as agents of digital and

global citizenship formation affirms their central role in cultivating reflective, responsible, and globally engaged communities capable of navigating the complexities of digitally mediated public life. Future research may extend this framework through empirical validation across diverse institutional and cultural contexts.

References

- Ridley, M. (2024). Algorithmic literacy in academic libraries: Understanding user folk theories. *College & Research Libraries*, 85(1), 45-62. <https://crl.acrl.org/index.php/crl/article/view/25767/34452>
- International Federation of Library Associations and Institutions. (2021). *IFLA statement on libraries and artificial intelligence*. <https://repository.ifla.org/handle/20.500.14598/1646>
- Ridley, M., & Pawlick-Potts, D. (2021). Algorithmic literacy and the role of libraries. *Information Technology and Libraries*, 40(2). <https://doi.org/10.6017/ital.v40i2.12963>
- UNESCO. (2021). *Recommendation on the ethics of artificial intelligence*. UNESCO.
- Head, A. J., Fister, B., & MacMillan, M. (2020). *Information literacy in the age of algorithms: Student experiences with news and information, and the need for change*. Project Information Literacy. <https://projectinfolit.org/publications/algorithm-study>
- Cox, A. M., Pinfield, S., & Rutter, S. (2019). Extending McKinsey's 7S model to understand strategic alignment in academic libraries. *Library Management*, 40(6-7), 313-326. <https://doi.org/10.1108/LM-06-2018-0052>
- Julien, H., Gross, M., & Latham, D. (2018). Survey of information literacy instructional practices in U.S. academic libraries. *College & Research Libraries*, 79(2), 179-199. <https://crl.acrl.org/index.php/crl/article/view/16606/18601>
- Association of College and Research Libraries. (2017). *Academic library impact on student learning and success*. American Library Association. https://www.ala.org/sites/default/files/acrl/content/issues/value/findings_y3.pdf
- Tewell, E. (2018). The practice and promise of critical information literacy. *Communications in Information Literacy*, 12(1), 10-24. <https://doi.org/10.5860/crl.79.1.10>
- Hobbs, R. (2017). *Create to learn: Introduction to digital literacy*. Wiley Blackwell.
- Lloyd, A. (2017). Information literacy and literacies of information: A mid-range theory and model. *Journal of Information Literacy*, 11(1), 91-105. <https://doi.org/10.11645/11.1.2185>

- Association of College and Research Libraries. (2016). *Framework for information literacy for higher education*. American Library Association. <http://www.ala.org/acrl/standards/ilframework>
- Choi, M. (2016). A concept analysis of digital citizenship for democratic citizenship education in the internet age. *Theory & Research in Social Education*, 44(4), 565–607. <https://doi.org/10.1080/00933104.2016.1210549>
- Jones, L. M., & Mitchell, K. J. (2016). Defining and measuring youth digital citizenship. *New Media & Society*, 18(9), 2063–2079. <https://doi.org/10.1177/1461444815577797>
- Pasquale, F. (2015). *The black box society: The secret algorithms that control money and information*. Harvard University Press.
- UNESCO. (2015). *Global citizenship education: Topics and learning objectives*. UNESCO. <https://doi.org/10.54675/DRHC3544>
- Lankes, R. D. (2011). *The atlas of new librarianship*. MIT Press.
- Ribble, M. (2011). *Digital citizenship in schools* (2nd ed.). International Society for Technology in Education.

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