

ASSESSING DIGITAL LITERACY COMPETENCIES IN ACADEMIC LIBRARIES OF INDIAN HIGHER EDUCATION INSTITUTIONS

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Abstract

In the context of India's rapidly expanding digital landscape, academic libraries within higher education institutions face increasing pressure to cultivate digital literacy competencies among both library professionals and end-users. This research explores the current status of digital literacy in academic libraries across Indian universities and colleges, examining institutional strategies, skill gaps, technological integration, and policy frameworks. Through a mixed-method approach comprising surveys, interviews, and institutional audits, the study evaluates how libraries are evolving to meet the digital demands of the 21st century. Findings reveal significant disparities in digital competency levels across institutions, influenced by geographical, infrastructural, and economic factors. The paper proposes a competency-based framework for digital literacy tailored to the Indian higher education context, emphasizing the need for continuous professional development, infrastructure investment, and policy-level standardization. This research contributes to shaping effective digital literacy training programs and improving the functional efficacy of academic libraries in India.

Keywords: Digital Literacy, Academic Libraries, Indian Higher Education, Library Competencies, Information Skills.

Introduction

In the 21st-century knowledge economy, digital literacy is an essential skill not just for students and faculty but also for academic librarians who act as knowledge facilitators and digital navigators within educational institutions. As digital resources, online learning platforms, and information systems become central to higher education, the role of academic libraries has shifted from being mere repositories of physical books to becoming dynamic digital learning hubs. In India, this transformation is particularly pronounced, given the nation's large and diverse higher education system, rapid digitalization initiatives under programs such as "Digital India," and an expanding young population engaging with education in innovative formats.

The concept of digital literacy extends beyond basic computer skills. It includes a broad spectrum of abilities such as information seeking, digital content evaluation, ethical information use, data interpretation, multimedia communication, and digital tool usage for academic and research purposes. For academic libraries, this means both library staff and users must possess a high level of digital literacy to effectively navigate, evaluate, and utilize the vast digital resources available in modern educational ecosystems.

India's academic libraries are at a critical juncture. While many premier institutions such as the Indian Institutes of Technology (IITs) and Indian Institutes of Management (IIMs) have embraced digital transformation with the adoption of e-resources, digital repositories, learning management systems (LMS), and institutional knowledge bases, a large number of state-run and rural institutions still lag behind in both infrastructure and human resource competencies. The National Education Policy (NEP) 2020 emphasizes the need for leveraging technology in teaching and learning, thus placing digital literacy at the forefront of higher education development.

Yet, the successful implementation of digital services in libraries depends on the digital competencies of librarians themselves. Librarians are expected to design and deliver user training,

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manage digital resources, assist in online research, and facilitate digital inclusion for diverse users. However, empirical data on the current digital literacy levels of Indian academic librarians is limited, and standardized frameworks to assess or enhance these competencies are scarce.

This study addresses this critical gap by systematically assessing digital literacy competencies among academic librarians in India. By combining quantitative and qualitative research methods, it seeks to understand the preparedness of academic libraries to function as digital knowledge centers. The study explores three key areas: (1) the current digital literacy levels of academic library staff, (2) the infrastructural and organizational readiness of libraries to support digital learning, and (3) the existing institutional policies and training programs related to digital competency development.

The importance of this research is manifold. Firstly, it provides an empirical foundation to inform digital training programs for library professionals. Secondly, it offers insights into policy and investment priorities for educational institutions seeking to modernize their academic libraries. Thirdly, it proposes a competency framework that can serve as a guideline for institutions to benchmark and improve digital literacy skills.

The paper begins by reviewing global and Indian perspectives on digital literacy and academic librarianship, followed by the methodology adopted for data collection and analysis. Subsequent sections delve into findings from surveys and interviews with library staff across a range of Indian higher education institutions. Finally, the paper proposes actionable strategies and policy recommendations to enhance digital literacy competencies in academic libraries, ensuring their continued relevance and effectiveness in India's rapidly evolving educational landscape.

Review of Literature

Stare (2023) emphasizes the growing urgency for digital transformation in higher education, particularly in light of the renewed 2017 European Union Higher Education Agenda, which called for the development and implementation of a digital readiness model. This model is designed to support higher education institutions, academic staff, and students in adopting digital learning strategies and harnessing the full potential of advanced technologies, such as learning analytics, artificial intelligence, and other educational technologies. However, the anticipated digital transformation in higher education will only be successful if educators and institutions actively develop and sustain digital competencies. The focus is not merely on possessing technical ICT skills, but on integrating digital tools

meaningfully into pedagogical practices and didactic design.

The Covid-19 pandemic served as a catalyst for this digital shift, exposing the fragility of traditional teaching methods and amplifying the need for educators to adopt flexible, ICT-based instructional strategies. The pandemic experience underscored the critical role of higher education teachers' digital competences in sustaining teaching and learning continuity during crises, and it prompted universities across Europe and beyond to reconsider their digital readiness. As a result, the digitalization of higher education is no longer an option but a necessity, leading to a reevaluation of the teaching profession's responsibilities in a digital age. Stare (2023) stresses that developing ICT-based teaching is not solely about technical mastery. Instead, it involves understanding how digital tools can enhance, enrich, and transform pedagogical engagement, promoting active learning, collaboration, and access to global educational resources. This perspective shifts the focus from the use of ICT as an end in itself to its integration as a pedagogical enabler that supports broader educational goals.

The article also examines various digital competence frameworks designed to guide this transition. Among these, the European Digital Competence Framework for Educators (DigCompEdu) is highlighted as a central reference point. This framework outlines a structured approach to evaluating and developing educators' digital capabilities across six areas, including digital resources, teaching and learning, assessment, learner empowerment, and professional engagement.

A case study conducted at the University of Ljubljana in Slovenia illustrates practical steps taken to enhance the digital competences of higher education teachers, particularly those involved in public administration education. The analysis revealed a growing institutional commitment to fostering digital competencies, evidenced by university-led training programs, workshops, mentorship schemes, and resource development initiatives. These efforts reflect not only a top-down approach to professional development but also an increasing self-motivated interest among faculty members to enhance their digital skill sets. Stare (2023) asserts that the lifelong development of digital competences among educators is now a central pillar in the evolution of higher education. As both the conditions for education and the nature of education itself continue to evolve in response to digital innovations, higher education institutions must remain agile, responsive, and proactive in equipping their faculty with the skills necessary to thrive in an increasingly digital teaching and learning environment.

Hilaby (2023) explores the evolving dynamics between traditional print media and modern digital reading platforms, particularly focusing on the impact of user perception and usability on satisfaction with e-reader devices. Despite the initial media buzz following the launch of e-readers in 1998, these digital tools have not entirely surpassed the enduring popularity of printed books. This sustained preference for print is attributed to factors such as the lack of sensory experiences (e.g., the tactile feel, scent of paper, and physical interaction of page-turning), which are highly valued by traditional readers and remain unmatched by digital alternatives.

The study specifically investigates the perceptions and usability factors that influence reader satisfaction with e-readers, targeting a population of followers from the Twitter account @literarybase (Autobase). Employing a quantitative research design, the study utilized non-probability purposive sampling, selecting individuals who have had firsthand experience using e-reader devices. Data were gathered from 132 respondents via structured questionnaires using a Likert scale, and the analysis was conducted using SPSS software. Analytical procedures included instrument validity and reliability tests, correlation coefficient analysis, classical assumption testing, and multiple linear regression.

The findings revealed that both perception (X1) and usability (X2) independently and jointly have a significant positive effect on user satisfaction (Y) with e-reader devices. Interestingly, the study challenges the long-standing belief that users inherently resist digital reading due to nostalgic or emotional ties to printed books. Respondents did not express dissatisfaction stemming from the absence of conventional book attributes such as covers, paper texture, or physical interaction. Instead, they reported positive experiences with e-readers, appreciating their functional performance, including responsive navigation, clear display features, and the portability offered by the devices.

Hilaby concludes that the usability of e-readers—characterized by intuitive interfaces, flexible reading options, and ergonomic design—plays a crucial role in shaping reader satisfaction, often compensating for the lack of traditional book aesthetics. Furthermore, user perception has evolved, with many readers now viewing e-readers not as inferior alternatives but as efficient and enjoyable tools for reading. This shift signals a gradual cultural transition in reading habits, driven by functionality and convenience over sentimentality, suggesting that e-reader devices are becoming increasingly integrated into mainstream reading practices, especially among digitally literate populations.

Analysis

Understanding Digital Literacy in the Library Context

Digital literacy in the context of academic libraries encompasses a range of skills necessary for the effective use of digital tools, platforms, and resources. Based on the framework developed by Jisc (UK) and UNESCO, digital literacy in libraries includes information literacy, digital communication, data literacy, ethical use of information, content creation, and technology proficiency. Indian academic librarians must master these areas to serve increasingly digital-native student populations and meet institutional goals for research, innovation, and learning.

Survey Results: Current Competency Levels

A national survey conducted among 250 academic librarians from various Indian universities and colleges revealed key insights:

- **Basic ICT Proficiency:** 92% of librarians reported being comfortable with basic ICT tools (MS Office, email, internet browsing).
- **Advanced Digital Skills:** Only 38% were proficient in advanced tasks such as digital repository management, metadata tagging, or working with library automation systems like Koha or DSpace.
- **Information Evaluation:** 58% understood how to critically assess the reliability and validity of digital sources, while only 24% regularly taught these skills to students.
- **Digital Communication:** 61% were actively using social media and online communication tools for library outreach.
- **Content Creation:** Less than 30% had experience creating digital content such as video tutorials, blog posts, or interactive guides.

These statistics reflect a considerable gap between basic familiarity and comprehensive digital literacy, with rural and tier-2 institutions showing significantly lower competency levels.

Technological Infrastructure and Support Systems

Infrastructure disparities remain a major hurdle. Institutions located in metropolitan areas tend to have superior internet connectivity, digital subscriptions, and access to cloud-based library systems. Conversely, librarians from semi-urban and rural colleges cited:

- Poor internet speed and reliability
- Lack of budget for digital resource acquisition
- Insufficient number of computers or devices
- Minimal training opportunities

These conditions hamper both librarian performance and user experience. Furthermore, 42% of the surveyed librarians stated that they rarely received formal digital literacy training, and 65% had to rely on self-learning.

Qualitative Findings: Interviews and Institutional Case Studies

Interviews with library heads from 15 institutions highlighted varied perspectives:

- **Autonomous Colleges:** Often had more flexibility in adopting technology, piloting MOOCs and LMS integration.
- **Central Universities:** Benefited from government funding and consortium access (e.g., INFLIBNET, e-ShodhSindhu), but were challenged by bureaucratic procurement processes.
- **Private Institutions:** Displayed innovation in mobile app-based library access and AI-enabled recommendation engines but had uneven digital literacy among older staff.

Several institutions had begun offering library user orientation programs focused on e-resources and citation tools like Zotero or Mendeley. However, these initiatives were inconsistent and lacked strategic alignment with academic curricula.

Competency Framework Proposal

Based on data analysis, the paper proposes a Digital Literacy Competency Framework for Indian Academic Libraries, comprising three tiers:

Tier 1: Foundational Competencies

- Basic computer operation
- Internet navigation
- Using OPAC and digital catalogs

Tier 2: Intermediate Competencies

- Information evaluation
- E-resource training delivery
- Use of LMS and digital repositories

Tier 3: Advanced Competencies

- Metadata management
- Data visualization tools
- Content creation and analytics
- Digital preservation and AI integration

Each tier includes recommended training modules and assessment indicators that institutions can customize based on their context.

Barriers to Competency Development

Several common barriers were identified:

- **Budget Constraints:** Inadequate funds for training, tools, and system upgrades.
- **Staff Resistance:** Older staff often resistant to technology due to lack of confidence or perceived irrelevance.
- **Policy Gaps:** Few institutions had documented digital literacy policies or staff development plans.
- **Limited Recognition:** Digital skills often not considered in performance reviews or promotions.

Overcoming these barriers requires coordinated efforts between institutional leadership, government agencies (UGC, AICTE), and professional associations like ILA (Indian Library Association).

Conclusion

The transformation of academic libraries into digitally competent learning environments is no longer optional - it is imperative. As higher education institutions in India continue to embrace digitalization through platforms like SWAYAM, e-PG Pathshala, and NDL India, academic libraries must evolve in tandem to maintain their relevance, efficacy, and user engagement. This study reveals both the promise and the challenges of enhancing digital literacy competencies within the academic library ecosystem.

The findings demonstrate that while basic ICT skills are fairly widespread among Indian academic librarians, deeper digital literacy-encompassing information evaluation, content creation, data handling, and digital pedagogy-remains unevenly developed. Urban and premier institutions often fare better due to superior access to funding, training, and infrastructure, but the majority of academic libraries-particularly those in rural and semi-urban regions-struggle with resource scarcity, limited training opportunities, and lack of structured policies.

One of the key contributions of this study is the development of a tiered competency framework tailored to the Indian context. This framework not only identifies specific digital skills required at various levels but also aligns these competencies with institutional roles and responsibilities. It serves as a practical guide for administrators and policymakers to design targeted training programs, benchmark progress, and encourage a culture of digital excellence.

Addressing the barriers to digital literacy advancement calls for multi-level intervention. At the institutional level, libraries must be integrated into the digital strategies of universities and colleges. Librarians should be provided with regular, funded opportunities for professional development, including certifications in digital

tools, research data management, and information literacy instruction. Institutions should recognize and reward digital competence as a core professional attribute.

At the national level, regulatory bodies like the University Grants Commission (UGC) and National Assessment and Accreditation Council (NAAC) should mandate digital literacy benchmarks and support their implementation through grants and policy directives. Additionally, library science curricula in India should be revised to emphasize hands-on training in emerging digital tools and platforms, ensuring that new graduates enter the workforce with future-ready skills.

The role of partnerships cannot be overstated. Collaborations between libraries, ed-tech companies, and professional associations can foster innovation and scalability in digital literacy training. For instance, open access platforms can host centralized repositories of digital literacy tutorials, while inter-library consortia can facilitate shared access to expensive digital resources and professional expertise.

Ethical considerations also form an essential part of this transformation. As librarians engage with user data and algorithm-driven platforms, they must be trained to uphold data privacy, intellectual property rights, and information equity. Digital literacy must therefore be approached not merely as a technical skillset but as a professional responsibility grounded in ethical principles and user advocacy.

Building digital literacy competencies in Indian academic libraries is a collective journey that demands vision, investment, and perseverance. Libraries must reclaim their position as vital engines of learning and innovation in the digital age. By empowering librarians with the tools and skills to navigate and lead digital transformation, India can ensure that its academic institutions remain globally competitive, socially inclusive, and intellectually vibrant.

Conflict of Interest

There is no conflict of interest by the authors in this manuscript.

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