

ARTIFICIAL INTELLIGENCE IN LIBRARY AND INFORMATION SCIENCE EDUCATION: AN INDIAN CONTEXT

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ABSTRACT

This paper assesses the current situation of Artificial Intelligence in Library and Information Science education in India. It discusses the advantages of using Artificial Intelligence in this field. The studies are based on a review of the academic courses framework, institutional reports, and significant government documents that influence national policy. The main focus is on Artificial Intelligence. How can it be incorporated into Library and Information Science education in India?

Results suggest that AI curriculum integration is not fully developed, technological infrastructure varies across institutions, and faculty readiness is limited, even as awareness of AI's professional relevance continues to expand. New AI applications - such as machine learning for information, natural language processing to generate metadata, chatbots for users' service, and research analytics - are reshaping the skills needed in LIS. The paper pleads for curriculum restructuring, interdisciplinary co-operation, and support from the institution and its policy for meaningful AI assimilation. More robust AI-informed LIS education is required in order to prepare librarians to work effectively with intelligent knowledge ecosystems and technology-mediated learning spaces.

KEYWORDS: Artificial Intelligence, Library And Information Science Education, Curriculum Innovation, India, Digital Libraries

Introduction

Artificial Intelligence (AI) as a disruptive technology is changing the way information is processed and shared, affecting education, research, governments, and public organisations. In Library and Information Science (LIS), digital tools are being transformed by AI for knowledge organisation, information retrieval, user experience, and to support digital scholarship. Traditional LIS education, which has traditionally focused on cataloguing, classification, and reference services, needs to encompass computational thinking, data literacy, and the design of intelligent systems.

LIS education in India is slowly being updated as national digital initiatives, the growth of higher education, and the increasing number of e-resources and institutional repositories influence it. However, the integration of AI skills into LIS curricula remains patchy across institutions. Thus, for LIS education to continue

responding to changing professional needs in the digital knowledge society, this era of widespread AI adoption, grounded as it is upon new sets of institutional barriers and opportunities, must be well understood. This article explores the adoption of AI in LIS education within India and suggests policy strategies for curriculum renewal, pedagogical interventions, and organisational development.

Introduction and Context of LIS Education in India

Library education in India has shifted from apprentice-oriented training to formal university-level professional courses. In the subsequent years, the curriculum began to emphasise documentation studies, information technology, digital libraries, and knowledge management. Notwithstanding these advances, AI-specific capabilities are still rarely part of, or only indirectly included in, information technology papers. The arrival of smart libraries, big data, open science, and

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digital scholarship demands librarians who are algorithm-savvy, skilled in metadata automation, research analytics, and intelligent discovery systems. Therefore, LIS education should move from tool-based education to conceptual and practical AI literacy.

Objectives of the Study

- To explore the extent of AI inclusion in LIS education in India.
- To explore AI technologies and skills applicable to LIS education and professional work.
- To understand barriers from institutions, pedagogy, and technology that affect AI adoption.
- To identify novel engineering, cross-disciplinary co-operation, and skills acquisition.
- To suggest strategic guidelines for integrating AI competencies into LIS programs.

Research Questions and Hypotheses

Research Questions

- Current level of AI in LIS education programmes?
- What AI skills and abilities are most pertinent to the future LIS workforce?
- What are the institutional and pedagogical barriers to AI integration in LIS teaching?
- Which lines of approach would enhance AI-supported LIS education in India?

Hypotheses

- Hypothesis H1: The incorporation of AI in LIS education is in its infancy.
- H2: The stronger institutional digital infrastructure leads to greater AI curriculum adoption.
- H3: Level of faculty training and interdisciplinary collaboration have significant effects on the successful integration of AI.

Review of Literature

The new literature shows that Artificial Intelligence is a driver of change in Higher Education Institutions and library services. Some of the applications include: Automatic indexing, Recommender systems, search, Research analytics dashboards, and Conversational virtual assistants in academic libraries. What's important here is that there's a growing need for Library and Information Science professionals who are proficient in data analytics, basic programming, and machine learning. They should also be aware of research support.

However, the literature on developing

countries highlights structural problems. These include a lack of facilities, a financial crunch, and teachers who lack expertise in AI, which prevented changes to the curriculum. To address these problems, researchers have suggested offering courses that combine subjects, collaborating with other departments such as computer science, issuing certifications for specific skills, and providing lifelong learning opportunities. The literature on integrating AI into Library and Information Science education also suggests that technology alone is changing how teaching is conducted in these institutions. AI is changing the way higher education institutions' library services work. Library professionals need to implement this change.

Methodology

This study uses a descriptive research design, examines what other researchers have written about the topic, and analyses the documents. The study reviewed library science course materials, national education policy documents, scholarly articles, and conference papers. To select sources, the study assessed their relevance at the time of publication and reliability. The information was analysed to identify patterns in how AI is used in library and information science education. This included examining the infrastructure's readiness for AI and the faculty's preparedness for AI professional skills. The study seeks to understand the context of AI in library science education in India and to assess the readiness of library science education for AI.

Analytical Framework

The analytical framework has four dimensions:

- Curriculum Integration – AI courses, modules, or lab work.
- Technological facilities: Access to digital platforms, AI apps, a data lab, and an innovative learning environment.
- Faculty Preparedness – Relevant professional preparation, research involvement, and collaboration across disciplines.
- Professional Skill Matching - AI Competencies and the New LIS Job Market.

This framework allows for a systematic interpretation of qualitative evidence within and across institutions, and for academic dialogue.

Findings and Discussion

Depth of AI Curriculum Integration: The results reveal early signs of AI's impact on LIS education, yet there are few structured curricular developments. Very few colleges today can offer

specialised AI courses, and hands-on experience with intelligent systems is very limited. AI topics are typically not presented as individual specialised learning units, but rather as a grandchild of broader information technology themes.

Infrastructure Disparities: There are broad divides between well-endowed and more resource-challenged universities. The availability of digital labs, licensed databases, and AI experimentation platforms plays a huge role in students' experiential learning. Without investment in infrastructure, teaching for AI may be no more than an academic exercise.

Faculty Readiness and Needs for Training: The faculty's readiness is a critical factor in implementing curricular innovations. Teachers exposed to data science, programming, or digital humanities are more inclined to incorporate AI-related content into their teaching. This requires continuous professional development, joint workshops, and interdisciplinary research co-operation.

Emerging Professional Skill Requirements: The changing LIS employment landscape indicates an increased need for data management, automated metadata generation, digital preservation analytics, User Behaviour Analysis (UBA), and AI-ref/search services skills. Graduates who do not possess such competences may be potentially less employable in technology-rich informational contexts.

LIS Education in India: The Way Forward

- **Curriculum change:** AI-related courses, labs, and project-based learning.
- **Capacity Building:** Provide instruction to faculty on concepts in machine learning, data analytics, and digital scholarship tools.
- **Infrastructure:** Need to invest in AI and also develop library technologies, open-source AI, and research data environments.
- **Policy Coherence:** This is connected to education, open science, and the knowledge economy in our country.
- **Collaboration with industry:** Offer internships and training to AI technology companies. This is a way to work with companies to make sure for research. This will help people work better with companies and the industry.

Recommendations for Implementation

- Create modular AI certification programs in LIS departments.
- Promote cross-disciplinary double degrees or CS/data science electives.

- Encourage AI open-source experimentation with free datasets and tools.
- Establish national curriculum standards for AI in LIS education.
- Fund a research project on the applications of AI in Indian libraries.

Conclusion

The use of AI in LIS education is very important for teaching library professionals. This is how to work with data and a machine. In India, people are increasingly learning about AI but face challenges, such as outdated teaching methods, a lack of computers, and teachers who are slow to adopt change. For instance, we should teach students about AI technology. This should help them learn new job skills. If teachers do this, they will be helping students find information online, which is part of their job as guides to knowledge. Library and information science education with AI will help students do their jobs better.

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