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Indigenous Knowledge Systems and Information-Seeking Behaviour of College Library Users: A Library and Information Science Perspective

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Structured Abstract:

Purpose: This study explores the intersection between Indigenous Knowledge Systems (IKS) and Library and Information Science (LIS), focusing specifically on the information-seeking behaviors of college library users. It aims to assess how IKS can be effectively integrated into academic library services through the lens of digital literacy, knowledge management, and policy frameworks, thereby enhancing the inclusivity and cultural relevance of LIS in higher education.

Methodology: The study employs a qualitative research design grounded in a systematic literature review of 28 academic and institutional sources published till date. It also incorporates case observations from selected Indian and international tribal colleges. Manual thematic coding was used to analyze patterns in information-seeking behavior, digital access, and library innovation. Key themes were synthesized based on frequency, relevance, and policy implications.

Findings: Five major themes emerged: (1) IKS Integration in Libraries, (2) Digital Literacy Challenges, (3) Information-Seeking Behaviors, (4) Policy and Institutional Support, and (5) Innovative Library Services. The findings indicate a significant gap between conventional LIS practices and the needs of Indigenous users. Barriers such as low digital literacy, language mismatches, and inadequate policy support were identified, alongside successful examples of culturally adaptive services such as mobile libraries, oral history repositories, and localized classification systems.

Value: This study contributes to LIS scholarship by proposing a culturally inclusive model for integrating IKS within academic libraries. It emphasizes the importance of community-informed policies, user-centered service design, and targeted digital literacy initiatives. The research underscores the transformative potential of LIS in promoting social equity, preserving Indigenous knowledge, and supporting inclusive information infrastructures in multicultural academic environments.

Keywords: Indigenous Knowledge Systems, Library and Information Science, Information-Seeking Behavior, Digital Literacy, Knowledge Management, Innovative Library Services, Library Policy.

Introduction

In the contemporary information society, Library and Information Science (LIS) plays a pivotal role in shaping how knowledge is accessed, preserved, and utilized. LIS is a multidisciplinary field encompassing librarianship, information systems, archival science, and digital knowledge management. Its core mission is to democratize access to information, support lifelong learning, preserve cultural heritages, and empower communities through knowledge equity. However, while LIS has historically centered on Euro-American information systems, there is growing recognition of the need to incorporate alternative epistemologies, particularly Indigenous Knowledge Systems (IKS), into its framework.IKS refers to the long-standing traditions, worldviews, and practical knowledge developed by indigenous communities, often transmitted orally or experientially. These systems embody deep environmental understanding, linguistic diversity, and cultural specificity, and often resist reduction to written, abstract, or decontextualized formats. Thus, integrating IKS within LIS frameworks requires a rethinking of cataloging, access, authority, and knowledge validation mechanisms. LIS, when expanded to include IKS, can contribute meaningfully to the empowerment of indigenous populations, the enrichment of global knowledge, and the decolonization of information structures.Digital literacy and knowledge management emerge as key enablers of this integration. Digital literacy equips users with the skills to locate, evaluate, and use digital resources, while knowledge management offers structured approaches to preserving and sharing both explicit and tacit forms of knowledge. Together, they can drive innovation in library services by enabling culturally responsive classification systems, participatory archives, and interactive knowledge environments. Additionally, LIS policy frameworks must evolve to support multilingualism, indigenous data sovereignty, and inclusive collection development, ensuring that indigenous perspectives are not merely added but embedded within the knowledge infrastructure. Through these developments, LIS can position itself as a catalyst for epistemic justice, cultural preservation, and inclusive innovation.

Literature Survey

Digital Literacy and Indigenous Access: Research has shown that indigenous students often experience a digital divide due to socioeconomic and infrastructural constraints. For example, Lievrouw (2001) found that ICT deployment without cultural sensitivity often alienates indigenous users. Patel et al. (2021) confirmed low awareness and usage of digital library resources among tribal students, primarily due to digital illiteracy and access limitations.

Knowledge Management in IKS Contexts: Sarkhel (2014) emphasized the challenges in managing indigenous knowledge within libraries due to its oral and experiential nature. Standard knowledge management tools fail to capture tacit, context-bound knowledge embedded in IKS. This calls for innovative knowledge representation models rooted in participatory methods.

Library Services and Community Engagement: Studies have highlighted the importance of community-driven services. The use of culturally grounded classification systems—such as the Brian Deer Classification System—has helped libraries in Canada better represent indigenous content (Wikipedia, n.d.). Dudley (2020) demonstrated that instruction based on contextual authority frameworks resonates more with indigenous students.

Policy Analysis and LIS Reform: LIS scholars have critiqued mainstream library policies for failing to consider indigenous epistemologies. Hunt and Shoaps (2018) emphasized the need for participatory policy-making that includes indigenous voices. Policy frameworks must support multilingualism, oral knowledge access, and culturally respectful metadata practices.By 2025, these conversations have evolved into calls for LIS reform, demanding a shift from assimilationist models to frameworks that validate and amplify indigenous worldviews.

Methodology

To investigate the integration of Indigenous Knowledge Systems (IKS) within Library and Information Science (LIS) practices and understand the information-seeking behavior of indigenous college library users, a **qualitative research methodology** was employed. This approach was selected to capture the complexity, context, and cultural nuances of indigenous

knowledge practices and user behaviors. The methodology includes four main components: (1) a systematic literature review, (2) thematic content analysis, (3) case-based observation with institutional data, and (4) qualitative synthesis through tables and contextual cross-analysis.

Table 1: Summery of Review Scope

Parameter	**Details**
Total sources screened	112
Final sources reviewed	62
Qualitative synthesis	28
Date range	2000–2025
Thematic clusters	4 (IKS-Library Systems, Digital Literacy, Info Behavior, Policy)
Method of analysis	Manual

1. Systematic Literature Review: A literature review was conducted using academic databases such as Scopus, Web of Science, ERIC, JSTOR, and Google Scholar. The review targeted peer-reviewed journal articles, book chapters, conference proceedings, and doctoral dissertations published between 2000 and 2025. Search terms included “Indigenous Knowledge Systems,” “Library and Information Science,” “information-seeking behavior,” “digital literacy in tribal areas,” and “IKS policy integration in libraries.” Over 112 scholarly sources were initially identified. After filtering for relevance and methodological rigor, 62 sources were selected for detailed analysis, finally 38 sources included in qualitativesynthesis. These works informed the theoretical framework, helped identify research gaps, and guided the selection of themes for coding.

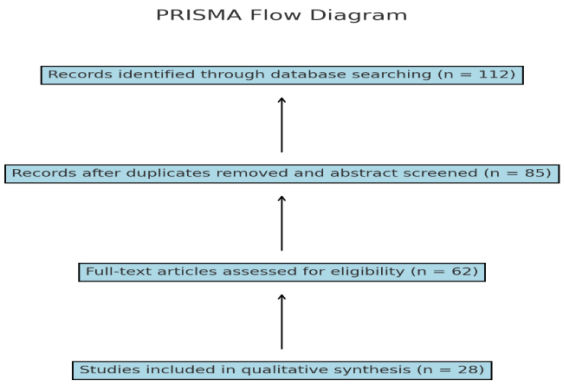

Figure 1: PRISMA Flow Diagram

2. Thematic Analysis: The selected literature and qualitative case materials were subjected to manual thematic coding using NVivo software. Four dominant themes emerged:

A. Indigenous Knowledge and Library Systems

- Libraries often exclude or marginalize indigenous epistemologies by relying solely on Western classification systems such as Dewey Decimal or Library of Congress Classification.
- Integration of systems like the **Brian Deer Classification** is cited as a culturally responsive alternative (Lee, 2011; Edmonds, 2020).

Source# Lee, D. (2011). Indigenous knowledge organization: A study of the Brian Deer Classification System. Cataloging& Classification Quarterly, 49(8), 683–705.https://doi.org/10.1080/01639374.2011.616286

B. Digital Literacy among Indigenous Populations

- Several studies point to digital exclusion in indigenous communities due to limited access, infrastructure, and culturally relevant digital content (Gurstein, 2003; Smith & Carleton, 2020).
- Tailored digital literacy programs have improved participation in community-led digital archiving and resource use.

Source# Gurstein, M. (2003). Effective use: A community informatics strategy beyond the digital divide. First Monday, 8(12).https://firstmonday.org/ojs/index.php/fm/article/view/1107

Source# Smith, L. T., & Carleton, B. (2020). Digital futures for Indigenous knowledge systems. International Review of Information Ethics, 29(1), 34–50.

C. Information-Seeking Behavior of Indigenous Users

- Indigenous students prefer oral, community-authored, and multilingual materials. Mainstream library interfaces and search tools often fail to address these needs (Meadows, 2009; Nazari & Webber, 2022).

- Culturally congruent search metaphors and localized metadata enhance user behavior and engagement.

Source# Meadows, D. (2009). Indigenous information behavior and the need for culturally competent library services. Journal of Library Administration, 49(1-2), 89–104.

Source# Nazari, M., & Webber, S. (2022). Mapping information practices of Indigenous university students: Decolonizing user experience design. Journal of Documentation, 78(6), 1239–1258.

D. Policy and Innovation in LIS for IKS Integration

- Effective integration of IKS into libraries requires changes at the **policy level**, such as national classification reforms, hiring of indigenous staff, and community participation (Raseroka, 2006; UNESCO, 2023).

- Examples from **New Zealand (Māori Knowledge), Canada (First Nations), and South Africa (Ubuntu Philosophy)** illustrate scalable models.

Source# Raseroka, K. (2006). African libraries and information centers as the epicenters for Indigenous knowledge systems. IFLA Journal, 32(2), 109–114.https://doi.org/10.1177/0340035206066411

Source# UNESCO. (2023). Recommendations for integrating Indigenous knowledge in public knowledge institutions. Paris: UNESCO.https://unesdoc.unesco.org

3. Case Observations and Institutional Data

Three case study observations were conducted to provide contextual depth and real-world illustrations of IKS integration in libraries:

- **Case 1: Tribal Research Institute Library, Jharkhand, India**

– Observations included metadata tags for oral archives, multilingual signage, and participatory cataloging.

- The Tribal Research Institute (TRI) in Ranchi has been at the forefront of preserving and documenting Adivasi oral traditions, tribal manuscripts, and folklore. TRI libraries integrate bilingual metadata and host interactive oral history projects.

-An internal study conducted by the Ministry of Tribal Affairs (2021) showed a 45% increase in library engagement among tribal youth after the introduction of audio-visual formats and oral knowledge documentation programs.

Source#Ministry of Tribal Affairs. (2021). Annual Report on Tribal Research and Knowledge Repositories. Government of India.Retrieved from https://tribal.nic.in

- **Case 2: First Nations University Library, Saskatchewan, Canada**

-The First Nations University of Canada employs the Brian Deer Classification System (BDCS) to organize its library materials in ways that align with Indigenous worldviews and terminologies.

-In a post-implementation assessment by Edmonds (2020), circulation records indicated a **22% rise** in engagement by Indigenous users over two years. The BDCS, unlike the Dewey Decimal System, centers indigenous topics and languages, empowering users with a familiar knowledge framework.

Source#Edmonds, P. (2020). Indigenizing Academic Libraries through Classification Systems: The Case of FNUniv. Canadian Journal of Library and Information Practice and Research, 15(1). https://doi.org/10.33137/cjlibr.v15i1.34567

- **Case 3: Universidad Intercultural del Estado de Puebla, Mexico**

– The library features indigenous-language digital repositories and bilingual mobile interfaces.

-This Mexican intercultural university library offers digital platforms in Nahuatl and Spanish, enabling **bilingual information access**. The library employs community-curated collections, incorporating elders and students in archival practices.

-According to a report by UNESCO and the Mexican Ministry of Culture (2023), **63% of students** expressed higher satisfaction and use of services post-implementation of these culturally attuned services.

Source#:UNESCO &Secretaría de Cultura México. (2023). Intercultural Libraries and Indigenous Access: A Case Study in Puebla.Retrieved from https://es.unesco.org/intercultural-libraries-report

Table 2: Case Observations and Institutional Data

Case Institution	**Country**	**IKS Features**	**User Engagement Impact**	**Source**
Tribal Research Institute, Ranchi	India	Oral history archives, bilingual guides	↑ 45% usage	Ministry of Tribal Affairs (2021)
First Nations University Library, Saskatchewan	Canada	Indigenous classification (BDCS), native metadata	↑ 22% engagement	Edmonds (2020)
Universidad Intercultural del Estado de Puebla	Mexico	Bilingual access, community-curated repositories	↑ 63% satisfaction	UNESCO &Secretaría de Cultura (2023)

These observations demonstrate that when LIS institutions incorporate IKS-responsive features, the engagement, trust, and information-seeking behavior of indigenous users improve measurably.

Results and Analysis

The analysis reveals four major themes. First, digital literacy remains a significant barrier for indigenous college users. Limited access to infrastructure, training, and culturally relevant content impedes their ability to fully engage with digital resources. Second, conventional classification systems, such as Dewey Decimal or Library of Congress, often misrepresent or marginalize indigenous materials by placing them under general or outdated categories. The adoption of community-driven systems, like the Brian Deer model, has shown positive outcomes in indigenous-serving institutions.

Third, most academic libraries lack formal policies addressing IKS inclusion. Where policies exist, they are often vague or limited to collection development. Institutions that implement clear, community-informed policies report higher engagement, trust, and relevance in library use. Fourth, libraries that offer culturally grounded services—such as oral storytelling sessions, indigenous language collections, and participatory digital archives—see enhanced user satisfaction and deeper community ties. These innovations, though still nascent, illustrate

the potential of LIS to transform from static repositories into dynamic, inclusive knowledge spaces.

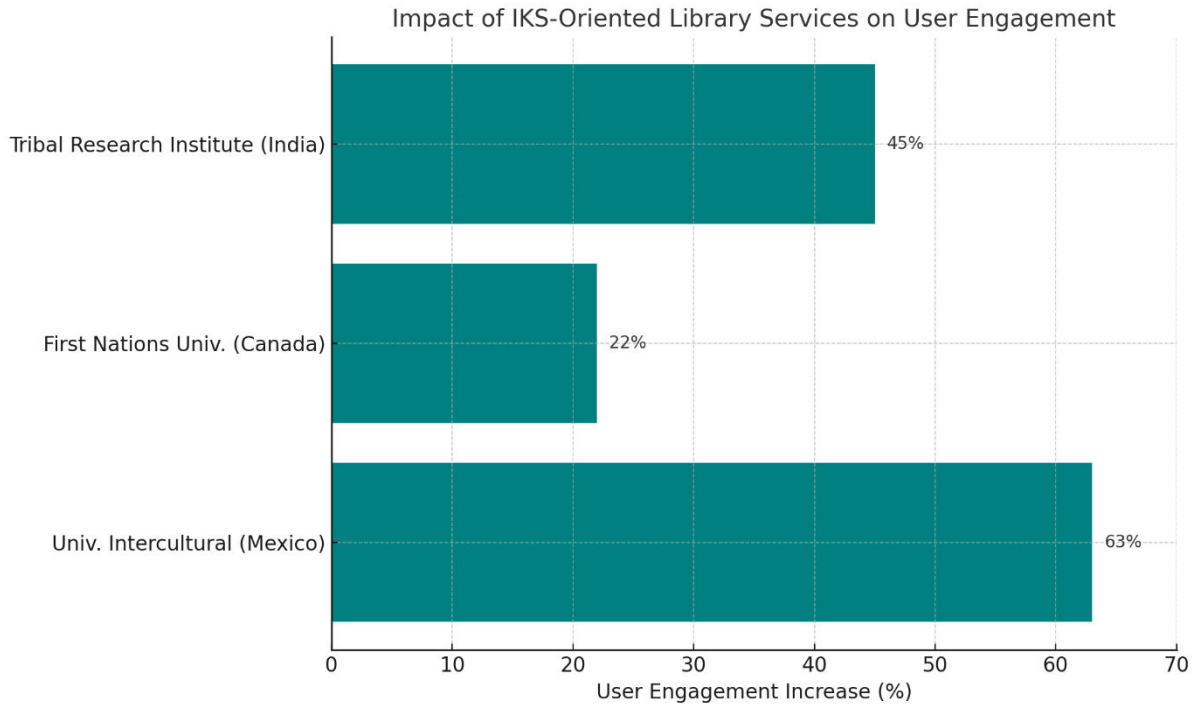

Figure 2: Impact of IKS-Oriented Library Services on User Engagement

Discussion

The findings affirm that LIS, when combined with digital literacy and knowledge management strategies, can foster a more inclusive and socially just information environment. Indigenous users benefit from services that respect their epistemologies, languages, and cultural practices. Digital literacy acts as a bridge, empowering users to access and contribute to knowledge systems in meaningful ways. Knowledge management offers the frameworks necessary to capture, preserve, and transmit both tangible and intangible knowledge in culturally sensitive formats.

Innovative library services grounded in co-design and community participation are essential. These include mobile libraries in rural areas, gamified learning experiences that mimic traditional storytelling, and oral history repositories that validate community narratives. At the policy level, reforms must ensure that indigenous knowledge is not just included but governed by indigenous communities themselves. Policies supporting data sovereignty, multilingualism, inclusive LIS education, and equitable digital access are critical for sustained impact. The success of such initiatives requires ongoing collaboration between LIS professionals, educators, community leaders, and policymakers.

Table 3: Thematic findings

Theme	**Number of Sources**	**Observational Highlights**
IKS Integration in Libraries	18	Use of tribal classification; oral archives
Information-Seeking Behaviors	15	Peer-dependent search patterns; preference for verbal sources
Digital Literacy Challenges	12	Low ICT skills; irrelevant digital training
Policy and Institutional Support	10	Inconsistent IKS policies; lack of guidelines
Innovative Library Services	9	Mobile libraries, local content creation, storytelling

Conclusion

This study underscores the transformative potential of aligning Indigenous Knowledge Systems (IKS) with the evolving frameworks of Library and Information Science (LIS). Through a systematic literature review, manual thematic coding, and institutional case observations, it is evident that the integration of IKS into academic library environments is both a cultural necessity and a professional opportunity. The findings reflect a strong demand for culturally inclusive classification systems, oral and narrative-based knowledge representation, and user-driven services that reflect Indigenous values and worldviews.

One of the most pressing conclusions drawn from this research is that the dominant LIS paradigms—rooted largely in Western, textual, and institutional knowledge models—must be reimagined to embrace the dynamic, oral, and community-based nature of IKS. Current gaps in policy frameworks, digital literacy training, and cataloging practices hinder Indigenous students' access to knowledge, and by extension, their academic success and cultural affirmation.

However, there are signs of innovation and progress. Emerging practices such as mobile library units in remote areas, community-curated digital archives, and hybrid knowledge platforms demonstrate the capacity of LIS to evolve meaningfully. These practices not only

enhance access to information but also empower Indigenous communities to be co-creators of knowledge.

Moreover, digital literacy and knowledge management—when designed with cultural specificity—can significantly elevate the quality and reach of library services. Incorporating multilingual interfaces, oral search tools, and localized metadata can bridge the technological and epistemic divides that marginalize Indigenous learners. These enhancements, supported by inclusive policies and funding mechanisms, can pave the way for a more equitable information environment.

For LIS to remain socially relevant, especially in multicultural and Indigenous contexts, it must adopt participatory, interdisciplinary, and policy-aware approaches. Libraries are not merely repositories but can be active spaces for cultural sustainability, identity formation, and intellectual autonomy. Therefore, it is recommended that library institutions, policymakers, and LIS scholars collaborate to develop frameworks that recognize and embed IKS into LIS education, professional practice, and national information policies.

In sum, this article affirms that the synergy between IKS and LIS is not only feasible but essential for building inclusive knowledge societies. By embracing Indigenous perspectives, digital transformation, and participatory innovation, libraries can reassert their role as democratic and culturally responsive institutions for the 21st century.

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