INDIAN KNOWLEDGE SYSTEM AND ACADEMIC LIBRARIES

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Abstract :

Libraries, as repositories of knowledge, play a crucial role in conserving, disseminating, and promoting this heritage. This paper examines the significance of libraries in the conservation of IKS, highlighting their role in preserving ancient manuscripts, promoting research, digitizing knowledge, and ensuring access to future generations. They also facilitate interdisciplinary research and engage in public outreach to raise awareness. The Indian Knowledge System (IKS) is a priceless cultural legacy that offers insightful information and environmentally friendly methods. However, traditional knowledge is seriously threatened at a time of fast technological development, cultural uniformity, and globalization. With a rich history spanning thousands of years, the Indian knowledge system covers a broad range of topics, such as mathematics, astronomy, philosophy, medicine, and more. Libraries are essential for maintaining, sharing, and expanding this information. Ancient Indian libraries housed literary works, scientific papers, philosophical treatises, and holy writings.

Introduction :

The Indian Knowledge System, a vast repository of wisdom surrounding foundational texts like the Vedas, Upanishads, and Bhagavad Gita, practical treatises such as the Arthashastra and Charaka Samhita, and the rich oral traditions of tribal and indigenous communities offers a holistic framework that integrates science, ethics, philosophy, and pedagogy. This legacy holds transformative impending for modern education, particularly in shaping teachers who can inspire and innovate within a culturally resonant framework. The Indian knowledge system has made important contributions to many fields including library and information science. The information system is the study to organize, store and share information. Nalanda, Takshashila and Vikramshila which were ancient learning sites were early versions of modern libraries. By combining the timeless principles of Indian knowledge system with modern trends and technologies in Library and Information Science, we can preserve, organize, and circulation traditional knowledge while addressing contemporary challenges. This integration not only enriches the academic and professional landscape but also ensures that India's intellectual heritage remains relevant in the digital age.

Libraries have preserved India's rich history of manuscripts, scrolls, and oral traditions, serving as long-honored institutions for knowledge. These repositories have been crucial in maintaining India's vast intellectual heritage and continue to be vital for sharing this wisdom

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with new generations through modern conservation, digitization, and research initiatives. Libraries can use technology to make ancient Indian knowledge accessible to teachers by turning fragile palm-leaf manuscripts into digital files that can be easily searched, capturing oral traditions as videos and audio recordings, and organizing various multimedia materials, so they can use this rich heritage in their tech-savvy classrooms. This change establishes libraries as active drivers of educational advancement, moving beyond their traditional role as stationary repositories of information and instead becoming energetic centers that foster learning and discovery, which aligns with the NEP's objective of building a knowledge-based society grounded in Indian cultural heritage

The Indian Knowledge System: An Overview :

The Indian Knowledge System (IKS) encompasses ancient India's diverse intellectual and cultural output, including philosophy, science, mathematics, literature, medicine, arts, and ethics, which have profoundly shaped its civilization for millennia. This holistic and ethical system aims to foster holistic human development and has seen renewed interest for its integration into modern education and its potential to address contemporary challenges by promoting sustainability, cultural identity, and a balanced approach to knowledge. (R.N., 2022) The key areas are as follows:

Vedic texts : These are the ancient, divine scriptures of Hinduism, consisting of the Rigveda, Yajurveda, Samaveda, and Atharvaveda, which are considered the primary source of spiritual knowledge and eternal truths within the tradition. These sacred texts, meaning "knowledge," were not authored by humans but were received through deep meditation by ancient sages (Rishis) and then transmitted orally for generations before being written down

Ayurveda and Medical Texts : Ancient Indian texts such as the Charaka Samhita and Sushruta Samhita are foundational to the field of medicine.

Mathematics and Astronomy : India made substantial advancements in mathematics, introducing concepts like zero and the decimal system, and developed sophisticated astronomical systems known as the Siddhantas. These contributions, made by mathematicians such as Aryabhatta and Brahmagupta , were foundational and had a global impact on the development of modern mathematics and science.

Philosophy and Literature: Indian philosophical texts, such as the Upanishads, Bhagavad Gita, and Arthashastra, along with literary works like the Mahabharata and Ramayana, form the backbone of India's intellectual heritage. These knowledge systems were originally transmitted through oral traditions and manuscripts. Libraries, especially those in temples and universities, have historically been the custodians of this knowledge.

Role of Academic Libraries in Revitalizing Indian Knowledge System:

Academic libraries are vital for the Indian Knowledge System (IKS) by acting as knowledge repositories that connect traditional and modern learning, documenting and

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digitizing cultural heritage, and providing public access for education and research. Through digital initiatives, they ensure the accessibility and preservation of IKS, integrating it into contemporary learning and fostering a global understanding of India's intellectual legacy. (A., 2025)

Following aspects includes in revitalizing IKS in Academic Libraries :

Preservation and Documentation :

In today's digital world, academic libraries are committed to collecting, archiving, and converting cultural heritage—like indigenous knowledge, oral stories, and historical documents—into digital formats to ensure their preservation and long-term availability for future generations.

Collaboration with aboriginal communities :

To document knowledge ethically and accurately while upholding Aboriginal rights and protocols, it is essential to partner with Aboriginal groups and scholars, ensuring their informed consent, ownership, and governance of the knowledge. This approach prioritizes their cultural practices and knowledge systems by involving them throughout the process, from data collection to decision-making and benefit-sharing, fostering equitable partnerships and preventing the misappropriation of cultural heritage.

Access and Dissemination :

Academic libraries can enhance access to indigenous Knowledge for researchers and communities by utilizing open access repositories and digital libraries to digitally collect, preserve, and disseminate valuable IK resources like manuscripts, oral traditions, and cultural artifacts, making them readily available to a broader audience.

Education and Awareness :

Academic libraries can raise user awareness about the significance of the Indian Knowledge System (IKS) in various academic fields through events like exhibitions and workshops, alongside introductory programs, to promote IKS's value and integration into modern academic frameworks.

Integration and modern knowledge system :

Academic libraries can foster IKS integration in modern studies by promoting interdisciplinary research, thereby bridging traditional wisdom with current scientific and academic disciplines to ensure the relevance of Indian Knowledge Systems. This approach creates innovative solutions to contemporary issues, like environmental sustainability, and enriches the global knowledge landscape with diverse perspectives.

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Technological Integration:

Applying cutting-edge technology like artificial intelligence, and machine learning to improve the authentication and preservation of traditional knowledge. Creating applications that can support the gathering and sharing of traditional knowledge in real time, particularly in isolated locations. Establishing immersive experiences that let individuals interact creatively with conventional information. (S., 2017)

Need of Preservation of IKS :

Traditional knowledge is vital for safeguarding cultural heritage, protecting the environment, and fostering social harmony; however, with the forces of globalization, environmental decline, and cultural homogenization, preserving this knowledge has become more crucial than ever before. Essentially, as the world becomes increasingly interconnected and standardized, it's becoming more important to actively maintain traditional customs and practices to prevent their loss. (M.T., 2024)

Cultural Identity and Heritage :

For indigenous and local groups, traditional knowledge is the foundational knowledge of their communities, shaping their identity and serving as a legacy passed down through generations. It encompasses practices, skills, and values developed through experience and shared in ways like stories, songs, and rituals, thus it is crucial for cultural continuity and heritage preservation.

Environmental Conservation and Sustainability :

Traditional ecological knowledge can provide significant insights into sustainable environmental management.

Medicinal Knowledge :

Traditional medical knowledge served as the foundation for many contemporary medications.

Agricultural Practices :

For sustainable farming and food security, traditional farming methods are essential.

Intellectual Property :

Traditional knowledge has enormous economic potential, especially in sectors like tourism, agriculture, and medicines. By preserving this information, we can prevent other parties from taking advantage of indigenous groups' intellectual property.

Legal and Ethical Considerations :

Both ethical and legal issues are involved in the preservation of traditional knowledge.

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The rights of indigenous and local groups to their knowledge and customs must be acknowledged and respected.

Traditional Knowledge Digital Library (TKDL) :

To record ancient knowledge and use patents to stop its infringement, particularly in the fields of medicine like Ayurveda, Unani, Siddha, and Yoga. National Mission for Manuscripts (NMM): to digitize, preserve, and record manuscripts in different scripts and languages.

AYUSH Systems-Ayurveda, Yoga & Naturopathy, Unani, Siddha, and Homoeopathy :

Founded with the goal of advancing traditional Indian medical research and development.

Digital India and e-Governance Initiatives :

An project to provide a digital repository of information resources, including traditional knowledge, is the National Digital Library of India.

Current Trends and Technologies in LIS :

To digitize the ancient Indian manuscripts, texts, and oral traditions, the Indian Knowledge System can be made accessible to a global users. This action simultaneously safeguards India's valuable intellectual inheritance and makes it more meaningful and useful for contemporary times. By integrating ancient knowledge systems with modern challenges, India can foster innovation, self-reliance, and address emerging global issues. Such initiatives overpass the gap between traditional knowledge and contemporary information systems, nurturing a deeper understanding and appreciation of India's cultural and scientific contributions. (Chakrabarti, 2010)

Machine Learning and Artificial Intelligence :

Artificial Intelligence and Machine Learning technologies have the possible to reform the way traditional knowledge is organized, analyzed, and accessed. By leveraging AI-powered tools, vast amounts of Indian Knowledge System (IKS) resources can be systematically categorized, retrieved, and studied. For instance, AI can assist in decoding ancient scripts, interpreting complex texts, or identifying patterns in Vedic mathematics, astronomy, and other fields. These technologies enable efficient management of IKS materials, making them more accessible to researchers and learners. By integrating AI and ML into the study of IKS, we can unlock new insights, preserve cultural heritage, and bridge the gap between ancient wisdom and modern scientific exploration.

Distributed Ledger Technology for Preservation :

Distributed Ledger Technology (DLT), such as blockchain, can play a pivotal role in

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safeguarding the authenticity and integrity of digitized Indian Knowledge System (IKS) materials. By creating immutable and transparent records of digital assets, DLT ensures that rare manuscripts, texts, and cultural heritage resources are protected from tampering, forgery, or misuse. This technology is especially critical for preserving the originality and credibility of ancient knowledge, which holds immense historical and cultural value. By leveraging DLT, Libraries and Information Sciences (LIS) professionals can establish a secure and trustworthy framework for the long-term preservation and circulation of IKS, ensuring that future generations can access these resources with confidence.

Information Analysis, Data Examination, Interpretation, and Processing :

Data analytics has the potential to uncover hidden insights within traditional knowledge systems, such as identifying patterns in Ayurvedic treatments, ecological practices, or Vedic astronomy. By analyzing large datasets derived from ancient texts and practices, researchers can extract valuable information that may have been overlooked. Visualization tools, such as graphs, charts, and interactive dashboards, can then transform these complex insights into accessible and understandable formats. This approach not only enhances the study of the Indian Knowledge System (IKS) but also makes it easier for scholars, students, and practitioners to apply this wisdom in modern contexts. Through data-driven exploration, IKS can be revitalized, offering innovative solutions to contemporary challenges while preserving its timeless relevance.

Library Initiatives for Indian Knowledge System Integration :

- Interdisciplinary Research: Libraries can facilitate collaborations between scholars from diverse disciplines to study and promote IKS.
- Share ideas and skills
- Create new research methods
- Understand how IKS applies to modern life
- Develop new ways of thinking

Collection Development : Libraries should acquire and digitise IKS resources, including ancient texts, manuscripts, and oral traditions.

Community Engagement : Libraries can collaborate with local communities, scholars, and cultural organisations to promote IKS.

Challenges in Conservation :

Despite the efforts made by libraries, several challenges hinder the effective conservation of Indian Knowledge:

Lack of Infrastructure and Funding :

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- Preservation and digitization require substantial financial investment but funding is often inadequate.
- Many libraries, particularly in rural areas, lack the necessary resources for proper preservation and digitization.
- The lack of trained professionals in manuscript conservation and digitization slows down efforts.
- Government policies need better to support the integration of IKS into education and research.

Physical Deterioration of Manuscripts :

In modern conservation techniques, certain ancient manuscripts may be beyond restoration due to irreversible damage. Ancient manuscripts are fragile and made from perishable materials like palm leaves and birch bark. Conservation requires specialized knowledge and resources.

Lack of Expertise: The scarcity of trained professionals in manuscript conservation, restoration, and digitization poses a major challenge.

Cultural and Political Factors: In some cases, the collection and preservation of certain works may be impeded by regional or political sensitivities.

Accessibility and awareness:

Digitization efforts face challenges in cataloging and indexing texts for research use. Most of the texts remain untranslated, limited their reach to scholars proficient in classical languages. Many manuscripts are kept in private collections, monasteries and temple libraries, so these have restricted access.

Libraries are essential in the conservation and dissemination of the Indian Knowledge System, which represents an invaluable intellectual legacy. By preserving manuscripts, promoting research, and fostering public awareness, libraries play a central role in ensuring that IKS is accessible to future generations. Through digitization, open-access initiatives and interdisciplinary collaborations, libraries ensures that indigenous knowledge remains accessible and continues to inspire innovation.

By utilizing digital technologies, promoting collaborative cross-field research, and operating within ethical guidelines, LIS professionals can ensure India's heritage remains an inspiring force for global progress. This integrated approach not only protects cultural heritage but also enriches the current knowledge base, creating a more inclusive and enlightened global society.

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