

INFLUENCE OF INNOVATIVE TECHNOLOGICAL SERVICES IN PROMOTING INDIAN KNOWLEDGE SYSTEMS IN ACADEMIC LIBRARIES

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Abstract:

Libraries are playing most important part not only in conserving Indian Knowledge Systems (IKS) within academic libraries but also helps in rediscovering and promoting it by renovating them from passive repositories into active, digitally enabled knowledge-sharing hearts. According to NEP, the innovative knowledge and skill based knowledge are more important. Now, we are living in a digital age, in which, the knowledge should be spread in digital format, which can be applied and utilised by patron. Several digital tools and platforms are now being used in India and worldwide to digitize ancient IKS-allied texts. To partake effective digital knowledge, values and invention, involve different types of tools, such as palm-leaf manuscripts, inscriptions, and regional-language books. These tools help convert fragile physical resources into searchable, preferable digital objects like- social media collaboration platforms and open access repositories. Through a range of theoretical and practical perspectives, the researcher wants study the influence of innovative technological services in promoting Indian Knowledge System in Academic Libraries and also want to focus on concentrate on assessing technology's part in digitizing, preserving, and propagating traditional Indian knowledge like Vedas, Ayurveda, and yoga texts within ultramodern library ecosystems. While handling the complications of the digital age, we aim to promote a deeper understanding of the part of technology in shaping our engagement with library automation.

Keywords: Digital Repositories, VR (Virtual Reality), Cloud Computing, AI, MOOCs,

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Objectives:

- To assess how digital repositories, VR (Virtual Reality), AI-driven search tools, and cloud-based platforms enhance availability and preservation of Indian Knowledge Systems (IKS) in academic libraries.
- To explore the influence of innovative services like institutional repositories and virtual reference systems on patron engagement with IKS resources.

Introduction:

Knowledge sharing is the sharing of knowledge, without any dissemination between the groups or any persons who required that information. By the knowledge sharing, new inventions and literacy takes place in society. Digital knowledge sharing is very fast tool to share the knowledge. It provides a fast communication in very lesser time. But, for creation and sharing of digital knowledge, requires the necessary digital infrastructure, for example, hardware, software tools, and networks or networking. Several ICT tools like digital repositories, AI search tools, and cloud-based platforms effectively promote Indian Knowledge Systems (IKS), such as ancient texts on Ayurveda, Vedas, and yoga, practical treatises such as the

Arthashastra and Charaka Samhita, and the rich oral traditions of ethnic and indigenous communities—offers a holistic outline that integrates wisdom, ethics, philosophy, by enabling digitization, access, and interactive learning in academic libraries.

These services facilitate instant access and sharing of old documents, research papers, rare books, manuscripts and non-printed knowledge. The rapid advancement of teacher education reflects global trends, with digital tool likes virtual classrooms, AI grounded assessments, Massive Open Online Courses (MOOCs), and ILM (Integrated learning models) programmes reconsidering how educators are trained and how they engage scholars. In India, initiatives like SWAYAM and the National Digital Library of India (NDLI) illustrate this shift, support scalable access to educational resources. Yet, this technological advancement frequently adopts a Universalist lens, sidelining the artistic and philosophical productivity of IKS. As the National Education Policy (NEP) 2020 underscores, India must develop “an education system embedded in Indian moral belief”.

1. Digital Repositories

The Indian Knowledge System (IKS) has recognition as a administrative framework of ancient and everlasting wisdom and believed. The IKS encompasses knowledge, wisdom, and life itself rudiments elements that have evolved through experience, observation, trial, and profound analysis. This system has applied a significant influence on colourful angles of Indian life, including education, the arts, administration, law, justice, healthcare, manufacturing, and commerce. Likewise, this influence is apparent in India's classical and regional languages, which have increased through rich written and oral creative traditions. To save this inestimable knowledge, the digitization of the Indian Knowledge System is of top significance. The IKS includes a different scale of knowledge domains as well as traditional pedagogical styles. According to National Education Policy (NEP) 2020, the Ministry of Education has directed that Higher Education Institutions start various initiatives to introduce and showcase India's rich knowledge traditions to the entire world. These action comprise universal human values, Yoga, Ayurveda, Sanskrit, Indian languages, diverse Indian handicrafts and artisanal skills, sculpture, music, dance, drama, sacred religious sites, archaeological monuments, and ancient manuscripts.

Since ancient times, libraries have been engaged in the work of nurturing, preserving, and spreading knowledge. In the modern era, it is pivotal not simply to circulate and promote knowledge, but also to vigorously foster its growth. Many repositories similar as the National Digital Library, the Traditional Knowledge Digital Library, and the Vedic Heritage Portal, are working to bring the Indian Knowledge System within the reach of every Indian and every learners.

National Digital Library of India (NDLI): A comprehensive virtual repository with over 60 million particulars, including IKS manuscripts like Panchatantra; supports education by incorporating traditional knowledge into modern syllabuses

Traditional Knowledge Digital Library (TKDL): Contains over 5 lakh phrasings from Ayurveda, Siddha, Unani, and Yoga; interpreted into five transnational languages to prop patent auditors and protect against misappropriation.

Vedic Heritage Portal: this portal was launched by Ministry of Culture for universal access to Vedic heritage. It archives Vedas, Upanishads, and rituals in audio-visual formats.

2. Virtual Reality Technology

Virtual reality is the simulation of physical presence in a virtual environment that produces realistic images, sounds, and other sensations. A virtual reality headset or multi-projection atmosphere is used to familiarize this. A person using reality equipment can walk in an artificial world and interact with virtual features or objects. Augmented reality is a type of virtual reality that uses digital content created by computer software to replace what is seen in its real environment. Recreates ancient spots as Nalanda University or Vedic townships, allowing for virtual journeys that make abstract IKS concepts interactive and accessible. In education, it delivers gurukul-style training or simulations of moral stories in IKS, adding engagement over traditional reading, as shown in EEG studies where VR operators showed higher cognitive engagement.

3. Cloud based technology:

Cloud computing deliver services like software, storhouse, and networking over the internet, allowing patrons to access library resources anytime. It helps libraries improve efficiency, reduce the need for physical infrastructure, and better support virtual learning. A cloud-based platform for Indian Knowledge Systems (IKS) is a digital, internet-accessible repository that stores, manages, and circulates traditional Indian knowledge such as manuscripts, Ayurveda, yoga, and mathematics using cloud computing for global accessibility and preservation.

- **Digital Conservation & Access:** Keeping ancient manuscripts and texts steadily in the cloud for worldwide access by scholars, as seen with initiatives like the Assam government's Xasi Paat Puthi project.
- **Education & Curriculum (IKS/NEP 2020):** The Ministry of Education to host IKS content, teacher training, and curriculum-linked materials Platforms like DIKSHA (Digital Infrastructure for Knowledge Sharing).
- **International Institute of Information Technology Community Archives:** Cloud platforms enable, for instance, the Bodo and Dimasa Heritage Digital Archive to allow communities to manage and share their local knowledge.

4. AI (Artificial Intelligence)

AI (Artificial Intelligence) perform tasks involves programming computers which bear human intelligence. This maximizes library resources handling speed, and effectiveness in and enhances service delivery than human work. It can automate repetitive processes similar as acquisitions, circulation, and cataloguing, freeing up staff time and helps to utilize their time for digital preservation and research support. This significantly enhances the efficiency of library operations and supports the long-term viability of the Library services in promoting Indian Knowledge System in Academic Libraries in essence, AI helps libraries familiarize to the changing digital landscape, providing innovative resolutions for information access, resource management, and patron engagement, thereby ensuring their continued applicability and optimal service delivery.

AI Centred Applications:

There are specific operations of AI currently implemented or being developed in libraries **Descriptive Cataloguing and Subject Indexing** - AI applications, particularly Expert Systems (ES) and Optical Character Recognition (OCR), are used for automatic cataloguing and classification. It can pretend human decision-making, using a "knowledge base" compiled from human experts to suggest appropriate index terms or respond to reference queries.

Collection Development - AI systems suggest user to learn from past experiences and interests about ancient knowledge Ayurveda, Vedas, and yoga for accession, improving the accession process and enhancing user experience through recommendations of books and information in any language.

Addressing Language Barriers and Enhancing User Experience - Natural Language Processing (NLP), a field of AI, can be used to reduce language wall by supporting foreign scholars in rephrasing and understanding resources. It can also be helpful to searching information in multi-language databases. Virtual Reality (VR), built with AI features like computer vision and speech recognition, create artificial 3D worlds that immerse patrons in a 360-degree digital environment, offering opportunities for remote or disabled patrons to visit libraries virtually and interact with resources.

Enriched Information Retrieval and Accessibility - By enlightening search functionality AI-driven search engines can analyse patron activity to offer tailored recommendations for ancient scholarly materials, boosting research productivity.

Conclusions:

Technology Integration in Library Systems with Cloud Computing, Artificial Intelligence (AI), and Blockchain technology is encourage to restructure the traditional Library Systems into a vital and digital setup to able and ancillary digital knowledge demand. These technologies collectively increase the efficiency, accessibility, and security of information services. Cloud computing enables expandable storehouse and access to vast digital collections, enable remote access and collaborative resource sharing by securing data integrity, secure transactions, and translucent record-keeping, which is pivotal for copyright, digital rights management, and faith in scholarly communication.

AI initiate intelligent automation, personalized services, and advanced data analytics, thereby refining patron experiences and decision-making processes.

As libraries evolve from being passive repositories to active digital knowledge hubs, support these technologies is essential for encouraging inclusive, sustainable, and innovative information ecosystems. This merging not only modernizes library operations but also empowers users to collaborate and access knowledge smoothly, standardizing with the goals of digital knowledge creation, sharing, and infrastructure development. Continued investment, capacity building, and interdisciplinary collaboration will be key to fully realizing the potential of these emerging technologies in the library landscape.

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