

Digitization and Dissemination of Indian Knowledge System: Integration of Tech Platforms in School Education

Rupali Das¹, Kabita Nayak²

^{1,2}Research Scholar, Department of Education, Regional Institute of Education, NCERT, Bhubaneswar

Abstract

India is the country of rich culture and knowledge heritage. The Indian Knowledge System (IKS) is a systematic process of knowledge transformation from one generation to next generation (Amani, 2024). The NEP 2020 has also emphasized the integration of Indian Knowledge System (IKS) in to school education which enhance the holistic development, deeper understanding about the India's heritage, own identity, cultural continuity, and multidisciplinary thinking of students across the country. Now-a-days technology is playing a critical role in fostering and transforming education by making teaching-learning more accessible, interactive and adaptable. The main objective of this paper was to explore the integration of technology into Indian Knowledge System in a school education landscape. This paper highlighted the conceptual understanding of IKS, role of technology in school education, digitization of traditional knowledge, Dissemination of Traditional Knowledge through Tech platforms and challenges and future scope in adopting digital technology in IKS. This paper has implications for pedagogy, curriculum development, cultural preservation, and national educational goals.

Keywords: Indian Knowledge System, Digitization, Dissemination, Tech platforms

Introduction

India is the country of rich culture and knowledge heritage. The Indian knowledge refers to the collective system of wisdom, traditions, customs and practices, which are developed by the Indian society, including, philosophy, spirituality, science, mathematics, medicine, astronomy, arts and literature and so on. Indian Knowledge System (IKS) is a systematic process of knowledge transformation from one generation to next generation (Amani, 2024) which includes tribal knowledge, oral traditions, folklores, and indigenous and traditional way of learning in astronomy, mathematics, architecture, agriculture, engineering, linguistics, literature, sports, and games (Singh, 2024). The NEP 2020 has also emphasized the integration of Indian Knowledge System (IKS) in to school education which enhance the holistic development, deeper understanding about the India's heritage, own identity, cultural continuity, and multidisciplinary thinking of students across the country. Now-a-days technology is playing a critical role in fostering and transforming education by making teaching-learning more accessible, interactive and adaptable. By integrating the contemporary digital technology with latest advanced technology e.g., Artificial Intelligence (AI) with IKS, traditional knowledge is digitizing and disseminating in a great way. Therefore, the present paper has explored the integration of technology into Indian Knowledge System in a school education landscape. Generally, Indian Knowledge System (IKS) is developed by India over a period of

time, rooted in Hindu Philosophy, comprising huge collection of knowledge, traditions, practices and beliefs from Vedic scriptures around 1500 BCE, which have shaped India's cultural, intellectual, and spiritual landscape (Sing & Meitei; Kapoor, 2020) including diverse knowledge domain such as science, technology, literature, philosophy, culture, medicine, astronomy, arts and yoga (Rahman, 2024).

In an education system, paradigm shifting is occurred when the teachers redesigning their teaching and learning activities by utilizing new digital technology (Ankita & Das, 2020). Therefore, in school education system role of technology is enhancing the teaching-learning process by creating digital content, smart classroom and learning management System (LMS), promoting personalized learning, increasing access and equity, providing collaborating learning, enhancing assessment and feedback, improving school management system, strengthening teachers' professional development. Since the National Education Policy 2020 came out, lots of school programs have started blending indigenous knowledge systems into digital lessons. Now many online platforms, QR-coded books, Diksha materials, and smart classrooms showing local history, traditional sciences, arts, yoga, nature care, and cultural stuff. Hence, the main objective of this paper is to explore the integration of technology into Indian Knowledge System in a school education landscape.

Digitization of Traditional Knowledge

Digitization of traditional knowledge refers to the integration of India's traditional and indigenous knowledge through modern digital technologies. The intersection of digital technology provides innovative pedagogical strategies that align with the cultural and epistemological context of Indian learners (Ashokan & Pachiyappan, 2025). The digitization of traditional knowledge means to preservation, conversion and documentation of ancient wisdom including medicine, history and indigenous languages in to different digital formats like database, virtual exhibits, audio-video archives (M & R, 2026). By this process India's cultural heritage are safeguarded against physical degradation while making it accessible for everyone. Besides this, bridges the gap between ancient wisdom and modern science like, pharmacology and agriculture (Sattigeri et al., 2025). By this, school students can develop cultural awareness, enhance digital literacy skills, promoting interdisciplinary learning, strengthens critical thinking, and facilitates experiential learning.

Dissemination of Traditional Knowledge through Technology

Historically, the Indian Education System began with an ancient education system in which fathers were required to transfer on their knowledge to sons as a method of passing, later in the post-independence the Indian Government has always encourage and promoted the educational technology which aids in enhancing the pedagogical process (Asif & Panakaje, 2022). Dissemination of traditional knowledge refers to the sharing of indigenous, cultural, linguistic, scientific, and artistic knowledge systems using modern digital technology (Singh, 2024). There are certain key channels for dissemination of knowledge such as; digital repositories, education and curriculum, community transfer, & public awareness campaigns. The integration of IKS into mainstream education, fostering cultural awareness, national identity and holistic learning of students. Moreover, there are certain strategies for effective dissemination in school context such as, develop multilingual digital content, integrating traditional knowledge into curriculum, train teachers in technology-enabled cultural education, collaborate with local communities, and promoting open-access digital repositories of traditional knowledge.

Digitization and Dissemination of Indian Knowledge System through tech platforms

The followings are the digital initiatives for supporting the preservation, dissemination, and integration of the Indian Knowledge System (IKS) in teaching and learning in school education.

a. Digital initiatives for the Indian Knowledge System (IKS)**Indian Knowledge System (IKS) Division- Ministry of Education Vision:**

To rejuvenate and mainstream Indian Knowledge Systems for the contemporary world and completely decolonize Indian mind by generating interest and healthy critical reverence for the unbroken knowledge traditions of Bharata for the welfare of the world

National Digital Library of India (NDLI)

IIT Kharagpur under the Ministry of Education has developed the National Digital Library of India. This is a centralized digital repository access to manuscripts, books, and huge learning materials across different subject area related to Indian culture, history, traditional knowledge, philosophy by supporting lifelong learning.

Bharatavani Project

Bharatavani Project is a multilingual knowledge repository, executed by the Central Institute of Indian Languages (CIIL). It is a national knowledge portal design to provide resources about all Indian languages through text, image, audio, video formats.

National Mission for Manuscripts (NMM)- e- GRANTHA

The National Mission for Manuscripts (NMM) is one of the biggest efforts to digitize manuscript heritage which was developed by the Ministry of Culture. The e-Geantha is initiated for serving as a digital platform for managing manuscript collection.

SWAYAM MOOCs

The SWAYAM platform offers MOOC (Massive Open Online Courses) which enable students to access courses related to Indian Knowledge System subject includes yoga, ayurveda, Sanskrit, Indian arts.

Diksha Platform

Digital Infrastructure for Knowledge Sharing (Diksha) is a digital learning platform initiated by NCERT and Ministry of Education. This gives digital books, interactive learning resources, teacher training modules, and multilingual educational content. NEP 2020 also recommended Diksha platform incorporates Indian Knowledge System content, indigenous practices, local traditions, cultural heritage materials into school education.

Indigenous Knowledge Digitization by CSIR & AYUSH

The role of CSIR and the Ministry of AYUSH is to document, digitize, and protect indigenous knowledge. These initiatives also support research and innovation in the traditional field. For example, the Traditional Knowledge Digital Library documents the traditional medicinal knowledge from Ayurveda, Yoga and so on.

Digital Encyclopedias and Initiatives by IGNCA

Indira Gandhi National Centre for the Arts (IGNCA) has created lots of digital projects, to save and share India's culture and brainpower. They have put together digital collections with manuscripts, old books, pictures, recordings, folk customs, and performances. By making online archives and digital guides, IGNCA lets access info about Indian culture.

b. How technology supports IKS digitization

Technology plays a big part in saving and sharing India's traditional knowledge. Using digital tools, info that was locked in old books or just passed down orally can now reach students in school. It helps revive this knowledge too. The following are the some of way for supporting IKS digitization.

Scanning and Archiving- some rare manuscripts digitized using scanners and traditional texts preserved as e-books and PDFs.

Multimedia Production- showing videos on Yoga, classical dance, traditional food, rituals and creating digital storytelling formats.

3D Modelling and Virtual Reality- VR- based heritage tours (e.g., museums, temples) and 3D models of ancient scientific instruments

AI and Natural Language Processing (NLP)- uses for translation of indigenous knowledge through text digitization (Sanskrit).

Geographic Information Systems (GIS)- helps in mapping cultural heritage sites and documenting tribal ecological knowledge.

Educational Impact in Schools

Digitization makes Indian Knowledge System (IKS) accessible (through mobile phones & tablets), engaging learners with videos, animations, implementing multilingual for diverse learners and integrated into textbooks and classrooms.

Challenges and future scope in adopting digital technology in IKS in School Education

The integration of digital tech in the Indian Knowledge System for school education is a big part of the National Education Policy 2020. It helps preserve, share, and document traditional knowledge in how the teaching -learning process is going on. Yet, there are challenges that get in the way of smooth implementation. By overcoming these can helps in developing the culturally responsive and tech-rich learning in the future. Maqoqa and Seleke (2025) reported, a huge digital divide with major gaps in tech access, infrastructure, and digital literacy holding back effective use of technology. Additionally, the tech framework pushes indigenous knowledge system to the side, risking the loss of local wisdom. Other challenges include, some school may face difficulties while identifying authentic and legal shareable traditional knowledge materials, low digital literacy often hinder effective integration of IKS in classroom, and language and cultural diversity. The future potential can be happened by developing Artificial Intelligence- enabled learning system, expansion of digital repositories, strengthening school-based digital documentation projects, multilingual and inclusive learning resources, teacher professional development, and enhancing collaboration with stakeholder and community members.

Conclusion

The digitization and dissemination of the Indian Knowledge System (IKS) through technology have created promoting, preserving, and weaving traditional knowledge in to school education. Online tools, digital initiatives, videos, and other high-tech teaching aids make old traditions more relatable and useful for today's learners, which fits right in with the goals of the NEP 2020. The integration of technology into traditional knowledge not only strengthen cultural identity and awareness but also develop holistic and experiential learning. Still, there are hurdles such as, digital divide, authenticity, and low digital literacy must be addressed to ensure effective implementation. With the advanced technological innovation (e.g. AI), policy support, teacher capacity building and community participation can preserve and transmit this to future generation to create a meaningful bridge between traditional knowledge and modern education.

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