

**BOOK CHAPTER:
THE CONVERGENCE OF THEORY AND PRACTICE IN
APPLIED SCIENCE AND TECHNOLOGY**

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Since 2023

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Leilani Katie

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The International Journals, Conferences, Awards and Books

142, Periyar Nagar, Madakulam,
Madurai - 625003, Tamil Nadu, India.

+91 9894820237 | +91 9790120237

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Published by: **Leilani Katie Publication and PRESS
Madurai - 625003, Tamil Nadu, India.**

Edition Details: **I**

ISBN: **978-93-6348-116-9**

Month & Year: **May, 2025**

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Leilani Katie Publication and PRESS**

Pages: **84**

Price: **₹600/-**

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**ROLE OF TECHNOLOGY IN ADVANCING LANGUAGE
INDIAN KNOWLEDGE SYSTEM**

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Abstract

Technology plays a vital role in modern life, impacting almost every feature of our daily routines, from communication and work to education and entertainment, by handsome efficiency, facilitating access to information, and driving innovation. Technology is a broad field with many important contributors, and it's developed over thousands of years with contributions from countless individuals and civilizations. Technology allows broader access to various language learning materials. With the internet, students can easily access resources such as articles, videos, and e-books in the language they are learning. This opens the door to deeper investigation and enrichment in learning. The main objective of drawing from our past and integrating the Indian Knowledge Systems is to ensure that our antique systems of knowledge represented by unbroken tradition of knowledge broadcast and providing a unique perspective is used to solve the current and emerging challenges of India and abroad.

Keywords

Technology, Indian Knowledge System, Indigenous knowledge, digital culture, resources, cultural heritage.

Introduction

The Indian Knowledge System (IKS) is a vast repository of knowledge developed over thousands of years, deep-rooted in ancient texts like the Vedas, Upanishads, and Puranas. It covers philosophy, science, mathematics, and medicine with a holistic tactic that integrates mind, body, and spirit. IKS offers valuable understandings into sustainable practices and holistic problem-solving essential for today's global challenges.

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Furthermore, IKS endorses inclusivity and cultural awareness, preparing individuals to navigate an interconnected world. By integrating traditional wisdom with modern science.

Technology allows broader access to various language learning materials. With the internet, we can easily access resources such as articles, videos, and e-books in the language they are learning. This opens the door to deeper investigation and enrichment in learning.

Technology plays a dynamic role in modern life, impacting almost every aspect of our daily routines, from communication and work to education and entertainment, by enhancing efficiency, facilitating access to information, and driving innovation.

The Importance of Preserving Indigenous Knowledge

Cultural Heritage and Identity

Technology plays a central role in advancing language and the Indian Knowledge System (IKS) by facilitating preservation, accessibility, and revitalization of traditional knowledge over digital platforms, online resources, and language technology tools.

Indigenous knowledge is important to the cultural heritage and identity of indigenous communities. It incorporates language, rituals, medicinal practices, environmental management, and more. Preserving this knowledge is crucial for maintaining the unique cultural identities and heritage of these communities. Indigenous knowledge often includes justifiable practices and ecological insights that have been honed over generations.

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This knowledge can contribute to contemporary environmental management and maintenance efforts, offering sustainable solutions to modern ecological challenges.

Use of Technology in Preserving Indigenous Knowledge

Indigenous knowledge, the accumulated wisdom, beliefs, and practices developed by indigenous communities over centuries, is a paragon trove of cultural heritage. However, this invaluable knowledge is at risk of being lost due to various factors, including globalization, environmental changes, and the declining number of knowledge keepers.

Modern technology offers promising tools and methods to preserve, document, and distribute this traditional wisdom to ensure it continues to flourish and benefit future generations. This article explores how technology can be effectively utilized in advancing language Indian Knowledge system.

Role of Technology

1. Ornamental Efficiency and Productivity

Technology automates tasks, freeing up human resources for more strategic and creative endeavours. It streamlines workflows and processes, leading to increased proficiency and output. It facilitates faster and more efficient communication, both within and outside organizations.

2. Enabling Access to Information and Education

The internet and digital platforms provide access to vast amounts of information and educational resources. Technology enables online learning, making education accessible to a wider audience. Online libraries and databases deliver access to a wide range of books, articles, and other materials.

3. Pouring Innovation and Economic Growth

Technology fuels innovation, leading to the creation of new industries and products. Technological improvements contribute to economic growth and development. E-commerce has revolutionized the retail industry, allowing businesses to reach a global audience.

4. Shaping Social Interactions and Culture

Social media platforms have converted the way people interact and connect with each other.

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Online communities and forums provide spaces for people to share interests and connect with like-minded individuals. Technology is shaping digital culture and influencing how people consume media and entertainment.

Technological Tools for Conservation

Digital Archives

Digital archives provide a platform to store and manage massive amounts of information. By digitalizing indigenous knowledge, communities can produce comprehensive databases that include audio recordings, videos, photographs, and texts. These archives ensure that knowledge is preserved in its original form and can be easily accessed and shared.

The Mukurtu Content Management System, established with indigenous communities, allows users to manage and share digital cultural heritage rendering to their specific needs and cultural protocols.

Geographic Information Systems (GIS)

GIS technology can map traditional lands, resources, and cultural sites, providing a spatial representation of indigenous knowledge. This mapping supports in the documentation and protection of sacred sites and traditional territories.

The Yurok Tribe in California uses GIS to map and accomplish their ancestral lands, ensuring the protection of their cultural and natural resources.

Technology for Teaching and Dissemination

E-Learning Platforms

E-learning platforms enable the creation of interactive educational content that can teach traditional knowledge to a wider audience. These platforms can host online courses, tutorials, and virtual classrooms that make learning accessible irrespective of geographic location.

The Alaska Native Knowledge Network affords resources and curricula planned to teach indigenous knowledge and languages through online platforms.

Virtual and Augmented Reality

Virtual Reality (VR) and Augmented Reality (AR) technologies offer immersive experiences that can bring traditional practices and environments to life. These technologies can reconstruct cultural ceremonies, historical events, and natural habitats, providing an engaging way to learn about indigenous cultures.

The "Virtual Songlines" project in Australia uses VR to reconstruct indigenous cultural landscapes and stories, permitting users to experience them in an immersive virtual environment.

The Role of Social Media and Mobile Applications

Social Media

Social media platforms can be powerful tools for sharing and promoting indigenous knowledge. They allow for the distribution of information quickly and to a broad audience, helping to raise awareness and gratitude of indigenous cultures.

Instagram accounts like @IndigenousRising and @Native_Activists share stories, art, and knowledge from various indigenous communities, reaching a global audience.

Mobile Applications

Mobile apps can deliver access to indigenous knowledge on-the-go. They can contain features like language learning tools, cultural stories, and guides to traditional practices.

The "FirstVoices" app offers a suite of tools for language learning, empowering users to learn and preserve indigenous languages through interactive lessons and games.

Challenges and Considerations

Ethical Considerations

The use of technology in conserving native knowledge must be approached with sensitivity and respect for the communities involved. Issues of consent, ownership, and control over the knowledge must be carefully managed to ensure that the rights and wishes of native peoples are honoured.

Digital Divide

Access to technology remains a significant barrier for many indigenous communities. Efforts to preserve and teach indigenous knowledge through technology must address this digital divide by providing the essential infrastructure and support.

Initiatives like the "Indigenous Connectivity Summit" emphasize on improving internet access and digital literacy in indigenous communities to bridge this gap.

Unequal access to technology can exacerbate existing inequalities. The use of technology advances privacy concerns that need to be addressed. The development and use of technology raise ethical reflections that need to be carefully considered. Over-reliance on technology can lead to dependence and a decline in certain skills. Automation and AI could lead to job displacement in certain sectors.

1. Preservation and Accessibility

Technology allows for the digitization of ancient texts, manuscripts, and other forms of cultural heritage, making them accessible to a wider audience and ensuring their preservation for future generations.

Digital libraries and online databases provide easy access to a vast repository of knowledge, including texts, research papers, and other resources related to IKS. Language technology, including machine translation, can enable the translation of IKS texts into various languages, making them accessible to a global audience.

2. Revitalization and Promotion

Online language learning platforms and apps can be used to teach and encourage Indian languages and the rich literature and knowledge associated with them.

Social media and other digital platforms can be used to share information about IKS, promote cultural events, and engage with communities interested in traditional knowledge.

Technology can be used to create interactive learning tools, such as simulations, games, and virtual reality experiences, to engage learners and make learning more dynamic and effective. Modern software can be used to digitally preserve, analyze, and teach Indian classical music, with its intricate ragas and talas.

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Sanskrit and regional language texts can be digitized and made available to global audiences through online libraries and translation tools. Technology can be used to document and disseminate knowledge about traditional medicine systems like Ayurveda, including herbal remedies and holistic health practices.

Technology can be used to teach and promote Vedic mathematics principles alongside conventional mathematics, enhancing computational thinking and problem-solving skills.

Ensuring that technology is accessible to all, regardless of their location or socioeconomic status, is crucial for promoting the widespread adoption of technology for IKS.

It's important to consider the ethical implications of using technology to preserve and promote IKS, ensuring that traditional knowledge is not misappropriated or exploited. Integrating IKS with modern technology requires interdisciplinary collaboration between researchers, educators, and community members.

Thus, the Indian knowledge system has undergone significant transformations in the past few decades due to the impact of technology. Technology has facilitated the democratisation of knowledge, the expansion of research and development, and the evolution of communication and collaboration norms.

Conclusion

Modern technology offers extraordinary opportunities to preserve and teach indigenous knowledge, ensuring it continues to thrive in the digital age. By leveraging digital archives, GIS, e-learning platforms, VR, AR, social media, and mobile applications, we can document, protect, and spread this invaluable knowledge. However, these efforts must be guided by ethical considerations and a commitment to connecting the digital divide. By doing so, we can ensure that the wisdom of indigenous peoples is not only conserved but also endures to enhance and update our global society.

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