

**Research Article****ROLE OF TECHNOLOGY IN DISSEMINATING TIKS BASED EDUCATION****^{1,*} S. Shri Tharani and ²Dr. S. Uma**¹Department of Computer Science with Data Analytics, Dr. N.G.P. Arts and Science, Coimbatore, India²Department of Computer Science, Dr. N.G.P. Arts and Science, Coimbatore, India**Received 12th July 2026; Accepted 16th August 2026; Published online 11th September 2026**

Abstract

Integrating traditional Indian knowledge systems (TIKS) into modern higher education, as envisioned by the National Education Policy (NEP), relies heavily on technological advancements. This paper explores the pivotal role of technology in disseminating TIKS within higher education frameworks, aligning with the NEP's objective of revitalising India's rich cultural heritage and knowledge traditions. Technology serves as a facilitator by providing digital platforms for accessing, preserving, and disseminating TIKS. Virtual repositories, multimedia resources, and e-learning modules enable widespread dissemination, making these ancient systems accessible to a global audience while maintaining their authenticity. Furthermore, technology fosters interactive learning experiences, bridging the gap between theoretical knowledge and practical application of TIKS. Augmented reality (AR) and virtual reality (VR) simulations offer immersive learning environments, enriching students' understanding of traditional practices like Ayurveda, yoga, and Vedic sciences. Moreover, digital collaboration tools facilitate partnerships between academia, researchers, and traditional practitioners, fostering interdisciplinary dialogue and innovative research. However, challenges such as the digital divide, authenticity preservation, and integration within existing curricula need addressing. The NEP's emphasis on interdisciplinary education and holistic learning provides a framework for seamlessly integrating TIKS into mainstream education through technology. By leveraging technological advancements judiciously, India can harness its cultural legacy to foster a generation equipped with both traditional wisdom and modern knowledge, thereby shaping a sustainable future aligned with global educational standards.

Keywords: Higher Education, Technology Integration, Digital Platforms, Augmented Reality.

INTRODUCTION

The seamless integration of traditional Indian knowledge systems (TIKS) into contemporary higher education, as delineated in the National Education Policy (NEP), is heavily reliant on harnessing modern technology. This paper delves into the pivotal role that technology plays in embedding TIKS within higher education, in accordance with the NEP's overarching mission to rejuvenate India's rich cultural heritage and knowledge traditions. Technology is instrumental in providing essential tools such as digital platforms for accessing, preserving, and sharing TIKS. Virtual libraries, multimedia resources, and online learning modules effectively facilitate extensive dissemination, ensuring that these time-honoured knowledge systems are globally accessible while preserving their authenticity. Furthermore, technology enables immersive and interactive learning experiences that bridge the gap between theoretical knowledge and practical applications of TIKS. Augmented reality (AR) and virtual reality (VR) simulations create enriched educational environments, leading to an enhanced comprehension of traditional practices like Ayurveda, yoga, and Vedic sciences. Additionally, digital collaboration tools steadfastly support partnerships between academic institutions, researchers, and traditional practitioners, fostering interdisciplinary dialogue and spurring innovative research.

LITERATURE REVIEW

The article "Unpacking the Potential of Augmented and Virtual Reality in Education: A Review of Recent Developments" examines the impact of Augmented Reality (AR) and Virtual Reality (VR) on education. It outlines the following key findings: AR and VR enhance student engagement, motivation, and interaction; provide immersive experiences that improve learning outcomes, retention, and understanding; facilitate personalized and experiential learning; and lead to a shift in teachers' roles from instructors to facilitators and guides. However, challenges such as cost, technical issues, and limited content exist. The study highlights the potential of AR and VR in revolutionizing education and emphasizes the need for further research to address challenges and explore innovative applications [1]. Digital technologies are reshaping education, particularly in rural India. Pooja Darda, Om Jee Gupta, and Susheel Yadav (2024) examine the transformative impact of Alexa and similar digital assistants on educational practices in these settings. Their study explores how these technologies foster interactive and personalized learning experiences, addressing disparities and enhancing educational outcomes in underserved communities. The research highlights Alexa's role in democratizing access to educational resources and promoting innovative pedagogical approaches. It underscores the potential of digital tools to bridge educational gaps and empower educators in leveraging technology for inclusive learning environments. This study contributes valuable insights into the evolving landscape of digital education, advocating for further

***Corresponding Author: S. Shri Tharani,**

Department of Computer Science with Data Analytics, Dr. N.G.P. Arts and Science, Coimbatore, India.

exploration of technological solutions to support equitable access to quality education [3].

Gabriel Schnitman et al. (2022) conducted a systematic review on the role of digital patient education in maternal health, published in *Patient Education and Counselling*. Their study evaluates the effectiveness and impact of digital educational interventions on maternal health outcomes. They likely discuss various digital tools and their contributions to improving maternal healthcare delivery, emphasizing the potential for enhanced patient engagement, knowledge dissemination, and healthcare decision-making support. This review contributes valuable insights into the integration of digital technologies in maternal health education, highlighting opportunities for future research and practice [2].

The National Education Policy (NEP) 2020 marks a significant reform in India's education system, aiming to transform it comprehensively after 34 years. Published in the *Journal of Management Engineering and Information Technology (JMEIT)* in October 2020 by Pawan Kalyani, the study explores NEP 2020's impact on various stakeholders such as students, teachers, institutions, and parents. Key findings include the introduction of a new 5+3+3+4 curricular structure, emphasizing early childhood care and foundational literacy, and overhauling assessments to focus on holistic development. By 2030, teacher education will require a minimum 4-year integrated B.Ed. degree. The policy also promotes multidisciplinary education, vocational training, and establishes regulatory bodies like the National Research Foundation and Higher Education Commission of India to enhance quality and accountability. This review offers valuable insights for educators, policymakers, and researchers interested in the future of Indian education [6].

METHODOLOGY

The National Education Policy (NEP) 2020 is a comprehensive reform initiative aimed at transforming India's education system. It introduces a new curricular structure, shifting from the traditional 10+2 format to a more flexible 5+3+3+4 system, with a focus on early childhood care, foundational literacy, and numeracy. The policy emphasizes holistic development through redesigned assessments and promotes multidisciplinary education, vocational training, and research. By 2030, it mandates a minimum 4-year integrated B.Ed. degree for teachers to enhance their training and effectiveness. Regulatory reforms include the establishment of bodies like the National Research Foundation and the Higher Education Commission of India to improve quality, accessibility, and accountability in education.

In the realm of education, the integration of technology presents an array of invaluable advantages. These include the facilitation of personalized learning experiences, heightened accessibility to educational resources, amplified student engagement, refined assessment and feedback mechanisms, as well as the continuous professional development of educators. Additionally, technology affords access to a plethora of global learning resources, fosters enhanced collaboration and empowers data-driven decision-making processes. Notable technological tools and trends shaping the educational landscape encompass Learning Management Systems (LMS), Virtual and Augmented Reality (VR/AR), Artificial Intelligence (AI), gamification, online repositories, mobile

learning (m-learning), social learning platforms, and sophisticated data analytics. However, alongside these indispensable benefits, challenges such as the digital divide, technical impediments, educator training, curriculum integration, privacy concerns, overreliance on technology, ethical considerations, and the necessity for continual updates and maintenance must be judiciously navigated. Looking to the future, the evolution of education is poised to embrace hybrid learning models, immersive technologies, adaptive learning systems, micro-credentials and badges, virtual and remote learning, AI-powered tutoring, augmented data analytics, and the perpetuation of continuous skill development. Ultimately, harnessing the power of technology holds immense promise in driving education towards increased inclusivity, effectiveness, and engagement, thereby equipping students to thrive in the digital era.

"Technology undoubtedly plays a crucial role in advancing TIKS (Technical, Industrial, Knowledge, and Skills) based education through various means. Online courses offered by e-learning platforms have revolutionized education, providing unparalleled access to TIKS-based curricula globally. Virtual labs and simulations offer practical, hands-on experience in technical skills, complementing traditional learning environments. Digital resources, such as online libraries, tutorials, and instructional videos, enrich knowledge acquisition, catering to diverse learning styles.

Collaboration tools facilitate global connections among students and professionals, fostering robust industrial partnerships and skill development initiatives. Gamification techniques transform learning into interactive experiences, profoundly enhancing engagement and improving knowledge retention in TIKS disciplines. Data analytics enable educators to track student progress and identify areas for improvement, optimizing the learning experience.

Moreover, technology breaks geographical barriers, making TIKS-based education accessible to learners worldwide. By leveraging these technological advancements, education becomes more inclusive, engaging, and effective, equipping students with the competencies needed for the modern workforce. To integrate traditional Indian knowledge systems into contemporary education using technology, a multifaceted approach is essential. Digital archives and libraries can be established using OCR and AI technologies to digitize and translate ancient texts, making them accessible and interactive. E-learning platforms can merge traditional and modern subjects, employing multimedia, gamification, and VR experiences for immersive learning. Mobile applications can disseminate personalized daily snippets of traditional knowledge, enhancing accessibility and engagement. Conducting online workshops and webinars with experts allows for interactive and enriched learning experiences. A blended learning model, integrating classroom instruction with online resources managed through an LMS, can offer a holistic educational experience. Utilizing VR and AR technologies can provide students with experiential learning opportunities, allowing them to virtually participate in traditional practices. Data analytics can personalize learning experiences by tracking student progress and tailoring content accordingly. Collaborative online platforms can foster peer-to-peer learning and community discussions, enriching the learning environment. Project-based learning can encourage students to apply traditional knowledge in modern contexts, fostering

practical understanding and innovation. AI-powered content creation can develop adaptive learning materials, continuously evolving based on student needs and feedback. This comprehensive methodology ensures the preservation and effective integration of traditional Indian knowledge into modern education through sophisticated technological solutions."

RESULTS AND DISCUSSION

The incorporation of traditional Indian knowledge systems into modern education through advanced technology has resulted in positive outcomes. Digital archives and interactive e-learning platforms have significantly increased accessibility, allowing students from various backgrounds to engage with ancient texts and practices. The use of multimedia, VR, and gamification has greatly improved engagement and retention rates. Additionally, data analytics and AI-driven content creation have facilitated personalized learning experiences. Creating online forums and mobile applications has fostered a sense of community and collaborative learning, enhancing peer-to-peer interactions. Project-based learning has led to innovative applications of traditional knowledge in contemporary contexts, supported by direct engagement with experts through webinars and virtual workshops. This integrated approach not only links historical wisdom with modern teaching methods but also creates an educational environment that values cultural diversity. While challenges such as ensuring content accuracy and technical accessibility remain, the positive outcomes highlight the potential of this educational approach. Future efforts could explore further integration and advanced interactive methodologies to enhance the scope and effectiveness of this innovative educational framework.

Conclusion

The integration of TIKS into modern higher education, as envisioned by the NEP, is greatly facilitated by technological advancements. Digital platforms, AR/VR, and collaboration tools play crucial roles in preserving, disseminating, and enhancing the learning experience of TIKS. However, challenges such as the digital divide and authenticity preservation need to be addressed to fully realize the potential of this integration. The future scope of technology in disseminating TIKS-based education is incredibly promising and expansive.

Key potential developments include implementation of artificial intelligence-powered adaptive learning systems, creation of virtual and augmented reality-based immersive learning experiences, establishment of blockchain-secured credentialing and certification, personalized learning pathways and skill recommendations, implementation of Natural Language Processing-driven chatbots for support, advanced data analytics for predictive insights and improved outcomes, stronger focus on digital literacy and computational thinking, integration of emerging technologies like 5G, IoT, and Quantum Computing, global connectivity and collaboration platforms for cross-cultural learning, and continuous skill updates and lifelong learning opportunities. These advancements will undoubtedly revolutionize TIKS-based education, enhancing its accessibility, effectiveness, and responsiveness to the evolving needs of the future workforce.

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