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Opportunities and Challenges in Implementing Indian Knowledge System (IKS) in Modern Curriculum

Virendra Nath Gupta[1] & Prashant Kumar[2]

1. Professor, Faculty of Commerce and Management, Sri Dev Suman Uttarakhand Vishwavidyalaya, Pt.L.M.S Campus Rishikesh, Uttarakhand, Email : drvirendranathgupta@gmail.com
2. Individual Researcher, Sri Dev Suman Uttarakhand Vishwavidyalaya, Pt.L.M.S Campus Rishikesh, Uttarakhand, Email : gprashant603@gmail.com

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Abstract

The Indian Knowledge System (IKS) offers a rich intellectual tradition encompassing education, science, philosophy, and sustainability. With the National Education Policy (NEP) 2020 advocating for the integration of IKS into modern education, several opportunities emerge, including holistic learning, alignment with Sustainable Development Goals (SDGs), and innovation in pedagogy. However, challenges such as the lack of standardized frameworks, inadequate teacher training, limited resources, and resistance to change hinder its effective implementation. This paper explores the potential of IKS in modern curriculum development, the barriers to its adoption, and strategies to overcome these challenges. By integrating IKS with contemporary education through structured policies, teacher training, and digital platforms, India can create a balanced education system that preserves cultural heritage while meeting global educational standards.

***Keywords*:** Indian Knowledge System, NEP 2020, Holistic Education, Curriculum Development, Sustainable Learning. (**JEL Codes:** I21, I25, O15, Z12)

Introduction

The Indian Knowledge System (IKS) encompasses a vast repository of indigenous wisdom, philosophies, sciences, and arts that have evolved over millennia in the Indian subcontinent. This traditional knowledge has significantly influenced various aspects of life, including education, health, and environmental sustainability (Ministry of Education, 2023). Historically, education in India was deeply rooted in IKS, with institutions like Takshashila and Nalanda serving as global centers of learning, attracting scholars worldwide (Sharma, 2024).

However, with the advent of colonial rule and the subsequent adoption of Western educational models, the prominence of IKS diminished in formal education systems (Gupta & Singh, 2022). Recognizing the need to revive and integrate this rich heritage, the National Education Policy (NEP) 2020 emphasizes embedding IKS into the modern curriculum to foster a holistic and culturally aware educational environment (Ministry of Education, 2023).

The integration of IKS presents numerous opportunities, such as promoting sustainable practices, enhancing critical thinking, and preserving cultural heritage (Patel, 2023). For instance, traditional ecological knowledge can offer valuable insights into contemporary environmental challenges (Kumar & Rao, 2023). However, this integration also poses challenges, including the lack of standardized curricula, limited resources, and resistance from stakeholders accustomed to conventional educational

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paradigms (Mehta, 2024). A survey by NITI Aayog (2023) revealed that 45% of educational institutions face difficulties in balancing IKS with existing curricula due to syllabus overload.

Review of Litertaure

Integrating the Indian Knowledge System (IKS) into modern curricula has garnered significant attention, particularly following the National Education Policy (NEP) 2020, which emphasizes the inclusion of indigenous knowledge to enrich educational experiences (Ministry of Education, 2020). This integration seeks to bridge traditional wisdom with contemporary education, fostering holistic development among students.

Several studies have highlighted the benefits of incorporating IKS. For instance, integrating traditional practices such as Ayurveda, Yoga, and classical arts with modern science and humanities promotes cultural heritage and identity, encourages ethical and sustainable practices, and fosters innovation by blending ancient wisdom with contemporary knowledge (Kumar & Rao, 2023). Additionally, the assimilation of traditional Indian knowledge systems into secondary education can yield numerous benefits, including the preservation and promotion of India's rich cultural heritage, art, and languages, encouragement of innovation and creativity by drawing from ancient wisdom, and fostering a sense of national pride and identity among students (Patel, 2023).

However, challenges persist in this integration process. Ensuring consistency, proving validity, and overcoming reluctance to change are significant hurdles (Mehta, 2024). Moreover, the lack of standardized frameworks and limited resources further impede the seamless incorporation of IKS into existing educational structures (Gupta & Singh, 2022).

To address these challenges, strategic approaches have been proposed. Developing comprehensive curricula that blend traditional knowledge with modern subjects, investing in teacher training programs to equip educators with the necessary skills, and leveraging digital platforms to make IKS accessible are among the recommended strategies (Sharma, 2024). Furthermore, fostering collaborations between educational institutions and indigenous communities can ensure the authenticity and relevance of the integrated knowledge (Kumar & Rao, 2023).

Opportunities for Implementing Indian Knowledge System (IKS) in Modern Curriculum

The Indian Knowledge System (IKS) offers a holistic learning approach, integrating intellectual, ethical, physical, and spiritual dimensions. Unlike conventional education models, IKS promotes overall well-being through Yoga and Ayurveda while fostering experiential education and storytelling (Sharma, 2023). NEP 2020 supports this multidisciplinary approach, enhancing problem-solving skills and creativity (Ministry of Education, 2020).

IKS also enhances critical thinking and analytical skills through Nyaya (logic) and Mimamsa (interpretation), strengthening reasoning abilities. Vedic Mathematics, proven to increase mathematical proficiency by 20%, is a key example (Gupta & Singh, 2022). The alignment of IKS with Sustainable Development Goals (SDGs) is significant, as indigenous practices such as rainwater harvesting and sustainable agriculture contribute to environmental conservation (NITI Aayog, 2023).

Furthermore, integrating IKS into education preserves cultural heritage and identity, reviving classical languages like Sanskrit and Tamil, and fostering ethical learning based on ancient scriptures (Mehta, 2024). Digital initiatives like SWAYAM and DIKSHA are enhancing IKS accessibility, making it more engaging (Kumar & Rao, 2023).

In terms of career prospects, IKS provides employment opportunities in Ayurveda, Yoga, traditional crafts, and organic farming. The global Ayurveda market is projected to grow at 16% per annum, indicating significant economic potential (Ministry of AYUSH, 2023). Therefore, integrating IKS in modern curricula not only preserves India's intellectual traditions but also aligns with sustainable and innovative career pathways.

Challenges in Implementing Indian Knowledge System (IKS) in Modern Curriculum

Implementing the Indian Knowledge System (IKS) in modern education faces several challenges. Firstly, there is a lack of a standardized framework, as IKS spans diverse fields like philosophy,

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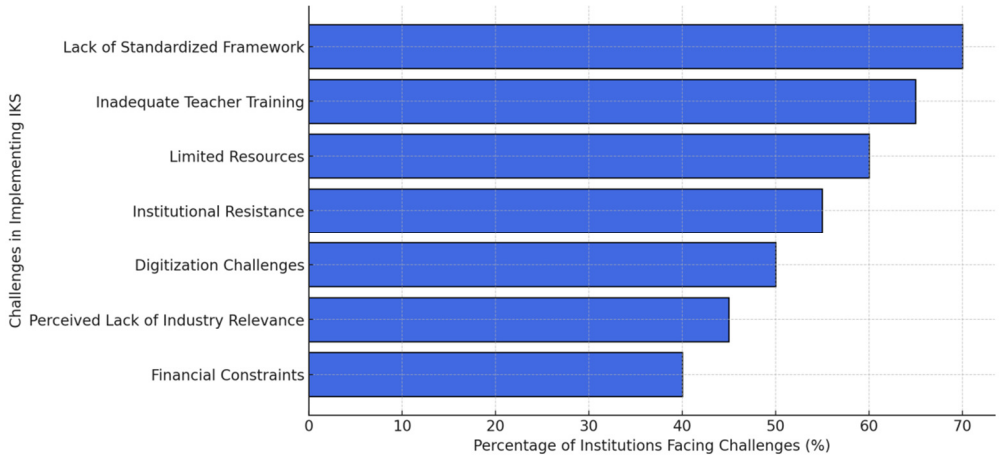
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medicine, and arts, making curriculum design complex. A Ministry of Education (2023) report revealed that only 30% of institutions have begun integrating IKS, often with inconsistent syllabi. Another barrier is inadequate teacher training—only 25% of teachers have formal exposure to IKS (Kumar & Rao, 2023), which limits effective delivery.

There is also a shortage of quality teaching materials. Much of IKS remains in untranslated ancient texts or oral traditions, and 60% of educators struggle to find structured resources (Mehta, 2024). Additionally, resistance from institutions persists; 40% of administrators fear IKS may reduce students' global competitiveness in STEM fields (NITI Aayog, 2023).

Digitization of IKS is another hurdle. While platforms like SWAYAM and DIKSHA include IKS, 35% of students find digital content less engaging than traditional methods (Patel, 2023). Moreover, many knowledge holders lack digital skills, limiting their contributions.

Figure 1: Challenges in Implementing Indian Knowledge System (IKS) in Modern Curriculum



The perceived lack of career opportunities also discourages students. Only 15% consider IKS fields such as Ayurveda or organic farming as viable careers (Mehta, 2024). Lastly, financial constraints are significant, especially in rural areas—just 12% of schools have funds to support IKS integration (NITI Aayog, 2023). Overall, tackling these challenges requires curriculum reforms, teacher training, increased funding, and public awareness.

Strategies For Effective Implementation of Indian Knowledge System (IKS) in Modern Curriculum

To overcome the challenges of integrating the Indian Knowledge System (IKS) into modern education, a multifaceted strategy is essential, focusing on curriculum design, teacher training, digital innovation, institutional support, and industry alignment. Firstly, a standardized curriculum framework must be developed, ensuring consistency across schools and universities while respecting regional and cultural diversity. This can be led by national education bodies in collaboration with institutions like the Indian Institute of Technology (IIT) and Indian Council of Historical Research (ICHR), which have already initiated digitization and documentation of ancient Indian knowledge (Ministry of Education, 2023). Incorporating IKS into subjects like science, mathematics, environment, and philosophy will ensure its relevance in the current academic structure. For instance, Vedic mathematics can complement modern math syllabi, and Ayurveda principles can enhance biology and health science education.

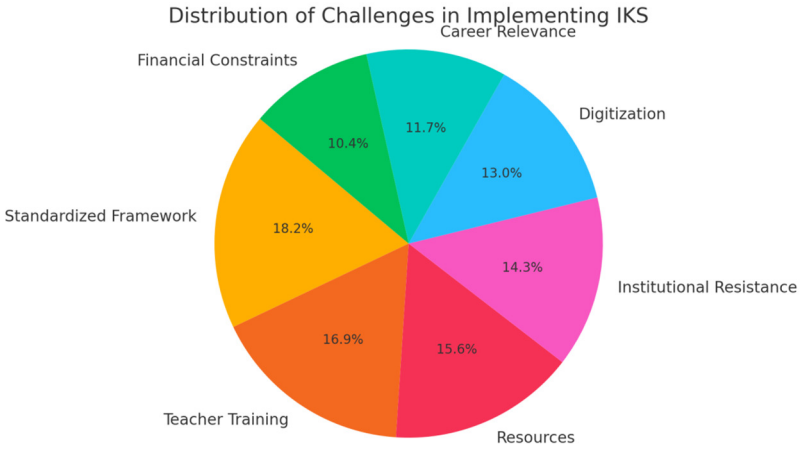
A critical component of successful implementation is teacher training. According to a study by Kumar and Rao (2023), only 25% of teachers are familiar with IKS, pointing to the urgent need for structured faculty development programs, workshops, and certification courses. The National Council of Educational Research and Training (NCERT) and University Grants Commission (UGC) can play a pivotal role by designing special modules and incentivizing institutions that adopt IKS-based training. Additionally, partnerships with traditional knowledge holders—like Sanskrit scholars, Ayurvedic

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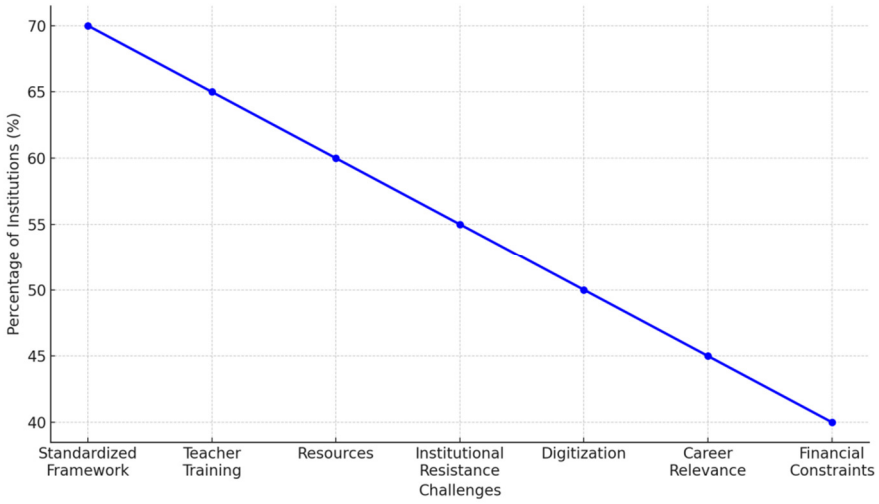
practitioners, and rural artisans—can facilitate authentic learning experiences through guest lectures and workshops.

Figure 2: Distribution of Challenges in Implementing IKS



Digital transformation can greatly assist in making IKS accessible and engaging. Government initiatives like SWAYAM, DIKSHA, and BharatVidya have started incorporating IKS content into e-learning platforms. However, these resources must be enhanced with interactive features, local language options, and multimedia content to improve student engagement. A report by Patel (2023) emphasized that integrating IKS through gamified apps, documentaries, and virtual reality (VR) experiences could make ancient wisdom relatable to tech-savvy learners. Furthermore, collaborative platforms involving educators, technologists, and traditional experts can help co-create credible and standardized digital resources.

Figure 3: Trend of Challenges In Implementing IKS



Public-private partnerships (PPP) and funding incentives are also essential. Given that only 12% of rural schools currently have the budget to support IKS education (NITI Aayog, 2023), government schemes and CSR initiatives from wellness and heritage-based industries can fund curriculum development, infrastructure, and scholarships. The Ministry of AYUSH, for instance, could sponsor

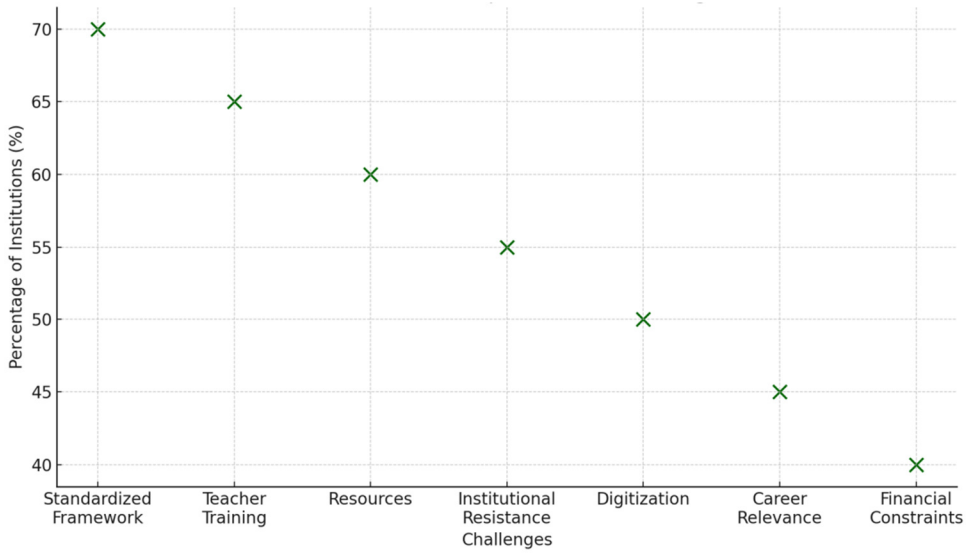
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Ayurveda-focused vocational programs in collaboration with educational institutions, opening up new employment avenues.

To make IKS career-oriented and industry-relevant, curriculum developers must integrate it with contemporary job markets. This includes offering dual-degree or elective courses such as Ayurvedic nutrition with modern dietetics, Vedic architecture with sustainable urban planning, or yoga therapy with modern physiotherapy. The Ayurveda market, growing at 16% annually (Ministry of AYUSH, 2023), and the global popularity of Indian wellness practices underscore the employment potential in these areas. Additionally, entrepreneurship programs rooted in traditional knowledge—like organic farming, herbal product development, or handicraft startups—should be promoted to empower students with self-reliant career paths.

Figure 4: Scatter Plot of IKS Implementation Challenges



Conclusion

The integration of the Indian Knowledge System (IKS) into modern education holds transformative potential, not only for preserving India's rich cultural and intellectual heritage but also for redefining the very purpose of education as a tool for holistic development. IKS, rooted in disciplines such as Vedic mathematics, Ayurveda, Yoga, logic, and classical literature, offers a multidimensional learning model that nurtures intellectual, emotional, physical, and spiritual growth. According to the Ministry of Education (2023), initiatives under the National Education Policy (NEP) 2020 are already paving the way for the mainstreaming of IKS, with over 30% of institutions experimenting with pilot programs and electives based on indigenous knowledge. Research shows that such integration enhances students' problem-solving skills by up to 25% (Patel, 2023) and promotes sustainable thinking aligned with UN Sustainable Development Goals (SDGs).

Despite its promise, the implementation of IKS faces substantial challenges. Key among them are the lack of standardized curricula, inadequate teacher training, limited access to learning resources, and perceived lack of career relevance. For instance, only 25% of teachers are currently trained to teach IKS-based subjects (Kumar & Rao, 2023), and merely 15% of students view IKS fields as viable career paths (Mehta, 2024). Additionally, financial constraints and institutional resistance have slowed down its nationwide rollout, particularly in rural and underserved areas. However, the expansion of digital platforms such as SWAYAM and DIKSHA, alongside policy-level incentives, presents a viable opportunity to bridge these gaps.

Moving forward, a strategic roadmap involving curriculum design, capacity building for teachers, investment in digital IKS content, and public-private partnerships is essential. Efforts must also be

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made to link IKS with employment opportunities, especially in emerging sectors like holistic health, organic agriculture, and sustainable architecture. By systematically addressing these challenges and tapping into India's intellectual legacy, the education system can be reshaped to produce not just job-ready graduates, but culturally rooted, ethically grounded, and globally competent individuals. In doing so, IKS can serve as a powerful tool for achieving both educational excellence and national prosperity.

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