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Strengthening Higher Education through Indian Knowledge Systems: Challenges and Prospects Ahead

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Abstract

The Indian Knowledge System (IKS) presents a rich and integrated body of knowledge that combines traditional wisdom, scientific inquiry, and cultural practices. It offers higher education a meaningful path toward more holistic and sustainable learning models. As universities seek approaches that move beyond fragmented disciplinary structures, IKS provides a framework that connects fields such as astronomy, mathematics, medicine, architecture, and philosophy with ethical and spiritual thought.

This paper examines how IKS can be incorporated into higher education curricula and evaluates its capacity to strengthen contemporary educational models. Although the National Education Policy (NEP) 2020 has created policy support for such integration, several challenges remain. These include cultural considerations, uneven institutional resources, and the difficulty of aligning traditional knowledge systems with emerging technologies such as blockchain and virtual learning environments.

The study reviews the historical foundations of IKS, assesses its relevance in present-day academia, and discusses the institutional barriers to its effective implementation. It also outlines future directions, including the use of digital tools for cultural preservation and the development of interdisciplinary research platforms. The paper concludes that meaningful integration of IKS requires a careful balance between preserving its authenticity and adapting it to contemporary academic and technological contexts.

Keywords: Indian Knowledge System, Higher Education, NEP 2020, Curriculum Development, Educational Reform, Indigenous Knowledge, Blockchain in Education.

1. Introduction

Higher education today is under increasing pressure to produce graduates who are not only professionally competent but also ethically aware and socially responsible. In this context, the Indian Knowledge System (IKS) offers a meaningful framework that combines intellectual inquiry with moral and philosophical reflection. Developed over centuries, IKS encompasses disciplines such as astronomy, mathematics, medicine, architecture, arts, and governance, all connected through deeper spiritual and philosophical foundations (Mishra & Aithal, 2023) [22].

Integrating IKS into higher education is not about looking backward. It is a forward-looking effort to strengthen academic models that often separate knowledge into isolated compartments. Practices such as yoga and meditation in university programs demonstrate how traditional knowledge can support student well-being and holistic development. Historically, IKS has influenced regions beyond India, particularly Southeast Asia. Today, in an increasingly globalized world, there is renewed interest in drawing upon this heritage to address contemporary challenges. This includes exploring how traditional frameworks can inform emerging areas such as blockchain and virtual learning environments, while remaining mindful of cultural sensitivity (Garg, 2024) [11].

2. Literature Review

Recent research highlights the growing importance of IKS in higher education and sustainable development. Khan and Ahmed (2020) [15] describe IKS as a reservoir of traditional knowledge systems that promote environmental balance and self-reliance, values that align closely with sustainable education models.

Pramanick and Meta (2024) [27] and Kumari (2024) [18] connect IKS with the Sustainable Development Goals, particularly in areas such as public health and community development. They argue that traditional systems like Ayurveda and community-based practices can enrich university programs in health sciences and social work. Mahajan (2025) [20] further suggests that IKS can support innovation and self-reliance initiatives, especially within entrepreneurship education focused on eco-friendly production and circular economic models.

Policy discussions also reflect this shift. Mengal (2024) analyzes the National Education Policy (NEP) 2020 and notes its emphasis on incorporating indigenous knowledge into mainstream curricula, including economics and governance. However, Garg (2024) [11] and Khare and Kumar (2025) [16] point out that practical implementation remains uneven. Bridging traditional epistemology with modern scientific frameworks continues to pose challenges in classrooms. Timane and Wandhe (2024) [37] also highlight how concepts such as Vasudhaiva Kutumbakam can contribute to developing global citizenship among students.

3. Statement of the Problem

Despite its potential, IKS remains marginal in many higher education institutions. Standardized global curricula often sideline indigenous knowledge systems. As a result, valuable traditional practices, including agricultural and medicinal knowledge, risk gradual erosion (Brodt, 2001) [5].

Although NEP 2020 calls for integration, universities often struggle to translate policy into meaningful academic practice. Key obstacles include insufficient documentation of traditional knowledge, limited faculty expertise in IKS methodologies, and technical difficulties in combining classical systems with digital tools (Onwu & Mosimege, 2004) [25]. In many cases, IKS appears in curricula only at a superficial level, without deep engagement or institutional commitment.

4. Significance of the Study

Reintegrating IKS into higher education has both cultural and academic value. It reconnects students with philosophical traditions that emphasize ethical responsibility, social harmony, and purposeful living. Ideas such as dharma, karma, and moksha provide moral frameworks that can strengthen leadership and civic responsibility.

For policymakers and administrators, this study offers insight into how IKS can be implemented thoughtfully and effectively. A balanced integration can produce graduates who combine technical competence with cultural awareness and creative thinking grounded in indigenous wisdom.

5. Objectives of the Study

This study aims to examine the role of the Indian Knowledge System in strengthening higher education. Specifically, it seeks to:

1. Assess the current extent of IKS integration in university curricula.
2. Identify pedagogical, technological, and cultural challenges in implementation.
3. Explore future possibilities, particularly the intersection of IKS with digital technologies such as virtual environments and preservation tools.

6. Research Methodology

The study follows a descriptive research design based on secondary sources. Data were collected from government documents, including NEP 2020, academic journals, agency reports, and relevant books. These sources were analyzed to understand the applications, limitations, and future directions of IKS in higher education.

7. Discussion

7.1 IKS as a Transformative Pedagogical Framework

IKS challenges the compartmentalized structure of modern academia. Classical Indian epistemology views knowledge as a product of disciplined inquiry and cognitive development, a perspective that aligns with contemporary constructivist approaches (Turri, 2017) [38]. By adopting such a framework, universities can encourage students to connect multiple knowledge traditions while addressing global issues such as sustainability and climate change (Moreno-Cely et al., 2021) [23].

In management education, for example, IKS can shift attention from profit-centered models to broader value creation. This approach moves learners beyond data and information toward wisdom-based decision-making (Bratianu & Bejinaru, 2023) [4].

7.2 Curriculum Integration and NEP 2020

The NEP 2020 provides institutional backing for interdisciplinary learning and the inclusion of Indian intellectual traditions. It encourages the integration of classical texts, such as the Arthashastra, into subjects like economics and governance (Muniapan & Dass, 2008; Mengal, 2024) [24].

Emerging technologies open additional possibilities. Garg (2024) [11] notes initiatives to integrate IKS into blockchain and virtual platforms. For instance, recreating ancient architectural heritage in immersive digital environments can serve both cultural preservation and technical training. Such applications demonstrate how tradition and technology can reinforce each other when thoughtfully designed.

7.3 Implementation Challenges

Despite promising developments, several obstacles remain:

- Technical Complexity: Integrating traditional knowledge into digital systems requires interdisciplinary expertise that is currently limited.
- Authenticity Concerns: Simplifying complex traditions for academic credit risks reducing their depth and meaning.
- Institutional Resistance: Interdisciplinary collaboration often encounters bureaucratic and structural barriers.
- Resource Gaps: Leading institutions may have advanced digital infrastructure, while smaller colleges lack access to basic resources (Ajani et al., 2024) [1].
- Language Barriers: Declining proficiency in classical languages such as Sanskrit and Pali restricts access to primary texts.

7.4 Future Prospects

The future of IKS in higher education depends on sustained policy support and responsible use of technology.

- Digital Preservation: GIS mapping, 3D modeling, and digital archives can expand global access to cultural heritage (Liu et al., 2024; Skublewska-Paszkowska et al., 2022) [19, 33].
- Virtual Reality in Teaching: Immersive tools can help students experience traditional art forms, architecture, and wellness practices in new ways (Zhao & Kim, 2024; Sun et al., 2023) [40, 34].
- Ethnopharmacology Research: Collaborative research can scientifically evaluate traditional medicine while respecting its original context (Reyes-García, 2010) [28].
- International Partnerships: Establishing global research networks can position India as a leader in indigenous knowledge studies.

8. Findings

The study identifies several key insights:

- IKS offers a holistic framework that addresses the limitations of fragmented education systems.
- NEP 2020 provides strong policy support, but implementation requires institutional readiness.
- Integrating IKS with emerging technologies presents promising opportunities, provided faculty development is prioritized.
- Revitalizing classical languages is essential for deeper scholarship.
- IKS has strong potential to contribute to sustainability, healthcare, and management innovation.

9. Conclusion

Strengthening higher education through the Indian Knowledge System does not mean replacing modern science with tradition. Instead, it calls for a thoughtful synthesis that draws on the strengths of both. While challenges related to infrastructure, expertise, and authenticity remain, the long-term benefits are substantial.

Meaningful integration requires curriculum redesign, faculty training, digital investment, and collaborative engagement across disciplines. If implemented carefully, IKS can help universities cultivate graduates who are technically skilled, ethically grounded, and culturally aware. In this balance between heritage and innovation lies the future direction of Indian higher education.

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