Preserving and Integrating India's Indigenous Knowledge Systems: A Critical Analysis of Policy, Epistemology, and Educational Practice

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Abstract
India's indigenous knowledge systems (IKS) constitute a diverse and historically layered body of epistemologies embedded in local practices, oral traditions, artisanal expertise, and classical textual traditions. While the National Education Policy (NEP) 2020 has renewed institutional interest in integrating IKS within mainstream education and research, the academic discourse often lacks critical engagement with questions of epistemic legitimacy, methodological challenges, and socio-cultural inclusivity. This article argues that the preservation and promotion of IKS require a balanced framework—one that combines cultural revitalization with analytical scrutiny, equitable knowledge politics, and robust institutional mechanisms. Drawing upon decolonial scholarship, sociological perspectives on knowledge hierarchies, and recent policy directives, the study examines (a) the contemporary relevance of IKS, (b) the opportunities and limitations of current policy interventions, and (c) the conditions necessary for building a sustainable IKS ecosystem. Rather than offering a descriptive enumeration of schemes, the paper advances a conceptual and analytical model for integrating IKS into education, research, and heritage conservation.

Keywords: indigenous knowledge systems, NEP 2020, decoloniality, knowledge politics, higher education, cultural heritage

Introduction

The resurgence of interest in India's Indigenous Knowledge Systems marks a significant shift in the country's intellectual and educational landscape. Traditionally embedded in textual traditions such as the Vedas, Upanishads, regional literatures, as well as in community-based practices, crafts, environmental knowledge, and healing systems, IKS represents a complex constellation of epistemic traditions. Yet, despite its civilizational depth, IKS has historically been marginalised due to colonial knowledge hierarchies (Nandy, 1983, p. 15), institutional neglect, and privileging of Western scientific paradigms.

Policy frameworks—especially the National Education Policy (Government of India, 2020)—have sought to restore IKS within mainstream education, research, and cultural policy. However, a conceptual gap persists between policy enthusiasm and academic understanding. Much of the current discourse frames IKS primarily as cultural heritage or as an instrument for national pride, rather than as a living epistemological system that must stand up to scholarly debate, methodological rigour, and pluralistic inclusivity.

The article suggests that substantive preservation and promotion of IKS demand acknowledgment of indigenous research perspectives (Smith, 1999, p. 24), awareness of decolonial epistemic shifts (Mignolo, 2011, p. 43), and a justice-oriented approach to knowledge (Santos, 2014, p. 12) :

1. A clear epistemic positioning—What counts as "knowledge" in IKS?
2. A critical understanding of challenges—caste exclusion, linguistic barriers, regional hierarchies, and the risk of romanticising tradition.
3. A framework that bridges traditional knowledge and modern research methodologies.
4. Institutional mechanisms that ensure access, quality, and equitable participation.

Accordingly, this article develops a broad analytical structure for incorporating IKS into India's educational and research systems, moving beyond descriptive policy enumeration to a model grounded in contemporary scholarship.

Conceptual Framework: What Constitutes Indigenous Knowledge in India?

Indigenous Knowledge Systems in India encompass classical knowledge traditions, ecological practices, oral narratives, artisanal skills, performing arts, and regional epistemologies. Scholars highlight the multiplicity of these knowledge strands. Kapoor (2010, p. 4) emphasizes the importance of classical śāstra-based traditions. Chattopadhyaya (1977, p. 33) explores historical epistemologies and materialist interpretations. Nandy (1983, p. 52) examines the sociological structures that shaped traditional transmission of knowledge. Mignolo (2011, p. 67) identifies the disruptions caused by colonial epistemologies. Smith (1999, p. 98) discusses indigenous reassertion through decolonizing methodologies, while Santos (2014, p. 74) stresses the importance of epistemic plurality in reconstructing IKS narratives. These diverse

perspectives prevent IKS from being treated as a monolithic category and instead highlight its dynamic, evolving nature.

Indigenous Knowledge Systems in India represent a diverse and dynamic body of understanding that integrates multiple intellectual traditions. These include classical streams of knowledge such as śāstraic texts, Ayurveda, linguistic scholarship, and astronomical studies. Alongside these, there exist rich community-based and tribal knowledge practices rooted in ecological wisdom, oral traditions, and indigenous crafts. The system also embraces embodied and performative knowledge expressed through music, dance, and skilled craftsmanship. Moreover, it reflects region-specific ways of knowing that have evolved in response to India's vast linguistic and cultural diversity.

Scholars such as Kapil Kapoor, Ashis Nandy, Walter Mignolo, Linda Tuhiwai Smith, and Boaventura de Sousa Santos argue that indigenous epistemologies should not be dismissed as remnants of the past; rather, they constitute dynamic, context-specific systems of knowledge. Any meaningful conceptualisation of Indigenous Knowledge Systems (IKS) must therefore acknowledge the coexistence of multiple traditions, the social structures that have historically governed their transmission, and the profound disruptions caused by colonial interventions. At the same time, it should recognise the importance of reinterpreting these knowledge systems in contemporary contexts. Such an approach provides a necessary theoretical grounding, preventing IKS from being reduced to a uniform or static cultural entity.

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Rationale and Problem Statement

The urgent need to preserve and promote IKS arises from three intersecting concerns:

Epistemic Marginalisation: Colonial education systems systematically displaced indigenous epistemologies, causing fragmentation and disrupting intergenerational knowledge transmission (Nandy, 1983, p. 21).

Contemporary Relevance: IKS continues to offer significant insights into sustainability, ecology, linguistics, psychology, agriculture, community health, and Environmental resilience. These contributions are widely recognized in global South scholarship (Santos, 2014, p. 95; Smith, 1999, p. 112).

Policy–Practice Gap: Despite ambitious proposals under the National Education Policy (Government of India, 2020), numerous challenges persist, including limited institutional

capacity, insufficient faculty preparedness, lack of methodological frameworks for IKS-based research, and symbolic representation of tribal knowledge systems. UGC guidelines highlight gaps in curriculum implementation (UGC, 2023, p. 6), while AICTE reports indicate inadequate research infrastructure for IKS scholarship (AICTE, 2020–2024, p. 12).

Thus, the central problem addressed by this paper is:

How can India develop a critical, equitable, and institutionally sustainable a model for incorporating Indigenous Knowledge Systems into contemporary educational and research structures*?*

Literature Review

Indigenous research methodologies rooted in community knowledge (Smith, 1999, pp. 1–30), decolonial theory (Mignolo, 2011, pp. 1–40), and epistemic justice frameworks (Santos, 2014, pp. 1–25) form the foundation of global debates on knowledge plurality. Indian scholarship further expands understanding of linguistic, philosophical, and epistemic histories (Kapoor, 2010, pp. 10–35; Chattopadhyaya, 1977, pp. 20–55; Nandy, 1983, pp. 30–60). However, the literature also identifies significant gaps: limited empirical studies, insufficient dialogue between classical and oral knowledge systems, and the absence of methodological frameworks to validate IKS within mainstream academia.

The emerging literature on IKS reflects two main strands:

(1) Decolonial and indigenous epistemologies, which argue for the recovery of marginalised knowledge traditions (Smith 1999; Mignolo 2011; Santos 2014).

(2) Indian scholarship on knowledge traditions, tracing epistemic, linguistic, and philosophical histories (Kapil Kapoor; Debiprasad Chattopadhyay; Ashis Nandy).

However, significant gaps remain:

- limited empirical research on actual institutional implementation
- insufficient dialogue between classical textual traditions and oral/tribal knowledge
- lack of methodological frameworks for validating IKS within modern research paradigms
- little engagement with equity and access issues

This paper seeks to fill these gaps by offering an integrated analytical framework.

Policy Analysis: Contemporary Institutional Frameworks for IKS

Government policies in India have positioned Indigenous Knowledge Systems at the forefront of educational reforms. NEP 2020 acknowledges the value of integrating traditional Indian epistemologies with modern knowledge systems. Yet the institutional strategies for implementation require close scrutiny.

NEP 2020 and Its Vision

The National Education Policy (NEP) 2020 foregrounds Indigenous Knowledge Systems (IKS) as a vital component of multidisciplinary education (Government of India, 2020). It advocates the incorporation of classical and indigenous knowledge traditions into academic curricula, alongside the promotion of Indian languages as key mediums of knowledge transmission. The policy further emphasises the creation of research ecosystems dedicated to IKS, including the establishment of specialised cells and centres within educational institutions. Additionally, it proposes the allocation of curricular credits for courses related to IKS, thereby institutionalising their academic relevance. Collectively, these measures resonate with broader decolonial efforts aimed at expanding and diversifying the epistemic foundations of contemporary education.

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UGC and AICTE Guidelines

Guidelines issued by the UGC (2023, p. 3) and AICTE (2020–2024, p. 5) place strong emphasis on the curricular integration of Indigenous Knowledge Systems (IKS), along with structured credit allocation and faculty capacity-building. These frameworks recommend that institutions dedicate approximately 6% of total programme credits to IKS-related courses, while also creating avenues for electives and minor specialisations in this area. In addition, they highlight the importance of faculty development through orientation and refresher programmes to support effective teaching. However, the mere presence of policy guidelines does not ensure meaningful implementation; it requires adequately trained educators, access to rigorously developed and peer-reviewed teaching resources, and a broader level of institutional preparedness.

Institutional Mechanisms: IKS Division and Centres

The AICTE Indigenous Knowledge Systems (IKS) Division plays a central role in facilitating the documentation, coordination, and promotion of IKS-related initiatives (AICTE,

2020–2024, p. 10). Operating under the Ministry of Education, it undertakes activities such as research coordination, formation of expert groups, organisation of hackathons and innovation challenges, provision of internships, and efforts toward documentation and digitisation of knowledge resources. While these initiatives contribute to building a supportive institutional framework, their current orientation appears to be more administrative than deeply academic. In the absence of sustained scholarly engagement, rigorous peer review, and strong theoretical foundations, there is a risk that such efforts may remain largely descriptive, rather than evolving into analytically robust and research-driven knowledge systems.

Digital Platforms and Open Learning

Digital platforms such as SWAYAM and NPTEL have significantly expanded access to Indigenous Knowledge Systems (IKS), enabling wider dissemination among diverse learner communities (Government of India, 2020). By hosting IKS-focused courses, these platforms contribute to the democratisation of knowledge. However, this expansion also raises critical concerns regarding quality assurance, the credibility and accountability of academic authorship, and the accurate representation of indigenous perspectives. Therefore, while digital initiatives enhance outreach, their development must be guided by community participation and sensitivity to indigenous contexts, rather than being driven solely by technocratic approaches.

Limitations of Policy Architecture

Despite its ambitious vision, the policy framework surrounding Indigenous Knowledge Systems (IKS) is marked by several structural limitations. Scholars have pointed to persistent concerns such as uneven representation, a disproportionate focus on Sanskritic traditions, regional imbalances, and the relative weakness of research ecosystems (Santos, 2014, p. 101; Nandy, 1983, p. 81). In practice, these challenges are reflected in disparities in institutional capacity across states, a shortage of adequately trained IKS scholars, and an overreliance on textual traditions at the expense of community-based and tribal knowledge systems. Additionally, there is a risk that diverse regional epistemologies may be subsumed under homogenising frameworks, while independent funding for critical and interdisciplinary research remains limited. Consequently, the enthusiasm embedded in policy initiatives must be complemented by sustained academic engagement and critical scholarly preparation.

Critical Discussion: Challenges, Tensions, and Opportunities

The revitalisation of IKS invites both promise and complexity. This section examines contradictory dynamics underlying contemporary efforts.

Epistemic Tensions and Knowledge Politics

Indigenous Knowledge Systems (IKS) in India are marked by significant epistemic tensions and underlying knowledge politics. Internal hierarchies often privilege classical Sanskritic textual traditions, while marginalising Dalit, Adivasi, folk, and orally transmitted epistemologies (Nandy, 1983, p. 75; Santos, 2014, p. 120). As a result, forms of knowledge such as Adivasi ecological practices, Dalit oral traditions, and regional vernacular epistemologies frequently remain at the periphery of institutional recognition. Rather than fostering epistemic plurality, such dynamics risk reproducing historically entrenched inequalities within the knowledge system itself.

Another critical concern lies in the tendency to romanticise Indigenous Knowledge Systems. Policy discourses often present Indian traditions as timeless and continuous, overlooking the complexities of historical change, contestation, and disruption (Smith, 1999, p. 146; Mignolo, 2011, p. 132). This uncritical glorification can obscure internal diversities, marginalise less dominant knowledge communities, and constrain the scope for critical inquiry. Consequently, IKS risks being reduced to a static cultural heritage rather than being recognised as a dynamic and evolving epistemological framework. Meaningful engagement therefore requires not only preservation but also critical reinterpretation.

Methodological challenges further complicate the integration of IKS into formal academic frameworks. Many indigenous traditions rely on embodied, performative, and orally transmitted modes of knowledge, which do not easily align with conventional Western research paradigms (Smith, 1999, p. 55; Kapoor, 2010, p. 22). Effective scholarly engagement thus demands ethnographic sensitivity, interdisciplinary collaboration, linguistic competence, and community-led documentation practices. Without such approaches, attempts to assimilate IKS into dominant academic formats may lead to distortion, fragmentation, or loss of contextual meaning, thereby undermining the integrity of these knowledge systems.

Institutional and Pedagogical Bottlenecks

Faculty limitations, weak research infrastructure, and lack of peer-reviewed scholarship hinder progress (UGC, 2023, p. 11; AICTE, 2020–2024, p. 17).

Insufficient Faculty Preparation

A significant challenge in the implementation of Indigenous Knowledge Systems (IKS) lies in the limited preparedness of faculty members. Many educators lack adequate training in IKS-specific methodologies, as well as the linguistic competence required to engage with classical texts or regionally grounded knowledge sources. Furthermore, there is often insufficient familiarity with decolonial and indigenous theoretical frameworks that are essential for critical engagement with IKS. Consequently, the incorporation of IKS in classroom settings frequently remains superficial, with teaching approaches tending toward descriptive overviews rather than deeper analytical or interpretive exploration.

Limited Research Ecosystem

The development of a robust research ecosystem for Indigenous Knowledge Systems (IKS) remains significantly constrained. There is a notable scarcity of peer-reviewed journals dedicated specifically to IKS, alongside a limited number of doctoral programmes focusing on indigenous epistemologies. Additionally, the absence of well-developed and widely accepted theoretical frameworks further restricts the depth and scope of scholarly inquiry in this field. As a result, research engagement often becomes reliant on policy-driven platforms and institutional repositories rather than being anchored in sustained, critical academic scholarship.

Social Justice and Inclusivity Concerns

Concerns of social justice and inclusivity remain central to the equitable revitalisation of Indigenous Knowledge Systems (IKS). Scholars emphasise that meaningful engagement must ensure the inclusion and active participation of knowledge-bearing communities, along with recognition of their intellectual contributions and rights (Santos, 2014, p. 141; Nandy, 1983, p. 95). In this context, policy frameworks need to address issues such as the adequate representation of Adivasi, Dalit, and minority knowledge holders, fair remuneration and intellectual ownership for community experts, and the gendered dynamics that shape the transmission of traditional knowledge. Attention must also be given to safeguarding intellectual

property rights. Without such measures, efforts to institutionalise IKS risk reproducing patterns of elite capture rather than fostering genuinely inclusive knowledge systems.

Opportunities for Revitalisation

Despite existing challenges, Indigenous Knowledge Systems (IKS) offer significant potential for revitalisation across diverse domains. They contribute to sustainable development through ecological knowledge and traditional practices in agriculture and water management, while also supporting cultural preservation through performing arts and oral traditions. In the field of health, systems such as Ayurveda, Yoga, and folk medicine provide valuable complementary approaches. Additionally, IKS enable economic empowerment through craft-based livelihoods and related industries, and promote educational innovation through multidisciplinary and experiential learning. With balanced and critical engagement, IKS can coexist with modern scientific knowledge, enriching both (Chattopadhyaya, 1977, p. 66).

Case Illustrations

Rejuvenating Historical Water Conservation Approaches in Rajasthan: A Model of Indigenous Ecological Intelligence: Historical water-harvesting structures such as johads, kunds, baoris, and tankas demonstrate indigenous ecological intelligence (NITI Aayog, 2016, p. 42; Chattopadhyaya, 1977, p. 70).

Traditional water-harvesting systems in Rajasthan—such as *johads* (earthen embankments), *baoris* (stepwells), *kunds*, and *tanka* systems—represent one of the most sophisticated indigenous hydrological knowledge traditions in South Asia. Long before the introduction of modern hydrological engineering, local communities relied on these structures to capture monsoon runoff, recharge groundwater, and maintain ecological balance in an otherwise water-scarce region.

Contemporary studies indicate that community-led revitalisation of Indigenous Knowledge Systems (IKS), such as initiatives observed in the Alwar district, has yielded tangible socio-ecological benefits. These include notable improvements in groundwater levels, the restoration of local flora and fauna, enhanced agricultural productivity, a decline in distress-driven migration, and greater stabilisation of local microclimatic conditions.

Hydrologists now note that the indigenous logic behind *johads*—their placement in relation to the slope, soil type, watershed position, and rainfall cycle—reflects generations of

empirical environmental learning. Unlike large-scale modern water projects, these systems are decentralised, low-cost, community-governed, and ecologically harmonious.

This illustration demonstrates what a sustainable, IKS-driven model can achieve when indigenous ecological intelligence**,** collective stewardship, and modern policy alignment come together. It also reveals how reclaiming indigenous hydrological knowledge can offer climate-resilient solutions for other drought-prone regions in India and beyond.

Tribal Ecological Knowledge in North-East India: Rethinking Sustainability Through Community-Led Agriculture

Jhum cultivation, often misunderstood, is a sophisticated ecological practice when implemented traditionally (NITI Aayog, 2016, p. 53; Smith, 1999, p. 133).

The tribal communities of North-East India possess a robust ecological tradition grounded in centuries of observation, experimentation, and intergenerational knowledge transmission. Their agricultural ecosystem—particularly *jhum* (shifting cultivation)—has often been misunderstood in policy discourse as environmentally harmful. However, recent ethnographic, ecological, and agricultural studies reveal a more nuanced picture.

When practised in accordance with traditional norms—such as regulated fallow cycles, mixed cropping, selective burning, and rotational land use—jhum cultivation operates as an adaptive and ecologically sustainable system. It sustains soil fertility through natural nutrient recycling, promotes biodiversity via multi-cropping patterns, regulates pests without chemical inputs, and supports social and cultural cohesion, while remaining well-suited to high-rainfall and hilly terrains. Recent collaborative studies involving agricultural institutions and local communities in regions such as Mizoram and Nagaland demonstrate that integrating jhum practices with contemporary agro-ecological approaches can enhance productivity, reduce soil degradation, strengthen climate resilience, and encourage participatory environmental governance. This example highlights the importance of combining indigenous knowledge with scientific frameworks, showing that sustainable agricultural strategies in fragile ecosystems must be rooted in local practices and community-led decision-making, thereby underscoring the practical relevance of IKS in addressing broader environmental challenges.

Conclusion

A sustainable framework for India's Indigenous Knowledge Systems (IKS) necessitates epistemic plurality, interdisciplinary rigour, community participation, and sustained critical

engagement. Decolonial scholars have long emphasised the need for justice-oriented epistemological reconstruction, foregrounding the recovery and validation of marginalised knowledge traditions. In this regard, policy initiatives such as the National Education Policy (NEP) 2020, along with UGC and AICTE guidelines, provide important institutional pathways for integrating IKS into contemporary educational and research frameworks.

However, the preservation and promotion of IKS must extend beyond descriptive policy articulation toward a critically grounded and pluralistic academic approach. Despite growing institutional recognition, implementation remains uneven and conceptually fragile. Addressing this requires a multidimensional strategy: recognition of diverse knowledge traditions across classical, tribal, vernacular, and artisanal domains; methodological robustness combining textual scholarship with ethnographic and interdisciplinary inquiry; and the democratisation of knowledge production through meaningful community participation and equitable representation.

Equally crucial is institutional preparedness, including faculty training, dedicated research centres, and the expansion of peer-reviewed scholarship. At the same time, IKS must be approached through critical inquiry rather than ideological romanticisation, ensuring intellectual integrity and contemporary relevance.

Ultimately, for IKS to contribute meaningfully to India's educational, cultural, and sustainable development agendas, it must be cultivated as a living, adaptive, and critically engaged epistemic tradition. Only through such an approach can it evolve from policy aspiration to academic legitimacy and broader societal relevance.

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