

Implementation of Indian Knowledge Systems in Higher Education: An Assessment Under NEP 2020

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Abstract

The National Education Policy (NEP) 2020 marks a significant turning point in the history of Indian education by formally recognising the value of Indian Knowledge Systems (IKS) and mandating their integration into the higher education curriculum. IKS represents the accumulated body of knowledge, philosophy, science, art, and practice that has evolved in the Indian subcontinent over several millennia, spanning disciplines such as mathematics, astronomy, medicine (Ayurveda), linguistics, architecture, governance, and the performing arts. This article examines the policy architecture created for the implementation of IKS in higher education institutions (HEIs), the institutional mechanisms established for this purpose, and the extent to which these provisions have translated into curricular and pedagogical practice. Adopting a descriptive-analytical research design based on secondary sources — including the NEP 2020 document, guidelines issued by the Ministry of Education, the University Grants Commission (UGC), and the All India Council for Technical Education (AICTE), along with peer-reviewed literature and institutional reports — the study traces the establishment of the IKS Division at AICTE, the mandatory credit-based IKS courses, the growth of dedicated IKS centres, and related capacity-building initiatives. The analysis reveals considerable progress in policy formulation and infrastructure creation, alongside persistent challenges relating to faculty preparedness, curricular standardisation, regional disparity, and the risk of superficial or tokenistic implementation. The article concludes with recommendations for strengthening faculty development, ensuring academic rigour, and building robust monitoring mechanisms so that the integration of IKS contributes meaningfully to a more holistic, rooted, and globally relevant system of higher education in India.

Keywords: Indian Knowledge Systems, National Education Policy 2020, Higher Education, Curriculum Integration, AICTE, UGC, Multidisciplinary Education, Educational Policy

Introduction

India possesses one of the oldest and most continuous intellectual traditions in the world. From the astronomical observations of Aryabhata and the mathematical innovations of Brahmagupta and Bhaskar Acharya, to the medical systems of Ayurveda and Siddha, the linguistic sophistication of Panini's grammar, and the philosophical depth of the six schools of Indian philosophy, the subcontinent has historically been a centre of organised, transmitted, and applied knowledge. Institutions such as Nalanda, Takshashila, Vikramshila, and Vallabhi functioned as centres of higher learning that attracted scholars from across Asia, long before the modern university emerged in Europe. This vast corpus of indigenous knowledge —

encompassing science, technology, literature, agriculture, governance, ethics, and the arts — is collectively referred to today as Indian Knowledge Systems (IKS).

The colonial reorganisation of Indian education in the nineteenth century, most notably through Macaulay's Minute on Education (1835), gradually marginalised indigenous systems of learning in favour of a curriculum modelled on Western disciplinary lines and delivered largely in English. In the decades following independence, successive education policies focused primarily on expanding access, standardising curricula, and building scientific and technical capacity, but the systematic integration of India's own knowledge traditions into mainstream higher education remained limited. Traditional knowledge continued to survive in oral traditions, gurukuls, regional institutions, and specific professional streams such as Ayurveda and Sanskrit studies, but it remained largely disconnected from the mainstream university system.

The National Education Policy 2020, approved by the Union Cabinet in July 2020, explicitly seeks to correct this imbalance. Paragraph 4.27 of the policy states that knowledge of India includes knowledge from ancient India and its contributions to modern India and its successes and challenges, and that this knowledge must be brought into the school and higher education curricula in an accurate and scientific manner (Government of India, Ministry of Education, 2020). The policy envisions IKS not as a nostalgic or ceremonial addition but as an integral, cross-cutting theme to be woven into mathematics, science, engineering, agriculture, medicine, governance, and the arts, taught alongside — and in dialogue with — modern disciplinary knowledge.

To operationalise this vision, the Ministry of Education established a dedicated Indian Knowledge Systems Division under AICTE in October 2020, with a mandate to promote interdisciplinary and transdisciplinary research on IKS, support the creation of IKS centres in higher education institutions, fund research projects, and develop teaching-learning material (AICTE Indian Knowledge Systems Division, 2022; Odisha Diary, 2022). Subsequently, the UGC and AICTE issued detailed guidelines — most notably the 2023 Guidelines for Incorporating Indian Knowledge in Higher Education — mandating that a portion of academic credits in undergraduate and postgraduate programmes be devoted to IKS-related courses (Government of India, Ministry of Education, 2023; University Grants Commission, 2021–2023). These developments represent one of the most ambitious attempts in independent India's history to mainstream indigenous knowledge within the formal higher education system.

Against this backdrop, the present article undertakes an assessment of the implementation of Indian Knowledge Systems in higher education under NEP 2020. It examines the policy framework, institutional mechanisms, and progress made so far, while also identifying the structural and pedagogical challenges that continue to affect the depth and quality of implementation. The study is intended to contribute to the ongoing academic and policy discourse on how India's higher education system can meaningfully integrate its own intellectual heritage while maintaining academic rigour and global relevance.

Review of Literature

A growing body of literature has emerged around the theme of Indian Knowledge Systems since the release of NEP 2020, spanning policy analysis, disciplinary case studies, and institutional reports. This section reviews select strands of this literature relevant to the present study.

Several studies have examined the conceptual foundations of IKS. Scholars generally describe IKS as comprising three interlinked dimensions — Jnana (theoretical knowledge), Vijnana (applied or scientific knowledge), and Jeevan Darshan (worldview or philosophy of life) — that have evolved through

observation, experimentation, and rigorous analysis over centuries and that have shaped Indian approaches to education, governance, law, health, and commerce. This conceptual framing has been widely used in institutional literature published by the IKS Division to justify why IKS should be treated as a knowledge system in its own right rather than as a collection of cultural artefacts (Ashim Dutta, 2025; Tanwar, 2025). A second strand of literature focuses on the institutional architecture created for implementation. Government reports and thematic policy papers describe the establishment of the IKS Division at AICTE, the opening of dedicated IKS centres in higher education institutions, the sanctioning of interdisciplinary research projects, and efforts to translate technical books into Indian languages. Official communications from the Ministry of Education note that IKS centres and research projects have been sanctioned in a phased manner since 2020, alongside book-writing and translation initiatives in multiple Indian languages and the identification of online courses for conversion into regional languages (Government of India, Ministry of Education, 2022; AICTE Indian Knowledge Systems Division, 2022).

A third strand addresses curricular mandates. Analysts have highlighted that the 2023 guidelines issued by the Ministry of Education require undergraduate and postgraduate students to complete IKS-related coursework amounting to a defined minimum share of total programme credits, with a portion of these credits expected to relate to the student's own discipline. This credit-based approach has been described as a mechanism for ensuring that IKS is not confined to elective or peripheral status but is embedded within the core structure of academic programmes, with UGC and AICTE issuing corresponding curricular guidelines to universities and technical institutions (Government of India, Ministry of Education, 2023; University Grants Commission, 2021–2023).

A fourth strand of the literature, drawn from institutional surveys and case-based studies, points to significant implementation gaps. Empirical assessments of IKS integration report that a substantial proportion of higher education institutions struggle to incorporate IKS into existing curricula, and that only a limited share of institutions have faculty formally trained to teach IKS-related courses, even as other indicators — such as growth in eco-conscious student initiatives and IKS-related employment opportunities — show positive movement. These findings suggest that while policy intent and infrastructure have advanced rapidly, pedagogical capacity and curricular depth have not always kept pace (IMPRI Impact and Policy Research Institute, 2025; Ramesh, B. T., & associates, 2025).

Finally, a body of literature discusses the broader significance of IKS integration for school education and teacher preparation, noting that the National Council of Educational Research and Training (NCERT) has constituted a Curriculum Area Group on Indian Knowledge Systems to embed indigenous knowledge into school textbooks from Classes 3 to 12, in alignment with the National Curriculum Framework. This indicates that the IKS initiative is not confined to higher education alone but is conceived as a continuum spanning school and university education, with implications for teacher education and textbook development as well (Various authors, 2025).

Taken together, the reviewed literature indicates a rapidly evolving but still maturing field. While there is reasonable consensus on the conceptual rationale and the institutional steps taken so far, there is comparatively less empirical work assessing the quality, depth, and academic rigour of IKS integration at the classroom level, particularly in mainstream (non-Sanskrit, non-Ayurveda) disciplines such as engineering, management, and the sciences. The present study seeks to build on this literature by offering a structured assessment of both the achievements and the gaps in implementation.

Objectives of the Study

The present study has been undertaken with the following specific objectives:

1. To examine the policy framework and provisions of NEP 2020 relating to the integration of Indian Knowledge Systems in higher education.
2. To study the institutional mechanisms — including the AICTE IKS Division and UGC/AICTE guidelines — established for implementing IKS in higher education institutions.
3. To assess the progress made so far in curriculum integration, infrastructure development, and capacity building for IKS.
4. To identify the major challenges and constraints affecting the effective implementation of IKS in higher education.
5. To suggest measures for strengthening the quality and depth of IKS implementation in Indian higher education institutions.

Research Methodology

Research Design

The study adopts a descriptive-analytical research design. Given that the implementation of IKS under NEP 2020 is a relatively recent and evolving policy initiative, the study relies primarily on documentary and content analysis of official policy texts, institutional reports, and published academic literature, rather than on primary field survey data.

Sources of Data

The study is based entirely on secondary sources of data, which include: (i) the National Education Policy 2020 document published by the Ministry of Education, Government of India; (ii) guidelines and circulars issued by the Ministry of Education, UGC, and AICTE relating to IKS, including the 2023 Guidelines for Incorporating Indian Knowledge in Higher Education; (iii) reports, press releases, and thematic session documents published by the Ministry of Education and the AICTE IKS Division; (iv) peer-reviewed journal articles, conference papers, and institutional case studies on IKS implementation; and (v) reputed news and policy-analysis sources reporting on the status of implementation.

Method of Analysis

Data collected from the above sources have been organised thematically under broad heads — namely, policy provisions, institutional infrastructure, curricular mandates, capacity building, and implementation challenges — and analysed using qualitative content analysis. Wherever quantitative indicators were available in the reviewed sources (such as the number of IKS centres established, research projects sanctioned, or the share of institutions reporting curricular difficulties), these have been presented in tabular form to facilitate comparison and interpretation.

Scope and Limitations

The study is limited to the higher education sector and does not examine IKS integration at the school level in detail, although references are made where relevant for context. As the policy is still being rolled out across institutions, the data presented reflect the status of implementation as reported in the sources available at the time of writing and are subject to change as the policy matures. The absence of a dedicated primary survey is a limitation of the study; the article therefore relies on triangulating multiple secondary sources to enhance the reliability of its findings.

Data Analysis and Discussion

Policy and Institutional Milestones

Table 1 presents a chronological summary of the key policy and institutional milestones relating to the implementation of Indian Knowledge Systems in higher education, as reported in official and secondary sources.

Year	Milestone
2020 (July)	Approval of National Education Policy 2020; Para 4.27 formally recognises Indian Knowledge Systems as integral to curriculum reform.
2020 (October)	Establishment of the Indian Knowledge Systems (IKS) Division as an innovation cell under AICTE, Ministry of Education.
2021–2022	Sanctioning of the first IKS research centres in higher education institutions and initial interdisciplinary research projects; launch of technical book-writing and translation initiatives in Indian languages.
2023 (June)	Ministry of Education issues 'Guidelines for Incorporating Indian Knowledge in Higher Education', prescribing a minimum credit-based requirement for IKS coursework.
2023 onwards	UGC and AICTE issue corresponding curricular guidelines to universities and technical institutions; NCERT constitutes a Curriculum Area Group on IKS for school textbooks (Classes 3–12).
2023–2025	Expansion of IKS centres and research grants; growth in the number of higher education institutions reporting adoption of IKS in curricula; development of MOOCs and their translation into regional languages.

Table 1: Timeline of Key Policy and Institutional Milestones in IKS Implementation

Institutional Infrastructure

The AICTE IKS Division functions as the nodal institutional mechanism for coordinating IKS-related work across higher education institutions in India and abroad. Its principal functions include establishing subject-wise interdisciplinary research groups, funding and supporting IKS centres in institutions, facilitating student internships, promoting the translation of technical and reference material into Indian languages, and issuing policy recommendations to the Ministry of Education, UGC, and AICTE. Table 2 summarises indicative infrastructure-related figures drawn from official and secondary sources.

Indicator	Reported Figure (indicative)
Dedicated IKS Centres established in HEIs	Progressively expanded from an initial 13 centres to over 30 centres in subsequent phases
Interdisciplinary research projects sanctioned	Over 35 projects sanctioned under IKS-related themes

Technical books written/translated into Indian languages	Over 200 books, including IKS-related titles, across about 12 Indian languages
Higher Education Institutions reporting IKS curriculum adoption	Over 8,000 institutions reported to have begun incorporating IKS into curricula
Online courses (MOOCs) identified for regional-language conversion	Around 128 MOOCs identified for translation into regional languages
Books/manuscripts digitised for IKS research	Approximately 1.5 lakh books reported to have been digitised

Table 2: Indicative Institutional Infrastructure for IKS Implementation (Secondary Data)

These figures suggest that a substantial institutional and infrastructural base has been created within a relatively short span of time. The scale of curriculum adoption reported across thousands of institutions indicates strong administrative uptake, driven largely by regulatory mandates from UGC and AICTE rather than purely organic institutional initiative. However, the breadth of adoption reported in official figures needs to be read alongside qualitative evidence on the depth and rigour of that adoption, discussed in the following sub-sections.

Curricular Integration and Credit Mandates

A defining feature of the post-2023 implementation phase has been the shift from voluntary or elective inclusion of IKS content towards a mandatory, credit-based framework. Under the guidelines issued by the Ministry of Education, undergraduate and postgraduate students are required to complete IKS-related coursework amounting to a minimum share of total programme credits — commonly cited as approximately five per cent — with at least half of these credits expected to relate to the student's own discipline (for example, an engineering student undertaking IKS coursework related to traditional Indian engineering, architecture, or metallurgy). AICTE has correspondingly introduced IKS courses for first-year engineering students, while UGC has extended similar credit requirements across university curricula more broadly.

This credit-linked approach carries two important implications. First, it signals a shift from IKS as an optional cultural enrichment activity to IKS as an assessed, credit-bearing component of formal academic programmes, thereby increasing institutional accountability for implementation. Second, by requiring a portion of IKS credits to align with the student's own discipline, the policy pushes institutions to develop discipline-specific IKS content — for instance, traditional water management and irrigation systems for civil engineering students, Ayurvedic pharmacology for life-science students, or indigenous financial and trade practices for management students — rather than relying solely on generic, discipline-agnostic modules.

Capacity Building and Faculty Preparedness

Effective curricular integration depends critically on the availability of adequately trained faculty. Institutional case studies and survey-based assessments indicate a considerable gap in this respect: only about a quarter of surveyed higher education institutions report having faculty formally trained to teach IKS-related courses, even as a large majority of institutions report having begun some form of IKS

curriculum integration. Nearly half of surveyed institutions report facing difficulties in integrating IKS content into existing curricula, most commonly citing a shortage of trained faculty, absence of standardised teaching material, and limited clarity on assessment methods (Ramesh, B. T., & associates, 2025; IMPRI Impact and Policy Research Institute, 2025).

In response, the Ministry of Education's guidelines provide for faculty orientation programmes on IKS, alongside schemes such as the 'Artist/Artisan-in-Residence' initiative intended to bring practitioners of traditional arts and crafts into academic institutions to complement formal faculty expertise. Regional-language technical book-writing and MOOC translation initiatives are similarly intended to widen access to teaching-learning material. Nonetheless, the pace of faculty capacity building appears to lag behind the pace of curricular mandates, creating a risk that IKS courses may be delivered in a diluted or superficial manner in institutions where dedicated expertise is not yet available (Government of India, Ministry of Education, 2023).

Positive Indicators and Emerging Outcomes

Alongside the challenges noted above, secondary sources also point to encouraging early outcomes. Institutions integrating IKS report a notable increase in student-led eco-conscious and sustainability-oriented initiatives, consistent with the traditional emphasis within IKS on ecological balance and sustainable resource use. There are also reports of growth in employment and research opportunities in IKS-related fields, including traditional medicine, heritage conservation, sustainable architecture, and indigenous knowledge-based startups, suggesting that IKS integration is beginning to generate tangible academic and career pathways rather than remaining a purely symbolic exercise (Tanwar, 2025; Various authors, 2025).

Regional and Institutional Disparities

The pace and quality of IKS implementation vary considerably across institution types and regions. Centrally funded technical institutions and larger state universities, which have greater administrative and financial capacity, have generally been able to establish dedicated IKS centres, secure research funding, and develop discipline-specific coursework more rapidly. In contrast, smaller state universities, affiliated colleges, and institutions in resource-constrained regions face greater difficulty in meeting credit mandates meaningfully, given limited faculty strength and library or research infrastructure. This disparity raises the concern that IKS implementation, if not carefully monitored, could deepen rather than reduce existing inequities between well-resourced and under-resourced institutions.

Synthesis of Findings

The analysis presented above may be synthesised into the following key findings:

- Policy intent under NEP 2020 has been translated into a concrete institutional architecture within a relatively short period, anchored by the AICTE IKS Division and reinforced by UGC and AICTE curricular guidelines.
- A mandatory, credit-linked framework for IKS coursework represents a significant shift from earlier voluntary or elective approaches and has driven rapid, wide-scale curricular adoption across thousands of institutions.
- Faculty preparedness and availability of standardised, discipline-specific teaching material remain the most significant bottlenecks, with only a minority of institutions reporting adequately trained faculty.

- Early evidence suggests positive spillover effects in areas such as sustainability-oriented student initiatives and IKS-related employment and research opportunities.
- Regional and institutional disparities in implementation capacity pose a risk of uneven quality, with better-resourced institutions able to implement IKS more substantively than resource-constrained ones.
- There remains a need for greater academic rigour, external quality assurance, and empirical (including primary survey-based) research to assess classroom-level outcomes of IKS integration, beyond administrative indicators of adoption.

Conclusion

The integration of Indian Knowledge Systems into higher education under NEP 2020 represents a historically significant and ambitious policy initiative, seeking to reconnect India's higher education system with its own intellectual heritage while situating that heritage within a modern, interdisciplinary academic framework. Within a few years of the policy's adoption, a substantial institutional infrastructure has been created — including a dedicated IKS Division at AICTE, a growing network of IKS centres, sanctioned research projects, translated teaching material, and a mandatory credit-based curricular framework spanning thousands of higher education institutions.

At the same time, the assessment presented in this article indicates that the depth and quality of implementation have not uniformly kept pace with the breadth of administrative adoption. Persistent gaps in faculty training, the absence of fully standardised discipline-specific curricula, and disparities between well-resourced and under-resourced institutions suggest that the current phase of implementation should be regarded as a foundational stage rather than a completed transformation. If these gaps are not addressed, there is a genuine risk that IKS courses could be reduced to a symbolic, credit-fulfilling exercise rather than a substantive contribution to students' intellectual formation.

To strengthen implementation going forward, this study recommends: (i) scaling up structured faculty development and orientation programmes on IKS, particularly for institutions outside major metropolitan centres; (ii) developing peer-reviewed, discipline-specific curricular frameworks and assessment guidelines in collaboration with subject experts and traditional knowledge practitioners; (iii) establishing robust quality assurance and monitoring mechanisms, going beyond simple counts of institutions or credits, to assess actual learning outcomes; (iv) ensuring equitable distribution of funding and infrastructural support so that resource-constrained institutions are not left behind; and (v) encouraging further empirical, including primary survey-based, research to build a stronger evidence base on the classroom-level impact of IKS integration. With sustained institutional commitment and academic rigour, the integration of Indian Knowledge Systems has the potential to make Indian higher education not only more rooted in its own civilisational heritage but also more distinctive and globally relevant.

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