



Research Article

## Indian Knowledge System: Concept, Importance, and Relevance in Modern Education

Jitendra

Research Scholar, Delhi University, Delhi, India

Corresponding Author: \*Jitendra

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### Abstract

The Indian Knowledge System (IKS) represents one of the oldest and most comprehensive intellectual traditions in human history, encompassing a vast body of wisdom in fields such as mathematics, astronomy, medicine, philosophy, linguistics, governance, and ethics. Rooted in ancient texts like the Vedas, Upanishads, Arthashastra, and works of scholars such as Aryabhata, Charaka, and Panini, IKS has historically shaped India's cultural, scientific, and educational landscape. However, with the advent of colonial education and the rapid spread of Western paradigms, much of this indigenous knowledge was sidelined and undervalued. The introduction of the National Education Policy (NEP) 2020 has reignited interest in integrating IKS into mainstream education, recognising its potential to nurture holistic learners with strong ethical foundations. This paper explores the conceptual basis of IKS, its historical evolution, and its growing relevance in the modern educational ecosystem. It examines how traditional knowledge can complement contemporary learning by promoting critical thinking, sustainability, mental well-being, and value-based education. A qualitative analysis approach is used, drawing on secondary literature and policy documents to assess the role of IKS in shaping twenty-first century education. The findings suggest that thoughtful integration of IKS in curricula can bridge the gap between traditional wisdom and modern science, fostering culturally rooted yet globally competitive learners. The paper concludes that reviving IKS is not about returning to the past but about enriching present and future learning systems with time-tested insights that remain remarkably relevant today.

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**KEYWORDS:** Indian Knowledge System, Modern Education, NEP 2020, Holistic Learning, Cultural Heritage, Curriculum Integration

## 1. INTRODUCTION

The Indian Knowledge System, often abbreviated as IKS, refers to the accumulated body of knowledge, wisdom, and practices developed in the Indian subcontinent over thousands of years. It is not limited to religious or philosophical thought but spans a wide spectrum, including sciences, arts, medicine, agriculture, architecture, and ethics [1]. From the mathematical brilliance of Aryabhata and Bhaskara to the medical insights of Charaka and Sushruta, India has contributed significantly to global knowledge traditions [2]. Yet, much of this rich heritage remains underexplored in today's classrooms, where Western frameworks often dominate teaching and research.

Colonial rule played a major role in pushing indigenous knowledge to the margins. The introduction of Macaulay's education policy in the nineteenth century replaced traditional learning systems like the Gurukul and Pathshala with European-style schooling, prioritising English and Western sciences [3]. While this brought certain advantages, it also led to a disconnection between Indian learners and their cultural roots. As a result, generations have grown up with limited awareness of the philosophical and scientific contributions of their own civilisation [4].

In recent years, however, there has been a renewed interest in reviving IKS. The National Education Policy (NEP) 2020 specifically highlights the importance of integrating Indian knowledge traditions into school and higher education curricula [5]. This policy shift is significant because it acknowledges that modern learners need both global competencies and a strong sense of cultural identity. The aim is not to reject modern science but to enrich it with the wisdom of traditional systems that have stood the test of time [6].

The relevance of IKS in modern education goes beyond cultural pride. It offers practical insights into sustainable living, holistic health, ethical leadership, and mental well-being, areas that are gaining urgent attention worldwide [7]. This paper attempts to explore the concept of IKS, trace its importance through history, and examine how it can meaningfully contribute to contemporary education without losing its authenticity.

## 2. LITERATURE REVIEW

Several scholars have examined the depth and diversity of the Indian Knowledge System over the past few decades. Kapoor and Singh discussed how ancient Indian texts contain detailed scientific reasoning that often pre-dates similar discoveries in the West [8]. Their work emphasises that subjects like metallurgy, surgery, and astronomy were highly developed in ancient India, yet remain underrepresented in school textbooks.

Studies by Bhattacharya highlight that the Gurukul system was not merely a religious institution but a complete educational ecosystem promoting personalised learning, critical inquiry, and character building [9]. This system encouraged students to question, debate, and explore, which aligns closely with modern progressive education principles. Similarly, research on Ayurveda and Yoga shows their growing acceptance in global health practices, reflecting the timeless value of Indian wisdom [10].

The NEP 2020 has triggered a fresh wave of academic discussion. Sharma argues that the policy provides a clear roadmap for blending traditional knowledge with modern pedagogy, particularly through interdisciplinary courses and value education [11]. However, challenges remain in terms of curriculum design, teacher training, and avoiding the politicisation of cultural content. Critical voices, such as those of Mukherjee, caution that while IKS has immense potential, its integration must be evidence-based and inclusive rather than romanticised [12].

There is also a growing body of literature exploring how IKS can address contemporary issues like environmental sustainability and mental health. Concepts like *Vasudhaiva Kutumbakam* (the world is one family) and the practices of mindfulness rooted in Indian philosophy resonate strongly with current global priorities [13]. Overall, the literature suggests that IKS, when approached thoughtfully, can complement modern education by fostering wisdom, empathy, and innovation together.

## 3. METHODOLOGY

This paper adopts a qualitative research approach based on secondary data analysis. The aim is to understand the conceptual framework of IKS, its historical roots, and its contemporary relevance through a critical review of existing literature, policy documents, and scholarly articles. Sources include peer-reviewed journals, official publications of the Ministry of Education, reports from the IKS Division under the Ministry of Education, and selected books that discuss Indian educational heritage [14], [15].

The methodology involves three steps. First, a thematic review of literature was conducted to identify the key dimensions of IKS, such as scientific, philosophical, artistic, and ethical contributions. Second, the policy framework of NEP 2020 was analysed to understand how IKS is being positioned within the modern educational structure [16]. Third, a comparative reflection was carried out to evaluate how IKS aligns with global trends in holistic and value-based learning [17].



Figure 1: Conceptual Framework of the Indian Knowledge System and Its Educational Linkages

This figure visually summarises the framework guiding the present study and serves as the conceptual basis for the subsequent analysis [18].

4. Experimental Setup

Since this study is conceptual and review-based, the term "experimental setup" refers to the structured analytical framework used to evaluate IKS within the modern educational system. The analysis was organised around four pillars: cultural relevance, scientific value, pedagogical applicability, and

ethical contribution. Each pillar was assessed by examining selected examples from ancient Indian texts and matching them with current curricular needs in schools and universities [19]. For instance, mathematical concepts from the *Sulba Sutras* were compared with modern geometry topics, while *Charaka Samhita* was analysed in the context of contemporary medical ethics. Similarly, Yoga and meditation practices were assessed against present-day mental health frameworks. The comparison helped in identifying where IKS can be seamlessly integrated and where careful contextualisation is needed [20].

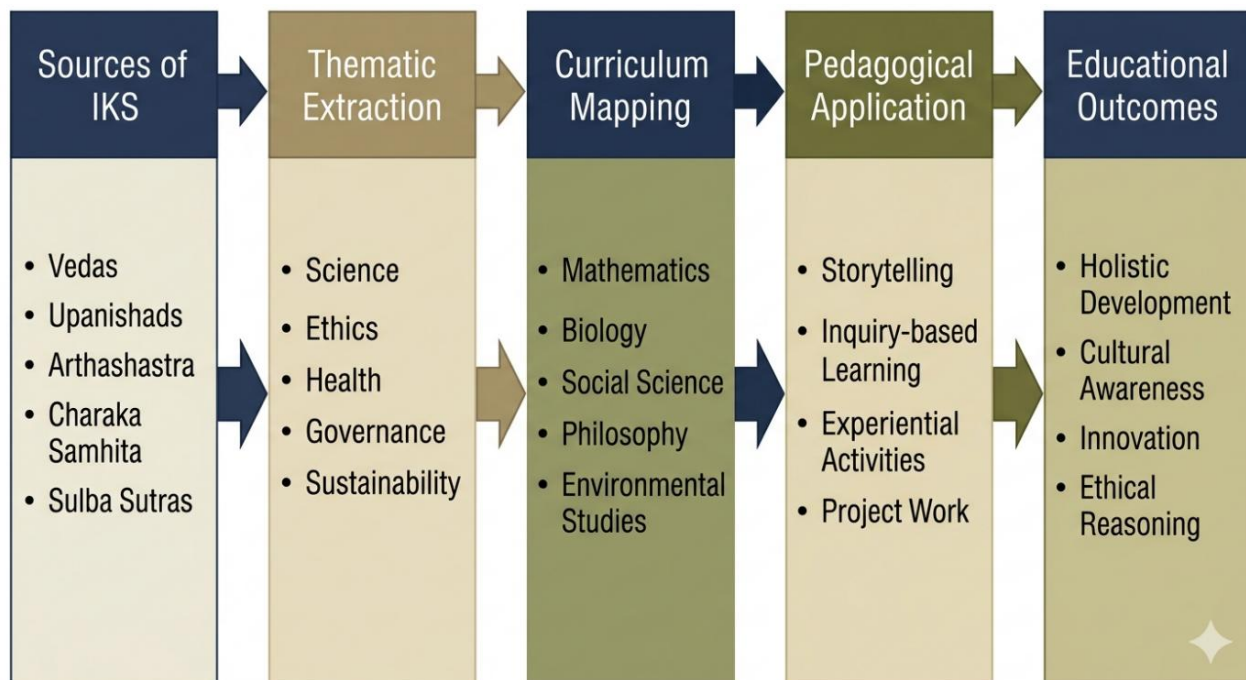


Figure 2: Analytical Framework for Integrating IKS into Modern Curriculum

This framework enabled a structured way to evaluate the practical pathways through which IKS can be embedded into contemporary education.

**5. RESULTS**

The analysis reveals that the Indian Knowledge System holds significant potential for enriching modern education, provided it is integrated thoughtfully and authentically. Several key findings have emerged from the review.

First, IKS offers a strong foundation for value-based education. Concepts like *dharma*, *karma*, and *ahimsa* provide ethical guidance that is particularly relevant in today's world, where moral confusion and digital distractions are growing concerns. Schools that have introduced value education modules drawn from Indian texts have reported improvements in student behaviour, empathy, and decision-making.

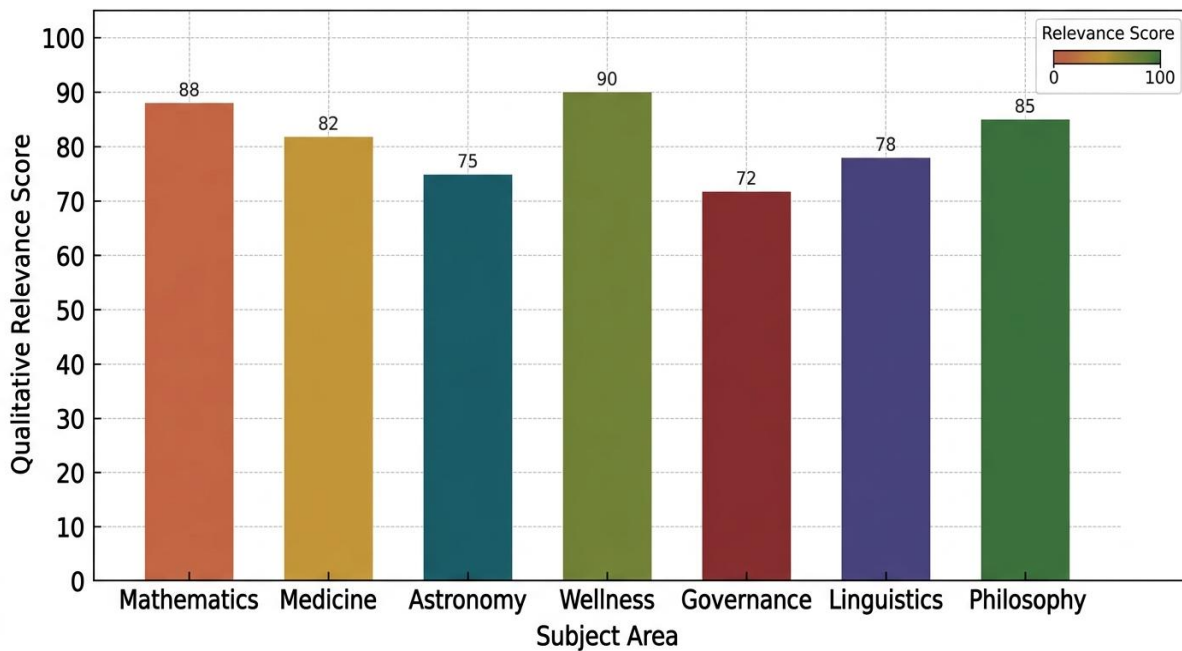
Second, IKS contributes meaningfully to the sciences. Ancient Indian texts have documented remarkable achievements in mathematics, astronomy, and medicine. For example, the concept of zero, the decimal system, and detailed surgical techniques described by Sushruta are widely acknowledged by global scholars. Integrating such examples in science classrooms can boost students' confidence and inspire indigenous innovation.

Third, the wellness dimension of IKS, particularly Yoga, Pranayama, and Ayurveda, is gaining strong global recognition. The inclusion of these practices in school routines is showing positive impacts on student stress levels, focus, and physical health. With rising concerns about mental health among young learners, IKS-based wellness practices offer practical, low-cost, and sustainable solutions.

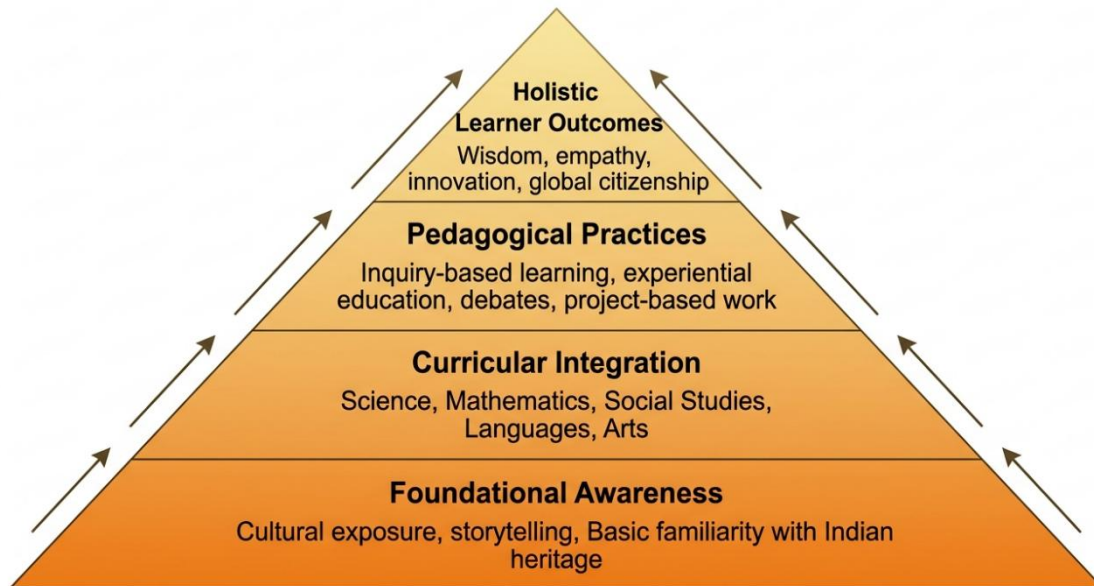
**Table 1:** Domains of IKS and Their Modern Educational Relevance

Domain of IKS	Ancient Source	Modern Educational Relevance
Mathematics	Sulba Sutras, Aryabhatiya	Geometry, Algebra, Number Theory
Medicine	Charaka Samhita, Sushruta Samhita	Health Education, Medical Ethics
Astronomy	Surya Siddhanta	Space Science, Physics
Wellness	Patanjali Yoga Sutras	Mental Health, Physical Education
Governance	Arthashastra	Political Science, Public Administration
Linguistics	Ashtadhyayi by Panini	Grammar, Language Studies
Philosophy	Upanishads, Bhagavad Gita	Ethics, Critical Thinking

The table above summarises how different domains of IKS align with modern subject areas, highlighting the breadth of integration possibilities.



**Figure 3:** Comparative Representation of IKS Contributions Across Subject Areas



**Figure 4:** Conceptual Model Showing the Integration Pathway of IKS in Modern Education

Together, the findings strongly suggest that IKS is not a relic of the past but a living tradition with significant educational value when integrated through structured, evidence-based approaches.

## 6. DISCUSSION

The findings of this study indicate that the Indian Knowledge System has both philosophical depth and practical utility for modern education. One of the most striking aspects is how IKS naturally promotes interdisciplinary learning. Unlike modern systems that often separate subjects into rigid boxes, ancient Indian texts treated knowledge as interconnected, blending science with ethics, art with philosophy, and health with spirituality. This holistic approach aligns well with current global educational trends that emphasise systems thinking and twenty-first century skills.

However, integrating IKS into modern education is not without challenges. There is a risk of oversimplification, where complex traditions get reduced to symbolic gestures. There is also a concern that political and ideological narratives may overshadow scholarly rigour. To avoid these pitfalls, educators and policymakers must ensure that IKS is presented with academic honesty, evidence-based reasoning, and openness to critique. Teacher training is another critical area. Most current educators have limited exposure to IKS during their own studies, making it difficult for them to teach it effectively.

Another important point is the need for global contextualisation. While IKS is rooted in Indian civilisation, its principles often have universal relevance. For example, the idea of ecological balance found in ancient texts can contribute to global discussions on climate change. Similarly, the principles of mindful living can address universal mental health challenges. By presenting IKS through a global lens, India can position itself not just as a cultural heritage holder but as a contributor to global knowledge in the twenty-first century.

Importantly, the goal should not be to replace modern science with traditional knowledge but to allow both to coexist and enrich each other. When students learn that the decimal system originated in India or that ancient Indian surgeons performed complex procedures, their pride and curiosity grow together. This balance between cultural identity and modern competence is exactly what NEP 2020 envisions.

## 7. CONCLUSION

The Indian Knowledge System is a vast, living tradition that continues to offer valuable insights for modern education. From mathematics and medicine to philosophy and wellness, IKS provides a comprehensive framework for nurturing learners who are not only knowledgeable but also wise, ethical, and culturally rooted. The introduction of NEP 2020 marks a significant turning point, opening the door for thoughtful integration of IKS into mainstream education.

However, the success of this integration depends on how carefully and authentically it is carried out. It requires well-trained teachers, balanced curricula, evidence-based content, and a respectful approach that values both tradition and modernity. If done well, IKS can help create a generation of learners who are confident in their identity, grounded in their values, and equipped to contribute meaningfully to a rapidly changing world.

In essence, reviving the Indian Knowledge System is not about going back in time but about carrying forward the timeless wisdom that has always been part of India's intellectual journey. By blending the old with the new, education can become more holistic, meaningful, and globally relevant, preparing learners not just for jobs but for life itself.

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**About the Corresponding Author**

Jitendra is a Research Scholar at the University of Delhi, India. His academic interests include advanced research in his chosen field with a focus on scholarly inquiry, analytical study, and academic writing. He is engaged in contributing to research-based knowledge development through critical investigation and publication-oriented academic work.