



International Journal of Recent Development in Engineering and Technology
Website: www.ijrdet.com (ISSN 2347-6435(Online) Volume 15, Issue 02, February 2026)

Relevance of the Indian Knowledge System in the Era of Globalization

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Abstract-- In the age of globalization, nations are constantly seeking knowledge systems that blend innovation with sustainability, technology with ethics, and development with inclusivity. The Indian Knowledge System (IKS), a vast body of indigenous wisdom developed over millennia, offers a holistic framework that remains profoundly relevant today. With contributions across disciplines—from astronomy and Ayurveda to governance and education—IKS provides a unique lens to address modern challenges. This article explores the contemporary relevance of IKS in relation to Education, trade and economy, space research, skill development, women empowerment, and healthy living. It also presents a review of relevant literature to highlight the evolution and modern adaptation of IKS, concluding with an analysis of its limitations and future potential. This article explores how IKS retains its relevance in today's globalized landscape, fostering not just intellectual advancement but also ethical, sustainable, and inclusive progress.

Keywords-- challenges, Globalization, Indian Knowledge systems, modern age, etc.,

I. INTRODUCTION

The Indian Knowledge System (IKS) is a vast, multidimensional heritage that has shaped not only the Indian subcontinent but also the broader world. Spanning thousands of years, it includes a broad spectrum of intellectual disciplines, such as philosophy, mathematics, astronomy, medicine, linguistics, and social sciences. These contributions have left an indelible mark on the development of human civilization. The Indian Knowledge System (IKS), encompassing centuries of indigenous wisdom in fields like education, science, technology, trade, and human values, holds significant relevance today. Rooted in the Vedas, Upanishads, Ayurveda, Arthashastra, and other classical texts, IKS presents a holistic worldview—emphasizing balance, sustainability, ethics, and universal well-being. India's contributions to science—mathematics (zero, decimal system), metallurgy (Iron Pillar of Delhi), astronomy (Aryabhata, Bhaskara), and medicine (Ayurveda, Sushruta)—showcase advanced empirical knowledge long before Western scientific revolutions.

II. LITERATURE REVIEW

Several scholars and institutions have explored the value of traditional Indian knowledge in the modern context: Kapila Vatsyayan (2003) emphasized the interdisciplinary nature of IKS, especially its integration of science, art, and spirituality.

- The National Education Policy (NEP) 2020 calls for the inclusion of IKS in modern curricula to foster cultural rootedness and creativity.
- Raja Ramanna (1995) noted the ancient Indian understanding of space, time, and motion, connecting it with modern physics and cosmology.
- A study by CSIR-NIScPR (2010) evaluated Ayurveda and other traditional medicine systems, showing their increasing acceptance globally.
- UNESCO (2008) highlighted the role of indigenous knowledge systems in sustainable development and community resilience.

III. SCOPE OF THE STUDY

The scope of the study aims to delve into the key contributions of the Indian Knowledge. Globalization, characterized by interconnected economies, cultures, and societies, has reshaped the modern world. As global trends emphasize rapid innovation and integration, there is a parallel need to revisit traditional knowledge systems that have stood the test of time. The present study is based on the secondary data and available literature on the study; it is in theoretical and conceptual nature.

IV. OBJECTIVES OF THE STUDY

1. To examine the Foundation of the Indian Knowledge System (IKS).
2. To know the Global Influence of Indian Knowledge.
3. To assess the relevance of IKS in contemporary fields such as education, science & technology, trade, and interpersonal relations and global influence of IKS.
4. To identify the challenges and limitations in integrating IKS with modern systems.



V. SIGNIFICANCE OF THE STUDY

In a world dominated by rapid technological changes and Western-centric paradigms, re-evaluating indigenous knowledge systems is essential for cultural preservation and alternative models of development. IKS offers insights in the area of Sustainable practices in science and trade, Holistic education that integrates ethics and experiential learning. Human-centric values in technology and social relations. Recognizing IKS contributes to not only national identity but also global pluralism, where multiple knowledge systems co-exist to solve modern challenges.

VI. DISCUSSIONS

6.1. Foundations of Indian Knowledge System

Indian civilization's intellectual achievements are deeply embedded in its foundational texts and philosophical traditions. These texts laid the groundwork for both theoretical and applied knowledge in a variety of fields. The Vedas, composed around 1500 BCE to 500 BCE, are considered the oldest scriptures of humanity. They form the philosophical, theological, and ritualistic foundation of the Indian Knowledge System. The Upanishads, which are part of the Vedic literature, represent profound philosophical inquiry into the nature of reality, consciousness, and the self (Atman) and its relationship to the ultimate reality (Brahman). The concise, aphoristic texts known as Sutras, and Shastras (comprehensive treatises), laid the groundwork for key domains such as law (Dharma Shastra), governance, ethics, and rituals. These texts contributed not only to spiritual practices but also to the legal and administrative systems of ancient India. The Bhakti movement, emphasizing devotion to a personal deity, and the Karma philosophy, focusing on the principle of cause and effect, had profound influences on social and ethical thought, shaping governance, social structures, and personal behavior.

6.2 Global Influence of Indian Knowledge

The Indian Knowledge System has traveled across the world, influencing cultures and civilizations through trade, migration, and intellectual exchange. Through trade routes such as the Silk Road, Indian mathematical and astronomical knowledge reached the Middle East, Central Asia, and Europe. Indian scholars directly influenced Islamic Golden Age scholars, who in turn contributed to the European Renaissance. The spread of Buddhism from India to China, Southeast Asia, and beyond played a significant role in shaping the spiritual and philosophical landscapes of East Asia.

6.3. Relevance of the IKS in the field of Education system

IKS views education as a lifelong, character-building process. The Gurukul system emphasized experiential learning, moral development, and the integration of art, science, and spirituality. In today's globalized education system, which often prioritizes standardized testing and rote learning, the Indian approach offers a valuable contrast that emphasizes interdisciplinary learning, Mindfulness and yoga in curriculum to foster mental well-being, Sanskrit texts offering deep insights into logic, linguistics, and philosophy. Reviving elements of IKS in modern education can foster critical thinking, creativity, and cultural rootedness. The contributions of India to mathematics are fundamental to the development of modern science and technology. Ancient Indian mathematicians developed concepts that were far ahead of their time. India is credited with the invention of the decimal system, which was revolutionary in simplifying calculations. The concept of zero as a number, rather than just a placeholder, is one of India's most significant contributions. Mathematicians like Brahmagupta (598-668 CE) formalized the concept of zero and negative numbers, while Aryabhata (476-550 CE) made early contributions to algebra and trigonometry. Indian mathematicians developed advanced trigonometric concepts. Madhava of Sangamagrama (c. 1340-1425 CE) introduced early concepts of calculus, and Bhaskara I (c. 600 CE) made groundbreaking contributions to understanding the relationships between angles and sides in triangles, laying the foundations for modern trigonometry. Indian mathematicians calculated the value of Pi (π) with remarkable accuracy and worked on the geometry of circles and spheres. The work on geometry in India was instrumental in developing mathematical theories used in architecture, engineering, and astronomy. Vedic mathematics offers simplified computation techniques useful in modern algorithms.

6.4. IKS Contribution in global Science and Technology

IKS thus offers eco-centric models for science and tech development. Indian scholars made significant advancements in astronomy, offering insights into the workings of the cosmos that were centuries ahead of Western thought. Aryabhata's work "Aryabhatiya" (499 CE) proposed that the Earth is a rotating sphere and described the Earth's rotation on its axis, which was a revolutionary idea at the time. Aryabhata also predicted the occurrence of eclipses and explained the causes of lunar and solar eclipses.



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Brahmagupta, another pioneering Indian astronomer, made contributions to understanding the orbits of planets, the nature of celestial bodies, and the concept of gravitational forces. His work laid the foundation for Islamic and later European astronomy. Madhava and the Kerala School of Astronomy and Mathematics made significant contributions to the study of celestial motions, offering models of planetary orbits that were later taken up by Copernicus and Kepler.

6.5 IKS contribution to world Trade and Economy

Ancient India had vibrant trade relations, exporting spices, textiles, and knowledge. The Arthashastra by Kautilya provided detailed insights into governance, economics, and international relations. In today's global trade environment: The principles of dharma in commerce emphasize ethical trade practices. Traditional Indian crafts and local economies (e.g., handlooms, Ayurveda, yoga) are gaining global markets. Concepts like “Vasudhaiva Kutumbakam” (the world is one family) align with inclusive trade and cooperation.

6.6. Human Relations and Social Harmony

Indian scholars contributed significantly to social and political philosophy, shaping concepts of governance, ethics, and social justice. Arthashastra (4th century BCE) is one of the oldest texts on political science and governance. It outlines strategies for administration, warfare, economics, and diplomacy. The text is notable for its pragmatic approach to governance and social order. Indian philosophical traditions, particularly those of Jainism, Buddhism, and Hinduism, have had a lasting influence on ethical thought worldwide, focusing on non-violence (Ahimsa), the concept of Dharma (righteous living), and social welfare. IKS promotes universal values such as compassion, respect for nature, interdependence, and collective well-being. The Bhagavad Gita, Upanishads, and Buddhist-Jain philosophies all stress inner growth, empathy, and ethical living. In today's fragmented, polarized global society, such values help in Bridge cultural and religious divides, Encourage dialogue over conflict, Promote mental well-being and spiritual awareness in a high-stress world.

6.7. Indian Knowledge System and Space Research

India's ancient astronomy, known as *Jyotisha*, featured highly accurate calendrical systems and celestial observations. The works of Aryabhata, Varahamihira, and Bhaskara laid the foundation for modern Indian space aspirations. Today, organizations like ISRO integrate traditional astronomical understanding with cutting-edge technology.

Mission planning often acknowledges indigenous calendars for cultural alignment, and public communication of scientific milestones sometimes draws parallels with ancient cosmology to foster public pride and participation.

6. 8 Skill Development and Vocational Knowledge

India's traditional knowledge systems offered skill-based education through the *Gurukul* and apprenticeship models, especially in agriculture, metallurgy, architecture (Vastu Shastra), carpentry, and textile crafts.

6.9. Women Empowerment in Indian Knowledge Systems

While patriarchal distortions exist, classical Indian texts and traditions feature empowered female figures—Gargi, Maitreyi, Rani Durgavati, and Avvaiyar, among others—who were philosophers, warriors, and scholars. In modern India, IKS offers a foundation for women-centric leadership and entrepreneurship, especially in sectors like Ayurveda, textiles, and education. Women-led SHGs (Self Help Groups) are reviving traditional practices and accessing global markets. Traditional models of community care and cooperative leadership are being modernized for women's development programs.

6.10. Health, Wellness, and Ayurveda

Indian medicine, especially Ayurveda, has been practiced for thousands of years and is one of the earliest known systems of holistic healing. One of the earliest medical systems, Ayurveda focuses on maintaining balance among the body, mind, and spirit. Texts such as the Charaka Samhita and Sushruta Samhita provided detailed descriptions of diseases, diagnostic methods, treatments, and surgery. These texts discussed the use of herbal medicines, surgical procedures, and the importance of diet and lifestyle in maintaining health. Sushruta, known as the “father of surgery,” wrote the Sushruta Samhita, a pioneering medical text that outlined surgical procedures, including plastic surgery and cataract surgery. His work on surgical instruments and methods is still regarded as the foundation of many modern surgical practices. Charaka's Contributions to Internal Medicine: Charaka's writings focused on the internal aspects of human health, covering various treatments for diseases, emphasizing detoxification (Pancha Karma), and outlining the significance of mental well-being in treating physical ailments.

6.11 Yoga and Spiritual practices

Yoga, which originated in ancient India, has become a global phenomenon for physical health, mental well-being, and spiritual enlightenment. The Yoga Sutras of Patanjali (c. 200 BCE) provided a systematic approach to yoga, focusing on meditation, ethical practices, and self-discipline as paths to personal growth.



The system emphasized controlling the mind to reach spiritual enlightenment (samadhi). Meditation: India's contributions to meditation practices, particularly mindfulness and dhyana (meditative concentration), have greatly influenced modern psychological therapies and stress-relief techniques worldwide. IKS encompasses Ayurveda, Siddha, Unani, Yoga, and Naturopathy—systems based on balance, lifestyle, and prevention. With globalization, these practices have found worldwide acceptance as alternatives to allopathic medicine.

6.12 Architecture and Urban planning

Ancient India was home to highly sophisticated architectural and urban planning systems.

Indus Valley Civilization: The cities of Mohenjo-Daro and Harappa, dating back to 2500 BCE, exhibited advanced urban planning with grid-based street layouts, well-organized drainage systems, and multi-story buildings. Vastu Shastra, the ancient Indian system of architecture, emphasized harmony with nature and cosmic forces in the design and construction of buildings. This system influenced the design of temples, homes, and palaces throughout India and continues to be practiced today. Indian temple architecture, including iconic structures like the Brihadeeswarar Temple in Tamil Nadu and the Sun Temple in Konark, reflects not only architectural mastery but also an understanding of geometry, astronomy, and spirituality.

VII. LIMITATIONS OF IKS IN THE MODERN CONTEXT

1. Documentation and Accessibility: Much of IKS is in ancient languages (Sanskrit, Pali, Tamil), limiting accessibility.
2. Standardization Issues: Traditional knowledge lacks uniformity, making integration with modern systems complex.
3. Perception of Obsolescence: IKS is often dismissed as outdated or unscientific without sufficient research validation.
4. Commercial Exploitation: Global interest in yoga, Ayurveda, and Indian spirituality has sometimes led to cultural appropriation rather than respectful adoption.
5. Resistance to Integration: Modern education and policy frameworks often favor Western models, resisting the incorporation of indigenous knowledge.

VIII. CONCLUSION

The Indian Knowledge System is one of the oldest and most profound intellectual traditions in human history. Its contributions across diverse fields, from mathematics and astronomy to medicine, philosophy, and governance, have had an enduring impact on both the Indian subcontinent and the global community. As contemporary society faces complex challenges, revisiting the principles of IKS, such as holistic thinking, sustainability, and ethical governance, can provide valuable insights for addressing modern issues and fostering a more inclusive, equitable world. The continued exploration and integration of the Indian Knowledge System will undoubtedly enrich global knowledge and inspire future generations.

The Indian Knowledge System, though ancient, is not obsolete. In fact, globalization has created a unique opportunity to showcase and integrate IKS into modern life. Its contributions in space science, skill-based learning, women empowerment, and health reflect a value-based, sustainable model of progress. The Indian Knowledge System, deeply philosophical yet practical, offers enduring wisdom relevant to the global age. While not a replacement for modern systems, it provides complementary pathways that stress harmony, sustainability, and ethical advancement. Reviving and integrating IKS into contemporary structures—through education reforms, scientific validation, trade policies, and intercultural dialogue—can help build a more inclusive and balanced global civilization. However, this requires collaborative efforts in research, policy, and public awareness to overcome limitations and prejudices.

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