

Development of Indian Knowledge System (IKS) Rooted in Ancient Texts

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Structured Abstract:

Background: Ancient Indian knowledge systems, rooted in texts like the Vedas, Vedangas, and Vedanta, have significantly shaped Indian society and culture. These systems, as highlighted in the Devi Saraswati Stotram ("Om Bhadrakalyai Nomoh Nityang Saraswatyo Namah. Veda-Vedanga-Vedanta-Vidyasthanebhya Eba Cha"), encompass a broad spectrum of intellectual traditions, including the Vedas, their explanatory Vedangas, and the philosophical insights of Vedanta. The concept of "Vidyasthanebhya" underscores a dynamic framework for integrating new ideas and philosophies.

Objective: This study aims to evaluate the scientific validity and long-term impact of ancient Indian knowledge systems on Indian society, culture, and their global influence.

Methods: The research employs a mixed-methods approach, analyzing primary data from ancient Indian texts, such as the Vedas, Vedangas, and Vedanta, alongside contemporary scholarly interpretations. Qualitative assessments explore the philosophical and cultural contributions, while comparative analyses evaluate the scientific relevance of these systems in modern contexts.

Results: The findings highlight the foundational role of the Vedas in shaping Indian intellectual traditions, with Vedangas providing critical explanatory frameworks and Vedanta offering philosophical depth. The concept of "Vidyasthanebhya" reflects an adaptive knowledge system that integrates innovative ideas, influencing not only Indian culture but also global philosophical and scientific thought.

Conclusion: Ancient Indian knowledge systems demonstrate significant intellectual achievements with enduring cultural and societal impacts. Their scientific validity lies in their holistic approach to knowledge, which remains relevant in contemporary global discourse. Further research is needed to explore their practical applications in modern scientific frameworks.

Keywords: Indian Knowledge System, IKS, Ancient Vedic Scriptures, Vedas, Vedangas, Vedanta, Shruti, Smriti.

Introduction

The Indian Knowledge System has a rich and diverse history that can be traced back to the ancient Vedic scriptures. It has evolved and adapted over thousands of years, incorporating new ideas and philosophies while retaining its core principles. This system of knowledge continues to be a source of inspiration and a guiding force for millions of people, not just in India, but around the world today.

The Vedic texts, dating back to around 1500 BCE, form the foundation of much of India's intellectual heritage. These texts introduced the early concepts of philosophy, cosmology, and ethics, shaping the intellectual currents that would follow. The emphasis on dharma (righteous living) and karma (actions and their consequences) influenced not only moral philosophy but also practical sciences, such as medicine and engineering, by stressing balance, sustainability, and ethical practices. Over time, scholars in India systematically developed knowledge in these areas, resulting in highly specialized disciplines that became the cornerstones of the ancient Indian knowledge system.

The Vedic Literature consists of “Shruti” – revealed literature and “Smriti” – memorised literature. ‘Shruti’ literature consist of Vedas; Four Vedas are Rig Veda, Yayur Veda, Saama Veda and Atharva Veda; Rig Veda – collection of prayers, Yayur Veda – sacrificial manual, Saama Veda – mostly Rig Vedic hymns in musical form and Atharva Veda – magical charms.

Rig Veda – The term “Rig” or “Rik” means hymns and praise, “Veda” means knowledge. The hymns are in praise of the Supreme. Each “Rik” is a mantra. A number of Riks constitute Sukta. It is divided into ten Mandalas.

Yayur Veda – The Yayur Veda means a Tatpurusha compound of yajana i.e. sacrificial formula + Veda or knowledge. It describes the ritualistic procedures of yajana. It contains the mantras needed to perform the sacrifices of the religion of the Vedic period. Yayur Veda deals with all yajanas – Darsa, Poornamasa, Somayoga, Rajasooyayoga etc.

Saama Veda – the third Veda of the Vedas. “Saama” means melody and “Veda” means knowledge. Saama is for bringing shanti or peace to the human minds/or to make the minds to find happiness in peace. Among the four prescribed methods – Saama, Daama, Danda, Bheda – Saama is the first one and it is there to conquer the enemy by love and conciliatory words.

Atharva Veda – The Atharva Veda is entirely different from the above three Vedas in content and style. Atharva and Angirasa are the two Risis associated with this Veda. Mantras which pertain to Devatas not mentioned in the other Vedas are found in Atharva Veda.

The Features of the Vedas

The Vedas are without a beginning and they are without end also. They have no human authorship and they are at the root of all creations. The sound of the Vedas activates the nerve centres and atmosphere, resulting in individual and collective wellbeing. Collective wellbeing is not limited to humanity. It extends to animals and plants also (Sham no astu dvipade sham chatushpade). No other religious text emphasizes the wellbeing of animals and plants as much as the Vedas. It emphasizes wellbeing of shrubs, trees, mountains and rivers – in fact all creations.

Parts of the Vedas

Each Veda has four parts. Samhita – essential part of a Veda containing hymns. Brahmanas – prose commentaries on Vedas with detailed observations on prayers and ceremonies. Aranyakas – text to be read by Risvis in forests as they deal with mystic meanings of Samhita texts. Upanishads – philosophical aspects which are to be taught by Acharyas to their trusted students.

Smriti

“Smriti” literature consists of “Vedangas”, “Upavedas” etc. which form supplementary sections of Vedic literature. Vedangas literally mean the limbs of the body, they perform various supportive and augmenting functions in the study, preservation and protection of the Vedas and the Vedic traditions.

The six Vedangas are Siksha – phonetics, Chhanda – metre, Vyakarana- grammer, Nirukta – etymology, Jyotisha – astronomy, Kalpa – ritual. The Vedangas are very important as illustrated by the following verse from Paniniya.

Upavedas (supplementary Vedas) are largely secular in nature. The eight Upavedas are Gandharva Veda – music, Shilpa Veda – sculpture, Ayur Veda – medicine, Dhanur Veda – archery or art of “War Sutras” (that guide people in various fields). Grihya Sutras (Veda) – deal

with domestic rituals, Shrauta Sutras (Veda) – deal with public rituals, Sulha Sutras (Veda) – deal with science of altars, Dharma Sutras – deal with customary law and practices.

Paniniya Siksa

“Chandah pada utu vedasya hastau kalpo'tha pathyate I jyotisam ayanam caksur niruktam srotram ucyate II” (41). “Siksa ghranam tu vedasya mukham vyakaranam smrtam I tasmad sangam adhttyiva brahmaloka mahtyate II” (42).

Firstly, metrics (Chanda) which is the two legs of the Vedas is read and then the Kalpa which is two hands. The science of the movement of luminaries (Astronomy) is its eyes and the Nirukta is called its ears; the Siksha is the nose of the Veda and Grammar is its mouth. It is for this reason that one studying the Veda with all its high position in the realm of Brahman.

Siksha

Siksha lays down the rules of phonetics – pronunciation / sounds / duration of utterance of each syllable – euphony. The goal is to achieve correct pronunciation and articulation through Akshara suddhi (syllable purity), Svvara suddhi (tonal / pitch purity), Maatraa suddhi (durational purity), Balam (force of articulation), Samam (evenness), Santana (continuity).

That is why sage Panini, the grammarian, gives in his “paanineeeya siksha”, how much care should be exercised when chanting Vedas.

As the mother tiger (cat family) carries its young gripping it by its teeth (firm, so that cub does not fall, but gentle, so that it does not harm), the mantras must be chanted lucidly, un-blurred. un-faded and not too loud. Neither should they be casually mouthed nor spat in staccato tones;

The Sanskrit language has 51 letters, called Maatrka Maatru is the cosmic Mother and the 51 letters are in her image. The Siksha Sastra says that these 51 letters represent the various parts of Her body and even define which one represents which.

Upaangas

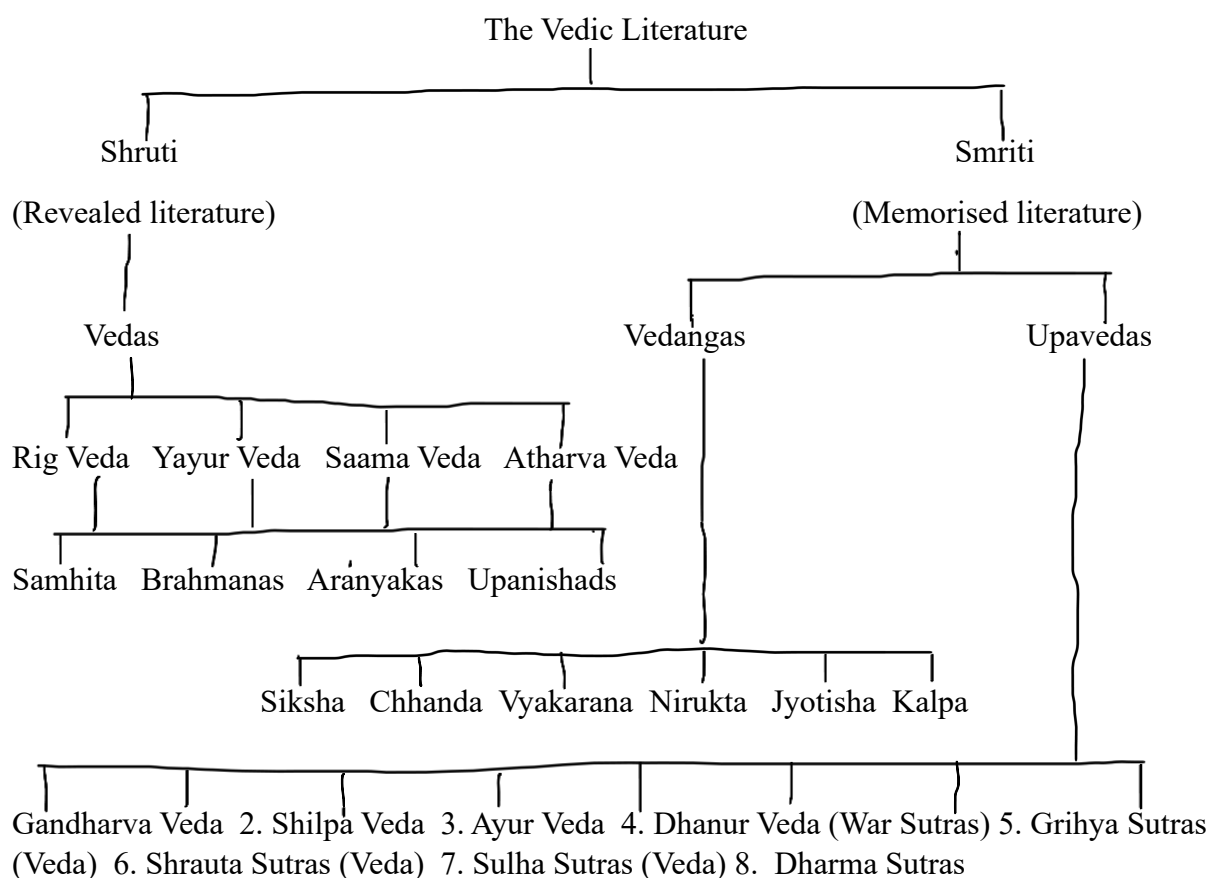
These Angas consist of four Upaangas. Those are Meemaamsa (Interpretation), Nyaya (Logic), Puraana (Mythology), Dharma Shaastras (Codes of conduct).

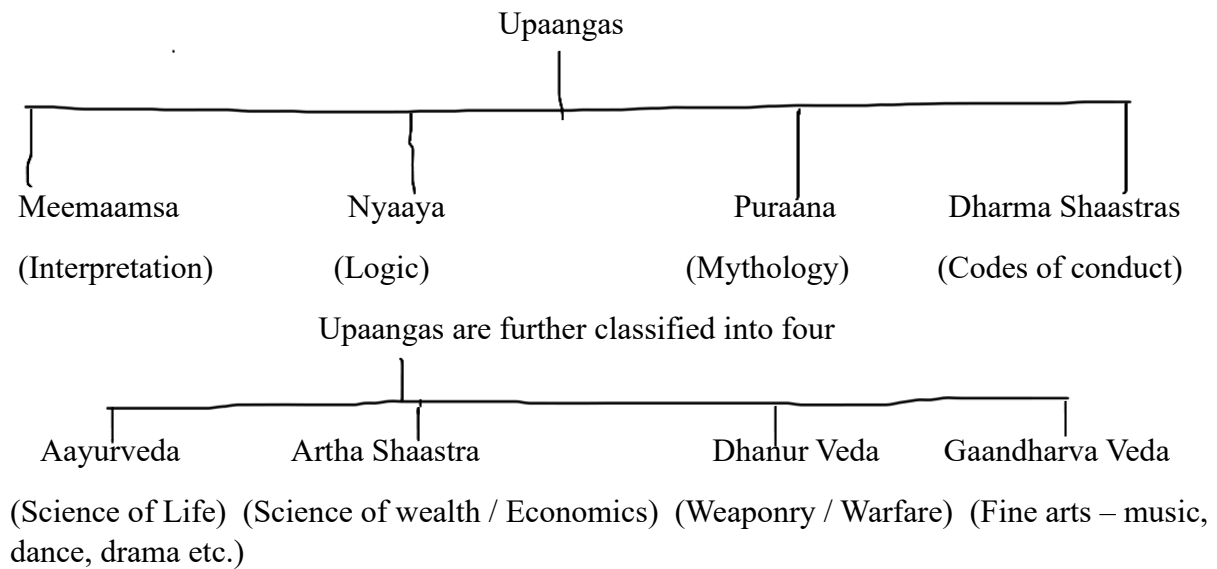
These Upaangas are further classified into four, Aayurveda (Science of Life), Artha Shaastra (Science of wealth / Economics), Dhanur Veda (Weaponry / Warfare), Gaandharva Veda (Fine arts – music, dance, drama etc.). By this way the four Vedas are classified into Angas and Upaangas which in total are fourteen. These fourteen are known as Vidya Sthaanas. Hence, knowledge and wisdom are enshrined in these. The four Vedas form the core of our Hindu Religion.

Samhita is the tree, Braahmanas are its flowers, Aaranyakas are its fruits, and Upanishads are the “Ripe fruits”. Only Upanishads help to attain Moksha.

Upanishad Mahaavaakyas

Aitareya Upanishad; Prajnaanam Brahma (Supreme knowledge is Brahman), Brihadaaranyaka Upanishad says Aham Brahmasmi (I am Brahma / God), Taittiriya Upanishad tells “Aham Asmi / Brahma Aham Asmi”, Chaandogya Upanishad says “Tat Tvam Asi” (You are “That” / Brahman), Maandukya Upanishad tells “Ayam Aatma Brahma” (This indwelling self is Brahma).





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Objectives of the Study

1. To analyse the scientific and cultural impact of this contributions using modern data analysis techniques.
2. To evaluate the influence of ancient Indian knowledge on contemporary scientific thought and societal practices.
3. To quantify the extent to which these knowledge systems continue to affect modern day India and the global community.

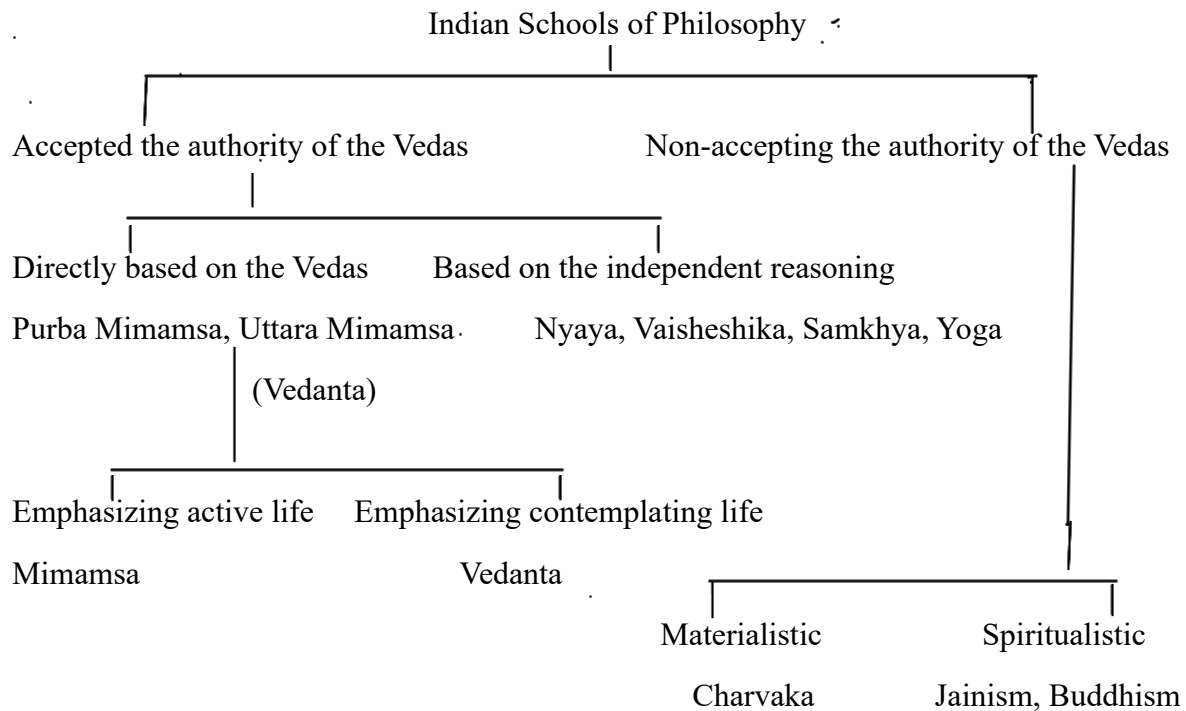
Research Methodology

The research methodology follows a mixed-methods approach, combining both qualitative and quantitative techniques:

1. **Literature Review:** A comprehensive review of primary sources such as ancient texts, including the classical Indian philosophical schools, as well as secondary sources like research articles, books, and reports.

2. **Data Collection:** Data is gathered from historical records, archives, and modern scientific studies.
3. Qualitative Analysis of ancient Indian Knowledge sources which flows ancient texts.

Classical Indian Philosophy



Analysis

Data from multiple sources is analysed to provide insights into the impact of ancient Indian knowledge. This includes historical data from texts and artifacts, as well as contemporary surveys.

India is endowed with a rich legacy of traditional knowledge and practices touching several spheres of life and traversing several arts, science, literature, ayurveda, astrology or jyotish, sthapatya (architecture), natyashastra domains. Our traditional practices exist in synergy between human needs and nature often balancing resources and requirements in local context. India has been witnessing erosion in people's faith towards our traditional knowledge. The "Indian Knowledge System" in ancient India refers to a rich and diverse body of knowledge encompassing philosophy, science, mathematics, medicine (Ayurveda), astronomy, arts, literature and social practices, primarily rooted in the ancient texts like the Vedas, Upanishads, and Puranas, which emphasized a holistic approach to life, integrating mind, body, and spirit,

with a strong focus on concepts like Dharma (righteousness), Artha (wealth), Kama (desire), and Moksha (liberation).

The Vedas (including Rig Veda, Yajur Veda, Sama Veda, and Atharva Veda) are considered the foundation of this knowledge system, with the Upanishads providing deeper philosophical insights. The Indian Knowledge System heavily emphasizes concepts like Karma (action and its consequences), reincarnation, and the pursuit of self-realization through practices like meditation and Yoga. Notable contributions include the development of the decimal system, the concept of zero, advanced astronomical calculations, and significant advancements in mathematics and medicine. Knowledge was primarily passed down through oral tradition within the Guru-Shishya (teacher-student) system. The Indian Knowledge System significantly influenced social practices, ethics, governance, and the overall worldview of ancient Indian society. Through its philosophical insights, scientific advancements, and spiritual practices, the Indian Knowledge System has made significant contributions to humanity, making it a valuable and timeless legacy for generations to come.

Conclusion

At the heart of ancient Indian intellectual traditions is the deep connection between knowledge and spirituality. The Indian worldview, as outlined in texts like the Vedas, Upanishads, and Puranas, emphasized the unity of the universe and the interconnectedness of all things. Knowledge, in this context, was not an abstract pursuit but a means of aligning oneself with cosmic principles and achieving harmony between the body, mind, and the environment. This holistic approach permeated all fields of study, from philosophy, medicine to architecture. The analysis presented in this paper underscores the depth and lasting significance of ancient Indian knowledge systems. This paper examines the contributions of ancient Indian knowledge systems in the field of classical Indian philosophy and its schools and assesses their influence on Indian society and culture.

References

- Breakthrough Science Society. (2016). Science in Ancient India: Reality versus Myth.
- Mandal, Ranajit Kumar. (2025). Rethinking ancient Indian Knowledge System: An analytical perspective on Ayurveda, Mathematics, Geometry, and Technology. *International Journal of Research and Analytical Reviews (IJRAR)*, 12(2), May, 2025, p. 246-252.

Ministry of AYUSH, India. (2023). *Traditional medicine in India: Current trends and future prospects*.

Sinha, A. K., (2023). *Redefining history and historical consciousness in Ancient India*. Khama Publishers, New Delhi, 2023, pp. i-xviii, 1-153.