Rediscovering the Roots of Ancient Indian Pedagogical Tools for Quality Education

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Abstract: The Ancient Indian Knowledge Systems (AIKS) represent a profound and interconnected worldview, deeply embedded in a cosmological understanding of existence. These systems, rooted in the timeless wisdom of the *Vedas*, perceived the universe as an inseparable whole, where celestial phenomena, nature, and human life were bound together in a divine harmony governed by *Brahma*, the ultimate truth and omnipresent reality. Central to this worldview was the recognition of humanity's intrinsic bond with nature, nurtured through contemplative practices like meditation and *yoga*. In stark contrast, the contemporary education grapples with fragmented and compartmentalized approaches to knowledge, which obscure holistic comprehension. The relentless emphasis on material success, grades, and career competition further sidelines the ethical and spiritual values enshrined in ancient Indian pedagogy. This disconnect calls for a meaningful integration of AIKS principles into modern educational frameworks. By doing so, we may restore balance, purpose, and a sense of interconnectedness—values vital for fostering compassion, kindness, and service to humanity. This paper advocates for a transformative shift in educational philosophy and curricula, guided by the timeless insights of AIKS. It is not a call for nostalgic revivalism but a pragmatic effort to harmonize modern aspirations with ancient wisdom. Such alignment, it is argued, can cultivate a holistic and ethical perspective—one that is indispensable for building a sustainable, harmonious world grounded in universal humanistic ideals.

Keywords: *Ancient Indian Pedagogy, Cosmological, Transformation, Ethical, Guru-śiṣyaparamparā*

1. INTRODUCTION:

Saha nāvavatu, sahanaubhunaktu, sahavīryaṁkaravāvahai,
tejasvināvadhītamastumāvidviṣāvahai

- Kṛṣṇa Yajurveda, TaittirīyaUpaniṣad (2.2.2)

India is the land of *Ṛṣi* (sage or seer) and *Kṛṣi* (agriculture or farming). *Rishi* explores the secret and sacred knowledge or mystery and shares it with ordinary people, whereas *Kṛṣaka* (farmer) cultivates the land and feeds

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the people. They consider land as life (land is our life). Since ancient times, India has had a unique knowledge pattern that gives us a unique perception of land, nature, and everything. However, due to the colonial impact on our education system, we deviated from our ancient roots of education. So now, the time has come to rethink our education with great motivation. This rethinking spirit is to reorganize and relook at our education, significantly higher education, and its pedagogical aspects. According to Dr. F.E. Key, "*To achieve their aim, not only did Brahmans develop a system of education which survived even in the events of the crumbling of empires and the changes of society, but they also, through all those thousands of years, kept a glow of torch of higher learning.*" In the words of Dr. N. Prabhu, "*Education in ancient India was free from any external control like that of the state and government or any party politics. It was the king's duty to see that learned pundits pursued their studies and performed their duty of imparting knowledge without interference from any source*".

In this 21ˢᵗ century, our great vision is to bridge the past knowledge with the present and the future potential. The education system that evolved first in ancient India is known as the Vedic education system, which was based on the Vedas. The foundation of Indian culture lies in the Vedas, which are four in number -Rigveda, Samaveda, Yajurveda, and Atharvaveda. Some scholars have subdivided the Vedic Educational period into the Rig Veda, Brahmana, Upanishad, Sutra (Hymn), Smriti, etc. This quotation, "*Swadeśepūjyaterājā, vidvānsarvatrapūjyate*" [Pañcatantra (2.58)] translates to 'a king is honoured in his land. Still, a learned person is honoured everywhere, is widely quoted in India, and illustrates the significance of education. The education system of the Vedic period has unique characteristics and qualities that were not found in the ancient education system of any other part of the world.

Salient Features of Vedic Education in Ancient India

i. **Spiritual Foundations: Cosmic Harmony and Self-Realization:** Vedic education transcended material goals, seeking alignment with ṛta (cosmic order) and dharma (moral law). The *MundakaUpanishad* declares, "*Brahmavidyāsarva-vidyāpratiṣṭhā*" (Knowledge of the Brahman – The Absolute is the foundation of all learning). Students engaged in *dhyāna* (meditation) and *yajña* (rituals) to internalize the interconnectedness of life. This spiritual framework, however, encouraged questioning, as seen in the dialogues of the *BṛhadāraṇyakaUpaniṣad*, where *Gargī* challenges *Yājñavalkya* on metaphysical truths.

ii. **Character Building: Ethics as the Core of Pedagogy:** The *guru-śiṣyaparamparā* emphasized virtues like *satya* (truth), *ahiṃsā* (non-violence), and *tyāga* (sacrifice). The *ChāndogyaUpaniṣad* narrates how sage *Āruṇi* taught his disciple *Śvetaketu* through analogies, blending moral lessons with intellectual rigor. Teachers modeled ethical conduct, as exemplified by Rishis *Vasiṣṭha* and *Vishwamitra* in the *Rāmāyaṇa*, who mentored *Ram* not just in warfare but in righteous kingship.

iii. **Civic Responsibility: Education for Societal Welfare**

Graduates were expected to serve society through *lokasaṃgraha* (collective welfare). The *Rigveda* (10.191.2) invokes, "*saṃgacchadhwaṃsaṃvadadhwaṃsaṃvomanāṃsijānatām*

devābhāgaṃyathāpūrvesañjānānāupāsate," which gives the great message of 'May you move in harmony, speak in one voice; let your minds be in agreement; just as the ancient gods shared their portion of sacrifice.', reflecting the ideal of communal upliftment.

iv. *Gurukuls*: Forests as Classrooms of Simplicity

Education occurred in *āśramas* (forest hermitages), fostering *aparigraha* (non-attachment) and *sahavāsa* (communal living). Students engaged in manual labor, such as firewood collection and farming, thereby grounding them in humility. The ancient texts describe gurukuls as spaces where "knowledge flowed like rivers," blending austerity with intellectual freedom.

v. Interdisciplinary Curriculum: Vedas to Vocational Arts

In ancient Indian education systems, particularly in *Gurukuls*, students were taught various *Vidyās*(branches of knowledge) and *Kalās* (arts and skills) to ensure holistic development.

purāṇanyāyamīmāṃsādharmaśāstrāṅgamiśritāḥ |

vedāḥsthānānividyānāṃdharmasya ca caturdaśa ||

- *Yājñavalkya Smṛti (Chapter 1, Verse 3)*

The 14 *Vidyās* (Four *Vedas* + Six *Vedāngas* + Four *Upāngas*) that were imparted are as follows:

a. The Four *Vedas: Ṛgveda*– Hymns and praises to deities, *Yajurveda* – Rituals and sacrifices, *Sāmaveda*– Melodic chants and music, *Atharvaveda*– Spells, charms, and everyday wisdom

b. The Six *Vedāngas* (Limbs of the Vedas): *Śikṣā*– Phonetics and pronunciation, *Vyākaraṇa*– Grammar (e.g., MaheshvaraSūtras), *Chandas*– Prosody (study of Vedic meter), *Nirukta*– Etymology and explanation of difficult words, *Jyotiṣa*– Astronomy and astrology, *Kalpa*– Rituals and procedures.

c. The Four *Upāngas* (Additional Disciplines): *Mīmāṃsā*– Interpretation of Vedic texts, *Nyāya* – Logic and reasoning, *Purāṇa* – Mythology and history, *Dharmaśāstra*– Law and ethics.

d. Parallelly, the 64 *Kalās* covered practical arts. Indian knowledge systems primarily describe 64 different arts, many of which are deeply intertwined with everyday life and remain relevant in the modern era. Notably, these arts encompass fields of knowledge that align with contemporary disciplines, such as science, medicine, chemistry, and physics. This balance of *parāvidyā* (metaphysics) and *aparāvidyā* (worldly skills) ensured holistic development (Dharmawiki, n.d.). The

Śaiva-tantram enumerates 64 traditional arts, known as *kalās*, integral to daily life and encompassing various disciplines, as follows:

Geeta (Singing), Vādya (Playing on various musical instruments), Nṛtya (Dancing), Nāṭya (Acting, gesticulation, mimicry), Alekhya (Drawing, painting, calligraphy), Viśeṣakacchedya (Painting figures on various parts of the body with fragrant substances), Tandula-kusumayālivikāra (Creating worship designs with rice grains, flowers, etc.), Puṣpās-taraṇa (Preparing a bed of flowers), Daśana-vasanāṅga-rāga (Coloring teeth, limbs, and garments), Maṇi-bhūmikā-karma (Paving floors with precious stones), Śayana-racanā (Arranging a bed), Udakavādya (Using a pot of water as a musical instrument), Udakaghāta (Sprinkling with water cannons), Citrayoga (Herbal preparations for weakening an enemy), Mālyagrathana-vikalpa (Making garlands and flower wreaths), Keśaśekharapīḍa-yojana (Hair styling), Nepathyayoga (Beautifying the body with clothes and ornaments), Karṇapatra-bhaṅga (Painting decorative designs on the ears), Gandhayukti (Making perfumes and cosmetics), Bhūṣaṇa-yojana (Designing and making ornaments), Indrajāla (Magic and illusion), Kaucumarayoga (The art of beautification), Hastalāghava (Sleight of hand), Citraśākapūpapākhya-vikāra-kriyā (Culinary art), Pānaka-rasarāgasavayojana (Preparing beverages and liquors), Sūcīpāka-karma (Weaving and needlework), Vīṇā-ḍamaruka-sūtra-krīḍā (Making musical instruments and operating string puppets), Prahelikā (Solving riddles), Pratimā (Sculpture), Durvāchaka-yoga (Skill in tongue twisters), Pustaka-vācana (Reading manuscripts efficiently), Nāṭikā-ākhyāyikā-darśana (Dramaturgy and story writing), Kāvya-samasyā-pūraṇa (Completing incomplete verses), Paṭṭikā-vetra-vaṇa-vikalpa (Making ligatures, canes, arrows), Tarku-karma (Spindle work), Takṣaṇa (Carpentry), Vāstuvidyā (Architecture), Rūpya-ratna-parīkṣā (Testing metals and gemstones), Dhātuvāda (Alchemy), Maṇirāga-jñāna (Coloring precious stones), Ākāra-jñāna (Knowledge of latent minerals), Vṛkṣāyurveda-yoga (Treating and nursing plants), Meṣa-kukkuṭa-lāvaka-yuddhavidhi (Training rams, cocks, and quails for sport fights), Śuka-sārikā-pralāpana (Teaching parrots and other birds to speak), Utsādana (Expelling enemies through charms), Keśa-mārjana-kauśala (Cleaning and dressing the hair), Akṣara-muṣṭika-kathana (Reading hidden letters and divining objects held in the hand), Mlecchitaka-vikalpa (Understanding foreign scripts and languages), Deśabhāṣā-jñāna (Speaking fluently in regional dialects of Bhārata), Puṣpaśakaṭikā-nimitta-jñāna (Decorating vehicles with flowers and interpreting omens), Yantramātrikā (Creating mystical diagrams and amulets), Dhāraṇamātrikā (Memorizing spoken sentences), Sampātya (Splitting complex substances such as diamonds into multiple shapes), Mānasikakāvya-kriyā (Reading others' thoughts and composing poetry based on them), Kriyāvikalpa (Mastering different forms of poetry), Calitayoga (Hiding one's body or speech), Abhidhānakośa-chanda-jñāna (Knowledge of lexicography and prosody), Vastragopana (Making ordinary fabrics appear as superior textiles), Dyūtaviśeṣa (Mastering the game of dice), Ākarṣaṇa-krīḍā (Attracting distant objects), Bālaka-krīḍanaka (Playing children's games), Vaināyikī-vidyā-jñāna (Practicing magical charms), Vaijayikī-vidyā-jñāna (Predicting the winner in a debate), Vaitālikī-vidyā-jñāna (Controlling spirits, goblins, and supernatural beings).

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This list provides a comprehensive understanding of the 64 *Kalās* in *Śaiva-tantram*, showcasing their diverse range from performing arts and crafts to mysticism and scientific knowledge.

vi. Pedagogical Methods: Dialogue, Debate, and Mnemonics

Learning was interactive, driven by *śravaṇa* (listening), *manana* (contemplation), and *nididhyāsana* (meditation). The ancient scriptures and schools of thought document *śāstrārtha* (philosophical debates) as tools to refine reasoning. The *Nyaya sutras* encompass various subjects, among which are *Tarka-Vidyā*, the art of reasoning and debate, and *Vāda-Vidyā*, the art of discourse and discussion. Mnemonic techniques like *ghana-pāṭha* (recitation in musical patterns) preserved Vedic hymns verbatim, training memory and cognitive discipline.

vii. Gender Inclusivity: Women as Scholars and Sages

Early Vedic society celebrated women scholars like *Gargī*and *Maitreyī*. The *Rigveda* features the sage *VākAmbṛṇī*, personifying speech as divine feminine energy. Historical texts like the *Harita Dharmasūtras*, *AśvālayanaGṛhya Sutra*, and *Yama smr̥ti* from ancient and medieval times reveal a fascinating glimpse into women's educational opportunities. These works indicate that young girls could pursue Vedic studies—a path traditionally reserved for scholarly and spiritual growth—after participating in the sacred *Upanayana* ceremony. Girls who chose this journey underwent the ritual as early as eight years old, marking their formal entry into learning. Once initiated, they were honoured with the title *Brahmavadinī*, signifying their role as dedicated seekers of Vedic wisdom. This practice highlights a progressive acknowledgment of women's intellectual and spiritual potential in eras often perceived as restrictive.

viii. State Patronage: Autonomy and Royal Support

Kings like Janaka of Videha sponsored parishads (scholarly assemblies) without interfering in curricula. Later, the *Arthaśāstra* codified royal duties to protect scholars, ensuring education remained a *brahma-vidyā* (sacred pursuit). Tax exemptions for teachers and land grants to gurukuls further institutionalized this support.

ix. *Upanayana*: Sacred Initiation into Lifelong Learning

The upanayana (thread ceremony) marked a student's formal entry into education. Conducted at a young age, it symbolized rebirth into a scholarly life. A whole hymn (*sūkta*) in the *Atharvaveda* (11.7.1-26) is devoted to exalting the ideals of the *brahmacārī* (celibate student) and *brahmacarya* (celibate discipline) in highly elevated terms. This text sheds light on aspects of the *upanayana saṃskāra* (initiation ritual), clarifying that during Vedic education, the student was designated as the *brahmacārī*. At the same time, the instructor held the title of *ācārya*.

x. *Brahmacharya***: Discipline of Celibacy and Austerity**

Students observed *brahmacharya* (celibacy) and adhered to strict routines: waking at dawn, studying under moonlight, and fasting during introspection. The *Mahābhārata (Śānti Parva)* praises *Ekalavya*'s self-discipline, who mastered archery through austere self-study. This regimen cultivated *tapas* (inner fire) and mental clarity.

xi. *Bhikṣā***: The Alms System and Cultivation of Humility**

Students begged for alms (*bhikṣā*) to sustain themselves and their gurus. This ritual dissolved ego, teaching interdependence between scholars and society. Even royal princes undertook *bhikṣā*, underscoring its egalitarian ethos. The term *Bhikṣāsin* describes someone who sustains themselves solely on food received through humble begging, reflecting a life of simplicity and detachment. According to the *Manthānabhairavatantra*, a true spiritual practitioner embodies qualities that blend inner strength with compassion. Such a person is courageous yet humble, content with little, and deeply devoted to their teacher. They avoid greed, radiate kindness, and approach life with diligence and self-discipline.

Physically healthy and mentally serene, they carry themselves with grace and integrity. Their wisdom goes beyond books—they understand devotion deeply and live by spiritual truths, transcending ordinary existence to touch higher realms of awareness. They follow a path free of rigid mental constructs, embracing a mindset of openness and presence. By relying on alms for nourishment, they practice letting go of desire and attachment, embodying freedom from materialism. This way of life is not about deprivation but about cultivating inner richness and connection to the sacred in everyday simplicity.

xii. Commercial education and mathematics education:

Commercial education and mathematics education are also of the chief features of the Vedic period. The ideas of the scope and nature of commercial education can be found in Manu. The knowledge of commercial geography required the people of various localities to exchange the value and quality of articles and the language spoken in different trade centuries, which was considered necessary. The theory of banking was also included in the course. However, no organized educational or institutional training was usually imparted to the family. As far as mathematics education is concerned, ancient India evolved a simple geometry system quite early. *Shiva Sutra* is the oldest mathematical work, probably composed between 400 B.C and 200 A.D. Aryabhata (476–550 CE) is the pioneer figure in the field of Indian mathematics and astronomy in ancient times. The concept of zero also belongs to this period.

Forms of Educational Institutions in the Vedic Period

a. Gurukuls: The Cradle of Holistic Learning

Gurukuls, often nestled in forest hermitages (*tapovanas*), were the primary centers of Vedic education. These institutions functioned as extended families, where students (*brahmachārins*) lived with their guru, sharing responsibilities like tending cattle, gathering firewood, and maintaining the ashram. The *ChāndogyaUpaniṣad* narrates how *Śvetaketu*'s education under sage*UddālakaĀruṇi* involved philosophical discourse, accompanied by manual labor, reflecting the ethos of *śrama* (toil) as a path to wisdom. *Gurukuls* emphasized *sahavāsa* (communal living), dissolving hierarchies and fostering empathy.

b. Parishads: Assemblies of Scholarly Discourse

Parishads evolved as advanced centers for interdisciplinary dialogue, akin to modern universities. The *BṛhadāraṇyakaUpaniṣad* (3.1.1) describes King Janaka's court as an assembly where scholars, such as Yājñavalkya, debated metaphysics. These assemblies, later formalized at institutions like Nalanda, welcomed diverse perspectives, including Buddhist and Jain philosophies. Historian R.K. Mukherjee (1958) likened parishads to "*collaborative think-tanks*," where intellectual rigor met cultural pluralism.

c. Tols and Agraharas: Specialized Learning Hubs

Post-Vedic periods saw the rise of *tols* (Sanskrit schools) and *agraharas* (Brahmin settlements), which preserved disciplines like *Nyāya* (logic) and *Vyākaraṇa* (grammar). They are referred to as repositories of *śāstric* knowledge, funded by land grants from rulers—a practice endorsed in the *Arthaśāstra*.

Role of Teacher and Students

a. Guru: The Spiritual and Intellectual Anchor

The word '*guru*' originates from the Sanskrit roots '*gu*', signifying darkness or ignorance, and 'ru', which means to eliminate it. This reflects the role of a *guru* as one who eradicates ignorance and steers others toward wisdom and understanding, symbolizing the teacher's role as a guide to self-realization. It is being said in *Vedic* prayers that:

"*oṁajñāna-timirāndhasyajñānāñjana-śalākayācakṣurunmīlitaṁyenatasmaiśrī-guravenamaḥ*"

(I entered this world shrouded in profound ignorance, but my spiritual guide illuminated my path with the light of wisdom. To him, I offer my humble reverence.) Gurus like *Dronāchārya* in the *Mahābhārata* balanced *śāstra* (textual knowledge) with *śakti* (practical skills), mentoring students in both ethics and archery.

b. Śiṣya: Discipline and Devotion

Students adhered to *gurudakṣiṇā* (voluntary offerings), symbolizing gratitude rather than transactional payment. The ancient laws mandated *vinaya* (humility) and *śuśrūṣā* (service) as core virtues. Anecdotes

like *Ekalavya*'s self-taught mastery in archery, underscore the rigor of *svādhyāya* (self-study) in ancient pedagogy.

c. Ethical Frameworks and Social Contracts

The *TaittirīyaUpaniṣad* (1.11.2) exhorts students to honor their guru as divine: *"mātṛdevo bhava | pitṛdevo bhava | ācāryadevo bhava | atithidevo bhava | yānyanavadyānikarmāṇitānisevitavyāni | no itarāṇi | yānyasmākaṃsucaritānitānitvayopāsyāni | no itarāṇi."* *(Let your mother be a god unto you. Let your father be a god unto you. Let your teacher be a god unto you. Let your guest be a god unto you. Only those actions that are irreproachable should be performed, not others. Only the noble practices observed by us should be adopted by you, not others.)* Teachers, in turn, maintained the integrity akin to the Hippocratic ethos by not withholding knowledge from deserving pupils. This reciprocity was uniquely rooted in *dharmic* duty.

National Education Policy 2020: Bridging Ancient and Modern

a. Reviving Experiential Learning

NEP 2020's emphasis on *'bagless days' and vocational internships echoes the Vedic integration of Kalās (arts), such as* carpentry (*takṣaṇa*) and pottery (*kumbhakāra*). For instance, the policy's directive to expose students to local artisans mirrors the *Śilpaśāstra* tradition, where apprentices learned temple architecture through hands-on mentorship.

b. Indian Knowledge Systems (IKS) in Curricula

The policy mandates teaching *Jyotiṣa* (Vedic astronomy) and *Yoga* alongside modern sciences, reviving the *parāvidyā-aparāvidyā* synthesis. Texts like the *Āryabhaṭīya* (499 CE), which quantified planetary motion, are proposed as case studies for interdisciplinary learning.

c. Ethics and Sustainability

NEP 2020's focus on "*knowledge of India*" aligns with the Vedic ideal of *dharma-viśeṣa* (contextual ethics). Courses on tribal agroecology and *Ayurveda* draw from the *Ṛgveda's* hymns to *Pṛthvī* (Earth), advocating ecological stewardship—a concept validated by UNESCO's 2019 *Global Education Monitoring Report*.

2. NEED AND SIGNIFICANCE OF THE STUDY

Education has long been recognized as the bedrock of a nation's socio-cultural and economic fabric. Ancient India's pedagogical systems, rooted in the *gurukul* tradition, sought not merely to impart skills but to cultivate *samatva* (equanimity) and *sarvodaya* (universal upliftment). The *Ishavasya Upanishad* (Verse 11) captures this ethos: *"vidyāṃcāvidyāṃ ca yastadvedobhayaṃsaha*

avidyayāmṛtyuṃtīrtvāvidyayāmṛtamaśnute" (He who simultaneously knows both Vidya and Avidya gets over Death by Avidya and attains immortality by Vidya). This can be inferred as true knowledge harmonizes the material and spiritual. Yet, modern education, shaped by colonial legacies and market-driven agendas, often reduces learning to transactional outcomes—grades, jobs, and economic metrics. This dissonance has led to a crisis of purpose: student suicides in India have surged, with academic pressure and stress cited as a leading cause.

The National Education Policy (NEP) 2020 acknowledges this rupture, advocating a return to India's holistic pedagogical heritage. By integrating *śilpa* (crafts), *kalā* (arts), and *yoga* into curricula, the policy mirrors the Vedic ideal of *śarīraṁkhalu dharma sādhanam* (the body as an instrument of ethical living). For instance, reintroducing vocational training in carpentry or pottery, once central to the 64 kalās, revives the ancient synergy between *jñāna* (knowledge) and *karma* (action). Such reforms are not nostalgic revivalism but pragmatic steps to address modern alienation, as noted by Amoli (2016): *"The Vedic model of gurukuls offers a blueprint for balancing individual aspirations with collective well-being."*

3. OBJECTIVES AND METHODOLOGY OF THE STUDY

3.1. Objectives

This study seeks to:

1. **Decode Ancient Pedagogical Tools**: Systematically analyse Vedic and post-Vedic texts to identify pedagogical frameworks (e.g., *śravaṇa-manana-nididhyāsana*) and assess their applicability in modern classrooms.

2. **Recontextualize the *Guru-Śiṣya* Dynamic**: Investigate how the ethical and relational tenets of *guru-śiṣyaparamparā* can address contemporary issues, such as student-teacher estrangement.

3. **Develop Interdisciplinary Strategies**: Bridge gaps between Vedic *vidyās* (e.g., *Jyotiṣa*, *Nyāya*) and modern STEM fields to foster creativity and critical thinking.

3.2. Methodology: Bridging *Śruti* and *Smṛti* with Modern Scholarship

This study is of a descriptive nature, based on the sources of ancient works from India.

Sources of Data: The research employs an approach that interprets ancient texts through the lens of 21st-century educational theory, fostering a dialogue between the past and the present.

a. **Primary Sources:** At its heart are primary sources, such as the Śruti literature, where the Rigveda's hymns reveal early insights into learning, and the Upaniṣads (e.g., ChāndogyaUpaniṣad) offer timeless lessons on mentorship and inquiry. Alongside these, the study delves into *Smṛti*texts, such as the *YājñavalkyaSmṛti*, to trace how educational norms evolved.

    b. Secondary Sources: To enrich this exploration, secondary sources—ranging from scholarly commentaries on ancient texts to modern peer-reviewed studies on *Vedic* pedagogy—provide a broader context. The National Education Policy (NEP) 2020 documents are also examined, offering a contemporary lens to assess ancient ideals. Grounding the research in real-world practices, insights from traditional *gurukuls* reveal how ancient knowledge systems, such as *Vāstuśāstra,* can be creatively integrated into modern STEM education. For instance, students can learn mathematics through the principles of sacred architecture, demonstrating how ancient*vidyās*can breathe life into modern learning. This approach not only highlights the relevance of ancient wisdom but also humanizes the research by connecting textual ideals to lived, grassroots practices.

3.3.Analytical Framework: The various materials collected from different sources have been scrutinized, verified, and systematically organized for a thematic analysis and comparative pedagogy analysis in digital–age education.

4. ANALYSIS OF THE DATA:

In this study, the data were analysed based on the objectives.

Objective 1: Decode Ancient Pedagogical Tools - To find Ancient Indian Pedagogical tools for quality Education.

In ancient India's early Vedic era, education revolved around intimate mentorship, with gurus occupying a revered role as custodians of knowledge. They guided disciples through personalized instruction, often tailored to individual aptitudes. However, post-Vedic education gradually shifted toward fostering intellectual autonomy in pupils, marking a transformative phase where learners became active participants in their scholarly journeys. This pedagogical evolution was anchored in *prashna-uttara* (question-answer dialectics), a method where teachers posed graduated inquiries to unravel philosophical truths. For instance, the *BṛhadāraṇyakaUpaniṣad* (3:8) illustrates how sage *Yājñavalkya* engaged knowledge seekers and seers like*Gargī* in probing dialogues, dismantling abstract concepts through relentless inquiry.

The*Upaniṣadic* tradition elevated this discursive style, encouraging debates (śāstrārtha) that dissected metaphysical mysteries through logic (*tarka*). Such practices later crystallized into formal systems like *NyāyaŚāstra*, India's seminal treatise on reasoning. While oral transmission dominated—exemplified by the rhythmic recitation of Vedic hymns (*śruti*)—emerging literacy saw teachings gradually documented in *smṛti*texts. Beyond catechism, *gurus* employed allegories and parables; the *ChāndogyaUpaniṣad*, for example, uses the metaphors o to explain the unity of existence and culminating in the famous *Mahavakya*: "*Tat TvamAsi*"— *That Thou Art* (this is the traditional translation, while translated as '*that's how you are*' as per Brereton and others).

Crucially, pupils were not passive recipients. They engaged in *svādhyāya* (self-study), *manana* (critical reflection), and *chintana* (contemplation), honing their cognitive and imaginative faculties. A *guru* might offer

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cryptic hints, challenging students to independently unravel more profound truths—a practice mirroring heutagogical learning principles. This triad of self-driven inquiry, dialogue, and meditation forged not just scholars but holistic thinkers, a legacy echoing in today's emphasis on active learning.

Take the case of astronomy. Ancient Indian education integrated *Jyotiṣa* (astronomy) within the *Gurukula* system, employing oral transmission, mnemonic techniques, and experiential learning. The pedagogy followed the *Śruti-Smṛti* tradition, ensuring the precise preservation of astronomical knowledge, which later came to literary format in texts like the *VedāṅgaJyotiṣa* (c. 1400 BCE), *Āryabhaṭīya* (499 CE), etc. Teachers emphasized direct observation of celestial bodies using naked-eye astronomy alongside mathematical modeling, enabling students to correlate planetary movements with Vedic cosmology. *Yantras* (astronomical instruments) such as the *Śaṅku-yantra* and *Gola Yantra* facilitated experiential learning, transforming abstract cosmological principles into a tangible reality. Such practical engagement with the cosmos reinforced the *Upaniṣadic* vision of interconnectedness between the microcosm (*Pindāṇḍa*) and the macrocosm (*Brahmāṇḍa*).

The *Taittiriya Upanishad* refers to an exciting mode of teaching, where *Varuna*, the father of *Bhrigu*, instructs the latter, gives only general hints and directions about the Absolute four times and leaves him to find its content. Only in the fifth turn *does Bhrigu himself gain* knowledge of the Absolute. Similarly, *Svetaketu* also acquired practical knowledge from his father concerning the mind and its various faculties, as well as the interdependence of psychological conditions. It is evident, therefore, that in the drama of learning, the pupil plays the role of the protagonist, and the teacher is a mere guide to him.

The *BṛhadāraṇyakaUpaniṣad* describes a timeless journey of learning, rooted in three foundational practices: *Śravaṇa* (attentive listening), *Manana* (contemplative reflection), and *Nididhyāsana* (profound meditation). These are not dry academic steps but living pathways to awakening wisdom and realizing the self. *Śravaṇa*, the act of deeply listening to sacred teachings, is strengthened by six key supports. These ensure the learning process is both meaningful and transformative:

   i. *Upakrama:* A sacred initiation or ritual that formally begins Vedic study, infusing it with solemnity and devotion.
   ii. *Abhyāsa:* Consistent, dedicated repetition of the text to embed its essence into memory and consciousness.
   iii. *Apūrvatā:* A receptive mindset, free from preconceptions, allowing fresh insights to take root.
   iv. *Phala:* Understanding the purpose and long-term significance of the teachings, linking them to life's ultimate goals.
   v. *Arthavād:* Exploring commentaries and interpretations that illuminate hidden layers of meaning in the Vedic words.
   vi. *Upapatti:* Achieving clarity through logical reasoning and personal experience, solidifying faith in the teachings.

Manana, the second stage, is where the seeker actively wrestles with the teachings. It involves questioning, debating, and reflecting on ideas until they become inseparable from one's truth. This is how knowledge transforms from mere information into lived wisdom.

The *Upaniṣad* further emphasizes that actual realization of the Absolute (*Brahman*) requires more than intellectual effort. It calls for *Tapas* (disciplined austerity) and *Yoga* (union through spiritual practice), which purify the mind and dissolve its limitations. These practices enable direct experience of the divine, beyond words and thoughts. Together, *Śravaṇa*, *Manana*, and *Nididhyāsana*—supported by *Tapas* and *Yoga*—create a complete path. They harmonize the head, heart, and soul, guiding seekers from theoretical understanding to the radiant truth of existence.

Objective 2: To recognize and visualize the Importance of the Teacher in the learning process.

While self-study (*svādhyāya*) was widely practiced in ancient India, the significance of a teacher for a student's growth could never be overlooked or replaced. The *Katha Upaniṣad* explicitly highlights the essential role of the teacher. Such educators were required to possess three key qualities: deep knowledge, intuitive insight, and the capacity to inspire intellectual growth. They were revered as architects, mentors, and pillars of society. Traditionally, education was reserved for a teacher's biological son or a formally accepted pupil. After the *upanayana* (sacred initiation ceremony), the teacher would treat the student as his child, forging a lifelong spiritual bond. Only those deemed worthy—based on aptitude, dedication, and a willingness to serve the teacher—were accepted as disciples. The *Upaniṣads* frequently describe students approaching their teachers with bundles of firewood, symbolizing humility and readiness to learn. Alongside formal systems, some informal teachers shared wisdom without rituals. For instance, Yājñavalkya taught his wife Maitreyī and the scholar Gārgī philosophy and theology through open dialogue.

The Guru's role in preserving disciplines like *Jyotiṣa-vidyā* (astronomy) within *Para-vidyā* (spiritual knowledge) traditions was vital. Teachers were seen as embodiments of the divine, encapsulated in the verse: *GururBrahmāGururViṣṇuḥGurur Devo Maheśvaraḥ* ("The Guru is Brahmā, Viṣṇu, and Śiva"). In centers like Nālandā and Ujjain, the *Guru-śiṣyaparamparā* (teacher-disciple tradition) thrived. Here, students mastered complex astronomical calculations (*siddhānta*) and observational techniques through rigorous dialogue, memorization, and the decoding of cryptic verses (*sūtras*) composed by scholars like Āryabhaṭa and Bhāskara II. Beyond academics, Gurus nurtured ethical reflection, framing knowledge as a journey toward self-awareness (*ātma-jñāna*).

Family-based education also existed. Fathers often mentored their sons, as seen when Svetaketu received wisdom from his father Uddālaka, or when Varuṇa taught his son Bhrigu. These examples illustrate that while self-study was respected, ancient Indian education unequivocally upheld the irreplaceable guidance of a teacher.

Objective-3, To find out the suitable pedagogical strategies/Techniques in ancient Indian Literature.

In those times, education was not limited to theoretical exchanges alone. Equal emphasis was placed on two distinct forms of wisdom: *Parāvidyā*and*Aparāvidyā.*

These terms, central to Vedantic thought, differentiate between supreme spiritual insight (*Parāvidyā*) and practical, worldly understanding (*Aparāvidyā*). *Parāvidyā* represents the knowledge through which one realizes the supreme divine reality, *Param Brahma*. It is the higher wisdom guiding individuals toward self-realization and spiritual awakening. This metaphysical knowledge aimed to equip learners for their ultimate purpose beyond the material world. *Aparāvidyā,* on the other hand, pertains to intellectual and empirical knowledge of worldly affairs, enabling practical survival and success in daily life.

Curriculum Details:

A. ***Parāvidyā* Curriculum:** It included core texts, such as the four Vedas (Ṛgveda, Yajurveda, Sāmaveda, Atharvaveda); six auxiliary disciplines (Vedāṅgas): Phonetics (Śikṣā), Ritual Rhythm (Chandas), Grammar (Vyākaraṇa), Etymology (Nirukta), Astrology (Jyotiṣa), and Ritual Code (Kalpa); and additional subjects, including Mythology (Pūraṇa), Divine Philosophy (Brāhmavidyā), History (Itihāsa), Astronomy, Biology, and related fields.

Teaching Methods: The teaching methods included a form of holistic method of learning – teaching – inculcating with:

i. Chanting (*Adhyayana*): Collective recitation of Vedic hymns by teachers (*Gurus*) and students (*śiṣyas*) in a devotional setting.

ii. Śravaṇa (Hearing): Absorbing sacred teachings through attentive listening as sages recited mantras, followed by heartfelt memorization.

iii. Manana (Reflection): Critical contemplation of lessons. Students would internalize the Guru's teachings by debating their meaning, answering questions, and resolving doubts through group discussions.

iv. Nididhyāsana (Realization): Deep assimilation of truths to embody them in daily life, transcending mere intellectual understanding. These three stages (*Śravaṇa, Manana, Nididhyāsana*) were practiced daily, each phase building on the previous to foster profound spiritual growth.

B. ***Aparāvidyā*Curriculum:**This curriculum focused on mastering material sciences and worldly systems, aiming to prepare individuals for tangible challenges. Subjects included: Governance (*Rājanīti*), Military Strategy (Śastravidyā), Ethics (Nītiśāstra), Economics (Arthaśāstra), Law (Dandaśāstra), Medicine (Āyurveda), Metallurgy (Lohavidyā), Animal Husbandry (Paśupālana), and the Natural Sciences (the study of earth, plants, and environmental systems).

Teacher-Pupil Relation for Cosmological Transformation in Ancient India:

Gurur Brahmā Gurur VishṇuḥGurur Devo Maheshvaraḥ

Guruḥ Sākṣhāt Paraṁ Brahma Tasmai ŚhrīGuraveNamaḥ

Which translates to: "The *Guru* is *Brahmā* (the Creator), The *Guru* is *Vishṇu* (the Preserver), The *Guru* is *Maheshvara* (*Shiva*, the Destroyer). The *Guru* is the Supreme *Brahman* itself. Salutations to that revered *Guru*." This verse highlights the divine status of the *Guru*, equating the spiritual teacher with the trinity of Hinduism (*Brahma, Vishnu,* and *Shiva*) and the ultimate reality (*Para Brahman*). It signifies that a *Guru* is not just a teacher but a guide who leads one to self-realization and enlightenment. This sloka demonstrates how the Guru-Sishyaparampara becomes a faithful and reciprocal relationship.

Aristotle famously observed that educators, who teach the art of living well, deserve greater honor than parents, who merely give life. This sentiment resonated deeply in ancient India, where the teacher, or *Guru*, was revered as the cornerstone of society. Unlike other cultures, India uniquely elevated the *Guru*'s role, viewing education not as a mechanical exchange but as a sacred, transformative bond between mentor and student.

In ancient Indian tradition, the *Guru* was more than an instructor—they were a spiritual and intellectual guide, leading pupils from ignorance to enlightenment. This relationship transcended material concerns; students lived with their teachers, learning through oral teachings in the absence of written texts. The *Guru*'s duty was to impart knowledge unconditionally, with no expectation of payment. Instead, students offered *Guru Dakshina*, a voluntary token of gratitude, only after completing their studies. This gesture was never compulsory, reflecting the selfless ethos of education. Teachers often supported pupils' basic needs, ensuring even the poorest could access learning, while students contributed through humble tasks like gathering firewood or tending to the *Guru*'s household.

Moral integrity was paramount. *Gurus* were expected to exemplify virtue, and students were selected for their character, not wealth or status. Education was a lifelong journey; even after formal training, pupils returned to their mentors for guidance. In Buddhist and Jain traditions, monks taught without salaries, embodying the principle that knowledge was a duty, not a commodity. The bond between teacher and student was so profound that *Gurus* were venerated as embodiments of divine wisdom, fostering humility, discipline, and mutual respect.

This system thrived on simplicity. Students embraced modest living, focusing on intellectual and spiritual growth rather than material comforts. The Guru's authority was gentle yet firm, prioritizing moral development over rigid control. Unlike today's institutionalized education, ancient India's model emphasized direct, personal mentorship. Monasteries like Nalanda upheld this tradition without bureaucratic interference, allowing the teacher-student relationship to flourish organically.

Modern education, by contrast, often prioritizes transactional dynamics, reducing teachers to mere service providers and students to clients. The erosion of this sacred bond has fuelled academic disillusionment and

unrest. Ancient India's approach—rooted in trust, reverence, and shared purpose—offers a timeless lesson: education flourishes when it nurtures the soul as much as the mind. Reviving these ideals could mend the fractures in today's classrooms, reminding us that authentic learning begins not with curriculum standards, but with human connection.

5. IMPLICATIONS OF THIS STUDY:

This research holds critical relevance today, as modern education transcends mere instruction—it now focuses on weaving knowledge, ethics, competencies, and mindsets into a holistic learning experience. The study strengthens contemporary teaching practices by revisiting India's age-old educational methods, which emphasized experiential and value-based education. Its insights aim to deepen educators' understanding of core subjects while inspiring innovative strategies rooted in tradition.

Ancient Indian pedagogy, with its learner-centric and interdisciplinary ethos, continues to shape modern education. By integrating these timeless approaches, today's classrooms can foster curiosity and critical thinking, aligning with the National Education Policy (NEP) 2020. The policy champions multidisciplinary learning, Indigenous Knowledge Systems (IKS), and hands-on engagement—principles mirrored in traditions like *Jyotiṣa* (Vedic astronomy), which blended empirical observation with mathematical rigor. Similarly, NEP's push for early scientific exposure through practical activities echoes ancient practices where students interacted directly with tools and phenomena to grasp cosmic principles.

Such synergies between past and present revitalize education, encouraging teachers and learners alike to embrace wisdom that balances analytical reasoning with cultural heritage. This dynamic fusion not only enriches pedagogy but also nurtures adaptable, thoughtful individuals prepared for tomorrow's challenges.

6. CONCLUSION:

Ancient scriptures mention: *'Yathāpitarauputrānpālanaṁkurutaḥ, tathāśiṣyaḥācāryātśikṣaṇamlabhet.'* which translates to 'Just as parents take care of (nurture) their children, in the same way, a student should receive education from a teacher.' It highlights the parental role of the teacher in nurturing a student's intellectual and moral growth. In *TaittirīyaUpaniṣad* (1.11.2), students are instructed to regard their mother, father, and teacher as divine (*Mātṛdevo bhava, Pitṛdevo bhava, Ācāryadevo bhava*), emphasizing the *Guru's* role beyond instruction, akin to parental guidance. The *Guru-śiṣyaparamparā* ensured that learning was experiential, interactive, and value-based, where the teacher fostered independent thinking while providing moral direction. This aligns with Plato's concept of education, which views a teacher as both an instructor and a mentor, shaping a student's character alongside imparting knowledge.

For generations, Indian wisdom traditions have emphasized the profound bond between teacher and student as a sacred pathway to gaining and internalizing accurate understanding. In this dynamic, the Guru—a guide deeply rooted in timeless insights about existence, humanity, and the natural world—serves not merely as an instructor but as a beacon illuminating the learner's journey. Recent explorations into India's educational heritage aim to

shed light on how these age-old teaching practices functioned, offering insights that could help bridge the richness of the past with the needs of modern learning systems. Such efforts highlight the enduring relevance of traditional methods in cultivating ethical awareness, critical thinking, and practical abilities in students.

This alignment between past and present is reflected in India's National Education Policy (NEP) 2020, which reimagines educators as mentors and guides, echoing the holistic role of the Guru. Rather than limiting teachers to rigid curricula, the policy encourages adaptable, interdisciplinary approaches where educators nurture curiosity, spark meaningful dialogue, and tailor learning to individual needs, much like the interactive, student-centred methods of ancient times. NEP 2020 also prioritizes grounding education in ethical and cultural values, mirroring the way traditional Indian learning intertwined intellectual growth with self-discovery. For instance, subjects like astronomy were taught not just as academic disciplines but as tools for understanding humanity's connection to the universe.

Central to this vision is empowering teachers as lifelong learners and custodians of knowledge, a principle deeply rooted in the Guru-Shishya tradition. By integrating Indian Knowledge Systems (IKS) into curricula, the policy ensures that ancestral wisdom enriches contemporary education, fostering respect for both innovation and tradition. Through this synthesis, the timeless ideals of personalized guidance, moral integrity, and intellectual humility continue to shape how we teach and learn today, proving that the heart of India's educational legacy remains vibrantly alive.

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