

Review



A critical scoping review of *Trividha Jnanopaya* in relation to Modern Pedagogical Approaches

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ABSTRACT:

Background- In *Ayurveda*, teaching and learning were based on the “*Gurukula*” system of education. A “*Gurukula*” (residential school) was a place where a *Guru* (teacher) and *Shishya* (student) lived together. There were three ways for obtaining the knowledge, i.e. *Adhyayana*, *Adhyapana*, and *Tadvidhya Sambhasha* with the learned persons. Study of a single *Shastra* gives only a limited understanding; therefore, one should also get knowledge of other *Shastras*. There is sufficient evidence available in ancient literatures that indicates the prevalence of initial forms of learning and teaching methodologies. **Objectives:** Critical analysis of *Trividha Jnanopaya* as traditional *Ayurveda* Medical Education and to compare the ancient *Ayurvedic* education system with the modern education system. **Methodology:** This is a literary study of *Ayurvedic* pedagogical practices focuses on the *Samucchaya vidhi* (collecting the scattered matter) and *Nirdesha vidhi* (detailed explanation) methodologies. It incorporates the insights of ancient *Ayurvedic* texts and modern educational literature. **Conclusion** - The review demonstrates how well *Ayurvedic* education, *Adhyayana*, *Adhyapana*, and *Tadvidya Sambhasha* integrates the cognitive, psychomotor, and affective domains. The study highlights the value of traditional practices while promoting their incorporation with contemporary teaching methods.

KEYWORDS: *Trividha Jnanopaya*, *Adhyayana*, *Adhyapana*, *Tadvidhya Sambhasha*, *Guru*, *Shishya*, Medical education

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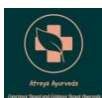
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1. INTRODUCTION

The *Ayurveda* is regarded as one of the most ancient sciences of life in the world, which has its root origin in *the Vedas*. Teaching and propagation of *Vedas* were dependent on *Guru Shishya Parampara*, wherein the knowledge was transmitted by the teacher to the disciples directly by speech and hearing method, which is why *Vedas* were also known as *Shruti* (gained by hearing). There has been a gradual evolution of teaching and learning methodologies through historical periods, i.e., *the Vedic period*, the *Samhita period*. [1]

In Pre *Vedic* period (Before 1000 BC), Man used to learn only from experiences as no languages were developed. In the *Vedic* period (1000-500 BC), language was well developed and knowledge was converted in the form of *mantras* by enlightened *Aptas* (learned person). Thus vast knowledge was summarized and transmitted to the next generation as *Shruti* i.e. heard knowledge. In *the Samhita* period (200 BC- 400 AD), *Guru Shishya Parampara* “*Gurukula*” system of education was the main way of teaching. There were 5 big well-known Universities in Ancient India: *Takshashila*, *Nalanda*, *Vallabhi*, *Vikramshila*, and *Sharadapeeta*, which focused on the overall development of students, like today’s well-known Autonomous Institutes IIT and IIM’s which are famous across the globe. [2]

The text “*Agnivesha Tantra*” written by *Agnivesha* was restored by *Acharya Charaka*, [3] which later known as ‘*Charaka Samhita*’. Numerous commentaries on *Charaka Samhita* have been written by various *Acharya*, including *Bhattara Harishchandra*, *Gayadasa*,

Swamikumara, *Yogendranath Sen*, *Jejjata*, *Chakrapanidatta*, *Shivadas Sen*, and *Gangadhar Roy*. Similarly, *Vishwamitra*, sent his son *Sushruta* to *Divodasa Dhanwantari* to learn *Ayurveda*. Who then wrote the *Sushruta Samhita*, [4] Commentaries on *Sushruta Samhita* were written by *Jejjata*, *Gayadasa*, *Chakrapanidatta (Sutrasthana)*, *Chandrata*, *Harana Chandra*, *Chakravarthy*, *Bhaskarabhatta*. The same methodology was followed by *Acharya Vagbhata* [5] the author of *Ashtanga Sangraha* and *Ashtanga Hridaya*. And Commentaries on *Ashtanga Hridaya* were also written by *Hemadri*, *Arunadatta*, *Indu*, *Shivadas Sen*, *Chandranandana*, *Sridasa Pandita*.

Brihatrayees explain about means to attain knowledge i.e. *Trividha Jnanopaya*. *Acharya Charaka* has explained three ways to attain knowledge and proficiency *Adhyayana* (studying), *Adhyapana* (teaching), and *Tadvidhya Sambhasha* (Discussion with authorities). To explain different concepts in *Ayurveda*, *Acharya Charaka* has given various methods of teaching and learning.

The classics of *Ayurveda* have explained in detail various means to attain knowledge, both helpful for the teacher as well as for the learner. So this study highlights the teaching-learning methodology adopted by our ancient *Acharya* and also compares Ancient and Modern Education Systems. Hence, the study aims to provide a critical review of ancient *Trividha Jnanopaya* and compare it with current teaching and learning methodologies.

2. METHODOLOGY

This study is a scoping literature review on *Ayurvedic teaching and learning methodology* based on *Samucchaya vidhi* (collecting the scattered matter) and *Nirdesha vidhi* (detailed explanation). The study integrates insights from classical *Ayurveda* literature and contemporary teaching and learning methods. Primary sources include classical *Ayurvedic* texts (*Charaka Samhita, Sushruta Samhita, Ashtanga Sangraha, Ashtanga Hridaya*), alongside peer-reviewed medical education literature in only English language from databases like PubMed and Scopus in past 5 years searched with Keywords as “Medical education”, “Teaching learning”, “TL methods”, “Blooms taxonomy and millers pyramid”, “Medical education and TL methods”. The study employs systematic textual analysis to extract definitions, understanding, and analysis of *Trividha Jnanopaya* (means of attaining knowledge), alongside a comparative framework aligning *Ayurvedic* concepts (*Adhyayana, Adhyapana, and Tadvidhya Sambhasha*) with modern teaching and learning methodology. The data is synthesized through concept mapping, textual synthesis, and comparative analysis to establish logical equivalencies between *Ayurvedic* and contemporary teaching and learning frameworks.

3. RESULT

***Trividha Jnanopaya* (means of learning)**

A. *Adhyayana* (method of study)

Adhyayana, the authoritative statement (*Aaptopadesha Pramana*) is the primary source of proper knowledge of a treatise. It gives knowledge about promoting health, prevention, and management of a disease. All this

knowledge can be inferred only by the person who has a proper understanding of the treatise. Therefore, *Adhyayana* is very important for knowing about *Aaptopadesha*. The following are the considerations for *Adhyayana*. [6] [7] [8]

1. *Guru Shishya Parampara* (teacher – disciple tradition)

Guru Shishya Parampara denotes a succession of teachers and disciples. It is the tradition of spiritual relationship and mentoring where teachings are transmitted from a *guru* (teacher) to *Shishya* (disciple) after formal *Shishyopanayan*.

Qualities of *Guru Shishya* & *Shastra Parikshanam* (teacher, disciple and text)

Guru should have Clear knowledge of the subject and practical experience, diligent, dexterous, and virtuous with a skilled hand, well equipped, possessing all the senses in normal condition, and acquainted with constitutions, well-versed in courses of emergency management and quick actions, having his knowledge uncensored, free from ego, envy, anger, forbearing, Paternal to disciples. [9] The ideal *Shishya* (student) should be calm, humble, modest, and well-behaved. They must be free from physical deformities, sensory disabilities, addictions, anger, vanity, greed, and idleness. The student should have qualities like intelligence, logical reasoning, memory, and open-mindedness. Student should have Healthy physical traits like. The student should be eager to learn, sincere, dedicated to learn and practice. They should show empathy, purity, affection, skillfulness, obedience, and respect for the teacher. Ideally, they should come from a

physician's family or have experience with a physician's conduct. They should be motivated to learn scientific knowledge and capable of grasping complex ideas while protecting that knowledge. [10] [11] [12] [13] Another important part of their education is *Shastra Parikshanam* (Examination of text), which involves examining essential texts. These texts should be reliable, written by experts, recognized by scholars, rich in meaning, clear of repetition, and self-explanatory. They must be logically organized, free from complex words, full of synonyms, and pleasant to read. The materials should be easy to understand, concise, and supported by examples. They should also be systematically arranged with summaries and commentaries to ensure clarity, logical flow, and effective communication of ideas for the learners. [14] [15]

2. Upanayana of Shishya (Initiation of vedic education)

A *shishya* with all the above aspects considered starts the education process as a *samskara* (ritual) called *Upanayana*. The actual intention of this *Samskara* is education for the attainment of *Brahmagyana* (spiritual knowledge) so the child joins as a student under a teacher to attain it. He is taught to control his emotions, anger, aggression, and grief, and is advised to behave maturely and responsibly. He is also taught to take care of himself, his parents, and society. This *Samskara* is important for achieving personal and social success in the future. The child will be sent to *Gurukula*, where he studies under the guidance of a teacher. [16]

3. Adhyayana and Adhyayana Nishiddha Kala (Time suitable and not suitable for studying)

According to *Charaka*, one who wishes to study should begin at a proper time with a calm mind by rising early in the morning. After tending to natural urges and daily body cleansing, the individual should perform spiritual rituals such as sprinkling water and worshipping gods, sages, cows, *Brahmans*, preceptors, elders, accomplished persons, and the teacher. Then, while sitting comfortably on even, clean ground, one should attentively recite the aphorisms in order as taught by the teacher, using a clean voice and repeating them. [17] Study should be avoided during unseasonal lightning, when houses appear burnt, during fires, earthquakes, major festivals, meteors falling, or eclipses, and also on new moon days or at dawn and dusk. Due to light and visibility at these times, *Charaka* also advised using suitable accents and correct morphology, neither rushing nor delaying, and avoiding extremes of pitch so that the concepts and context are understood clearly. In present scenarios, students begin their day with a moment of mindfulness or meditation to cultivate a calm mind. [18]

According to *Sushruta*, the various lunar phases—*Krishna Paksha* and *Shukla Paksha*—should be taken into account because of their auspiciousness and correlation with both cosmic and psychological transformations. Additionally, he advises against studying during natural disasters because students' mental states are likely to be distracted or anxious during these times, which makes them unsuitable for studying *vedas* by *brahmanas* should be avoided during festivals because they divert attention and make it difficult to concentrate. *Sushruta* say to not

study in places such as battlefields, war zones, and unfinished cremation sites because these symbolize death, violence, or instability and incite anxiety, tension, and mental instability, research should not be conducted there. [19]

Astanga Sangraha agrees with some aspects of *Charaka* and parts of *Sushruta*. Furthermore, he says that since Jupiter is thought to affect intelligence and learning, one should not study when the planet *Guru* (Jupiter) is absent. [20]

4. Methods of Reading and Understanding Text:

The *Ayurveda* follows a structured methodology for teaching and learning like recitation, explanation with examples, interpretation, and continuous study. Students are instructed to recite *Sutras* clearly, sequentially, and with correct pronunciation, as mispronunciation can change meaning. Understanding is achieved through three primary approaches: *Arthasha*, which involves logical interpretation; *Vakyasha*, which focuses on textual recitation; and *Arthavyavsha*, which entails repeated discussions for clarification. *Sushruta* outlines four strategies to enhance intelligence: engaging in debates and discussions, reviewing related sciences, serving knowledgeable teachers, and maintaining continuous study. This traditional model matches current educational ideas like active learning, peer learning, cross-disciplinary learning, and learning by mentoring.

5. *Vishkanupravesha* (Graduation)

After *Adhyayana*, the pupil should apply knowledge to improve their practical skills. Thus individual will start a medical career and commence practicing.

Vishkanupravesha refers to the stage where a disciple, having thoroughly studied the science of medicine, deeply reflected upon it, and verified its truths through observation and practical experience, becomes fully equipped with the knowledge necessary for clear exposition of the science. At this point, the disciple is deemed ready to begin their medical career and commence professional practice. . Though not widely practiced today, its spiritual and ethical essence remains relevant and can be reflected in modern initiatory practices like Graduation day and ethical pledges in *Ayurvedic* education. [21] [22] [23] [24]

B. *Adhyapana* (Teaching Methodology)

Teaching Methods of *Acharya Punarvasu Atreya*: *Punarvasu Atreya* was the best teacher, known for his teaching methods adapted to teach his disciples. At the beginning of each lesson, *Punarvasu Atreya* used to announce the definite subject that he proposed to elaborate and explain. While expanding the subject by *Punarvasu Atreya*, there were intelligent interjections by *Agnivesha* asking for clarification of certain points. The entire teaching method of *Punarvasu Atreya* is in the form of questions and answers; in other words can be correlated with inquiry-based learning / problem-based learning. It is an attractive style of teaching, useful for easy understanding. While teaching the subject the teacher *Atreya* used to ask his disciples or contemporary scholars about their views, incorporating group discussion, brainstorming, and peer learning. [25] [26]

For example,

In *Charaka Samhita, Sutra Sthana*, *atreya* follows various methods of teaching learning by first asking the

view of his disciples on the topics of discussion, then he gives his opinion, summarizes it, and concludes the discussion precisely. [27]

Since it's not possible to cover every aspect of science by one person or expert, the students were instructed to consult answers from experts in those fields to understand the truths and principles mentioned by them, and they should also seek all the possible comments on related work. *Atreya's* methodical dialogue-based learning, aphoristic instruction, logical reasoning, illustrative analogies, thematic sequencing, and group discussions, not only enhanced the field of Ayurveda but also promoted interdisciplinary dialogue among various scientific traditions. [28] *Atreya* followed a sophisticated ancient pedagogy that is in line with modern interactive and problem-based learning.

Teaching methods by Arunadatta

In *Ashtanga Hridaya, Sutra Sthana* 1st chapter, *Arunadatta* explains the teaching methods. He says that the teacher should explain every verse like *Pada* (Word to word), *Artha* (Meanings of the word), *Prayojanatah* (Utility), *Chodyatah* (Doubts/ questions), etc.

A person with even one of the following qualities like: Learning, rationality or capacity for innovative thinking, specific scientific knowledge, memory, devotion to performing timely duties, and clinical practice. Learning, wisdom, practical knowledge, experience, accomplishments, and continual guidance from eminent mentors, is sufficient to add significance to *Vaidya* (physician). The one who possesses all the above qualities deserves to hold the honourable degree of

Vaidya. [29] The teacher, despite having imparted immense knowledge and trained himself perfectly in each subject, should make sure to see that his student becomes capable enough to bring his knowledge into practice and become a good and intelligent practitioner. The teacher should train their student and supervise them performing various procedures individually until they master them. Under the guidance of a good teacher, surgical students should master different surgical and para-surgical methods. In spite of having a perfect theoretical knowledge, the medical student is not fit to practice until they have mastered the procedures by practicing several times. [30]

At the end of the training period, the teacher should also make sure that student has become well versed in virtues, like *Vakshaoushtava* (eloquence and communication skills) *Arthavignana* (Mastery over the subject), *Pragalbhya* (Mastery over everything), *Karma naipunya* (skilled in surgical/medical procedures), *Tadabhyasa*- practical application of surgical and medical knowledge, *Siddhi*- achievement of success. [31] This framework aligns with the 1956, Benjamin Bloom and a group of educators' three "domains" as Cognitive, Affective, and Psychomotor. Bloom's taxonomy remains one of the most widely used and easily understood systems in the field of education, irrespective of other models. This categorization was done to specify the aims of education and training and to make sure that learners acquire not only knowledge but also skills and dispositions that are consistent with those aims. The Cognitive domain, where students progress from memorization to analytical reasoning and

creative thinking, is represented by *Satata Adhyayana* (constant study) in the traditional *Ayurvedic* model. The Affective domain, which deals with attitude, professional ethics, and dedication to duty, is equivalent to *Tadvidhya Acharya Seva*, which means discipline, respect, and mentorship. In the psychomotor domain, practice is the key to developing applied skills like surgery and direct patient care. Bloom's taxonomy is used in contemporary education to help teachers create lesson plans and assessments for students at every learning level. *Ayurveda* also placed a strong emphasis on progressive learning, which included learning practical skills under the supervision of experts, memorizing sutras, participating in debates to develop critical thinking skills, and integrating related sciences. The goal of both systems is the development of holistic competency, which goes beyond academic knowledge to include professional behaviour and real-world experience.

c. *Tadvidhya Sambhasha* (Discussion)

The third method to attain knowledge is *Tadvidhya Sambhasha* (discussion) with the men of same profession who have acquired skill in exposition. This will give the final finishing of his proficiency and enlarge his field of vision by throwing light on many obscure points and sharpening his wits and methods of cogent arguments. He then becomes an expert. In *Tadvidhya*

Sambhasha, the main aim is to achieve or gain knowledge by all means of sources through discussions, seminars, presentations, etc. It not only increases knowledge but also increases vocabulary/command over the subject. This will correspond to the clinical meetings of the colleges and conferences of the present day. Discussion with experts is of two types, *Sandhyaya Sambhasha* (friendly discussion) and *Vigruhya Sambhasha* (hostile discussion). [32]

Acharyas have given Guidelines for preparation before initiating and recording the debate – one should choose a subject that is either advantageous to oneself or extremely challenging for the opposition, or the opponent should be given such a topic of discussion which will be quite averse to the assembly's views, ensuring agreement with the participants of the assembly. The discussion and debate are initiated, and on completion, the assembly makes the appropriate judgment regarding the discussion and its outcome based on the members' opinions, circumstances, and choice.

Method of Discussion in an Assembly (*Sabhā Sambhāṣā Vidhi*)

In *Ayurvedic* tradition, the mode of discussion in scholarly assemblies is guided by both the nature of the assembly and the caliber of the opponent. [33]

Nature of the Assembly			
Assemblies Unfit for Discussion		Suitable Assemblies for Discussion	
<i>Jñānavatī Pratiniviṣṭa</i> (highly knowledgeable)	<i>Mudāvati Pratiniviṣṭa</i> (Biased)	<i>Mudāvati Suhṛt</i> (friendly)	<i>Mudāvati Udāsīna</i> (neutral)

Caliber of the Opponent		
<i>Pratyavara</i> (Inferior Opponent)	<i>Pravara</i> (Superior Opponent)	<i>Sama</i> (Equal Opponent)

When engaging with an inferior or unqualified Opponent (*pratyavara*) one should use long, complex aphorisms that are difficult to comprehend, ridicule the opponent using gestures and sarcasm before the assembly, deny the opponent the opportunity to speak, and use obscure and difficult words, then assert that the opponent's proposition is invalid. Some believe these tactics also apply in a *Vigṛhya Saṁbhāṣā* (hostile debate) with a *pravara* (superior) opponent, but such confrontation is not desirable and should be avoided. [34]

Debating in a *Jñānavatī Suhṛt* or *Mudāvatī Suhṛt* assemblies (Qualified Assembly), one may initiate *Vigṛhya Saṁbhāṣā* with a *pratyavara* (inferior) or *sama* (equal) opponent. In a *Suhṛt Udaāsīna Pariṣad* (neutral and friendly assembly), where participants are attentive, well-learned, and skilled in reasoning, debate should begin only after evaluating the strength and weakness of the opponent. If the opponent is stronger, gracefully withdraw the debate without revealing your intent. If the opponent is weaker, he should be subdued immediately using suitable methods. [35]

Śhāstrārtha (spiritual discussion) and *Vādamārga* (debate) in *Ayurvedic* Education for assessing academic depth and interpretive abilities, traditional *Ayurvedic* teaching places a strong emphasis on *Śhāstrārtha* (scriptural discussion) and *Vādamārga* (the path of debate). A competent *Ayurvedic* scholar can properly quote original *śhlokas*

and provide a thorough and succinct explanation of their meanings in response to questions about classical texts (*Tantra*) and its constituent parts *Sthāna* (sections), *Adhyāya* (chapters), and *Praśna* (questions). [36] A scholar of this type should also be able to explain things using logic, examples, assumptions, connected concepts, and conclusions, all the while presenting the material in a way that students of all skill levels may grasp. It is emphasized that the ability to clearly repeat and rephrase difficult ideas is a sign of mastery that entitles a person to take part in discussions and arguments. [36] Eight classical queries can be used to assess the authenticity of a doctor's knowledge: *Tantra* (classical text), *Tantrārtha* (meaning of the text), *Sthāna* (section), *Sthānārtha* (purpose of the section), *Adhyāya* (chapter), *Adhyāyārtha* (content of the chapter), *Praśna* (question), and *Praśnārtha* (question). [37] Pretentiousness and shallow knowledge are discouraged, but humility is valued; dishonest doctors, who are marked by verbosity, pointless argument, and conceit, are seen a threat to society and need to be uncovered by this methodical assessment. [38]

Traditional *Ayurvedic* evaluation methods like *Vādamārga* and *śhāstra*, which stress the importance of logical reasoning, text interpretation, and critical discussion as necessary tools for judging a student's analytical skills and depth of knowledge. [39] [40] The following key domains are addressed by these

traditional methods, which harmoniously align with modern CBME principles Knowledge, through contextual application, *śhloka* memorization, and interpretation of classical texts, Skills, through the development of logical reasoning, analytical ability, and clinical correlation during discussions, Attitude through the cultivation of humility, ethical debate, and collaborative learning, and Communication through the use of appropriate terminology, clarity of speech, and the ability to teach concepts effectively across different learner levels.

Parishad (seminars and symposia): type of *tadvidha sambhasha*- The *Bruhatrayees* document several *Parishads* where learned sages, physicians, and even kings participated in profound discussions on medical, philosophical, and clinical issues. These academic assemblies exemplify a structured yet dynamic pedagogy rooted in the ancient *Gurukula* system, where senior *Acharyas* like *Atreya* served as mentors rather than authoritarian figures. Each *Parishad* revolved around a focused subject, such as the origin of disease, embryological development, classification of *Rasas* (Taste), etc, and engaged multiple scholars presenting varied, often contradictory viewpoints. [41]

Structure and Philosophy of the *Parishad* Model

The *Parishads* represent the *Gurukula* system in action, where an *Acharya* (mentor) presided over scholarly debates without imposing unilateral authority. Instead, knowledge was constructed through dialectics, wherein multiple perspectives were voiced and examined. Each symposium focused on a specific guiding question, such as the origin of disease (*Rashipurusha Parishad*), the

classification and utility of *Rasas* (*Rasa-Ahara Parishad*), the order of embryological development (*Garbhavakranti Parishad*), etc. [42]

Participants presented divergent viewpoints, often rooted in *Shaastra*, but validated through logical reasoning, clinical experience, and observation. In many cases, highly respected sages like *Bharadwaj* posed counter-arguments to senior mentors such as *Atreya*, showcasing a culture of open intellectual inquiry. Ultimately, conclusions were synthesized by the presiding *Acharya*, who evaluated each perspective with clinical, philosophical, and practical reasoning.

The following Pedagogical Themes and Teaching Tools were used in the *parishad/ tadvidhasambhasha*.

1. Discussion-Based Learning and Dialectics -The *Parishads* encouraged debate over rote memorization. This promoted not only retention of knowledge but also intellectual sharpening, fostering deeper understanding and student ownership of learning.
2. Philosophical and Clinical Integration- Topics ranged from metaphysical (*Atma, Karma, Kaala*) to physiological (*Dosha, Rasa, Beeja*) concerns.
3. Peer discussion and Group discussion - Symposia like the *Madanaphaladi Parishad* assessed herbs best for *Basti* (enema) therapy. The conclusion was one should decide the ideal drug for *asthapana basti* based on disease-specific responses and individual constitution and contextual pharmacology.
4. Mentorship and Role of the *Acharya*- the *Acharya* guided discussions, corrected fallacies, and synthesized the final view.

5. Consensus through Dialogue- Learning concluded not with dogma but with dialogue-driven consensus. Conclusions were accepted only after careful examination, reinforcing the values of mutual respect and collective wisdom.

4. DISCUSSION

Ayurveda is an ancient science of Indian origin and has a rich heritage in the field of knowledge and education. Higher level conceptions of learning in lecture method, demonstration method, panel or group discussion etc are encouraged in ancient teaching and learning methods as available in *Ayurvedic* classics.

The great preceptors like *Acharya Charaka*, *Sushruta*, and *Vagbhata* have emphasized on deep understanding of concepts, their rational multi-dimensional application, and focused on a cognitive approach of learning instead of surface learning. Hence advantages of salient features of cognitive learning have been highlighted in various contexts of *Ayurvedic* classics.

According to *Acharya Sushruta*, critical thinking should be encouraged to explore the knowledge hidden in verses or phrases. In most of the contexts, the meaning of the verses cannot be exposed directly. Contextual meanings in some of the verses are found in *Leshokta* (shortly described) or *Sandigdhartha* (not clearly understood), even *Na Ukta* (not uttered properly). In those cases, various questionnaires related to context, critical thinking, creativity, or innovation must be encouraged among the students of *Ayurveda* for understanding the right perspective of the concept as per context and its multidimensional application.

Acharya Charaka has emphasized vivid learning of *Ayurvedic* verses and analysis of *Vakyasha* (phrase), *Vakyarthasha* (meaning of entire phrase), and *Arthavyavsha* (learning or reciting shlokas with recalling of word by word meaning) of different verses or phrases of *Ayurvedic* texts, which must be incorporated in the teaching and learning curriculum. The role of cognition or meta-cognition by encouraging the critical thinking Skill, logical questionnaire has also been emphasized.

Among ancient methods of teaching and learning method as prescribed by *Arunadatta*, only the preliminary step '*Patha*' (repeated learning for memorization of *Shloka*) has been focused on by students, and the other two preceding steps, '*Bodha*' (deeper understanding) and '*Anusthana*' (execution) are often neglected by most of the teachers and students in the present time. *Patha* involves knowledge, and *Avabodha* means understanding of the *Shastra*. *Anusthana* is the application & evaluation of conceived meaning.

Modern educational frameworks, such as Bloom's Taxonomy, categorize learning objectives into cognitive, psychomotor, and affective domains, much like the ancient *Trividha Jnanopaya* (*Adhyayana*, *Adhyapana*, *Tadvidya Sambhasha*) of *Ayurveda* (Table 1 & Table 2). *Arunadatta's* model in *Ayurveda*—*Padartha* (Knowing Basic concepts), *Tadarthatah* (knowing the nuances of concept) , *Prayojanatah* (knowing the utility) , *Chodyatah* (creating curiosity by doubts and confusions), *Pariharatah* (clarifying the doubts, confusions and contradictions), *Sambandhatah* (establishing the applied relation with the concept) ,

and *Abhideyatah* (reinforcing the learned knowledge)—mirrors modern scaffolding techniques used to transition learners from basic awareness to advanced mastery. The four stages of competence described in modern psychology—Unconscious Incompetence, Conscious Incompetence, Conscious Competence, and

Unconscious Competence—also find parallels in *Shravana* (hearing), *Manana* (remembering), *Nidhidhyasana* (engage in mindful activities), and *Acharana (practice)-Pracharana* (preaching) concepts of Indian philosophy.

Table 1: Similarity between *Ayurveda* education and Modern education

<u>Educational Technology / Pedagogy</u>	<i>Ayurveda</i> Education	MODERN EDUCATION
Teaching Learning Approach	<p>According to <i>Charaka Samhita Trividha Jnanopaya</i> is explained i.e.</p> <p>1-<i>Adhyayana</i>, thus learning by self-studying,</p> <p>2-<i>Adhyapana</i>, learning by teaching/ or preaching to others</p> <p>3-<i>Tadvidya Sambhasha</i> : learning by discussion with experts was the ways one can attain knowledge. It is one of the three methods of acquiring knowledge as per <i>Ayurveda. Charaka Samhita</i>, there are references to brainstorming sessions on various topics.</p> <p>These are enhancements of knowledge, mastery over speech, and clarity of unclear topics</p>	<p>The modern pedagogical approaches in education are constructivist, inquiry-based, reflective, collaborative, and integrative.</p> <p>*Constructive and reflective student-centered learning emphasizes learner involvement in learning, but this approach focuses on application-based learning, unlike <i>Adhyayana</i>.</p> <p>*Integrated learning is nothing but learning across varied subjects, experts, practices, research, and approaches, like interdisciplinary learning. Gaining knowledge from all possible sources, which is both <i>Adhyayana</i> and <i>Adhyapana</i> together. In <i>Ayurveda</i>, <i>Acharya Sushruta</i> has explained Constructivism in chapter 9, <i>Yogyasutriya Adhyaya</i>.</p> <p>*Collaborative learning means learning in teams, groups, and with peers to achieve the learning goals. This is achieved through various methods discussions, debates, seminars, symposia, which are completely relatable to <i>tadvidha sambhasha</i>. Group creativity technique/ Brainstorming is designed to generate a large number of ideas for the solution of a problem. Participation in a group discussion, seminars, conferences, Journal clubs, clinical case presentations, etc is a subdomain cognitive and affective domains.</p> <p>*Inquiry-based learning is a learner-centered approach where students themselves explore textbooks, journals, etc., to answer their own questions, which can be taken as <i>Adhyayana</i> or teacher-guided inquiry were the teacher gives a problem and encourages students to search for possible answers, similar to <i>Adhyapan</i>. When the same inquiry is discussed, debated, and final conclusion drawn can be compared to <i>tadvidha sambhasha</i>.</p>
Aim	<i>Ayurveda</i> education has a holistic	Character & Social aims is also an aim of education. Character is universally

	development of an individual by guiding them through the path of <i>Dharma, Artha, Kama Moksha, and</i> means of attainment through <i>Sadvritta</i> , is explained focusing on good conduct & Social well-being	accepted aim of education, thus modern education too focuses on holistic development of the student
Teaching Strategy	In <i>Ayurveda Tantra Acharya</i> , before starting the lesson, the aim of the lesson is explained, and the use <i>Nyaya</i> for the explanation of the hidden meaning of different topics was the teaching strategy followed.	A similar teaching strategy is used by Statements of the aim of the lesson or assignment are discussed with the students before starting the lesson. The teacher explains the reasons for their learning and the Maxims of teaching to explain the hidden meanings of the subject.
Student engagement	In <i>Ayurveda, Acharya</i> used to ask questions to arouse curiosity and engage students in Learning.	To focus the attention and engage children, the teacher can stimulate their curiosity by asking thought-provoking questions.
Selection of study material	In <i>Ayurveda Tantra</i> , there is an explanation about <i>Shastra parikshanam</i>	In the modern education system selection of books is explained.

Table 2: Differences in Ayurveda Education and Contemporary Medical Education

S.N	Aspects	Ayurveda Education	Contemporary Medical Education
1	Student selection <i>Adhyapana</i>	By the <i>Guru</i>	Through a counseling process
2	School organization for <i>Adhyayana</i>	<i>Gurukula</i> -Residential schooling	Both Residential and Non- non-residential schooling
3	Mentor mentee Proximity	Available in person at all times, with long-term bonding.	Not feasible at all times, a formal relation
4	Approach in education	Both teacher and student-centric	Learner Centric
5	Teaching-Learning (TL) Methods adapted	<i>Very broad Adhyayana, Adhyapana, Tadvidhya Sambhasha</i>	Focused constructivist, inquiry-based, reflective, collaborative, and integrative.
6.	Evaluation	Non structured	Structured (Miller's pyramid)

5. CONCLUSION

This thorough literary analysis of *Ayurveda* teaching-learning methodology, with particular reference to

Brihatrayees, emphasizes on *Adhyayana, Adhyapana, and Tadvidya Sambhasha*, and how well it integrates the cognitive, psychomotor, and affective domains. The

research highlights the value of traditional methods while promoting their incorporation with contemporary teaching approaches. Giving the scope of further integration with newer teaching learning methodology to improve the efficacy of *Ayurvedic* education in the present scenario.

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