



Teaching and learning methods in Ayurveda and its current perspectives.

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ABSTRACT

Teaching and learning are the two sides of a coin. Present education in Ayurveda is mostly becoming an examination oriented not knowledge oriented. Education is not simply imparting knowledge in a particular faculty or subject or making oneself to be able for securing jobs or scoring Marks in exams, but at the same time is also training in logical thinking which helps the coming generations adjust to the ever-changing environment. It also means opening the doors of the mind, cultivation of Mind, cleansing and realization of the self. The present education system is weighed down by several reasons as a result of which the outcome is becoming self-centric. If we study our ancient education methods we found it from Buddhist period. The goal of Buddhist education is to attain wisdom and it is spiritual oriented. The chief aim of Buddhist education was all round development of child's personality. This included his physical, mental, moral, intellectual and spiritual development.

Ayurveda is an ancient science of Indian origin. India has the rich heritage in the field of knowledge and education. The importance of ancient sciences Ayurveda is being recognized and appreciated at

national and international levels. *Adhyayan* (learning) and *Adhyapan* (teaching) are important aspects of education system. Ancient education system in India was based on *Gurukul* and *Guru Shishya Parampara* (Teacher-Disciple Tradition) which was also followed in *Ayurveda*. *Ayurveda* and it was formally recognized by W.H.O in 1978. At present education system has been integrated with modern tools and technologies which are being incorporated in teaching and learning of Ayurveda. The present paper deals with critical review of ancient and current skills of Medical teaching and learning.

Key words: Education- *Ayurvedic*, Ancient, Buddhist, Learning, Teaching, *Adhyayan*, *Adhyapan*, *Guru Shishya Parampara*

INTRODUCTION

According to the ancient Ayurveda scholar Charaka, "ayu" comprises the mind, body, senses and the soul. It is serving people from thousands of years. Various Ayurvedic texts were written and Ashtang division of Ayurveda was done. Experts of various branches used to teach their disciples in *Guru Shishya Parampara*. Group discussions (*Sambhasha*) were important method of enhancing

knowledge. The aim of Buddhist Education is to make a free man, a wise, intelligent, moral, non-violent & secular person. Students became judicious, humanist, logical and free from superstitious. Students became free from greed, lust and ignorance. Buddhist Education was wide open and available to the people of all walks of life. The principal goal of the Buddhist Education is to change an unwise to wise, beast to priest.

Objectives

To assess ancient skills of learning and teaching in Ayurveda

To assess modern skills of learning and teaching

To correlate ancient and modern view of learning and teaching and to improve the quality of Ayurveda education

Materials and Methods

The ancient teaching and learning methods available in Ayurvedic classical books will be studied and literature regarding modern teaching and learning methods will be studied and it will be collected from various books and internet. The methodologies of teaching and learning from both streams of knowledge will be compared and critically analyzed.

ANCIENT TEACHING METHOD

Importance to Theoretical and Practical Knowledge: In Ayurveda Acharya has given equal importance to theoretical as well as Practical knowledge. It is necessary that first the theoretical knowledge should be gain and after one should attend to the practical skill and competency. The physician, who has learnt these both, is fit to be honored by kings¹. He who has learned only the theoretical part but not skilled in practice gets confused at the time of approach of a patient, even as a coward feels at entering the battle field. And the

one who is skilled in practice but is ignorant of the theoretical aspect of the science, does not receive approval of good men. Both these are lacking in skill and are inexpert in the discharge of their duties, for they only know half the science and are like birds with one wing only². Experimental knowledge was also imparted to the medical scholars in the form of *Yogya Karma* (operative surgery) like *Bhedan* (incision) over bladder of dead animals, *Bandhan karma* (bandaging) on parts of a dummy and so on³.

In Ancient India, the teaching and learning was based on *Gurukula* system of education which was also followed in *Ayurveda*. A “*Gurukula*” was a place where a teacher or “*Guru*” and students lived together like family members. There were three ways for obtaining the knowledge and proficiency in the subject i.e. *Adhyayanam* (learning), *Adhyapanam* (teaching) and *Tadvidya Sambhasha* (discussions) with the learned persons⁴.

Before the learning (*Adhyayan*) process is begun, the disciple have to choose the *Shatra(branche)* and *Acharya*, the one with the highest qualities should be selected.

1. Examination of the *Shastra* (Treatise)- The *Shastra* should be prepared and recognized by the experts of the concerned field. It should have well-arranged matter, easy to understand and free from errors.

2. Examination of the *Acharya* (Teacher) – The teacher should have good theoretical as well as clinical and practical knowledge of the subject. He should have high moral character and no ego besides having good behavior with the disciples. After being satisfied with the *Shastra* (Treatise) and *Acharya* (Teacher) the scholar should start the study of the Discipline /Treatise by serving the teacher.

3. Method of learning /Study- After completing daily regime and rituals, the Shastra should be practiced regularly at appropriate place in sufficiently loud voice and suitable pronunciation in the morning, afternoon , evening and night. Before teaching (*Adhyapan*) the teacher should examine the disciple. The Disciple should be obedient, laborious and should have high moral values, good conduct, and good health having no infirmity. Thereafter teaching of the Shastra (treatise) should be started giving disciplinary instructions to the disciple after induction ceremony of the students. *Shusruta* has mentioned six qualities of a surgeon as *Shauryam* (courage), *Ashu Kriya* (quick action.), *Shastrataikshyanam* (checking the sharpness of instruments), *Aswedavepathu* (no sweating or tremors in emergency i e should not be frightened), *Asammohacha* (must not become unconscious) as qualities of a surgeon .If students having these qualities are encouraged to study the surgery as a specialty; they will definitely become good surgeons⁵.in modern science it told that surgeon should have three H-Head (talent) Heart (kindness), Hand (skillful hands).

The teacher should explain each Shloka (Sentences and words) with their meaning, the disciple should hear and learn them carefully⁶

In *Charaka Samhita* it has been stated that a person should be able to explain the whole text, its different sections and chapters and specific topics in each chapter distinctly, and this is done by *Vakyasha*, *Vakyarthasha*, and *Arthavayavasha*.

- 1) **Vakyasha** - means reading the Sutra as it has been stated in the treatise
- 2) **Vakyarthasha** – It is the meaning obtained after appropriate

understanding and interpretation of a *Vakya* or sentence.

- 3) **Arthavayavasha** –These indicate the words which are difficult to understand and require special Attention⁷

The different subjects included in the treatise should be learned from their respective experts. It is essential that the disciple should have fare knowledge about other basic subjects /treatise related to the main subject or treatise .A good scholar is supposed to have knowledge of multiple subjects⁸.

Once the teacher was satisfied with the theoretical and practical knowledge as well operative efficiency of the scholar and getting permission from the Ruler (King or administrator) then only the scholar was allowed for *Vishikhanupravesha* (independent practice).⁹

Sambhasha (Discussion) was a method of increasing knowledge in *Parishad* (Conferences). Discussion was done with the person of his own profession .It helps to clarify the much obscure point and sharpens the mind of the scholar and ultimately helps to make expert of his field. It resembles with conferences of the present day. *Sambhasha* (Discussion may be friendly discussion or hostile with the purpose of defeating the opponent with the knowledge¹⁰.

In *Ashtang Hridaya* three terms have been mentioned in the context of learning ie *Paatha*, *Avabodha* and *Anusthana*. *Paatha* implies ‘to make by heart’ likewise repeated reading or reciting Shlokas. *Avabodha* means the pattern of understanding the Shastra. *Anushthana* means following the methods/guidelines as quoted in texts .*Arunadutta* in his commentary on *Ashtanga Hrudaya Sutrasthana* 1st *Adhyaya* explains the

teaching methods and stated that a teacher should explain every verse with following points. (1) *Padatah* – Word to word. (2) *Arthatah* – Meaning of the word. (3) *Prayojanatah* – to explain Utility (4) *Chodyatah* – to raise Doubts/questions (5) *Pariharatah* – To clarify the doubts. (6) *Sambandhatah* – Relation with the aim. (7) *Abhidheyatah* – Subject matter to be explained¹¹.

Sushrut Samhita stressed the following practices for learner and researcher. (*Sushrut Chikitsa* 28/27)

Satat Adhyayan – constant study

Partantra Avlokan – studying parallel subjects, integrated approach.

Vada – professional discussion

Tadvidya – Participation in seminar, symposia etc

Acharya seva – constant interaction with Acharya serving him

These are stated as *Buddhi medhakaro gano* – activities that promote once intelligence and intellectual activities.

Other than Ayurveda if we see the ancient literature regarding learning and teaching found many things in Tripitaka (Buddhist *Pāli* literature). *Takshshila*, *Nalanda*, *Vikramshila*, *Kashi* were the well-known great universities of India where students from different countries use to come for different type of education. The gatekeeper use to take entrance exam of students in *Nalanda* University. The story goes that *Jeevak*, a physician and surgeon who practiced medicine in the time of Buddha, was asked by his *Guru* to collect herb from the woods that would not have any medicinal value. *Jeevak* roamed everywhere but could not find a single herb that was not having medicinal property! Imagine the biodiversity of our country and the huge untapped potential in our flora and fauna.

The *Mangal Sutta* is well-known *sutta* in *Pāli* literature. There are 38 life's highest blessings are explained in this *sutta*. This discourse is recorded in Theravada Buddhism's Pali Canon's *Khuddaka Nikaya* in two places: in the *Khuddakapāṭha* (*Kh* 5), and in the *Sutta Nipāta* (*Sn* 2.4). In the latter source, the discourse is called the *Mahāmangala Sutta*.

The first stanza of *Mangal sutta* explains a comprehensive list of the “aim of education”.

Bāhusaccañ ca sippañ ca, Vinayo ca susikkhito, Subhāsītā ca yā vācā, Etaṃ maṅgala-muttamañ -

To have much learning, to be skilled in crafts, to be well-trained in moral conduct and to have speech that is well-spoken, this is the highest blessing.

1. *Bāhusaccañ* – well-informed, knowledge, learning
2. *Sippañ* – skillful in crafts, different types of techniques.
3. *Vinayo* - in moral conduct, Discipline
4. *Susikkhito* - to be well-trained, proper training
5. *Subhāsītā* - well-spoken, moral- life
6. *Vācā* – speech

It is not sufficient to possess knowledge and technical ability, there is something more important, *Vinaya* means discipline. It is twofold: i.e.

- 1) Discipline in learning
- 2) Discipline you get out of learning

Knowledge without discipline is not only futile but also harmful. Scientists in the west have gone very far; but what has happened in the west? Knowledge and technology are utilized to destroy mankind. What is the use of such a knowledge bereft of discipline?

Susikkhito means proper training. A good training is also essential for knowledge to be useful. Why do we need all this? For the purpose of achieving, *Subhāsītā ca yā vācā* literary means “good speech” but the real implication here is a “Moral life”, a righteous life; in short education should produce a “good citizen” who is useful to himself and also to the society¹².

The teacher has to play different roles as information provider, role model, facilitator, assessor, planner, resource developer; these are six areas of the role of the teacher

What are the 21st century skills of the teacher?

- Critical thinking
- Creativity
- Collaboration
- Communication
- Information literacy
- Media literacy
- Technology literacy
- Flexibility
- Leadership
- Initiative
- Productivity
- Social skills

Educational philosophy of Buddhism methods of teaching

- Mostly verbal
- Questioning, Answering, discussion and debates
- Travelling and nature study method
- Preaching and conference method
- Both teacher and student were required the authority of reason and experience
- Student were required to maintain the freedom of thoughts

- Disciplined in matter of moral and conduct
- Maintain self-restrained life.

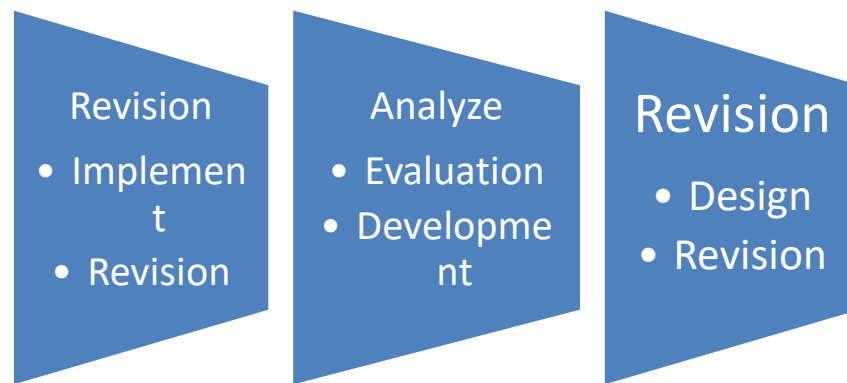
Modern Learning and Teaching Skills

Learning is the relatively permanent change in a person’s knowledge or behavior due to experience. Learning styles include listening and reading, observing and imitating and doing. There are various methods for teaching such as lecture method, demonstrations, field trips, panel discussions, group discussions, question –answer method, role playing SGT(small group teaching),LGT(Large group teaching),PBL(problem based learning),EBL(evidence based learning),OSCE(Objective structured clinical examination),OSPE(Objective structured practical examination) Team based learning, outcome based learning, integrated learning¹³

INSTRUCTIONAL SYSTEM DESIGN

- To create learner centered, innovative, authentic, inspirational learning module
- ADDIE(The five phases— Analysis, Design, Development, Implementation, and Evaluation)
- SAM (Successive Approximation model)
- ASSURE MODEL
- DICK and CAREY model

The ADDIE model was based on an earlier ID model, the Five Step Approach, which had been developed by the U.S. Air Force. Originally developed for the U.S. Army by the Centre for Educational Technology at Florida State University, ADDIE was later implemented across all branches of the U.S. Armed Forces¹⁴



SAM Model: Best Instructional Design Model for Short Deadlines and Staying on Budget

When you have short deadlines, want to stay on budget, and collaboration with SMEs, SAM would be the best model for you. This model is an alternative to ADDIE that also emphasizes efficiency and repetition. **SAM** stands for ‘Success of Approximation Model’. SAM model contains three stages¹⁵:

1. Preparation
2. Iterative Design
3. Iterative Development

The **ASSURE** model is an instructional system or guideline that teachers can use to develop lesson plans which integrate the

use of technology and media (Smaldino, Lowther & Russell, 2008). The ASSURE Model places the focus on the learner and the overall outcome of accomplishing learning objectives¹⁶

A	Analyze learner characteristics
S	State objective
S	Design materials or Select, Modify
U	Utilize materials
R	Require learner response
E	Evaluation

Walter Dick, Lou Carey, and James Carey developed this comprehensive and detailed process in 1978. It is composed of ten components as shown in the chart below¹⁷:

Conduct instructional Anylysis-Revise Instruction

☐

☐ write performance objective

☐ develop criterion referenced tests

☐ *develop instruction strategy

☐ *Identify entry behaviours

*identify instructional Goals

Dic and Carey Model

☐

☐ Develop and select instructional material

☐ Develop and conduct formative evaluation

☐ develop and conduct summative evaluation

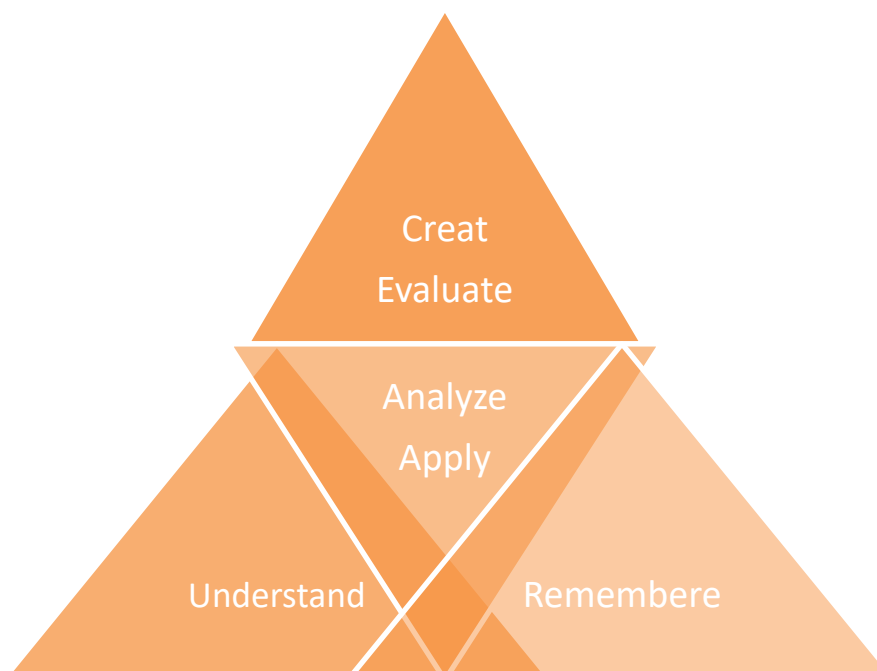
Gagné's Nine Events of Instruction

- Gain attention
- Describe goal
- Stimulate prior knowledge
- Present the content
- Provide guidance
- Elicit performance
- Provide feedback
- Assess performance

- Evidence retention and transfer

Robert Gagné proposed a series of events which follow a systematic instructional design process that share the behaviorist approach to learning, with a focus on the outcomes or behaviors of instruction or training

BLOOMS TAXONOMY-2001



Bloom's taxonomy is a set of three hierarchical models used to classify educational learning objectives into levels of complexity and specificity. The three lists cover the learning objectives in cognitive, affective and sensory domains. The cognitive domain list has been the primary focus of most traditional education and is frequently used to structure curriculum learning objectives, assessments and activities¹⁷.

There are three taxonomies, which of the three to use for a given measurable student

outcome depends upon the original goal to which the measurable student outcome is connected. There are knowledge-based goals, skills-based goals, and affective goals (affective: values, attitudes, and interests); accordingly, there is a taxonomy for each. Within each taxonomy, levels of expertise are listed in order of increasing complexity. Measurable student outcomes that require the higher levels of expertise will require more sophisticated classroom assessment techniques.

Table 1: Bloom's Taxonomy of Educational Objectives for Knowledge-Based Goals

Sr. no.	Level of Expertise	Description of Level	Example of Measurable Student Outcome
1	Knowledge	Recall, or recognition of terms, ideas, procedure, theories, etc.	When is the first day of Varsha Rutu?
2	Comprehension	Translate, interpret, extrapolate, but not see full implications or transfer to other situations, closer to literal translation.	What does the rutu sandhi represent?
3	Application	Apply abstractions, general principles, or methods to specific concrete situations.	What would varsha rutucharya?
4	Analysis	Separation of a complex idea into its constituent parts and an understanding of organization and relationship between the parts. Includes realizing the distinction between hypothesis and fact as well as between relevant and extraneous variables.	Why are rutu in visargakala saumya and in Adankala Agneya?
5	Synthesis	Creative, mental construction of ideas and concepts from multiple sources to form complex ideas into a new, integrated, and meaningful pattern subject to given constraints.	If the dosha bala is alpa and Vata Dosha prakopa what diet should be taken in Varsha rutu?
6	Evaluation	To make a judgment of ideas or methods using external evidence or self-selected criteria substantiated by observations or informed rationalizations.	What would be the important rutucharya?

Table 2: Bloom's Taxonomy of Educational Objectives for Skills-Based Goals

Sr. No	Level of Expertise	Description of Level	Example of Measurable Student Outcome
1	Perception	Uses sensory cues to guide actions	Selection of the patient for Vaman
2	Set	Demonstrates a readiness to take action to perform the task or objective	Describe vaman vidhi?
3	Guided Response	Knows steps required to complete the task or objective	Determine the purvakarma Pradhan karma and paschat karma.
4	Mechanism	Performs task or objective in a	the procedure of vaman as

		somewhat confident, proficient, and habitual manner	described
5	Complex Overt Response	Performs task or objective in a confident, proficient, and habitual manner	Use titration to determine the Ka for an unknown weak acid
6	Adaptation	Performs task or objective as above, but can also modify actions to account for new or problematic situations	You are performing Vaman vidhi in patient
7	Organization	Creates new tasks or objectives incorporating learned ones	Samyak vaman lakshana Avoide Atiyoga, Ayog.

Table 3: Bloom's Taxonomy of Educational Objectives for Affective Goals

Sr .no	Level of Expertise	Description of Level	Example of Measurable Student Outcome
1	Receiving	Demonstrates a willingness to participate in the activity	When I'm in OPD or IPD I am attentive to the Teacher, take case, notes, etc. I do not use the mobile instead.
2	Responding	Shows interest in the objects, phenomena, or activity by seeking it out or pursuing it for pleasure	I complete my case taking and participate in case discussions.
3	Valuing	Internalizes an appreciation for (values) the objectives, phenomena, or activity	I seek out information in popular media related to my class.
4	Organization	Begins to compare different values, and resolves conflicts between them to form an internally consistent system of values	Some of the ideas I've learned in my class differ from my previous beliefs. How do I resolve this?
5	Characterization by a Value or Value Complex	Adopts a long-term value system that is "pervasive, consistent, and predictable"	I've decided to take my family on a vacation to visit well-known hospitals, herbal gardens in kerala which I learned about in class.

Bloom's Taxonomy is a convenient way to describe the degree to which we want our students to understand and use concepts, to demonstrate particular skills, and to have their values, attitudes, and interests affected. It is critical that we determine the levels of student expertise that we are expecting our students to achieve because

this will determine which classroom assessment techniques are most appropriate for the course¹⁸.

CONCLUSION

The teaching is an art and it is a continuous 'Quality Improvement' learning process which was followed in Ancient days. Acharya Charaka and Sushruta have

mentioned fairly many sets of such teaching and learning methodologies which prove to be acceptable even in now days. Medical Education Technology is a special Dept. in our Maharashtra University of Health Sciences. This Dept. conducts three days Basic and six days advanced MET workshops regularly. Medical, Dental, Ayurved, Homeopathy, Nursing and Physiotherapy all faculties work together under one roof. Ancient education system in India was based on *Gurukul* now it is on *Kulguru* based.

- Proper and adequate Measures should be taken To Improve Ayurveda Education system
- Non Practical Things from the Texts should be deleted from curriculum
- Skills and competency should be developed In UG and PG Scholars
- Examination Assessment System should be improved
- Latest IT Tools should be adopted in teaching learning methods
- SWOT Analysis can be A useful tool in reforming Ayurveda Education
- Clinical Confidence should be developed in Students And Methods From Other Education Fields should be adopted
- Research Methodology and Integrated approach should be developed
- Perfect utilization of ancient knowledge, teaching and learning of Ayurveda should be integrative in nature involving ancient as well as modern methodologies without affecting its fundamental principles.

- *Sushruta* states that "*Ekam shakham adhiyano na vidya shastra nishchayam*". We need exposure to different fields of knowledge.
- Only appearing exams, scoring marks and receiving degree in convocation is not education Dr.Babasaheb Ambedkar says that 'cultivation of mind is the ultimate aim of education'. Development of wisdom is the real education and the path is only *Sīla* (It is an internal, aware, and intentional ethical behavior), *Samādhi* (right concentration) and *Prajñā* in Sanskrit or *paññā* in Pāli (Wisdom).

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