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Teaching and Learning Methodology – An Ayurvedic Perspective

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ABSTRACT

Teaching and learning are the two sides of a coin. Today's education in Ayurveda is mostly becoming an exam oriented "teaching and learning". The prevalent 'direct teaching' method also known as the "factory approach" discourages student curiosity, questioning, innovation and feedback. Innovation in teaching and learning methods aimed at development of creativity and original thinking skills are rarely adopted in Ayurveda. There is very little focus on application of knowledge and development of practical skills. Basically teaching should include two major components transferring and receiving information. So, any communication methods that serve this purpose without destroying the objective could be considered as novel methods of teaching. Various teaching, learning as well as debating methods have been narrated by our Ancient *Acharyas* to gain and update one's own knowledge. So this present review article pays a tribute to all the Ancient *Acharyas* who planned to explore the methodology of teaching as well as other learning methods that can be attempted in imparting knowledge to the students as well as the teachers in the present era.

Key words: Teaching Methodology, Learning, Ayurveda, Innovative, *Tadvidhya Sambhasha*.

INTRODUCTION

Teaching methodology is a unique practical problem faced by generations of teachers.^[1] The most critical aspect of teaching is to define the level of involvement of the student to learn and limit of exposure.

Education is the formal process by which society deliberately transmits its accumulated knowledge,

Skills, customs and values from one generation to another. But in today's era, information and knowledge stand out as very

important and critical input for growth and survival. Rather than looking at education simply as a means of achieving social upliftment, the society must view education also as an engine of advancement in an information era propelled by its wheels of knowledge and research leading to development.^[2]

In Ancient India, the "*Gurukula*" system of education was the method of the Ayurvedic training that was generally followed. A "*Gurukula*" was a place where a teacher or "*Guru*" lived with his family and trained the students. The *Gurukula* system of education suffered a setback during the medieval and colonial periods of Indian history.^[3]

However, there is no rule book on which teaching methods match up best to which skills and/or content that is being taught. Students often have little expertise in knowing if the method selected by an

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individual instructor was the best teaching method or just “a method” or simply the method with which the teacher was most comfortable.^[4]

Today, the teacher of Ayurveda is expected not only to be well versed in the theoretical concepts of books; he/she is expected to be a practically oriented. The ‘memory oriented’ teaching in Ayurveda has to become ‘understanding oriented’.

The classics of Ayurveda have explained in detail about the various means to attain the knowledge both helpful for the teacher as well as the learner. So this present review article highlights the teaching and learning methodology adopted by our ancient *Acharyas*.

METHODOLOGY

The Ancient teaching as well as learning methods found scattered in the Ayurvedic classics are critically examined, evaluated and probable innovative modifications that can be included in traditional methods without altering the principles of teaching and learning are suggested.

PRE-REQUISITES FOR A QUALITY TEACHING AND LEARNING:

An Excellent Teacher:

The texts of Ayurveda have also explained about the qualities of a good teacher. It describes that the teacher should have high exceptional abilities both moral and intellectual, and should enable the students to attain a knowledge that would give them fulfillment of life.^[5]

An Ideal Student:

The student should be physically, morally and intellectually sound. In these qualities much importance was given to moral qualities of a student. They insisted that the physical appearance must not offend the aesthetic sense of general humanity and especially in view of the impression that the medical man has to make on the patient.^[6]

Knowledge of the Technical Terms:

The students were advised to pay special attention in understanding the technical terms like *Tantrayuktis*

(canons of exposition) and should have a good command on Sanskrit language and grammar without which correct interpretation of the science is not possible. The subject matter in Ayurveda is described in *Sutra Rupa* (in the form of verses) in a concise manner and the deep interpretation and application of it, is left to the reader. So to understand and interpret this, one should have the knowledge of the technical terms called *Tantrayuktis*.^[7]

ANCIENT TEACHING METHOD – AN EVALUATION

Importance to Theoretical and Practical Knowledge:

Equal importance was given to theoretical and practical training. The person devoid of or deficient of any of these is unfit to the practice of medicine.

It is necessary that first the theoretical knowledge should be got and after having it one should attend to the practical skill. The physician, who has learnt these both, is fit to be honored by kings.^[8]

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 only.^[9]

Thus it becomes clear that the knowledge of the medical aspirant of those days was comprehensive and in no way mean or easy of attainment and in many respects beyond the actual conditions obtaining even today among the generality of the profession.

Teaching and Learning Methodologies in *Charaka Samhita*:

The first step in learning the science is to get theoretical knowledge i.e. mastering of the texts thoroughly. This can be taught by the ideal teacher. The texts in those days were written in a concise style known as *Sutra* style. The books were in combined form of both prose and verse. The prose was in a concise style while the verse was mostly in its simplest

form that is *Anusthup*. They were meant especially for the oral transformation of the knowledge. This was the practice adopted for the acquisition of Vedic knowledge as well as the Ayurvedic science. To understand the Ayurveda *Shastra* and achieve proficiency in the science the following method has to be adopted.

1) *Adhyayanadi, Adhyapana and Tadvidhya Sambhasha*:

The three ways to attain the knowledge and proficiency are *Adhyayanam* (learning), *Adhyapanam* (teaching) and *Tadvidya Sambhasha* (discussions) with the persons well versed in the subject.^[10]

Adhyayana Vidhi (learning method):

Charaka describes that the student should sit on an even and clean ground, should, concentrating his mind, go over the aphorisms in order repeating them over and over again all the while understanding their meaning fully, in order to correct his own faults of reading and to recognize the measure of those in the reading of others.^[11]

Adhyapana Vidhi (teaching method):

The method of *Adhyapana* (teaching) was exposition which consisted of expounding the subject before the students. *Adhyapana* or Teaching others was regarded important in making the subject clear to the person himself and enabling others to understand the science properly.

The teacher who teaches the worthy disciples will obtain all the auspicious fruits of teaching, those described and even others not described here and obtain all auspicious qualities for himself as well as for his disciple. This is the procedure of the Teaching.^[12]

The science of Ayurveda is better learnt when learnt directly from the preceptor and repeatedly studies and practicing it.^[13]

Tadvidhya Sambhasha (discussions):

The third method to attain knowledge was the discussion with the men of his own profession who has acquired skill in exposition. This will give the final finishing of his proficiency and enlarges his field of

vision by throwing light on much obscure point and sharpens his wits and methods of cogent argument. He becomes then an expert in the full sense of the term. This will correspond to the clinical meetings of the colleges and conferences of the present day.^[14]

2) *Vakyasha, Vakyarthasha and Arthavayasha*:

Acharya Charaka tells one who studies Ayurveda should be in a position to explain the whole text, its different sections and chapters and specific topics in each chapter distinctly, and this is done by *Vakyasha, Vakyarthasha, Arthavayavasha*.^[15]

- Vakyasha* - means reading the *Sutra* as told in the *Tantra* or understanding literal meaning of *Sutra*.
- Vakyarthasha* - is the meaning achieved after proper understanding and interpretation of a *Vakya*.
- Arthavayavasha* - are the words which are difficult to understand. They need special attention and also special elaboration and application of *Tantrayukti*.

3) *Aptopadesha, Pratyaksa and Anumana*:

Charaka tells the three sources of the knowledge, viz. *Aptopadesha* (authoritative instructions), *Pratyaksha* (direct observation) and *Anumana* (inference). Out of these three sources of knowledge, the knowledge derived from authoritative instruction comes first. Thereafter investigation proceeds by means of observation and inference.^[16]

Teaching and Learning Methodologies in *Astanga Hrudaya*:

1) *Paatha, Avabodha and Anusthana*:

Paatha means 'to make by heart' likewise repeated reading or reciting *Shlokas*. *Avabodha* means the pattern of understanding the *Shastra*. *Anusthana* is 'Do as directed' which means to follow the methods/guidelines as quoted in texts i.e. the implementation or application of conceived meaning.^[17]

Arunadutta in his commentary on *Ashtanga Hrudaya Sutrasthana* 1st *Adhyaya* explains the teaching

methods beautifully. He says that a teacher should explain every verse with following points.^[18]

- **Padatah** – Word to word.
- **Arthatah** – Meaning of the word.
- **Prayojanatah** – Utility
- **Chodyatah** – Doubts/questions
- **Pariharatah** – Clarification of the doubts.
- **Sambandhatah** – Relation with the aim.
- **Abhidheyatah** – Subject matter to be described.

Teaching and Learning Methodologies in *Sushruta Samhita*:

The first mean to achieve knowledge is *Adhyayana* i.e. learning from the teacher or the texts and other things pertaining to the science. *Sushruta* tells that the student who has become pure by his both body and his mind and who has worn good clothes and who has concentrated mind should study the *Shastra* and recite them word by word or verse by verse. Again they should be linked together properly as words, phrases and verses. Having thus formulated them, they should be repeatedly recited. One should recite neither too fast nor in a hesitant manner nor in nasal twang but should recite bringing out each syllable distinctly without over-stressing the accents and without making any distortions of the eye-brows, lips and hands. One must recite systematically and in a voice not too high pitched or too low.^[19]

Scope for independent thinking and reasoning:

Charaka is not satisfied that the *Vaidya* should limit himself to the knowledge he has acquired from his *Guru*, but he requires that he should enhance it by thought and practice.

The intelligent physician should not determine anything according to the instructions laid down in the science, but he must use his own *Tarka* (reasoning) and *Yukti* (planning) and make proper decisions.^[20]

Scope for Practical Training:

The common blame made against the Indian genius in general and her medicine in particular is that its

nature is more inquisitive and theoretical than practical. India suffered in the estimation of the world more through world's ignorance of her achievements than through the absence or insignificance of such achievements.

Both the treatise, *Charaka* and *Sushruta* emphasize the necessity and importance of practical work. *Sushruta*, the treatise on surgery tries to give even greater importance to practical training by means of dummies and substitute for the human limbs called as *Yogyaa*.^[21] While describing the qualities of a *Vaidya*, *Charaka* gives equal importance to practical work as to theoretical study. Clear grasp of theoretical knowledge, wide practical experience, skill and purity of body and mind are the qualities a physician.^[22]

Hence the *Vaidya* who possesses the fourfold accomplishment consisting of theoretical knowledge, clear interpretation, right application and practical experience is regarded as the reclamer of life.^[23]

DISCUSSION

Teaching is a means of offering a unique, definite, and essential social service through specialized training. This service is in the form of facilitation of learning, based on the beliefs, needs and practices of each community and each individual. Teachers can accomplish these requirements by creating an optimal teaching-learning environment by utilizing a variety of teaching methods and teaching styles.^[24]

All the classics of Ayurveda suggest that if one wants to expertise in a subject he should have the basic knowledge of the concepts and other teaching and learning methods should be adopted which help to acquire more and accurate knowledge in the subjects while practical training provide for application of that knowledge. Knowledge can be acquired by extensive learning of classics but wisdom can be developed by extensive practicing.

Studying only a single science gives limited understanding. Physicians should listen to other scientists. There should be exposure to different fields of knowledge. Science, both theoretical and practical, should be learned from experienced teachers.^[25]

The Dept of AYUSH recently noted that Ayurveda practitioners and students have a feeling of inferiority to the conventional medicine. Communication was also found to be poor. This is unnecessary. There are great teachers with lots of knowledge, they just need to communicate better.^[26]

A study conducted by Kishor Patwardhan *et al.* indicates that there are some serious flaws in the existing system of the graduate level Ayurvedic education. Only a good exposure to basic clinical skills during the medical education can produce a confident physician.^[27]

Gurukula Method of Teaching:

Every institution in ancient days was a residential one called as *Gurukula*, which assured close contact between the teacher and the students and it generated a spirit of mutual understanding, accommodation and love among the young students. They accompanied the teachers on his visits to neighboring places either for purpose of practical study and demonstration or for discussions and conferences with other sages and institutions.

The Role of the Teacher:

Teachers serve as role models not only when they teach students while they perform their duties as doctors, but also when they fulfill their role as teachers in the classroom, whether it is in the lecture theatre or the small discussion or tutorial group. The good teacher who is also a doctor can describe in a lecture to a class of students their approach to the clinical problem being discussed in a way that captures the importance of the subject and the choices available. The teacher has a unique opportunity to share some of the magic of the subject with the students. They can kindle, in the students, a curiosity and quest for a better understanding of the topic and the relevant pathophysiology by their own personal example that is difficult to reproduce in an instructional text or computer programme.^[28]

The active and participatory classroom has implications for the role of the teacher. There is a shift from a teacher-centred model to a learner-centred

approach to learning and teaching. There is also a shift from product-driven learning to process-driven. These changes encourage teachers to reflect not only on the key principles of learning and teaching but also on their role in the process.^[29]

The six areas of the role of the teacher:^[30]

1.	The teacher as information provider
2.	The teacher as role model
3.	The teacher as facilitator
4.	The teacher as assessor
5.	The teacher as planner
6.	The teacher as resource developer.

Student and Teacher Relationship:

He should have unbounded affection for his disciples and should devote a personal and individual care and thought over every pupil and be his source of inspiration and guidance through life. This spirit is gradually on the wane in present condition of educational methods and it is most essential that we try to revive this spirit of intimate relation between the teacher and the student.

On Code of Conduct and Behavior:

The main idea of the instructions told in Ayurveda for students was to develop a full man in the student. Great attention was paid to the preservation of cleanliness of the mind and body. All this comprised the physical and ethical side and no pain was spared to develop the intellectual side too. With this purpose in view, debates on scientific subjects were often held to develop and test the power of reasoning. Importance was given to the spirit of inquiry and research and the student was helped to abandon bias and to cultivate broadness of vision. Thus moral and spiritual progress paved the way to the building of character and the real idea of education was realized.

On Effective Learning:

In order for learning to be effective, knowledge must transfer from short-term memory to long-term

memory. Different theories have arisen as to the means by which this transfer occurs. What is important to realize is that an effective learning environment must facilitate this transfer. An individual's mere recollection of a training event, even in minute detail, does not by itself assure that learning has taken place, because this recollection may involve only short-term memory. The need for repetition is fundamental to the learning process. The effective transfer of knowledge to long-term memory depends upon repetition i.e. *Satata Adhyayanam*.

In this regard, it should be noted that modern technological advances, such as interactive and multimedia computers, laser discs, and the World Wide Web, can provide students with the tools to support discovery learning when it is appropriate.

On Effective Teaching:

A lecture is a talk or verbal presentation given by a lecturer, trainer or speaker to an audience. With all the advancement of training systems and computer technology, lecture method is still a backbone widely used in teaching and training at higher level of education. This method is economical, can be used for a large number of students, material can be covered in a structured manner and the teacher has a great control of time and material.

Lecturing is not simply a matter of standing in front of a class and reciting what you know. The classroom lecture is a special form of communication in which voice, gesture, movement, facial expression, and eye contact can either complement or detract from the content.^[31]

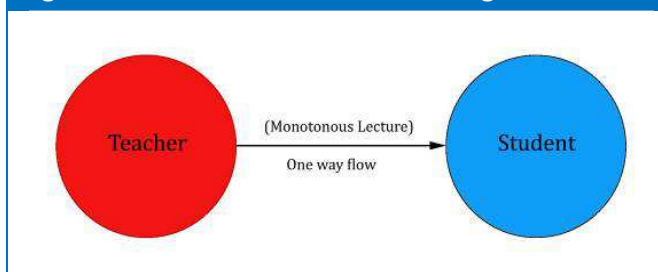
The monotony of the lecturing will bore many students in the educational institutes. In ancient India this boredom was avoided by the question and answer method known as Pariprashna (discursive) method. The Ayurveda science also lay down that an aspirant to knowledge should hear by obedience by questioning. **(Figure - 1)**

A study conducted by Benson *et al.* provides evidence that students may place greater emphasis on lecture material than on textbooks.^[32] Sullivan and McIntosh

said that with planning and effective presentation techniques, the lecture can be a highly effective and interactive method for transferring knowledge to students.^[33]

The multimedia presentations help the teacher to represent in a more meaningful way. By incorporating digital media elements into the project, the students are able to learn better since they use multiple sensory modalities, which would make them more motivated to pay more attention to the information presented and retain the information better.^[34]

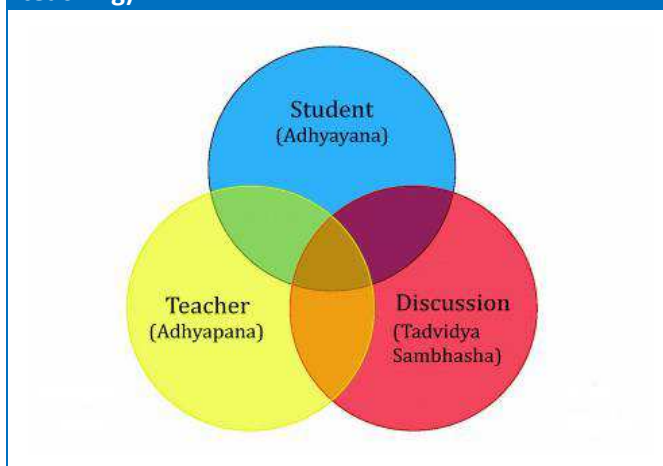
Figure 1: Common Method of Teaching.



On Effective Discussions (*Tadvidhya Sambhasha*):

It is a free verbal exchange of ideas between group members or teacher and students. For effective discussion the students should have prior knowledge and information about the topic to be discussed. The *Guru* is also observed to be sitting with other learned sages and men of learning. And in certain discussions the pupils as well as the sages present, participate and give out their opinions until in the end, the master surveys the whole range of the subject in its various aspects and gives his final verdict on the subject under discussion. For example in *Charaka Samhita* 26th chapter of *Sutrasthana* i.e. '*Atreyabhadrakapiya Adhyaya*' discussion on the subject of the category of Taste, we find various theories propounded first by those present and the summing up and the final decision declared by the master at the end. Thus the matter was not one sided and monotonous lecturing by the teacher, oblivious to the various requirements of the varied mental grades of intelligence of the students composing the class. There was a cooperative effort, an intelligent participation by the pupil in the evolution of the final and correct appraisal of a subject. **(Figure - 2)**

Figure 2: Classical Method of Teaching (Interactive teaching)



Importance to Oral Training:

Oral training is one aspect which fundamentally differs from the modern system of education. The Ancient *Acharyas* depended much on their power of memory while the moderns are depended upon their books. The Ancients paid special attention for cultivating the power of memory. It is no wonder that they memorized the whole of *Charaka Samhita* and *Sushruta Samhita* in those days and later on when memory power began to wane, *Vagbhata* epitomized the texts of these two books in one volume and in verse only in order to facilitate memorizing.

Medical Conferences, RoTP and CME's:

The idea of holding national and international conferences of scholars and scientists in any branch of knowledge is not confined only to modern times. This was a trend developed in ancient times too and we have ample evidence in the *Charaka Samhita* to think that either periodically or whenever there arose doubt and differences of opinion on important questions affecting the theory and practice of science, there took place large or small conferences and discussions to resolve the doubts and establish an authoritative doctrine on the subject. These were different in their character from clinical meetings and debates. These were national gatherings where scholars and thinkers from various parts of the country and even scholars from neighboring countries assembled for the advancement of the science.

The Dept. of AYUSH is conducting many RoTP's and CME's for AYUSH teachers and practitioners, to impart good teaching practices and teaching methodology to teachers for adequate training of students and for upgrading their professional competence & skills. Emerging trends of health care and scientific outcomes necessitate time to time enhancement of professional knowledge of teachers, practitioners and researchers. Many issues of the profession cannot be covered through stereotyped course curricula, and need augmentation & clarification through direct interaction with the resource persons and domain experts. Good Clinical Practices and Good Teaching Practices are the two areas where AYUSH practitioners and teachers need to be regularly updated to keep up the standards of health delivery and adequate training of students respectively in accordance with the emerging demands.

Innovative Method of Teaching:

Teaching methodology and Teaching Technology may be the other area where attention is needed. There is a need for integration between tradition and technology. Ayurvedic Institutions should install Multi Media Projector in each BAMS class room and every departmental seminar room in post-graduate section. Teachers may prepare computerized lecture for effective teaching with its applied aspect for better understanding of the subject.^[35]

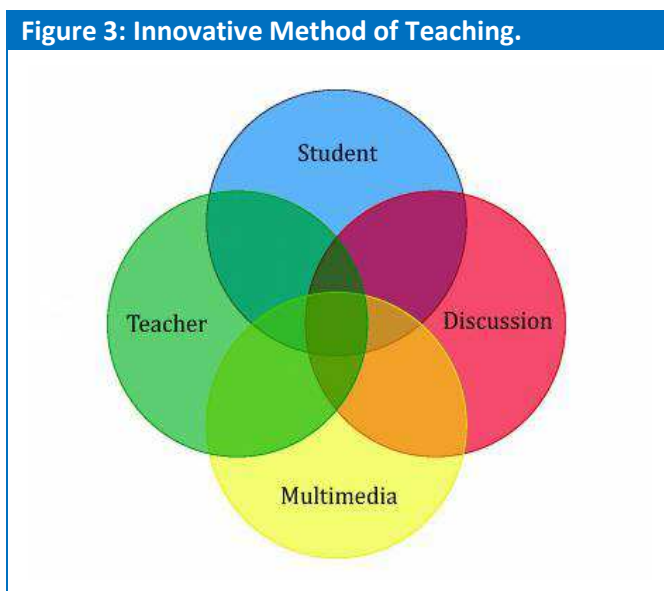
Use of Information Technology as a tool for widespread dissemination of AYUSH developments and updates is need of the hour in the present era of fast changing trends and methodologies.

Innovative methods and the IT (software's) can be used to develop training material, courses, modules, CDs and structured programs and can be used for innovative teaching. Preparation of subject-/specialty-specific AYUSH modules / CDs / DVDs for wider dissemination through web-based training programmes.

Innovative tools like over head projectors, power points, video files, Adobe Photoshop to create and edit graphics, Sound Forge and 3D Studio Max to

create and/or edit sound and animation files, respectively can very well be applied by the teachers. By incorporating these innovative digital media elements into the project, the students are able to learn better since they use multiple sensory modalities at same time, which would make them more motivated to pay more attention to the information presented and retain the information better. These innovative tools will help for clear and quick description of a subject, like procedures of *Panchakarmas*, anatomy and physiology of various organs and their systems and also it will reduce the boredom of the lecture and increases the student's concentration. (Figure - 3)

Figure 3: Innovative Method of Teaching.



CONCLUSION

The art of teaching 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. Though the technology has made many innovations in the field of teaching and also made a drastic change in the old system of teaching and learning, but the spirit of the teaching methodology and the attainment of core objective of teaching should never be deviated by the use of an innovative method.

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