



## TRADITIONAL AND ADVANCED TEACHING-LEARNING METHODS IN RACHANA SHARIR(ANATOMY)

Sakshi

Associate Professor, P.G. Dept. Of *Rachana Sharir*, Sri Ganganagar College of Ayurvedic Science & Hospital, Tanta University, Sriganaganar (Rajasthan)

Corresponding Author: [Drsakshi54@gmail.com](mailto:Drsakshi54@gmail.com)

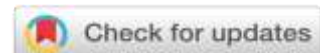
<https://doi.org/10.46607/iamj1911062023>

(Published Online: June 2023)

Open Access

© International Ayurvedic Medical Journal, India 2023

Article Received: 08/05/2023 - Peer Reviewed: 28/05/2023 - Accepted for Publication: 09/06/2023.



### ABSTRACT

Anatomy is the science that deals with knowledge of bodily structures like organs, bones, muscles, ligaments, blood vessels, nerves, etc. and it can be studied at gross level or microscopic level. It is the elementary subject for a medical student in learning medical education. Teaching anatomy simply started with the blackboard method and cadaveric dissection, which now has progressed to overhead projectors, power-point presentations, 3D models, virtual dissection, software, and many online applications. Anatomy has been educated using different methods including didactic lectures, practical sessions, based on models, cadaveric dissection & computer-based learning. In the ancient era, learning and teaching were based on the pattern of *Adhyan*, *Adhyapan*, *Sambhasha*, etc. where the *Guru* used to share his knowledge with his disciples by verbal communication. The subject has undertaken several changes with the adoption of modern effective teaching & learning approaches. Inclusive knowledge of human anatomy emphasizes the understanding & practice of medicine. It is a well-known part of the undergraduate curriculum. This paper aims to review the various traditional and modern anatomy educational methods in the present and future of anatomy education.

**Keywords:** *Adhyan*, *Adhyapan*, *Rachana Sharir*, Anatomy, Lectures, Innovative, Methodology, etc.

## INTRODUCTION

Education is the formal process by which society purposely transmits its accumulated knowledge, skills, and values from one generation to the other. Education is not only a means of achieving social upliftment, getting degrees but it must be considered as an engine of advancement in an information era driven by its wheel of knowledge and research leading to development. Earlier, education was imparted by means of "Gurukula" where teachers or *Guru* lived with their families and used to train the scholars. Modern teachers not only teach their students but also facilitate the learning process among them using various innovative technologies. The stimulation of such new educational technologies is not altogether new; these modes are already in use, but their importance has increased exponentially in the current scenario. However, with a variety of tools and techniques employed to teach anatomy, there is ambiguity regarding methods to deliver optimal teaching with the rapid advancement of technology & e-learning<sup>(1)</sup>. So, anatomy teachers need to keep themselves updated with advanced technologies in medical education.

**Teaching Methods used in the ancient period:** The concept of study, teaching, and discussion has been explained by *Acharya Charaka* where one should study by reciting the aphorisms in order with a clear voice attentively repeating it again and again, entering deep into the idea of understanding it and getting rid of his defects and other's defect. The method of teaching indicates the characteristics of a teacher with sound knowledge of the subject, endowed of reasoning, memory, broad mind having the ability to understand the essence of ideas, good conduct, modesty, etc. Finally, he mentioned the concept of discussion, the discussion with specialists promotes the pursuit and advancement of knowledge, improves the power of speaking, removes doubt, etc. Discussion can be friendly and hostile as mentioned in the literature<sup>(2)</sup>. In *Ayurveda*, *Acharya Sushruta* hundred years back mentioned the sequential steps of dissection, and where other eminent scholars also highlighted concepts of *Rachana Sharir* in the 5<sup>th</sup> chapter of *Sharir Sthana* of respective *Samhitas*.

### Review of modern techniques:

Anatomy as a subject not only requires surface learning or memorization but also requires deep learning through understanding and the ability to apply the information to solve clinical problems. By learning gross anatomy medical students remain undisputed there is currently a relevant debate concerning methods of anatomy teaching. In the past century, dissection and lectures were its unique pedagogy globally. Traditional anatomy education based on topographical structural anatomy taught in lectures & gross dissection classes has been replaced by a multiple range of study modules including, 3-D models, problem-based learning, plastic models, computer-assisted learning, and curriculum integration<sup>(3)</sup>. The problematic question is why students do not have enough anatomical knowledge to practice safely. The answers are various ranging from reduced teaching hours, to recently developed teaching methods not including compulsory dissecting and light microscopy. The storage of human bodies is expensive and other issues such as preservation & reduced suitability for dissection due to illness, elderly, or obesity could be an issue, as cadaveric dissection is time-consuming and light microscopy is not easy to maintain. The basic approach to teaching anatomy is the use of human cadavers are indispensable to the study of human anatomy. With increasing awareness of voluntary body donation, there is no dearth of cadavers and students get ample opportunities to learn dissection<sup>(4)</sup>.

### Didactic lectures:

They have been a universal form of teaching and learning since ancient times, especially for large group teaching, when the number of students attending is much larger than the number of teachers available. It follows learning objectives in which a lecturer presents academic content to a group of students. Traditional teaching lectures method requires the presence of students in a specific location like a lecture hall or classroom at a precise time. During the usual course of teaching the frequent method is the chalk-board method while the use of transparencies with an overhead projector is also popular<sup>(5)</sup>.

### **Power point Presentation:**

It is the most popular electronic presentation where some students prefer PPT as they evade the issue of poor handwriting & dirty blackboard or white boards<sup>(6)</sup>. It has a disadvantage as students become passive participants & observers. The majority of the students favor chalk board teaching not only because of improved student- teacher interaction. The chalk board or white board method involves student participation, but PPT is teacher -oriented method<sup>(7)</sup>.

**3D Atlas & Models:** Such applications are designed as new learning materials in which applications are tablet-based software that permits students to touch and rotate virtual bodies and recognize spatial relationships of structures.

**Body Painting:** It is used to assist the living anatomy, clinical skills classes, and traditional anatomy courses. Several structures such as bones, muscles, vessels, and internal organs are painted on real living bodies and allowing for easy examination and palpations<sup>(7)</sup>.

### **Plastination:**

It is a relatively new advancement in anatomy science, an effective technique of tissue preservation or entire organs or cross- sectional body slices. Introduced by Gunther Van Hagen in 1977 at Heidelberg University, Germany. It is a technique for preserving tissues, organs, and whole bodies for medical purposes & public displays. By accurately preserving tissues for use in research and education the techniques have contributed to the fields of medicine, anatomy, and embryology<sup>(8)</sup>.

### **Cadaveric dissection:**

It is central & indispensable to the study of human anatomy. The concrete foundation of medicine comes from a sufficient and very accurate knowledge of human anatomy, and this can be achieved only by learning human dissection. Cadavers are embalmed with formaldehyde, a hazardous chemical, and carry the risk of accidental over exposure. It is harmful to tissues in the long run of use as it causes irritation, breathing difficulties, and many other risk factors are involved<sup>(9)</sup>. It is a traditional method of teaching anatomy after theoretical classes and discussions on

atlas pictures. It supports medical students in understanding the relationship between different anatomical structures, appreciating anatomical variations, and contributing significantly to future professional work. Even surgical practices are based on adequate anatomical knowledge of human anatomy which can be learned from cadaveric dissection.

### **Virtual Dissection:**

Digital dissection provides students with innovative learning opportunities in anatomy. Now, virtual dissection is achieved on the anatomy visualization table. Unfortunately, students interact with only touch screens, and they have been far away from the fact that how a real structure would feel like muscles, nerves, vessels, ligaments, etc<sup>(10)</sup>.

### **Impact of Covid -19:**

Covid -19 pandemic crisis led to abrupt alterations in teaching graduates and higher education across the world. In particular to the subject, anatomists face the pressure of changing modes of medical education and assessments with few teaching hours and limited resources. Few institutions used online teaching methods using various platforms like Zoom, Google Meet, etc. and many of them shared PPT, Pdfs, you tube links to maintain social distancing and make it easier for students<sup>(11)</sup>.

## **CONCLUSION**

The art of teaching is a continuous 'quality improvement' learning process that has been followed since ancient time period. Though technology has made many innovations in the field of teaching and also made drastic changes in the old systems of teaching and learning, the spirit of teaching methodology and the attainment of the core objective should never be deviated by the use of technology. Students can learn and use radiographs and ultrasounds to learn the anatomy of the thorax, abdomen, pelvis, and extremities. Techniques like CT and MRI images initiate the study of sectional anatomy and transform 3-D structures and relationships into 2-D representations and help students to correlate with concepts in a better way. Proper utilization of newer technologies along with traditional teaching methods will certainly lead

to an enhanced understanding of gross. In an analysis of teaching and learning anatomy, it is necessary to examine the curriculum, mode of teaching, quality of how it is delivered, and infra structure within which it is delivered with the use of advanced methods.

## REFERENCES

1. Vikas Seth, Prerana et al, power point or chalk and talk: perceptions of medical students versus dental students in a medical college in India- Adv Med Educ Prac. 2010;1:11-16.
2. Priya Vrat Sharma, Charak Samhita Viman Sthana Rogabhisjitiyam Adhyaya, 8/5, Text with English Translation, Varanasi, Choukhambha Orientalia, Edition- 9<sup>th</sup>, volume-1 Print 2005, page- 351.
3. Sahar Yuoseff, Different approaches for teaching and learning anatomy and future directions; Indian Journal of Clinical Anatomy & Physiology, 2021.
4. Edgell. Multiple Approaches to Teaching Anatomy, Teaching innovation Projects. 2011;1(1)3.
5. Karpicke JD, Roedinger HL. The critical importance of retrieval for learning. Science 2008;319:966-8.
6. P. benly; Teaching methodologies on Anatomy- A Review, J Pharma. Sci. & Res. 2014;6(6): 242-243.
7. Veronica Papa, Mauro Vaccarezza; Teaching Anatomy in the 21<sup>st</sup> Century: New Aspects and Pitfalls; 2013.
8. <https://embryo.asu.edu/pages/gunther-von-hagens-plastination-technique> dated 12/3/23
9. <https://www.cancer.gov/about-cancer-causes-prevention/risk/formaldehyde> dated 15/3/23
10. J. Older; "Anatomy: a must for teaching the next generation," Surgeon, vol.2 no.2pp.79-90, 2004.
11. D Saverino Teaching Anatomy at the time of COVID-19, Anat 202010.1002/Ca.23616.
12. 12.Sharad kumar, Shaeen Rizvi; Teaching Anatomy to undergraduates' students; Int J Anat Res 2015 ,vol 3(3):1212-15.
13. Sushruta, Dalhana gyadasacharya, Sushruta Samhita, Sutra Sthana, Ahyayapan Sampradiya Adyaya, 3/48-49; Edited by Acharya Yadavtrikram, Reprint Edition 2008; Chaukhambha Subharti Prakashan, Varanasi, Page- 16.

**Source of Support: Nil**

**Conflict of Interest: None Declared**

How to cite this URL: Sakshi: Traditional and Advanced Teaching Learning Methods in Rachana Sharir (Anatomy). International Ayurvedic Medical Journal {online} 2023 {cited June 2023} Available from: [http://www.iamj.in/posts/images/upload/1327\\_1330.pdf](http://www.iamj.in/posts/images/upload/1327_1330.pdf)