

Evaluation of various methods of teaching human anatomy

Vijay Nayak^{1*}, Utkarsh Shrivastava², Sushil Kumar³, Mohan Angadi⁴, Kailash Balkund⁵

^{1,2}Assistant Professor, Department of Anatomy, Chirayu Medical College and Hospital, Bhopal, Madhya Pradesh, INDIA.

³Professor and HOD, ⁴Assistant Professor, Department of Anatomy, AFMC Pune, Maharashtra, INDIA.

⁵Assistant Professor, Department of Anatomy, Malabar Medical College, Calicut, Kerala, INDIA.

Email: drvijayafmc@gmail.com

Abstract

Anatomical knowledge of students is influenced by various effective methods of teaching. In this study a questionnaire was prepared for the students of MBBS 1st proff. The response of the students was studied in depth and statistically analyzed. Different methods of teaching were evaluated through responses given by first MBBS students. Anatomy education should be made as effective as possible, as no one can deny that medical students cannot do without anatomical knowledge. Because of promising findings in the areas of teaching in context, vertical integration and assessment strategies, it is recommended that future research into anatomy education should focus on these factors. It was found in this study that combined medical teaching (classical black board based and audiovisual assisted teaching) was the most effective method, particularly for embryology classes use of 3D animations were very helpful in understanding the subject.

Keywords: combined medical teaching, vertical integration, medical education.

*Address for Correspondence:

Dr. Vijay Nayak, Assistant Professor, Department of Anatomy, Chirayu Medical College and Hospital, Bhopal, Madhya Pradesh, INDIA.

Email: drvijayafmc@gmail.com

Received Date: 14/04/2015 Revised Date: 21/04/2015 Accepted Date: 24/04/2015

Access this article online	
Quick Response Code:	Website: www.statperson.com
	DOI: 26 April 2015

INTRODUCTION

Medical education has undergone tremendous changes over the year. The purpose of teaching is to facilitate learning and to encourage the learners to learn more effectively. The learning style is an individual's consistent way of perceiving, processing and retaining new information. Educational researchers have shown an increasing interest in the learning styles, the related instructional methods. This interest is spurred by a desire to help the students to become capable and successful learners. Anatomy as a subject forms the basis of medical knowledge. Anatomy has suffered as a subject because it is regarded as banal, archaic, didactic, traditional,

overly factual and unable to adapt to modern educational methods. The current MBBS students and teachers nowadays use internet besides books and traditional chalk and board teaching as the method of learning in this era of smartphones. This study is done to evaluate different methods of teaching influencing the Anatomical knowledge of students.

MATERIAL AND METHODS

This cross sectional study carried out in the department of anatomy Chirayu medical college, Bhopal. The study was carried out during Dec 2011- Nov. 2014. A total of 450 first year MBBS Students from 3 consecutive batches participated in the study. All the students were taught through various methods of teaching (black board, power point, combined) i.e. each student had the exposure of all the teaching modalities. At the end of teaching session, a pre-designed and pre-tested questionnaire was given to students for the feedback regarding generation of interest and how much they understood the topic being taught. To assess the level of understanding of the topic by the mode of teaching modality, a 10 MCQ question test was used. The response of the students was studied in depth and statistically analyzed. The responses were entered in to Microsoft-office excel-2007. The categorical data was

summarized as percentage and proportion and the continuous data as mean and standard deviation. Relevant graphical presentation was done.

OBSERVATION AND RESULTS

The study was conducted on 450 students of first MBBS for 3 consecutive years, total 198 boys (44%) and 252 girls (56%) participated in this study. They were taught by different methods of teaching and their response was analyzed, results of this study after analysis show that maximum 378 (84%) of students preferred the combined method of teaching, while 45 (10%) were in favour of black board teaching, the least preferred method was power point teaching, only 27 students (6%) preferred it.

Table 1: Preference of teaching methods by students

Response	Study Subject		Total
	Boys	Girls	
	No. %	No. %	No. %
Ppt	18(4%)	9(2%)	27(6%)
Black board	24(6%)	21(4%)	45(10%)
Combined	156(34.7%)	222(49.3%)	378(84%)
Total	198(44%)	252(56%)	450(100%)

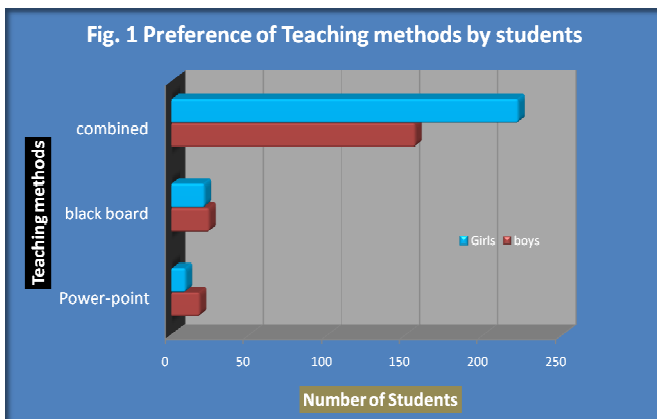


Figure 1: Preference of teaching methods by students

Table 2: Performance of students by different teaching methods

Teaching Methods	Students	
	Mean score	SD
Power-point (n=450)	6.7	1.3
Black board (n=450)	7.1	1.5
Combined (n=450)	8.3	1.1

Table 2 shows the mean scores of mcq test results which were taken after different methods of teaching, it shows that the performance of the students was best (8.3) in combined method followed by blackboard teaching(7.1), whereas only power point teaching shows minimum scores (6.7)

DISCUSSION

Anatomy is the foundation stone over which the pillars of clinical sciences viz surgery, orthopedics, gynae etc are built. Among the teaching methods Chalk and Board methodology was found to be the best (60%) followed by LCD Slides (20% students) and dictating notes (5%) was the least preferred teaching method by the students by banerjee *et al*. This finding is different from a study done at Kasturba Medical college by Mohan L *et al*, India which has shown that Mixed Aids (54.9%) is the best method of audiovisual aids to teach MBBS subjects like Pharmacology followed by Powerpoint presentation (20.9%) and Blackboard and OHP are (19.6% and 4.9%) respectively. In present study the new method of combined teaching was found to be more effective than the traditional one. Statistically significant results were obtained on comparing the marks obtained by the students in the test post combined teaching method with the traditional method. We received overwhelming response and suggestions through student's feedback such as conducting more combined teaching sessions on difficult topics like embryology and more frequently throughout the year.

CONCLUSION

Human anatomy is the scientific study of the form, position, size and relationship of the structures in the body. It can be divided into gross anatomy (the structure and positioning of organs), histology (the microscopic study of cells and tissues), embryology (the formation and early development of the foetus) and neuroanatomy (the study of the brain, spinal cord and peripheral nervous system). There is considerable debate within the medical community about the best ways to teach anatomy. The human body is the focus of investigation and intervention on a daily basis, Anatomy is obviously essential for surgeons but also has value for anyone who performs an invasive procedure on a patient; carries out emergency procedures; examines radio-logical imaging; performs a physical examination of a patient; refers a patient to another doctor; or explains a procedure to a patient. Integration of newer teaching modalities and modern technology will encourage interest and retention of anatomical knowledge and its clinical relevance. In present study it was found that the combined medical teaching (classical black board based and audiovisual assisted teaching) was the most effective method. Particularly for embryology classes use of 3d animations were very helpful in understanding and igniting curiosity in the minds of the students. It is recommended that future research into anatomy education should focus on these factors. The study should be further carried out in other medical colleges and in larger student population.

REFERENCES

1. Hinduja K, Samuel R, Mitchell S. Problem-based learning: is anatomy a casualty? *Surgeon*. 2005; 3:84–87.
2. Tavanaiepour D, Schwartz PL, Loten EG. Faculty opinions about a revised pre-clinical curriculum. *Med. Educ*. 2002; 36: 299–302.
3. Heylings DJ, Anatomy 1999-2000: the curriculum, who teaches it and how? *Medical Education* 2002 Aug; 36(8):702-10.
4. Older J., Anatomy: a must for teaching the next generation. *Surgeon* 2004 Apr; 2(2):79-90.
5. Turney BW, Anatomy in a modern medical curriculum, *Ann R Coll Surg Engl*. 2007 Mar; 89(2):104-7.
6. Veronica Papa *et al*, Teaching Anatomy in XXI Century : New Aspects and pitfalls, *The Scientific World Journal* 2013; 1-5
7. J.A. Pereira *et al*, Using videoclips to improve theoretical anatomy teaching, *Eur J Anat*, 8 (3):143-146 (2004)
8. John C McLachlan *et al*, Anatomy teaching: ghosts of past, present and future. *Medical education* 2006; 40: 243-253.
9. Shaffer K. Teaching anatomy in digital world. *New England journal of medicine* 2004;351:1279-81
10. Carmichael SW *et al*, Animated powerpoint as a tool to teach anatomy, *Anat Rec* 2000;261(2):83-8.

Source of Support: None Declared
Conflict of Interest: None Declared