



STUDENTS' REFLECTIONS ON TEACHING METHODOLOGY IN ANATOMY

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"Anatomy, a visual science, demands smart adequate use of visual aids. But opinion poll of students highlights that we cannot swap our traditional method completely. It is the prerequisite of subject as well as students that there should be proper admixture of traditional and power point method while delivering lectures."

ABSTRACT

Objective: With technological evolution, use of power point presentation has been increased tremendously for classroom teachings in medical education. There is dearth of information that whether this technology is really liked by the students in anatomy or not. Therefore present study was conducted to assess which methodology of teaching anatomy was preferred by students: traditional (chalk & black-board), computer assisted or both when combined.

Methods: A questionnaire based study was conducted that involved 250 1st year MBBS students. Students were asked to fill semi structured questionnaire that contained closed and open ended questions regarding teaching methodology.

Results & Conclusion: 70.37% students favored combination of power point presentations along with traditional method, 25.93% preferred chalk and black-board method and only 3.7% students opined that power point presentations should be the sole method of teaching. Therefore the study concludes that traditional method of lecture delivery in anatomy should be carefully amalgamated with power point presentations to meet the aspirations of students and to combat the limitations of chalk and board method.

Key words: Teaching methodology, Chalk and board, Power point, Students' reflection.

INTRODUCTION

Lecture has been the most universal form of teaching since prehistoric time. The word lecture dates from 14th century and was derived from latin word "lectus", which means 'to read'. Lecture is defined as an oral discourse on a given subject before an audience for purpose of instruction and leaning. This method of teaching is criticized for being unidirectional method of communication that does not involve significant audience participation.¹ Didactic lectures are still most commonly used methodology of teaching by faculty of medicine. The main reason is huge number of students wishing to study medicine which exceeds the capacity of faculty and universities have not yet found any practical alternative methods for teaching large group of students.

Technological innovation has accelerated in the first decade of the new century, and now digital projectors have become standard feature in most classrooms. Use of advanced multimedia technologies and user-friendly version of MS power point presentation has been increased tremendously for classroom teachings in the recent era. Educators are increasingly using these educational technologies and power point has become a presentation staple in medical colleges.

Researchers have examined the benefit of these types of presentations. Overall research indicates that students prefer power point-type presentations to traditional lectures.²⁻⁴ Supporters claim that power point improves learning,⁵ invokes audience interest⁶ and aids explanations of complex illustrations.⁷ Detractors charge that power point inhibits presenter-audience interaction⁸ and limits the amount of detail that can be presented.⁹ So, there is a lot of debate over advantages and disadvantages of power point.

The technology has been proved to be a boon for anatomists because transmission of visual information has a remarkable role in education of gross anatomy,^{10,11} and teachers can now present the subject to their students with more 3-D images, sequence of images and videos and thus improve the educational value. In our department also, we are using power point presentation for delivering lectures in histology, embryology and few sections of gross anatomy. Major portion of gross anatomy is taught by traditional chalk and black-board

method. There is dearth of information that whether this technology is really liked by the students in anatomy or not, whether their learning experience is productive and satisfying or not, therefore we conducted this study to know which methodology of teaching anatomy was preferred by them: traditional (chalk & black-board), computer assisted or both when combined.

MATERIALS AND METHODS

A questionnaire based study was conducted that involved 250 1st year MBBS students of King George's Medical University, Lucknow, UP, India, who attended various lectures in Anatomy in the academic year 2011-2012. For this study verbal consent was obtained from students. They were also free to refuse to participate in the study. The survey was conducted just after completion of their professional exam so that students were not afraid of giving their frank opinion.

In our setup students are exposed to both type of methods of delivery of lectures ie power point presentation and traditional chalk and board method. Students were asked to fill semi structured questionnaire that contained closed and open ended questions regarding teaching methodology. These questions were framed so as to highlight the overall satisfaction of the students with the method of lecture delivery. The close ended question enquired about student's preference for a particular type of teaching methodology; traditional, power point or combination of both. Open ended questions were framed to extract the reason for liking or disliking a method and their suggestions for improvement.

RESULTS

Two hundred forty three students responded out of 250 participants, giving a response rate of 97.2%. Out of 243 respondents, 70.37% students favored combination of power point presentations along with traditional method for teaching Anatomy. 25.93% students preferred chalk and black-board method. Surprisingly only 3.7% students opined that power point presentations should be the sole method of teaching (Table-1, Fig.1). Majority of students who favored combination methodology were of opinion that the

traditional teaching on one hand fulfilled the need of understanding the subject and on other empowered them with the skill of reproducing diagrams whereas supplementation with power point enhanced understanding due to visualization of 3D diagrams and real pictures of various clinical conditions. Those who preferred traditional teaching over others reasoned that in these classes they were able to cope up with the pace of teacher as well as they learnt building up diagrams. Few students who liked classes in which only power point presentation was used opined that these classes were more interesting.

Table 1: Students' response regarding preferred mode of teaching

Preferred mode of teaching	Frequency	Percentage
Chalk and Board	63	25.93
Power point	9	3.7
Combination of both	171	70.37
	243	

Present study reflects the views of students on the use of multimedia in teaching Anatomy. Majority of students liked combination of both methods i.e. traditional and power point. Similar findings were also reported by various authors.¹²⁻¹⁴

Majority of previous studies have compared chalk and talk method with power point; they have not considered the option of combining the two.

DISCUSSION

As students are the direct beneficiaries of any teaching program their evaluation may contribute immensely in improving teaching methodology. Till date researchers are debating about superiority of individual methodology either power point or traditional.^{3,4,15-17} But the two methodologies can be combined together so as to combat the drawbacks of each. Visual information has a remarkable role in teaching and learning Anatomy.^{10, 11} We all will accept that it is very difficult for first year students to imagine complex three dimensional inter relationship of body structures, various phases of complicated human development and microscopic anatomy. Even if the teacher is very good

artist then also reproduction of 3-D diagrams and constraint of time is a big challenge. Other reasons for disliking this technique are poor handwriting and faulty chalk and black board.¹⁸ In lectures, where only power point was used for teaching, students reported that they faced difficulty in taking down notes and were not able to draw diagrams. Similar reflections were also given by students in a study conducted by Shallcross.¹⁹ One major drawback of electronic presentation is that it reduces the interactive discussion between teacher and learner hence students become passive observer.^{20, 21}

Educational value of the class can be enhanced by proper and intelligent use of both audio-visual aid and chalk board. If 2-D reproducible diagrams are drawn by the teacher on the blackboard and complex 3-D diagrams are shown on power point then the student is able to follow the hand of the teacher, keep pace with the lecture, take the notes and at the same time in limited span of time is able to understand the complex array of structures. Liking or disliking of any method of teaching by the students is dependent upon whether it is fulfilling their requisite or not, and the requirement of student is not only to understand the subject but also to reproduce it in the exams to gain marks. In the evaluation of student, a lot of emphasis is given to the diagrams drawn by them. Probably the students in our setup preferred combination method because chalk board method fulfilled their requirement of reproducing diagrams in exam and power point, satisfied their need of understanding the subject.

Around Twenty-six percentage students preferred chalk and black-board method only. The possible reason for not liking visual aided segment of the combined methodology class by these students could be non availability of teaching material taught by power point after the class for revision.¹⁹ At present it is not economically possible for us to provide hand outs to 250 students after every class and we are even not able to upload PPTs on net due to unavailability of facilities. As a consequence these students do not appreciate any long term benefit of power point presentations. The second factor could be slightly fast pace of the class because teacher has to

accommodate all information in same duration.

One of the essential factors for selecting any teaching methodology is the subject to be taught. Anatomy, a visual science, demands smart and adequate use of visual aids. The visual technologies are very lucrative as on one hand they help in understanding the complex subject and on other buffers the compressing need of time. But opinion poll of our students cannot be neglected which highlights that we cannot swap our traditional method completely. It is the prerequisite of subject as well as students that there should be proper admixture of traditional and power point method while

CONCLUSION

The study establishes and recommends that traditional method of lecture delivery in Anatomy should be carefully amalgamated with power point presentations to meet the aspirations of students and to combat the limitations of chalk and board method.

REFERENCES

1. Kizlik B. Instructional Methods Information: Part 1. 2012 [cited 2013 May 4] Available from:URL: <http://www.adprima.com/teachmeth.htm>.
2. Cassady J C. Student and instructor perceptions of the efficacy of computer-aided lectures in undergraduate university courses. *Journal of Educational Computing Research* 1998; 19: 175–189.
3. Susskind J E. PowerPoint's power in the classroom: Enhancing students' self efficacy and attitudes. *Computers and Education* 2005; 45(2):203-215.
4. Gok T & Silay I. Effects of problem-solving strategies teaching on the problem solving attitudes of co-operative learning groups in physics education. *Journal of Theory and Practice in Education* 2008; 4(2): 253-266.
5. Lowry R B. Electronic presentation of lectures—effect upon student performance. *University Chemistry Education* 1999; 3(1): 18–21.
6. Szabo A & Hastings N. Using IT in the undergraduate classroom: Should we replace the blackboard with PowerPoint? *Computers and Education* 2000; 35: 175–187.
7. Apperson JM, Laws EL, James A. Scepansky .An assessment of student preferences for PowerPoint presentation structure in undergraduate courses doi:10.1016/j.compedu.2006.04.003
8. Driessnack M.Children's drawings as facilitators of communication: A meta-analysis. *Journal of Pediatric Nursing* 2005; 20(6): 415-423.
9. Tufte E. PowerPoint is evil. *Wired*. 2003[cited 2013May4] Available from :URL: <http://www.wired.com/wired/archive/11.09/ppt2.html>
10. Cottam W W. Adequacy of Medical School Gross Anatomy education as perceived by certain postgraduate residency programs and Anatomy course directors. *Clin. Anat* 1999; 12:55-65.
11. Carmichael S W & Pawlina W. Animated PowerPoint as a tool to teach Anatomy. *Anat. Rec.* 2000; 261:83-88.
12. Ernest K, Anand KN, Kanagasabapathy N, Chandy SJ, Kuruvilla A, Thomas M. Patient oriented problem solving(POPS) approach and audio visual aided lectures in teaching pharmacology- A comparative study. *Indian J. Pharmacol* 1998; 30:97-101.
13. Chandra PM, Das B, Samanta S, Mallick AK. A Study of Students' Attitudes towards the Use of Different Types of Audio-Visual Techniques for Biochemistry. *Research Journal of Pharmaceutical, Biological and Chemical Sciences* 2012; 3(2):1097-1103.
14. Mohan L, Shanker RP, Kamath A. *Journal of Clinical and Diagnostic Research* 2010; 4:3363-3368.
15. Novelli ELB, Fernandes AAH. Students' preferred teaching techniques for biochemistry in biomedicine and medicine courses. *Biochem Mol Biol Educ*.2007; 35:263-266.
16. Singh S, Singh S, Gautam S. Teaching styles and approaches: medical student's perceptions of animation-based lectures as a pedagogical innovation. *Pak. J. Physiol.* 2009; 5(1): 16-19.
17. Onotai L O, Tabansi, P N, Asuquo E O. Medical student's perception of traditional method and power point use for lecture delivery at the University of Port Harcourt. *Nigeria Educational Research* 2012; 3(7): 576-582.
18. Seth V, Upadhyaya P, Ahmad M, Kumar V. Impact of various lecture delivery methods in Pharmacology EXCLI J. 2010; 9:96-101.
19. Shallcross DE, Harrison TG. Lectures: Electronic presentations versus chalk and talk- a chemists' view. *Chem. Educ. Res. Pract.* 2007; 8(1) 73-79.
20. Casonova J, Casanova SL. Computers as electronic Black board; Remodeling the organic chemistry lecture *Educom Re* 1991; 31-34.
21. Garg A, Rataboli PV, Muchandi K. Students' opinion on the prevailing teaching methods in pharmacology and changes recommended. *Indian J. Pharmacol* 2004; 36:155-158.

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JC¹: Data analysis and manuscript preparation.

AR²: Concept and manuscript preparation.

AR³ & RKD⁴: Data collection

AKS⁵ & PKS⁶: Delivered lectures using PPT's

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