

# Teaching aids-perceptions of medical students

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## Abstract

**Background:** Traditional didactic lecture is more passive in nature and less effective as a teaching tool compared with active learning methods, such as problem-based learning. However, a well-organized lecture remains one of the most effective ways to integrate and present information from multiple sources on complex topics. Hence, assistance in the form of audio-visual aids like chalk and board, ppt and ohp is needed to enhance the quality of lecture. **Aims and Objectives:** The objective of our study was to find out medical students perspective regarding the 3 audio visual aids (chalk and board, ppt, ohp) commonly used in teaching. **Material and Methods:** A cross-sectional descriptive questionnaire based study was conducted on 87 first year medical students. A pre-designed, pre-tested, self administered questionnaire in English was used to collect data. A 15-item questionnaire was used to assess views regarding audiovisual aids. **Statistical Analysis:** Data was entered in MS Excel and were analyzed. Results are shown with the help of bar diagram, pie chart and percentages. **Results:** In our study, chalk and board was the most preferred teaching aid (62%) followed by combination of teaching aids(21.8%). 87.4 % students felt that chalk and board facilitated interaction of students and teachers, 81.7% for copying diagrams easily, 79.3% for better problem solving. The same parameters scored less with ppt, 3.4 %, 14.9%, 19.5% respectively. Our students felt black board was ineffective for demonstration of clinical conditions (98.8%), covering more subject per lecture (82.8%). These parameters scored highest preference with ppt teaching, 88.5% and 71.3% respectively. **Conclusion:** Chalk and board teaching remains as a best preferred teaching aid which can be supplemented by ppt and ohp to improve medical teaching. **Key Word:** Audio-visual aid, chalk and board, didactic lecture, medical students.

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## INTRODUCTION

Traditional didactic lecture is more passive in nature and less effective as a teaching tool compared with active learning methods, such as problem-based learning. However, a well-organized lecture remains one of the most effective ways to integrate and present information from multiple sources on complex topics. Hence, assistance in the form of audio-visual aid is needed to enhance the quality of lecture. A chalkboard is commonly used in lectures as a medium of classroom instruction, while the use of transparencies with an overhead projector is also done. John Dewey stated once

that if we teach today as we taught yesterday, we rob our children of the tomorrow. Technological advancements of this era have revolutionised every field of life. Teaching is no exception.<sup>1</sup> Recently the use of electronic presentations has become common and Microsoft PowerPoint (PPT) is now the most popular package used out of all electronic presentations.<sup>2</sup> The objective of our study was to find out students perspective regarding the various audio visual aids used in teaching, so as to improve their effective use in didactic lectures in Medical education.

## MATERIAL AND METHODS

This was a cross sectional descriptive questionnaire based study carried out at Mandya Institute of medical sciences, mandya for students admitted to college for the academic year 2013-14, after obtaining written informed consent from the students. The participation to study was on voluntary basis. A pre-designed, pre-tested, self administered questionnaire in English was used to collect data. A 15-item questionnaire was constructed to assess views regarding audiovisual aids, based upon a review of literature and similar studies conducted elsewhere<sup>1,3</sup>. The study was done at the end of 1<sup>st</sup> year, after exposing them

to different teaching aids throughout 1<sup>st</sup> year. Eighty seven preclinical medical students, including girls and boys, participated in the study. All participants were given a briefing about objective of the study and assured confidentiality. Students were instructed to select appropriate teaching aids for each item in the questionnaire and give their overall opinion regarding the best teaching aid they preferred. All of them completed the questionnaire. Data was entered in MS Excel and were analyzed. Results are shown with the help of bar diagram, pie chart & percentages. For a full description of the individual statements, kindly refer to the questionnaire in the appendix.

**RESULTS**

In our study, most students opted chalk board as best teaching aid for the following parameters (Fig 1, Table 1)  
 Facilitated interaction between students and teacher - 87.4%  
 Copy diagrams easily – 81.65%  
 Problem solving better – 79.35%  
 Students opted ppt teaching for the following parameters  
 Demonstration of clinical conditions – 88.6%  
 Covers more subject per lecture – 71.3%  
 Better summarization – 69%  
 Students felt combination of teaching aids (Chalkboard, PPT, and OHP) for the following parameters –  
 Clear and understandable – 8.1%  
 Better understanding of topic – 4.6%  
 However our students felt chalkboard was ineffective for the following parameters –  
 Demonstration of clinical conditions –98.8%  
 Covers more subject per lecture -82.8%

OHP was the least preferred teaching aid for all the parameters.

We also studied about the overall opinion of students towards the best teaching aid and found that 62 % of students preferred chalkboard, 14.9% ppt and 21.8% combination. (Fig 2)

So students overall preferred combination of teaching aids next to chalkboard teaching which scored highest. (Table 2)

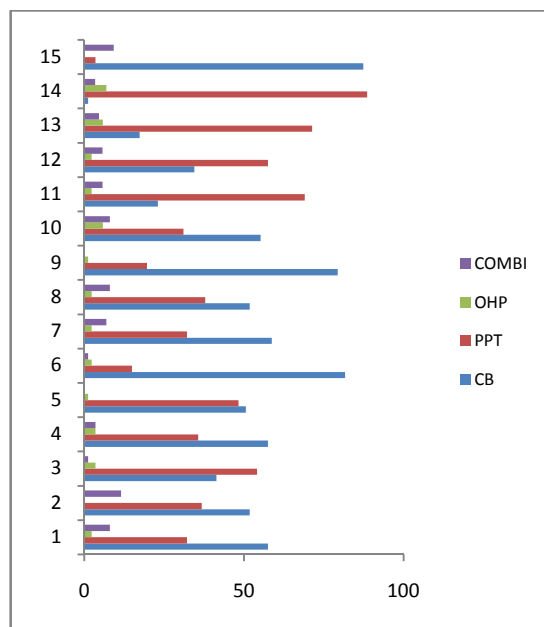
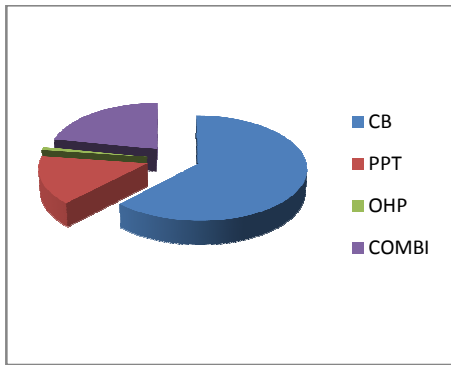


Figure 1: Percentage distribution of different teaching aids for 15 parameters

Table 1: Student’s preference for teaching aids to various parameters

Sr. No.	Parameters	Chalk Board N (%)	Power Point Teaching n (%)	Over Head Projector n (%)	combination n (%)
1	Lectures well organised	50(57.5)	28(32.2)	2(2.3)	7(8)
2	Clear and understandable	45(51.8)	32(36.8)	0	10(11.5)
3	Stimulate my interest	36(41.4)	47(54.1)	3(3.5)	1(1.2)
4	Stress on important points	50(57.5)	31(35.7)	3(3.5)	3(3.5)
5	Able to take notes	44(50.6)	42(48.3)	1(1.2)	0
6	Copy diagrams easily	71(81.7)	13(14.9)	2(2.3)	1(1.2)
7	Better understanding of topic	51(58.7)	28(32.2)	2(2.3)	6(6.9)
8	Lectures well informative	45(51.8)	33(37.9)	2(2.3)	7(8)
9	Problem-solving better	69(79.4)	17(19.6)	1(1.2)	0
10	Flow of thought better	48(55.2)	27(31.1)	5(5.8)	7(8)
11	Better summarization	20(23)	60(69)	2(2.3)	5(5.7)
12	Best mode to recall tough points	30(34.5)	50(57.5)	2(2.3)	5(5.7)
13	Covers more subject per lecture	15(17.3)	62(71.3)	5(5.8)	4(4.6)
14	Demonstrations of clinical conditions	1(1.2)	77(88.6)	6(6.9)	3(3.4)
15	Facilitated interaction between students & teacher	76(87.4)	3(3.5)	0	8(9.2)



**Figure 2:** Overall preference of students for different teaching aids as percentages

**Table 2:** Overall preference to teaching aids

Teaching aids	Percentage%	No. of students
Chalk board	62	54
Power point teaching	14.9	13
Over head projector	1	1
Combination	21.8	19

## DISCUSSION

Learning is the cognitive processes whereby an individual acquires the professional and ethical values, the bio-medical, behavioural and clinical knowledge, reasoning and psychomotor skills necessary for professional competence.<sup>4</sup> This can be demonstrated when learners acquire the ability to express their gained insight, realization, facts and new skills.<sup>5</sup> A good teaching needs a good communication for exchanging ideas, feelings and information. It is a complex process and has five main components viz. sender (source/ teacher), receiver (audience/ students), message (content/ lecture), channels (medium/traditional chalk & talk, OHP & PPT) and feedback (effect). The major limitation of lectures is that the listener passively receives the material and feels bored and sleepy. There are various techniques by which lectures can be made effective. One of them is the use of visual aids which should be clear and understandable<sup>6</sup> Chalkboard is most popular type of visual aid as it has easy access and relatively simply to use. It needs no special equipment except for chalk, board and duster which are easily affordable. Our study revealed that chalk and board teaching was the most preferred teaching aid by our students (62%) followed by a combination of chalk and board with ppt (19.5%). In chalkboard-based teaching, the students are active participants and are better able to cope with the teaching speed of the teacher. It motivates an interest in learning and helps in holding attention in the class.<sup>1</sup> In our study, 87.4% students preferred chalk board as it facilitated interaction between students and teacher, 81.65% felt that diagrams can be easily copied. However our students felt chalkboard was ineffective for demonstration of clinical conditions

(98.8%), covering more subject per lecture (82.8%). These parameters scored highest preference with ppt teaching. Also the parameters which scored low with ppt like – Facilitation of interaction between students and teacher 3.45%, Copy diagrams easily 14.95% scored highest with chalkboard teaching. Our study is comparable to the study of Banerjee I *et al*<sup>7</sup> where majority (60%) of medical students preferred Chalk and board to LCD slides (20%). Also Novelli ELB *et al*<sup>8</sup> found that traditional chalk and board was superior teaching method. In our study, only 14.9% of students showed overall preference for ppt. The reason for this may be dark room during ppt presentations. Students may divert, get bored and fall asleep with poor light during ppt presentation. Also, students might feel difficult to keep up to the speed of the teacher, making it difficult to copy diagrams or writing notes. In a study by Vikas Seth *et al*<sup>9</sup>, 65.3% students preferred ppt while 15.16% chalk and board and 19.51% TOHP. Roy B *et al*<sup>10</sup> reported that 54.83% preferred LCD slides and 37% preferred black board. In a study by Savoy A *et al*<sup>11</sup> most students preferred ppt presentation. Hitesh mishra *et al*<sup>12</sup> noted that 51.7% opted ppt, 44.9% traditional and 3.4% OHP. Equal preference to chalk and board and ppt was noted in the studies of Baxi *et al*<sup>1</sup> and Ricer *et al*<sup>13</sup>. In our study, 21.8% preferred a combination of teaching aids whereas in studies done by Bennal AS *et al*<sup>14</sup> and Mohan L *et al*<sup>15</sup>, combination scored 54.9% and 44.76% respectively. OHP was the least preferred teaching aid for all parameters in our study. While using an OHP, it is easy to put much information on one page/slide. When a large volume of information is presented in this manner, the working memory capacity can become overloaded and useful note taking becomes difficult. This could be one of the reasons as to why the students did not prefer the use of an OHP during lectures. Students gave the feedback that in lectures by using an OHP, good illumination is needed for proper visualization and the use of different colours on the plastic transparency sheet and depiction of the main points with good hand writing is beneficial in the elucidation of the topic under discussion. If we can use proper tips and rules, the OHP presentation can become more effective<sup>16</sup>. Our study had limitations. The opinions were collected only from a single batch of first year medical students. A multicentric study with higher sample size will be beneficial to assess the best teaching aids in medical education.

## CONCLUSION

Traditional chalk and board cannot be completely ignored. This teaching aid still stands an unmatched option, but can be made more effective by combining it judiciously with other aids. We as teachers, need to consider different visual aids like Chalkboard, OHP, ppt, etc and must

organise our teaching to take advantage of the power that these technological advancements provide, to make our lectures more informative and effective.

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