

Evaluation of Impact of Blackboard Teaching and Teaching by PowerPoint Presentations on Students' Performance in Forensic Medicine

¹Mahesh Jambure, ²Ashlesha Jambure

ABSTRACT

Introduction: Teaching methods like blackboard teaching and using PowerPoint (PPT) presentations have been used in many medical colleges, but the impact and students' preference of these aids over one another have not been proved. The aim of this study was to know the second-year Bachelor of Medicine and Bachelor of Surgery (MBBS) students' preferred teaching method, such as blackboard or PPT presentation in forensic medicine.

Materials and methods: A cross-sectional study was conducted in the Department of Forensic Medicine. A total of 150 second-year MBBS students were divided into two groups randomly. Each student was asked to assess the impact of lectures given by two different lecture delivery methods by filling in a questionnaire. After lectures we compared the effect of lectures delivered by different methods with an objective test. The data were analyzed by Student's t-test.

Results: We found that PPT presentations had made a positive impact on various aspects of their learning in forensic medicine than blackboard method. We conclude that use of this audiovisual aid is very useful than conventional blackboard teaching in forensic medicine.

Conclusion: This study has proved that teaching using PPT presentations is an effective teaching method when compared with conventional blackboard teaching.

Keywords: Audiovisual aid, Blackboard, Forensic medicine, PowerPoint presentations.

How to cite this article: Jambure M, Jambure A. Evaluation of Impact of Blackboard Teaching and Teaching by PowerPoint Presentations on Students' Performance in Forensic Medicine. *Int J Educ Res Health Sci* 2018;1(2):56-59.

Source of support: Nil

Conflict of interest: None

INTRODUCTION

Teaching is an art. By use of best teaching aid, the teacher can teach and make the student understand, remember,

and reproduce well, thus improving the academic performance of the student.¹

Lectures have been the most common form of teaching and learning process since ancient times² to impart knowledge and skills to a larger group of students, despite its disadvantages including being teacher-centric and lacking students' participation.^{3,4}

During a lecture, both the visual and auditory senses are used to absorb information, and here assistance in the form of a visual aid is useful. Two most important and promising media that have made a huge impact in the field of education is, by and large, the blackboard teaching and teaching using PPT presentation.³

A blackboard is uniquely effective as a medium of classroom instruction and has been used commonly in lectures. Recently, the use of electronic presentations has become common and PPT presentation is now the most popular method used out of all electronic presentations.⁴

There still rages an ongoing debate as to whether traditional methods like blackboard or modern ones like PPT presentations hold better place in the world of medical lectures.

We hypothesize to find out students' opinions on the impact of PPT presentations in lectures compared with the traditional blackboard teaching, and compare their effectiveness on the students' performance.

AIMS AND OBJECTIVES

- The aim of this study is to compare the effect of blackboard teaching with teaching using PPT presentations in second-year MBBS students in forensic medicine.
- To study student's preferred method of teaching in second-year MBBS students in forensic medicine.

MATERIALS AND METHODS

A self-administered questionnaire-based survey of students of second-year MBBS receiving lectures using either blackboard or PPT presentations was conducted in a Mahatma Gandhi Mission Medical College at Aurangabad, Maharashtra, India. It was a cross-sectional study. Students were summarized about the objective of the present study and assured confidentiality. All the students attempted the questionnaire.

^{1,2}Assistant Professor

¹Department of Forensic Medicine, Mahatma Gandhi Mission Medical College & Hospital, Aurangabad, Maharashtra, India

²Department of Biochemistry, Mahatma Gandhi Mission Medical College & Hospital, Aurangabad, Maharashtra, India

Corresponding Author: Ashlesha Jambure, Assistant Professor, Department of Biochemistry, Mahatma Gandhi Mission Medical College & Hospital, Aurangabad, Maharashtra India, e-mail: drmaheshjambure@gmail.com

A total of 150 students were allocated to two groups, I and II, randomly ($n = 75$). The same topic was being covered for two groups. The two groups received a series of three lectures by same faculty such that each group attended lecture by either of the methods. Both the groups are exposed to both the methods. An objective test comprising same 10 multiple choice questions was given after each lecture to assess the performance after attending the class in that particular method of teaching. The evaluation was same for all the three topics for the two teaching aids used. Data were analyzed using Student's *t*-test.

The students were asked to respond the questionnaire about their assessment of the impact of three forensic medicine lectures delivered by two different methods of lecture delivery, viz., blackboard and PPT presentation.

For each of the lectures given by a different lecture delivery method, the students were asked to grade each of the following parameters out of a maximum mark of 5:

- The lecture was well-organized.
- The lecture was well-audible.
- The board work or audiovisual aids were clear.
- The lectures were clear and understandable.
- The lecture stimulated my interest.
- The lecture advanced my understanding.
- The lecture delivery was interesting.
- I was able to take my notes/diagrams.
- The lecture contents were well informative.
- The lecture kept me involved throughout.
- The lecture was able to stress on important points.

- Better demonstrations of clinical conditions.
- How was student–teacher interaction?
- I was able to recall important points.
- I could summarize better in Blackboard/PPT.

The students were also interviewed further in the light of analysis of the questionnaire. The above parameters were analyzed based on the scale of grading, i.e., 1—bad, 2—good, 3—better, 4—best, and 5—excellent. The sum of all the students' grading on each parameter was used to calculate the final weighted score.

RESULTS

As per the questionnaire filled by the students, mean of scores given by the students to lectures using blackboard were 40.45 ± 4.24 , using PPT were 45.89 ± 5.35 out of a maximum score of 75 (Table 1 and Graph 1). The comparison between the assessment scores of lectures using blackboard, PPT was statistically significant (p -value < 0.0001).

Therefore, students preferred teaching using PPT presentations as it was rated with the higher score.

The marks obtained by the students who were taught using PPT were comparatively higher than the students who were taught using blackboard. The difference was found to be statistically significant ($p < 0.0001$; Table 2 and Graph 2). The average marks of students taught using PPT were 8.2, using blackboard were 6.1, out of maximum marks of 10.

Table 1: Mean of scores given by the students

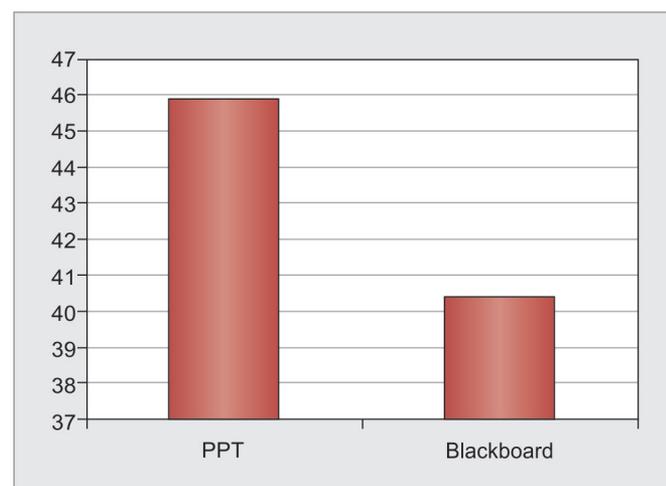
Method of teaching	Score given by student (mean \pm SD)
PPT presentation teaching	45.89 ± 5.35
Blackboard teaching	40.45 ± 4.24
p-value	< 0.0001

SD: Standard deviation

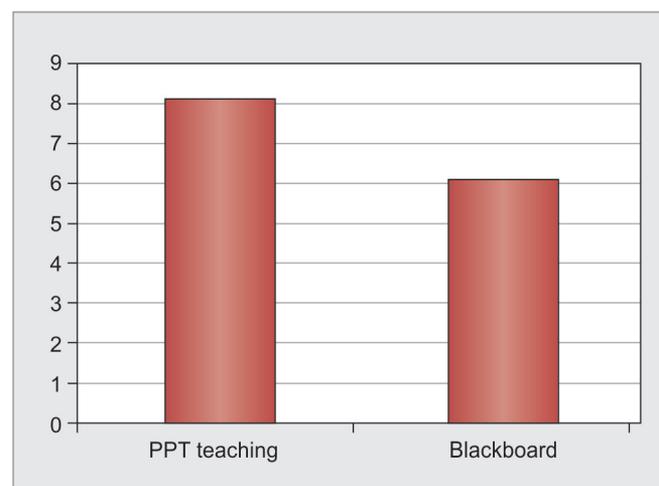
Table 2: Marks obtained by the students

Method of teaching	Mean \pm SD
Marks scored by student after PPT teaching	8.2 ± 0.91
Marks scored by student after blackboard teaching	6.1 ± 0.84
p-value	< 0.0001

SD: Standard deviation



Graph 1: Mean of scores given by the students



Graph 2: Marks obtained by the students

Here also it was noted that higher average marks were obtained for teaching using PPT presentations consistent with students' preferred method of teaching.

DISCUSSION

Every topic has some specific facts which students should retain in their memory. This helps them later to develop new knowledge. It is the duty of the teachers to emphasize these facts during the lecture. Use of teaching media plays an important role in this aspect.⁵

This study clearly highlights the students' preference of PPT teaching over traditional blackboard teaching. Every teaching method has its own advantages and disadvantages. In this study, students mentioned about their opinion on advantages and disadvantages of blackboard teaching and teaching using PPT presentations.

Students mentioned advantages of PPT lectures that lecture becomes more attractive and interesting with use of real images, X-rays, autopsy videos, and animations, which creates interest in subject like forensic medicine and makes learning easy. Understanding improved with various illustrations. The information in presentations is updated. Handwriting is not a problem with PPT presentations. Judicious use of animations makes PPT presentations more interesting and lasting impact. Similar opinions were observed by Ramachandrudu.⁶ Anakd et al⁷ found similar opinions in her study on PPT presentation in learning physiology by undergraduates with different learning styles.

Students preferred PPT presentations as they are ideal for fast revision and quick review of the subjects. All points are covered and less chance of skipping points. Similar results were observed by Bamne and Bamne.⁸

Some students stated that when teacher turns toward blackboard for writing, there is some disturbance in voice, such voice disturbance is not observed in lectures using PPT presentation. Similar feedback was received by Agrawal and Sankdia.⁹

Some students disliked PPT due to poor interaction with students. Some students found that the short-term retention of facts was less with PPT presentations. These observations are similar with the study conducted by Waheeda and Sathiya Murthy.⁵ In their study, students in group of PPT presentations scored less. Some students favored blackboard lectures as there is no interruption of class even in power cuts.⁶

There is better eye-to-eye contact and better interaction with the students. Students can take down notes easily. Also it is inexpensive, easy to clean, and reusable. Some students get more impressed by the way blackboard is used as compared with PPT presentations.

Similar to this, Waheeda and Murthy⁵ in their study suggested that blackboard has the advantage of better recall, besides being the most preferred aid among medical students.

Some disadvantages of blackboard lectures⁶ are it cannot illustrate accurate images and three-dimensional structures if required. Poor handwriting is not legible.⁹ Sometimes blackboard is dirty, especially if used several times a day. Fewer diagrams can be provided and real images cannot be included. Allergic rhinitis or asthma can be aggravated due to dust of chalk. Seth et al¹⁰ in their study of impact of various lecture delivery methods in pharmacology stated similar disadvantages of blackboard teaching.

Limitation of our study is that our sample is drawn from one institution and deals with observation of one subject only. This could alter the findings and hence scope of this study is restricted.

CONCLUSION

Both blackboard and PPT methods of teaching are almost equally effective. Most of the topics can be made more effective with the use of well-prepared PPT presentations and problems encountered with traditional blackboard teaching can be taken care of. In the present study, teaching using PPT presentations was found to be effective audiovisual tool compared with blackboard teaching in forensic medicine as it has ability to integrate text, images, and videos. It has a great advantage and improves the educative value of the subject if it is prepared keeping target audience in mind. In our feedback, second-year MBBS students preferred the use of PPT teaching significantly over blackboard teaching.

REFERENCES

1. Priyadarshani KS, Shetty HV, Reena R. Assessment of different teaching aids and teaching methods for the better perception of biochemistry by 1st MBBS students. *J Evaluation Med Dent Sci* 2012 Dec;1(6):1159-1165.
2. Allan J, Clarke K, Jopling M. Effective teaching in higher education: perceptions of first year undergraduate students. *Int J Teach Learn Higher Educ* 2009;21(3):362-372.
3. Raveendran R, Sajithkumar R, Pothan L, Mathew L. The effectiveness of lectures in forensic medicine using chalkboard and power point presentation—a comparative study. *IMA Kerala Med J* 2016 Mar;9(1):12-16.
4. Seth V, Upadhyaya P, Ahmad M, Moghe V. PowerPoint or chalk and talk: perception of medical students versus dental students in a medical college in India. *Adv Med Educ Pract* 2010 Aug;1:11-16.
5. Waheeda S, Sathiya Murthy K. A comparative study of blackboard teaching with PowerPoint teaching in 1 year medical students. *Natl J Basic Med Sci* 2015 Sep;1(6):11-13
6. Ramachandrudu RVSNS. PowerPoint presentation vs blackboard teaching: a comparative study and evaluation

- in Government Medical College, Ananthapuramu, Andhra Pradesh for II M.B.S students: a questionnaire based study. *J Evolution Med Dent Sci* 2016 Mar;5(26):1352-1356.
7. Ankad RB, Shashikala GV, Herur A, Manjula R, Chinagudi S, Patil S. PowerPoint presentations in learning physiology by under graduates with different learning styles. *Adv Physiol Educ* 2015 Dec;39(4):367-371.
 8. Bamne SN, Bamne AS. Comparative study of chalkboard teaching over PowerPoint teaching as a teaching tool in undergraduate medical teaching. *Int J Med Sci Public Health* 2016 Jan;5(12):2585-2587.
 9. Agrawal M, Sankdia RK. Attitude of medical students towards the use of audio visual aids during didactic lectures in pharmacology in a medical college of central India. *Int J Basic Clin Pharmacol* 2016 Mar-Apr;5(2):416-422.
 10. Seth V, Upadhyaya P, Ahmad M, Kumar V. Impact of various lecture delivery methods in pharmacology. *EXCLI J* 2010 Aug;9:96-101.