

A comparative study of blackboard teaching with PowerPoint teaching in 1 year medical students

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ABSTRACT

Background: Blackboard and PowerPoint (PPT) teaching have been used in physiology teaching. However, the superiority of these aids has not been proven. The present study was conducted to evaluate the impact of the PPT and chalk board based lectures on medical students. **Aim:** The purpose of this study is to compare the impact of blackboard teaching with PPT teaching in 1st year medical students. **Materials and Methods:** A cross-sectional study was conducted in the Department of Physiology, VMKV Medical College, Salem. 40 Medical students were randomly divided into two groups. Each group of students was allowed to attend a session of blackboard teaching followed by a multiple choice questions (MCQs) test, then a PPT teaching session with an MCQs test at the end. The MCQs answer sheets were evaluated for assessing the knowledge of the students by these teaching aids. The differences in the marks obtained in the groups were analyzed by independent Students *t*-test. **Results:** The marks obtained by students taught by blackboard were comparatively higher than those taught by PPT teaching. The differences were found to be statistically significant ($P < 0.05$). **Conclusion:** The present study suggests that chalk board teaching is more advantageous than the PPT teaching in the 1st year medical students.

Key words: Audiovisual aids, Chalk and board, Medical education, PowerPoint, Teaching methods

INTRODUCTION

Teaching aids like chalk board, PowerPoint (PPT), etc., have been used in physiology teaching but the superiority of these aids over one another has not been proven. The present study was conducted to evaluate the impact of the PPT and chalk board lectures in physiology teaching on medical students. The main aim of teaching in physiology is to make students understand the subject in such a way that they find the subject interesting and at the same time retain this knowledge when they write exams. With an increasing number of medical seats and an extensive syllabus, there has been a constant effort to use modern teaching aids in medical colleges. Audiovisual aids like PPT help to illustrate pathway and mechanism diagrams and impart clarity to the lectures.

Chalkboard aid is inexpensive, easy to clean and reuse, allows students to keep pace with the teacher and

is not dependent on electricity. However, it is time-consuming, one cannot go back to what has been erased and is not so effective for a large number of students. PPT has the advantages of using colors, fonts, diagrams and animation. One viewpoint is that using PPT improves learning or comprehension whereas other viewpoint states that students remember about the same amount of material following PPT as they do with other media (such as overhead projectors and blackboard). Some studies find that PPT actually impairs learning.^[1]

Aim and objectives

The purpose of this study is to compare impact of black board teaching with PPT teaching in 1st year medical students.

1. To assess the performance of students after the back board teaching session

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- To assess the performance of students after the PPT teaching session.

MATERIALS AND METHODS

This cross-sectional study was conducted in the department of physiology, Vinayaka Mission’s Kirupananda Variyar Medical College in October 2014.

The study was consented to by 40 1st year medical students. The lecture in physiology was delivered to two different groups in two different lecture halls at different times; the students were randomly divided into two groups, Group I and Group II based on roll numbers. For Group I (Roll No: 1-20), lecture was delivered using the PPT and the time allocated was 30 min; and immediately after lecture, 10 marks multiple choice question (MCQ’s) were given. To the other group, Group II (Roll No: 20-40) lecture was delivered using blackboard for 30 min and immediately after the lecture the 10 marks MCQs were given to solve, each carrying one marks. The marks obtained (out of 10) were calculated for each student. The difference in the marks obtained in the two groups was analyzed.

RESULTS

The marks obtained by the students who were taught using blackboard was comparatively higher than the students who were taught using PPT, the difference was found to be statically significant ($P < 0.0.5$) (Table 1 and Figure 1).

DISCUSSION

A teaching method is the system of operations and activities of the teacher and his/her students, which help students to acquire knowledge, skills, and abilities, develop capabilities, and form a view of the world. The educational environment is a dynamic and information - intensive space for learning developed and impacted by the educator.^[1]

Every lecture topic has some specific facts which the students should retain in their memory. These help 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. In this study, it was observed that the short-term retention of facts was less with PPT, and hence students in PPT group obtained lower scores. Furthermore, more numbers of students preferred blackboard (60%) over PPT (45%).

This study has been specifically conducted to evaluate the use of teaching aids in physiology. The findings

Table 1: Results obtained from Group-1 to Group-2

Parameters	Marks obtained in MCQ test after PPT teaching Group-1	Marks obtained in MCQ test after black board teaching Group-2
Mean value of marks obtained	7.02	8.15
Median	7.00	8.00
Average absolute deviation from median	0.500	0.550
Standard deviation values	0.696	0.813

PPT: PowerPoint, MCQ: Multiple choice question

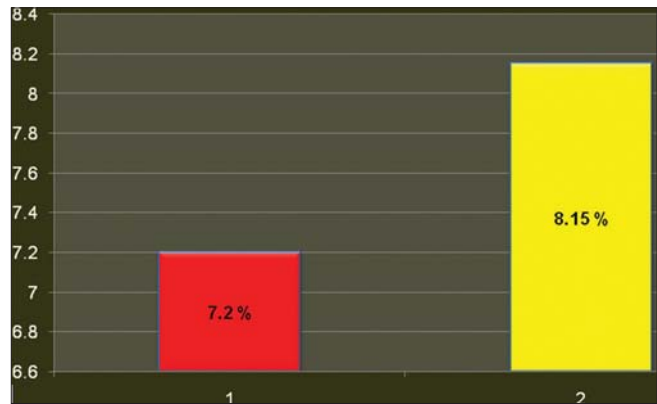


Figure 1: Comparison of marks obtained by Group 1 (PowerPoint) and Group 2 (black board)

obtained may not be for all subjects in the medical curriculum. The preference of students for these two teaching aids may vary from subject to subject and also influenced by the most common mode of teaching aid used in that department.^[2]

The main reasons for disliking PPT are that it takes longer to set up the projection, power failure interrupts the lecture and students find it difficult to take down the notes. Moreover, the students could be more impressed by the way blackboard is used as compared to PPT. Several studies in the past have found blackboard to be a better method of teaching. A questionnaire-based study carried out among the semester medical students in Delhi found blackboard as best allowing interaction and helping recall.^[2] Blackboard aid is inexpensive, easy to clean and reuse, allows students to keep pace with the teacher and is not dependent on electricity.

Use of teaching media plays an important role in this aspect. The type of media used will decide how much attention will be obtained during the lecture thereby influencing the knowledge retained.

In this study, it was observed that the short-term retention of facts was less with PPT, and

hence students in PPT group obtained lower scores. Furthermore, more number of students preferred blackboard.

A study conducted in Bangalore during 2011-2012 considered blackboard teaching is most satisfactory because students can follow the teaching and understand the concept effectively.^[3]

Teaching with blackboard provides better concepts, and this is more elaborated when the teacher highlights important contents of the topic on the board. In the present study, it was observed that when contents such as figures and flow charts were discussed and then elaborated on blackboard, the students were more active and got time to ask the questions compared to showing slides on PPT. Teaching with blackboard keeps the students engaged and motivated. Their attention remains focused on the subject matter and that ultimately leads to better absorption of the core knowledge of the contents.^[4]

Students wanted to be able to listen to the lecturer and make their own notes. The most effective lectures were the students are able to understand and given sufficient time to take down the notes, flow charts and diagrams.^[5]

The question of which mode of teaching is most appreciated by students indicated that they preferred traditional face to face explanation using blackboard teaching methods. Rather than PPT class. It is not evident from the data collected why the students preferred blackboard rather than PPT classes. A question may be raised as to whether it is because the blackboard is really more effective, or because the PPT tool is unsuccessfully applied by the teachers, and the answer to the question is that medical students prefer to be taught using traditional blackboard rather than PPT.^[6]

The main reasons for liking blackboard are that power failure cannot interrupt the lecture, and it encourages students to follow the pace of the teacher and the lecture contains natural pauses and breaks. The main reason for disliking PPT is that it requires darkness in the room, it takes a longer time to set up the projection and power failure can interrupt the lecture. Further students become passive observers rather than active participants.^[7]

Studies also show computer-mediated courses lack direct face to face interaction between instructors and students making the fully online teaching qualitatively different from the traditional classroom settings.^[8]

Some studies have shown through the perception of students that the majority of medical students rated blackboard (50%) teaching a higher in comparison with PPT (25%).^[9]

Some studies with teachers and students have concluded the interactive features of blackboard have the potential to enhance the learning experience.^[10]

CONCLUSION

The results of present study suggest that blackboard has the advantage of better recall besides being the most preferred aid among medical students.

There is a need to discuss as to why a traditional method has more preference over a new method. This study should be considered as a guide by all streams of medicine to improve the uses of black board teaching and to consider it a supplement to the PPT.

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