



Preference of First Year Medical Students Regarding Theory Teaching Aids and Opinion on Teacher-Student Interaction

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ABSTRACT

Introduction: There seems lack of consensus as to best theory teaching aids for Medical Students as brought out during informal discussions with faculty and students.

Aims and objectives: The study was conducted to determine the preference of first year Medical Students about theory teaching aids between Black Board and Power Point Presentation and to ascertain opinion on teacher-student interaction.

Methodology: A cross sectional study was conducted in two phases, first was from April to August 2015 for 2014 MBBS batch and second was from Jan to Feb 2016 for 2015 MBBS batch. Theory classes were conducted with the use of Black Board and Power Point. A questionnaire was administered. Analysis was done on 5 point Likert scale

Results: In the first phase, 69.04% of students preferred Black Board teaching while in the second phase, 66.94% of students preferred Power Point teaching. In first phase 43.65% students and in second phase 64.40% students rated interaction by teacher during theory lectures more than 3 on Likert scale.

Conclusion: Preference for Power Point Presentation was statistically highly significant ($P < 0.001$). So, it can be inferred that Power Point Presentation is preferred by students over Black Board.

Key words- Preference, Likert scale, Interaction, Udaipur

INTRODUCTION

There is a lack of consensus as to the best theory teaching aids for Medical students, as brought out in informal discussions with students and faculty¹. Presently students are being taught by using various teaching aids like Power Point Presentation, use of Black Board, Overhead projector slides etc. Various studies have been undertaken in the past, some showing preference for Black Board^{2,3,4} and some in favour of Power Point Presentation^{5,6} and one study found a judicious mix of both Black Board and Power Point⁷. There is a need to ascertain most preferred theory teaching aid and also level of teacher – student interaction during theory lectures.

Currently, large amount of theoretical information is delivered to a large group of learners by didactic lectures in one sitting. Teaching in India is dominated by teacher-centered classrooms⁸. Flexibility in learning, problem solving, critical thinking and independent learning are the least recognized concepts⁹. Since it is well known that retention of knowledge after a didactic lecture is only up to 10%, we have to make sure that the lecture is delivered effectively for better retention. Moreover, with number of Medical students increasing in batches from 100 to 150 and even 250 in some of the Colleges, it becomes our duty as medical teachers that whatever is taught in the class is retained by students and they remain attentive. In order to make sure that students remain attentive, we also

have to look at the teacher- student interaction during the lecture and make every effort to increase the level of interaction. MCI has also emphasized the beneficial role of interactive teaching in large groups.

Learning style defined as 'the manner in which and the conditions under which learners most efficiently and effectively perceive, process, store, and recall what they are attempting to learn'¹⁰. Learning style means as 'an individual's preferred method of gathering, processing, interpreting, organizing and analyzing information'¹¹. Teaching and learning were the two sides of a coin. The best way to the quality of teaching is the 'amount of student learns'¹². Students learn well by 'doing', yet there is an understandable tendency for students to regard lectures as an opportunity to sit back, be entertained, and 'soak up' the learning. However, we can use various methods to encourage students to take a more active part in the learning process. Methods like asking questions at various stages of lecture, encouraging students to ask you questions, brainstorming, buzz groups and mini-assessments through one-minute paper. Since didactic lectures are the most cost effective media for transferring the knowledge from teacher to a large number of students, we have to focus on teaching aids being used, so that we are able to achieve the goal of producing competent Indian Medical Graduates (IMG) as per the vision 2015 document of Medical Council of India¹³.

The overall goal of undergraduate medical education programme as envisaged in the revised Regulations on Graduate Medical Education-2012 (GMR-2012)¹⁴ is to create an 'Indian Medical Graduate' possessing requisite knowledge, skills, attitudes, values and responsiveness, so that he or she may function appropriately and effectively as a physician of first contact of the community while being globally relevant. In order to fulfil this goal, the IMG must be able to function appropriately and effectively in his/her roles as a clinician, leader and a member of the health care team and system, communicator, lifelong learner and a professional. In order to effectively fulfil the above mentioned roles, the IMG must obtain a set of competencies at the time of graduation. With this background the objectives of our study are to determine the preference of first year medical students about theory teaching aids between Black Board and Power Point Presentation and to ascertain opinion on teacher-student interaction during theory lectures

METHODOLOGY

Study design: A cross sectional study was carried out at Pacific Medical College and Hospital, Udaipur,

Rajasthan in two phases, first phase from April 2015 to August 2015 for 2014 MBBS batch before second contact session of Fellowship In Medical Education (FIME) and second phase from Jan to Feb 2016 for 2015 MBBS batch after second contact session of FIME.

First phase:-The study population consisted of all the 150 students of first year MBBS, first batch of this College, admitted in 2014. Only 126 students were present on the day of study. Theory classes were taken by the PI (self) himself using Black Board as well as through Power Point Presentation. After finishing four lectures each (Black Board and Power Point Presentation), feedback from students was obtained on pretested questionnaire. Students were briefed about the purpose of the study and were instructed to give their unbiased opinion. They were also explained about how to complete the questionnaire. There was no time limit given to fill up the forms and all forms were completed by students in one sitting and collected by the PI himself.

The pre tested questionnaire was administered to students to elicit preference of a particular teaching aid and responses were obtained on 5 point Likert scale. The details of Likert scale are as follows: 1=Strongly not preferred; 2=Not preferred; 3=Neutral; 4=Preferred; and 5 =Strongly preferred.

To elicit student-teacher interaction during theory lectures also, responses were obtained on 5 point Likert scale as follows: 1= Do not interact; 2=Not much interaction; 3=Sometimes interact; 4=Mostly interact; and 5=Always interact.

The teacher-student interaction could not be quantified, but it took place in the form of brainstorming, buzz groups and asking questions during the lectures.

Second phase:-The study population consisted of first year MBBS students admitted in 2015, second batch of this College. Only 118 were present on the day of study and all were included in the study. Same methodology was followed as for 2014 MBBS batch in first phase as given above.

The study was a comparison between two batches of MBBS and both batches were taught using Black Board and Power Point Presentation. It was not a cross over study.

Data analysis: Data was entered in MS Excel sheet and analysed in MS Excel and Epi Info 7.

Ethical clearance: Permission to conduct this study was obtained in writing from Institutional Ethics Committee. Informed consent was obtained from all students participating in the study, in writing, on the questionnaire itself.

RESULTS

First phase: In the first phase of study, 87 (69.04%) out of 126 students preferred teaching by teacher using Black Board and 39(30.95%) preferred Power Point presentation (table-1). Whereas 55(43.65%) out of 126 students rated interaction by teacher more than 3 on Likert scale independent of teaching aid used.(table-2)

Table 1: Students response on preference of teaching method on Likert Scale (First phase)

Response on Likert scale	Teaching aids used (%)		Total (%)
	Black board	Power point	
≤ 3	53 (67.9)	25 (32.1)	78 (100)
> 3	34 (70.8)	14 (29.2)	48 (100)
Total	87 (69.0)	39 (31.0)	126 (100)

Table 2: Level of Teacher-student interaction during theory lectures (First phase)

Response on Likert scale	Number of students
≤ 3	71 (56.3)
> 3	55 (43.7)
Total	126 (100)

Table 3: Distribution of students response on preference of teaching method on Likert Scale (Second phase)

Response on Likert scale	Teaching aids used (%)		Total (%)
	Black board	Power point	
≤ 3	21 (33.9)	41 (66.1)	62 (100)
> 3	18 (32.1)	38 (67.9)	56 (100)
Total	39 (33.1)	79 (66.9)	118 (100)

Table 4: Level of Teacher-student interaction during theory lectures (Second phase)

Response on Likert scale	Number of students
≤ 3	42 (35.6)
> 3	76 (64.4)
Total	118 (100)

Table 5: Comparison of Teacher-student interaction before and after 2nd contact session of FIME

Response on Likert scale	Number of students		Total
	Phase 1	Phase 2	
≤ 3	71 (62.8)	42 (37.2)	113 (100)
> 3	55 (42.0)	76 (58.0)	131 (100)
Total	126 (51.6)	118 (48.4)	244 (100)

Table 6: Comparison of findings on preference of teaching aids used in both phases

MBBS Batch/ Phase	Teaching aids used (%)		Total (%)
	Power point	Black board	
2014 (1 st phase)	39 (31.0)	87 (69.0)	126
2015 (2 nd phase)	79 (66.9)	39 (33.1)	118
Total	118 (48.4)	126 (51.6)	244

$\chi^2 = 31.6$; $df = 1$; $p < 0.001$

Second phase: In the second phase of study, 39(33.05%) out of 118 students preferred teaching by teacher using Black Board and 79(66.94%) preferred Power Point presentation.(table-3) In this phase 76(64.40%) out of 118 students rated interaction by teacher more than 3 on Likert scale independent of teaching aid used.(table-4)

A comparison on teacher-student interaction between two MBBS batches is given in table-5. It is worth noting that interaction between teachers and students during theory lectures is increasing.

Comparison of findings on preference of teaching aids of first and second phase is given in Table-6.

It was found that 2014 batch students preferred Black Board teaching as compared to Power Point Presentation, as only 31% students were exposed to Power Point Presentation in their schools. Whereas, 67% of 2015 batch students preferred Power Point Presentation as they were exposed to PPT in their schools.

DISCUSSION

In this study, 87 (69.04%) students of 2014 batch (first year) preferred Black Board teaching as compared to Power Point Presentation, out of this, 34(26.98%) students rated it >3 on Likert scale whereas 39(30.95%) students preferred Power Point Presentation and out of this, only 14(11.11%) rated it >3 on Likert scale .This shows preference for Black Board as compared to Power Point Presentation. Current findings on preference for Black Board as teaching aid are similar to the findings by Pappana et al in their study among second and third year medical students at Kasturba Medical College,Mangalore², by Bandyopadhyay D in a study of second year medical students at Burdwan Medical College, West Bengal³ and by Sunita B. deSa at Goa Medical College, Bambolim, Goa among medical students in 2012⁴.

In this study, 39 (33.05%) students of 2015 batch preferred Black Board teaching as compared to Power Point Presentation, out of this only 18 (15.25%) students rated it >3 on Likert scale whereas 79 (66.94%) students preferred Power Point Presentation and out of this , 38 (32.20%) rated it >3 on Likert scale. This show preference for Power Point Presentation as compared to Black Board .Current findings on preference for Power Point Presentation as teaching aid are similar to the findings by Atif M et al in their study among medical students at Dow International Medical College, Karachi, Pakistan⁵ and by Seth V et al among medical students in Jaipur ⁶.

However, study conducted by Lalit Mohan et al among medical students found that both the aids

(Black Board as well as Power Point Presentation) were almost equally preferred, though mix of aids was the most preferred⁷.

To find out whether these contradictory preference findings of two batches are statistically significant or not, Chi-square test was applied on these findings (Table 1) and it was highly significant ($p < 0.001$). This study was not a cross over study, but, two different MBBS batches were compared after each batch being taught by Black Board and Power Point Presentation.

Level of teacher-student interaction during theory lectures was also ascertained from both batches, 55 (43.65%) students of 2014 batch rated teacher-student interaction >3 on Likert scale, whereas, 76 (64.40%) students of 2015 batch rated teacher-student interaction >3 on Likert scale. This shows that interaction between students and teachers during the classes is increasing. The amount of teacher-student interaction could not be quantified but methods like asking questions, brainstorming and buzz groups were used to stimulate and motivate students towards better learning.

CONCLUSION

From this study, it can be concluded that Power Point Presentation as teaching aid is preferred over the Black Board by majority of the MBBS students and this has been proved statistically. Hence teachers should adopt this teaching aid for theory lectures. Teacher-student interaction during theory lectures was more in 2015 batch as compared to 2014 batch, which is an encouraging sign. Interactive lectures are better than just one way lectures.

RECOMMENDATIONS

It is recommended that such studies should be carried out annually to know the preference of medical students and adopt/change the teaching aids accordingly for the benefit of the students. In future cross over study should be carried out to draw valid comparisons, teaching through videos and role play should also be included to be assessed by OSPE and project should be taken to the next level of learning. As far as this study is concerned, it is recommended to adopt Power Point Presentation as a suitable teaching aid in theory lectures.

Brainstorming, buzz groups and one-minute paper should be a regular feature in all theory classes. Medical Council of India can also play a regulatory role and check these aspects during annual/ periodic inspections of Medical Colleges throughout the country with a larger goal in mind, producing competent Indian Medical Graduates.

LIMITATIONS

Only one theory class per week was held in Community Medicine for first year MBBS students, being a newly opened Medical College. No practical classes were held, hence only level 1 reaction could be tested. Cross over study could not be conducted and teacher student interaction could not be quantified on Likert Scale.

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