



## A QUESTIONNAIRE BASED EVALUATION OF TEACHING METHODOLOGY IN POST GRADUATE STUDENTS OF DENTAL COLLEGE.

### Physiology

Anupama  
V.Betigeri

Reader, Department of Physiology, Manav Rachna Dental College, Faridabad, India

Himanshu Thukral\*

Lecturer, Department of Physiology, Manav Rachna Dental College, Faridabad, India  
\*Corresponding Author

### ABSTRACT

**Background:** The fundamentals of teaching and learning process in first year postgraduate students plays very important role in preclinical curriculum. Feedback questionnaire was used to access the benefit of teaching physiology in short duration.

**Method:** A feedback analysis was done after completion of basic physiology teaching modules. Descriptive statistics was used in our study. Kruskal-Wallis test and Wilcoxon test were applied using R software (v.3.2.2). P value was considered to be significant at ( $p < 0.05$ ).

**Results:** On the basis of data analysis, preference of lecture on 1st hour in the morning was 100% and 93% felt 2 hour lectures per week was adequate. Application of kruskal-wallis test on average values of Chalk & Board(C&B) with Powerpoint presentation(PPT), C&B and Overhead Projector(OHP) were found significant ( $p < 0.00$ ). On pairwise comparison using wilcoxon test, there was statistical significant difference between C&B with PPT and C&B ( $p < 0.01$ ), OHP compared to C&B and C&B with PPT ( $p < 0.05$ ) and PPT compared with C&B, C&B with PPT and OHP ( $p < 0.05$ ). Analysis shows lecture content was fulfilling their objectives, coverage & relevance of topic was 100% while 20% felt subject was covered fast as more time to be given for clinical topics. On examining students average score was 11 out of 15 points.

**Conclusion:** According to students opinion major implementation to increase time duration with appropriate combinations of specific teaching methods included.

### KEYWORDS

Powerpoint presentation, Chalk & Board, Master of Dental Surgery, Overhead projector

#### Introduction:

Advanced stages of tertiary education has seen massive transformation over the last few decade{1}. This lead to fundamental outburst of innovation in teaching and learning strategies{2}. The fundamentals of teaching and learning process for first year postgraduate students plays very important role in preclinical curriculum. It enable students to gain knowledge and apply it in therapeutics. Teaching methodology influence students in the understanding of subject and managing clinical conditions. Physiology, like any other branch of medical science is ever changing and challenging branch where if physiological to pathological variations not known to them, it may be dangerous for medically compromised patients. So it is important to include clinical oriented teaching methodology. And to make lectures and presentations more interesting and comprehensive, one has to review teaching programme at regular interval{3}. At present generation students needs are changing along with the role of educators also being redefined at the same time. So one has to keep pace with ever changing needs of students and changing trends. Many educational institutes have evaluated through examination and is also been considered as one of the simplest method for evaluation{4,5}. But in current scenario, the most realistic and practical approach is to focus on students' perception of their experience with programme they are in and it is been used also in several studies {6,7}.

Our education system involves various methods in teaching and learning like traditional chalk and board method (C&B), overhead projector (OHP) and in modern world powerpoint presentation (PPT). And we all know every method has its own negatives and positives. All these methods help in deliver lots of information but without interacting with students, these methods are only teacher-centred and do not involve active learning. This may leads to loss of students interest and topic understanding. So it is important to have teacher-student interaction which in turn leads to student's performance {8}.

Multiple studies showed that students are the most suitable persons to report that whether the teaching and learning experience was fruitful or not {9}. It is also seen that meta-analysis of 41 studies also support the similar way and provides the strongest facts of relationship between student ratings and student learning {10}. So our ultimate aim is to identify the areas of strength and weakness and improving on them.

#### Material and Methods:

A quantitative study, using a structured questionnaire and evaluation on basis of examination, was carried out in an attempt to get feedback from the 15 post graduate dental students of Manav Rachna Dental College, Faridabad. The study protocol was approved by the

Institutional Ethical Committee to evaluate the preference of students for learning styles in short duration of time by lecturers. A written consent was taken from all participants before commencement of the study.

#### Experimental Design:

Our study analyzed and evaluated the real teaching methods and aids used in lectures using questionnaire. The questionnaire consists of questions regarding infrastructure, technology used and performance of teaching staff. Questionnaire was developed from interviews and discussions with students and with staff members from the basic medical science departments.

#### Data Analysis:

A feedback analysis was done after completion of basic physiology teaching modules. Descriptive statistics was used in our study. Most of the data was analysed on the basis of percentage. Kruskal-Wallis test and Wilcoxon test were applied using R software (v.3.2.2). P value was considered to be significant at ( $p < 0.05$ ).

#### Result:

The data collected using questionnaire was analyzed using percentage as most of the data based on subjective values like Good or need improvement. On basis of data analysis of scheduling of lecture and infrastructure, it was found that preference of lecture on 1st hour in the morning was 100% and 93% felt 2 hour lectures per week was adequate with 100% votes to functionality of Audio-Video workings as show in figure 1.

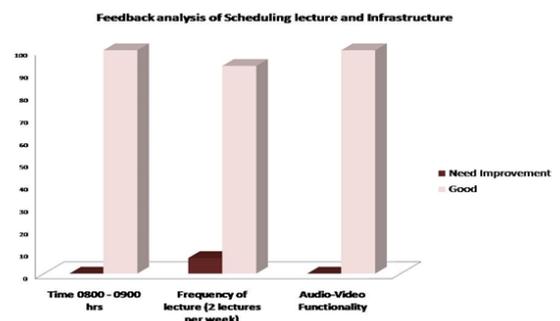


Figure 1: Analysis of scheduling lecture and infrastructure on percentage basis (n=15)

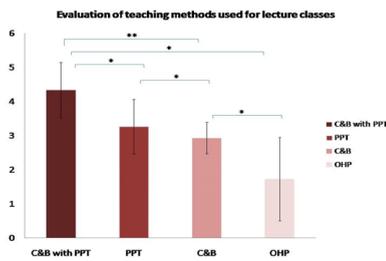
On application of Kruskal-Wallis Chi-Squared test on average values (Table 1), of Chalk & Board(C&B) with Powerpoint presentation(PPT), PPT, C&B and Overhead Projector(OHP) were found statistically significant, p-value was 5.43e-07 (p<0.00).

**Table 1: Mean± Standard Deviation of different parameters of visual aids used in teaching (n=15).**

Parameters	Mean± Standard Deviation
C&B with PPT	4.33±0.82
PPT	3.27±0.8
C&B	2.93±0.46
OHP	1.73±1.22

C&B- Chalk and board; PPT- Powerpoint presentation; OHP- Overhead projector

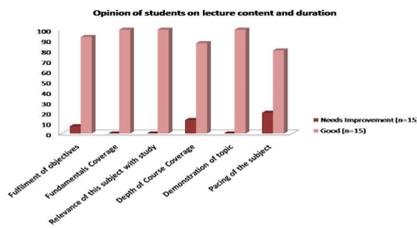
On pairwise comparison using Wilcoxon test, there was statistical significant difference between C&B with PPT and C&B (p<0.01), OHP compared to C&B and C&B with PPT (p<0.05) and PPT compared with C&B, C&B with PPT and OHP (p<0.05) as shown in Figure 2.



**Figure 2: Pairwise evaluation of teaching methods used for lecture classes (n=15).**

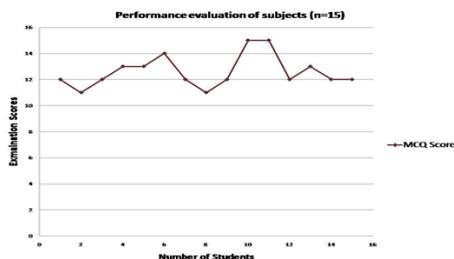
C&B- Chalk and board; PPT- Powerpoint presentation; OHP- Overhead projector; (\*\*) Significance level (p<0.01); (\*) Significance level (p<0.05)

On further analysis of students opinion on different parameters of lecture content and duration was good and 100% of students voted for covering fundamentals, demonstration & relevance of topic while 7% wants improvement in objectives cover, 13% students want depth of course need to be improve and 20% felt subject was covered fast as more time to be given for clinical topics. It is shown in Figure 3.



**Figure 3: Analysis of students opinion on lecture content and duration in percentage (n=15)**

On examining students average score was 11 out of 15 points as shown in Figure 4.



**Figure 4: Scores obtained by the students in Multiple Choice questionnaire exam (n=15)**

**Discussion:**

Student's opinion about teaching methodology are a useful basis for modifying and improving the quality of the education environment. It will help in making the subject more innovative and objective based for students so that they can understand and memorize the subject in a better way. As per the studies done by Chaudhary et al different visual aids in lectures has to be considered in need to maintain interest and enthusiasm among the pupils {11}.

The results of the present study reveal that 7% of the students felt 2 hour lectures per week are not enough to complete the subject understanding. On the other hand 20% felt subject was covered more fast and 13% wants depth of course to be increase. So both the finding suggest to increase the time duration of teaching physiology and with more elaborative discussion and information. In spite of short duration every post graduate student has achieved above average score.

On comparison of C&B with PPT to PPT, C&B and OHP, we have got highly significant results. As it was also proved by Mehta et al that traditional C&B and PPT teaching was far better than using simple OHP, PPT or C&B and transparencies in improving students performance {12}. Depending upon the topic which need to be covered the teaching methods should be used appropriately to understand and follow the subjects {13}.

**Conclusion:**

The important suggestion obtained was to use combination of traditional and advanced methods i.e. C&B with PPT together to make lectures more effective. As it was also observed that interactive classes having bilateral communication with visual aids as PPT were more popular among students as compare to normal PPTs, C&B or OHP. In this way efforts can be done to make these topics more interesting. Another major implementation is to increase the time duration of lectures. Teaching post graduate students for clinical prospects in short duration, although relevant topics are decreased, each topic need to be emphasised more.

It also depends upon the students interest and thrust for gaining knowledge for the benefits in their field of interest. The feedback analysis helps us in upliftment of their knowledge, as pre clinical topics are for their fundamental enrichment and also as a part of basic medical science University protocol.

**Acknowledgement:**

The authors are sincerely and wholeheartedly acknowledge the contribution of the students' participated in this study. The authors are also thankful to lab technician and junior staff of department for extending their support for the present study.

**References:**

- Laurillard, D. 1993, Re-thinking University Teaching: A Framework for the Effective Use of Educational Technology, London: Routledge
- Sydille K L. Evaluation of teaching and learning strategies. Med Educ Online (serial online) 2001;6:4
- Van Der Vleuten CPM, Dolmans D.H.J.M., Scherpbier A.J.J.A. The need for evidence in education. Medical Teacher, 2000; 22 (3): 246-250
- Shellhart WC and Oesterle LJ: Assessment of CD-ROM technology on classroom teaching. J Dent Educ 1997;61:817-820
- Login GR, Ransil BJ, Meyer MC et al: Assessment of preclinical problem-based learning versus lecture-based learning. J Dent Educ:1997;61:473-9.
- Boyd EM, Fales AW. Reflective learning: the key to learning from experience. J Humanistic Psychology.1983;23:99-117.
- Peters A et al. Learner centered approaches in medical education. Academic Medicine 2000; 75: 470-479.
- Ganyaupfu EM. Teaching methods and students' academic performance. International Journal of Humanities and Social Science Invention. 2012;2(9); pg 29-35
- Theall M, Franklin J. Students' ratings of Instruction: Issues for improving Practice. New Directions for Teaching and Learning, no. 43. San Francisco: Jossey-Bass, 1990.
- Gaubatz N. What's the Use of Student Ratings of Teaching Effectiveness? Available from: <http://csti.syr.edu/csti.T-L/strdate.htm>.
- Chaudhary R, Dullo P, Gupta U. Attitude of 1st MBBS medical students about two different visual aids in Physiology lectures. Pak J Physiol 2009;5(2)
- Mehta M, Adwal S, Chourishi A. Evaluation of different teaching-learning methods according to students' preference and perception. Int J Basic Clin Pharmacol 2017;6:769.
- Baruah M, Patel L. Evaluation of different teaching methods used in physiology lectures. Indian Journal of Basic and Applied Medical Research; December 2014: Vol-4, Issue- 1, P.271-276