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## A Pre-Lecture Assignment In The Form Of Power-Point Presentation By Students: A Novel Approach To Enhance Active Learning In Physiology.

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### ABSTRACT

Lecture is a common method of teaching in medical colleges. But it is teacher-centered and one way communication and it is not an effective tool for teaching. Hence the objective of this study was to use a pre-lecture assignment (PLA) to the students in the form of power-point presentation (ppt) to make the large group lecture more effective and create an motivated audience. The study was done in first MBBS students and their feedback was collected. Their feedback showed that this PLA in the form of ppt was very useful for them. Their learning improved in all the three domains – they acquired more knowledge on the concept, they also developed ppt preparation skills using a computer and also understood the art of presentation and teaching and the efforts of the teachers. This made them a motivated audience with more involvement in the lecture. Hence this method of PLA can be used more often to improve the effectiveness of large group lectures.

**Keywords:** Lecture, Pre-learning assignment, Power-point presentation, Physiology, Neuro-muscular junction

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## INTRODUCTION

Lecture based learning is the core of medical education in most of the medical colleges in our country. Lectures are useful to teach a large group of students [1, 2]. But it is teacher – centered and the students are not motivated. There is no active learning by the students. Hence it is not popular among students and teachers. Student-centered learning in small groups is promoted to improve teaching-learning experience. But these are not feasible all the time because of paucity of time and manpower.

To address these challenges, we tried an innovative approach of making a large group lecture more effective by using a pre-lecture assignment (PLA) in the form of a power-point presentation and assess the learning experience of the students.

## METHODOLOGY

The study was conducted in the Department of Physiology in Government Thoothukudi Medical College, Thoothukudi, among the 150 students pursuing first year MBBS. The students who did not submit their assignments and those who were absent for the lecture were excluded.

The topic for the lecture was decided to be “Neuromuscular Transmission”. The students were instructed to prepare a power-point presentation on the same topic as a prelecture assignment and submit it before the lecture class through mail to the teacher. This PLA was given on a Friday and two days’ time was given to them for preparation. The lecture class on the same topic was planned on Monday. The students were informed that their power-point presentation would be graded based on the scientific accuracy & quality of the content and the effective use of the power-point slides and animations. One hour lecture was delivered to the students on Monday by the teacher, using her own power-point presentation on the topic. After the lecture the students were asked to fill a feedback questionnaire and that was analyzed.

## RESULT

Out of 150 students 138 students submitted the PLA and attended the lecture class. Un-structured feedback was obtained from the students and analysed. Almost all students found the PLA in the form of power-point presentation useful and interesting. Many students had mentioned that they referred many resources like books, videos, other ppts available online. This widened their knowledge and created an interest in the topic. Some students have written that this type of assignment was better than the regular essay type of assignment. Students have also mentioned that they understood all the concepts and facts better and will also remember them for a long time. A few feedbacks from the students are compiled and shown in ‘Figure 1-4’.

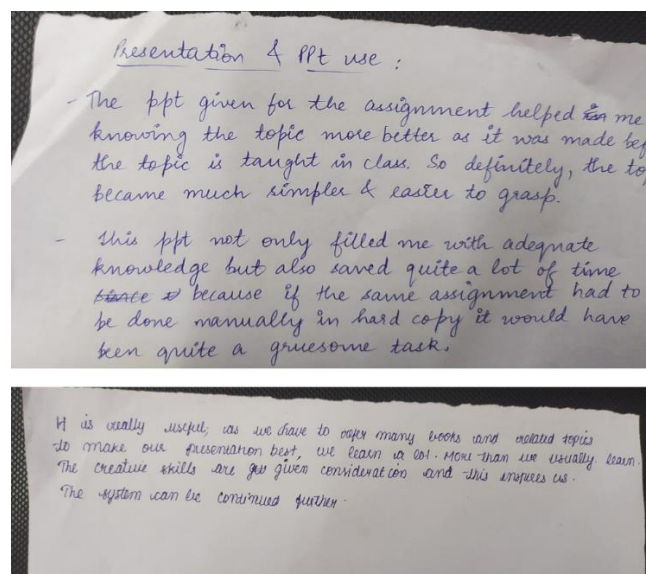


Figure 1

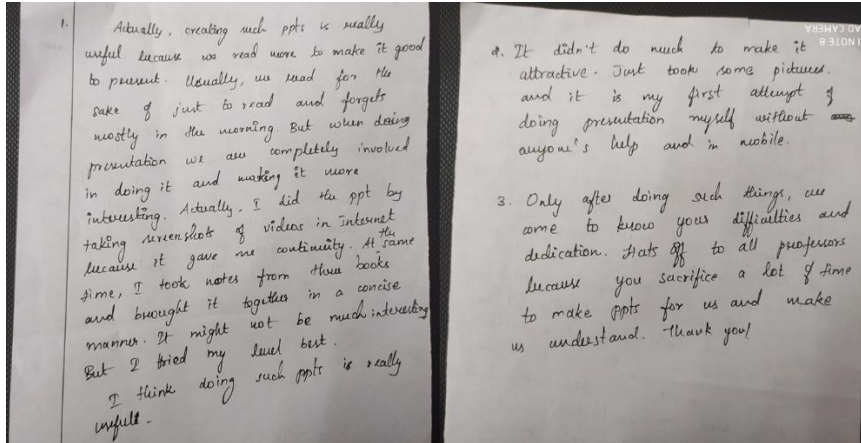


Figure 2

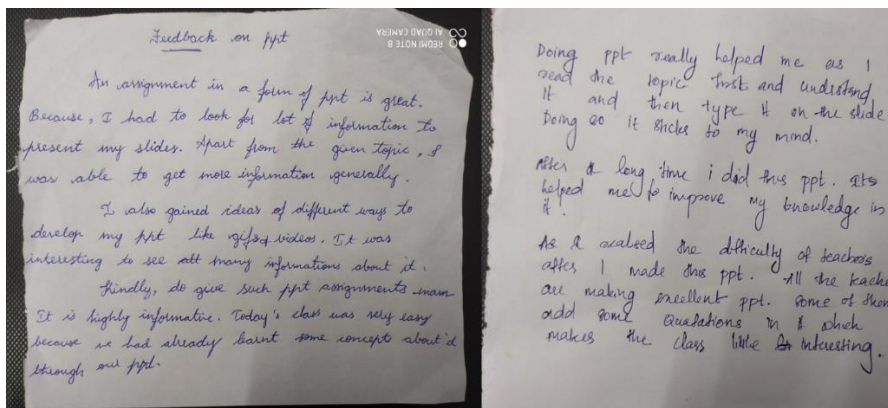


Figure 3

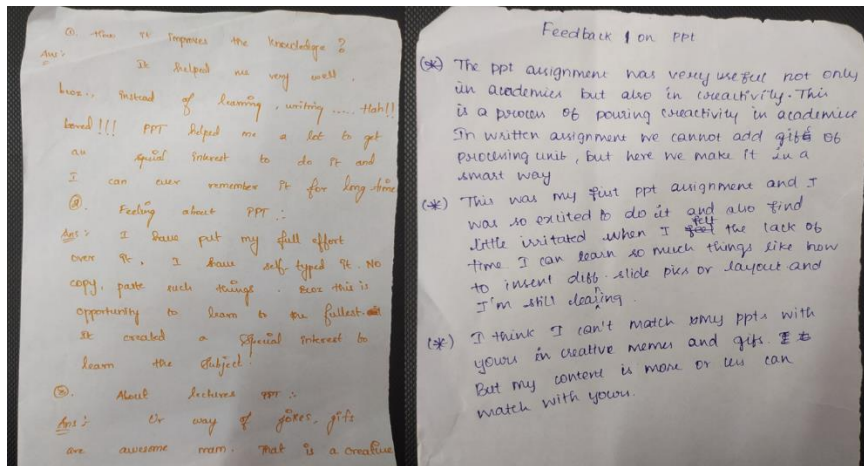


Figure 4

DISCUSSION

There is a very urgent and compelling need to change the way of teaching from teacher-centeredness to student-centeredness. The students should be motivated during the lecture classes. To address this issue, we tried this innovative PLA in the form of power-point presentation to increase student motivation and to make the lecture class more beneficial. In our study we found that this helped the students in an active and self-directed learning experience. The students were more attentive and

interactive in the lecture session. And the PLA in the form of power-point presentation helped them to learn and improve their skill in handling computer and power-point.

Since the students first read, understand the concept and then prepare a presentation to show others how the concept works, this mode of learning can be classified under ‘SHOWS HOW’ of Miller’s pyramid of learning (Figure:5). Thus, this is a higher level of knowledge acquisition. And this also helped them to retain the acquired knowledge for a long time.

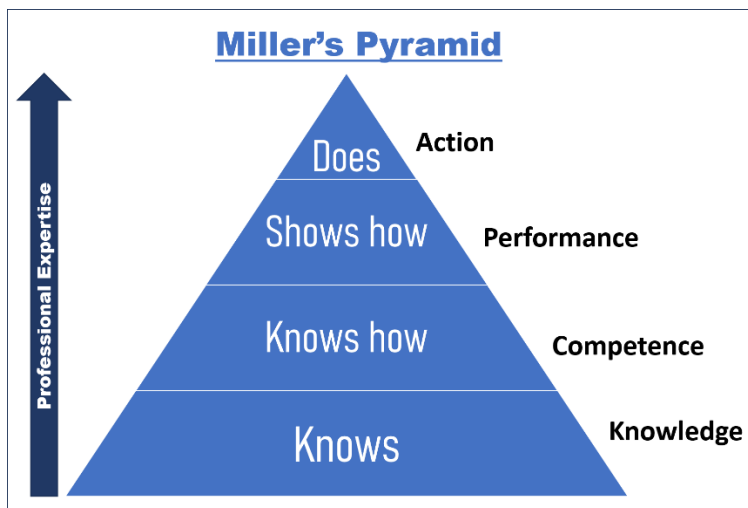


Figure 5

PLAs have been tried in previous studies [3-5] and shown to be useful. But PLA in the form of power-point presentation is far more effective than the other PLAs because the students also acquire a computer-based skill, the art of presenting a concept in a sequential and understandable manner. While working on the assignment the students are primed about the topic. Then listening to the lecture helps them to consolidate and clarify the concepts.

The students have also mentioned in their feedback that they also realized the effort taken by the teachers to prepare and teach a topic. And their respect for the teachers has increased. This type of assignment breaks the monotony of writing an assignment. It makes the students do something new, interesting and improve their creativity.

The students feedback showed that this PLA in the form of ppt was very useful for them. Their learning improved in all the three domains namely Knowledge, Skill and Attitude. They acquired more knowledge on the concept, they also developed ppt preparation skills using a computer and also understood the art of presentation and teaching and the efforts of the teachers.

From the teacher’s point of view, while going through the submitted PLAs in the form of power-point presentation, the teacher was able to identify students’ common misconceptions and difficult areas in the particular topic. This helped to build the lecture around those key concepts.

**Limitations**

Some students did not complete the assignment on time because of time constrains and demand of other subjects. Some students did not have computers or laptops and they found it difficult to prepare the PLA in their mobile phones. Some students had downloaded and submitted the power-point presentation available online. Those PLAs were identified and poorly graded.

**CONCLUSION**

An introduction of PLA in the form of power-point presentation improved the whole teaching-learning experience in all domains – knowledge, skill and attitude of both students and teachers. The students were more motivated and this made the lecture session more effective, interesting, interactive and student-centered. Hence this can be used for more topics in the future.



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