

TEACHING AIDS AND STUDENTS PREFERENCES IN ANATOMY LECTURES IN STATE OF TELANGANA

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ABSTRACT

Background: A right concept has to be obtained to the medical student's during their under-graduation period because knowledge of Anatomy forms the basic foundation for most of clinical subjects like Medicine, Surgery, OBG, ENT, Ophthalmology, Orthopedics, Radiology and Neurology. So, we professors need to give a clear tri-dimensional familiarity of human body using best teaching methodology. In medical education technology, there is a swift change from Blackboard to virtual simulations and other teaching methodologies. So we have taken feedback from the students so that the best teaching aid and method can be adopted to improve their academic performance. The study was designed to know the preferred one amongst teaching aids like traditional chalk & board versus Power Point Presentation among the 1st Year MBBS students.

Methods: For a period of 3 years 150 MBBS students of 2016-17 batch from Malla Reddy Institute of medical sciences, Suraram, 2017-2018 batch of Maheshwara Medical College and Hospital, Chitkul village, Patancheru, and 2019-20 batch from Mamata Academy of Medical sciences, Bachupally of Telangana state were selected and delivered Anatomy lectures for a period of 3 months. The questionnaire was prepared covering the different aspects of the lecture and was asked to voluntarily go through the questionnaire and evaluate their preferences after each class.

Results: Out of 450 students of 3 consecutive years Blackboard was preferred by 139 students, 90 students preferred PowerPoint Presentation and 183 students preferred both the teaching methods and 38 students were absent totally.

Conclusion: By using and adopting the best teaching aids the teacher can improve the academic performance of the students. Thus, there is a scope for improvisation in medical education and forming a strong basic foundation for medical graduates.

KEY WORDS: Teaching Aids, Blackboard, Power Point Presentation.

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INTRODUCTION

Educational environment is a 'dynamic and informative space for learning developed and impacted knowledge given by the educator. Technological advancements of this era have revolutionized every field of life. Teaching is no exception. Medical professors have conventionally been using different teaching methods to educate medical students, previously dominated by Blackboard and slide projectors. More recently audiovisual aids such as videotapes and multimedia have been introduced. The traditional Blackboard teaching method provides strong student-teacher interaction, but its effectiveness declines as the number of students in the class increase, hence it is a more preferential method for small group teaching. Later Power Point Presentations, accompanied with multimedia projectors, have remarkably revolutionized teaching. They provide a visual stimulation that is particularly handy in sustaining the interest and understanding complex medical concepts.

The efficacy of these tools in learning process has been observed from the teacher's point of view in many studies while other studies observed the effectiveness from learner's perspectives. There is no study available from the current region on the perception of undergraduate students on these two tools of lecture delivery in learning [1,2]. Therefore, this study is planned with an aim to find out the perceptions about these two common tools used in medical institutions for undergraduate teaching in well developed area like Hyderabad of Telangana state.

METHODS

For a period of 3years 150 MBBS students of 2016-17 batch from Malla Reddy Institute of medical sciences, Suraram, 2017-2018 batch of Maheshwara Medical College and Hospital, Chitkul village, Patancheru, and 2019-20 batch from Mamata Academy of Medical sciences, Bachupally of Telangana state were selected and delivered Anatomy lectures for a period of 3 months. They were asked for their preferences and views on the advantages and disadvantages of Blackboard versus Power Point

Presentation as a teaching tool. A pre-structured questionnaire was prepared. Verbal consent of the students was taken and were asked to voluntarily answer the survey. The teaching modalities were to be rated at the scale of 1-4. 1-Excellent, 2- Very effective, 3- Effective, 4- Not effective. Benefits and drawbacks were to be written next to its grading. In the questionnaire students were asked to fill the data voluntarily. Data was entered in an Excel sheet and analyzed.

RESULTS

Out of 450 students, Blackboard alone was preferred by 139 students, 90 students preferred Power Point Presentation while 183 students preferred both the teaching methods.

Students preferred Blackboard due to the following reasons:

- 'good interaction between professors and students',
- 'coping with teaching speed of teacher',
- 'copying the diagrams easily',
- 'aroused interest in learning'.
- Due to the interaction, teacher holds attention of the class and is more helpful in grasping the content.
- It facilitated increased ability to think and understand.

Power Point Presentation scored more in the following points:

- It is more useful in large group (50 - 100),
- Allowed better inclusion of content,
- Enhanced visual quality of text and figure,
- Made better use of the examples and illustrations.

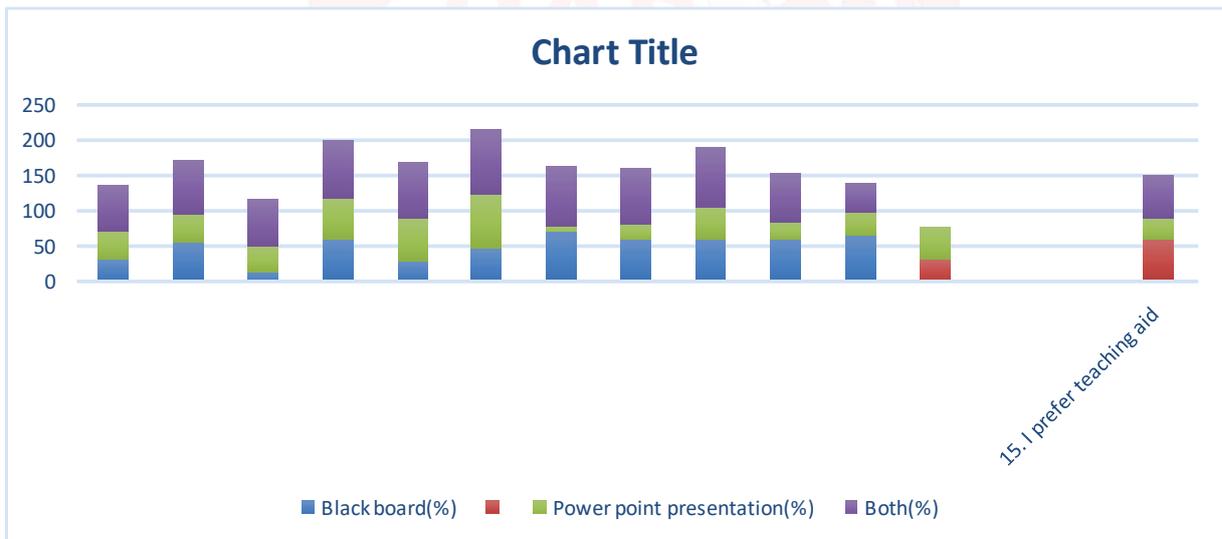
If both were combined it would make a perfect lecture. By combining it:

- Becomes the reliable teaching visual aid,
- Develops ability to think & understand topic better,
- Becomes Interesting & interactive teaching aid with enhanced visual quality of text & figure.
- Accentuates upon the relevant & important information and
- Is useful for both small and larger groups.

Response to the Questionnaire

Question	Blackboard (%)	Power Point Presentation (%)	Both (%)
1. The reliable teaching visual aid	32	40	64
2. Develops ability to think & understand topic better	56	38	76
3. Provide good learning experience	13	38	65
4. Interesting & interactive teaching aid	60	59	80
5. Allowed better inclusion of context	28	61	78
6. Enhanced visual quality of text & figure	46	78	90
7. Allows good room illumination	72	7	83
8. Better able to cope with teaching speed of teacher	61	21	77
9. Helps to grasp the content	60	46	84
10. Stresses upon the relevant & important information	60	25	68
11. More useful in small group(10-20)	66	30	43
12. More useful in large group(50-100)	32	44	
13. PPT included with other teaching aid- yes/no	yes-73	no-27	
14. Do you feel any difficulty from switching one mode to another within short duration of time- yes/no	yes-38	no-62	
15. I prefer teaching aid	59	30	61

Thus becoming the best combination.



DISCUSSION

Anatomy has been the cornerstone of medical education for hundreds of years. Good knowledge of anatomy plays a vital role in proper understanding of any other branch of Medicine. The traditional and the most frequent method used for teaching anatomy is the chalk and board method. While taking lecture, the important terminology and sentences are written on the Blackboard and necessary diagrams are also drawn using chalk.

During recent times, there has been a major change in terms of methodology of teaching

anatomy, due to time constrain, rapid advances in information technology and change in the demand of medical professionals. Moreover, there has also been a shift in medical education from passive didactic and teacher-control approach to active clinical-based and student-centered teaching. PPT uses a well prepared and brief lecture is delivered and conveyed to the students.

Today's advancing technology can be exploited to the advantage of both professors and students as well. Recently, use of Power Point Presentation has been increased tremendously

for classroom teachings in medical education. But there remains controversy and debate over teaching methods and about whether which mode of teaching anatomy is preferred by students [3].

At undergraduate level, it is important to get the right concept because knowledge of anatomy forms the foundation for most of the subjects.

So, we teachers have to teach in 3D concepts using Audio visual aids [4]. Ability to explain i.e., helping students understand the concept is a vital skill of a good teacher. The ability to draw accurate, proportionate and well labeled diagrams is also essential in Anatomy and thus, we feel that the efficacy of any teaching methodology for Anatomy should be assessed under three domains; understanding the concept, retention of lecture information in memory and reproducibility of diagrams. Thereby, the students' perspective and preference to a particular method should be considered.

Roopa et al conducted a study on 117 MBBS Students attending Biochemistry classes and observed that Power Point Presentation in combination with Blackboard (66%) was the most helpful teaching aid to understand, remember and reproduce; followed by combination of OHP and Blackboard (46%). Teaching using OHP alone and PPT alone was opined not effective at all [4].

SN Baxi et al conducted a study on 2nd year MBBS students during Pathology lectures and asked their views on advantages and disadvantages of Chalk & Board, OHP, PPT and other multimedia and clinched combination of teaching aids was preferred [2].

The studies conducted by Mohan L et al, Giri PA et al, Kumar A et al found similar results with 54.9%, 48.8% and 50% respectively. A Cross-sectional study using a pre-structured, pre-tested, pre-coded questionnaire prepared by Saha Nirmalaya, was conducted among 98 first year medical students in the Department of Anatomy in Tripura Medical College and perceived that majority (81.6%) of the students preferred for the combination of visual aids during the lecture classes [5-7].

Roopa Kulkarni et al study observed 475 medical students of first, second and final year

students in the year 2009, have also concluded that audio-visual aids enhance the effectiveness of the Blackboard teaching. Results showed 56.1% of students prefer Blackboard teaching, whereas 42.2% of students prefer multimedia presentations [8].

Sujata Biswas et al study showed that student's opinion about both lecture delivery methods, majority students feel that both Power Point and Chalk & Board should be used simultaneously in all the classes [9].

In the present study, 59 % students preferred Blackboard as they were able to take their notes/diagrams and thus, students were active learners. The lectures were not interrupted or affected due to power failures. It also contains natural pauses (e.g. during cleaning of board) which provide sufficient time for the students to assimilate the new concepts. In Blackboard method, as the teacher teaches, he/she is a single source for both the auditory as well as visual information for students. This enables them to concentrate easily. A teacher through a series of statements written/diagrams drawn, sequentially, tries to explain a process/procedure on a Blackboard. While explaining with Blackboard, only the important points were written on the board. Hence, these points get imbibed into the students' mind. Moreover, these points are on the board for a longer period, helping the students to remember them. In our study, 30% of students preferred PPT, as it was more useful in larger groups, and has been shown to explain complicated topics with the aid of pictures, graphs, animations and simulations. PPT can present complex concepts in small and easy chronological steps that aids students' ability to comprehend information in a meaningful way.

According to Rokade S A, in PPT, students receive inputs from two different sources i.e. auditory inputs from the teacher (usually standing at the computer) while the visual inputs from projector and the text on PPT is comparatively more, thus the important points, may not be given due weightage. Ultimately, retention in memory is the end- result of overall effectiveness of the lecture. Thus, with increased effectiveness of the lecture, more and long lasting will be the retention of information in

memory. The student can perceive the unfolding of a topic in a sequential manner and thereby it impinges on their minds. All sections of the explanation can be seen on the Blackboard at the same time and the most complicated topics are explained with animations, pictures using PPT thus giving the best lecture by combining the both.

CONCLUSION

Teaching is an art. By making use of the best teaching aid, a teacher can teach and make the students understand, remember and reproduce well; thus improving their academic performance. Discussing the effectiveness of learning strategies, a Spanish research concluded that medical students learned more when a blend of traditional and non-traditional methods were used and favored, employing new technologies in teaching. A good teacher with lack of audiovisual aids will be better received than the poor teacher with the best audiovisual aids. PPT should not replace Blackboard, but be used as a supplementary, to enhance the efficacy of teaching. As suggested by a recognizable number of students, a combination of both, Blackboard and PPT as per the need of the topic would be the right choice. It's an endowment of an Anatomist that we train a Medical Student in the science of uncertainty and the art of probability.

ABBREVIATIONS

C& B- Chalk and Board

PPT- Power Point Presentation

OHP- Over Head Projector

Conflicts of Interests: None

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