Section: Pathology

Original Research Article

PREFERENCE OF TEACHING METHODS AMONG SECOND-YEAR PATHOLOGY M.B.B.S. STUDENTS

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Received *: 06/07/2025*
Received in revised form *: 18/08/2025*
Accepted *: 09/09/2025*

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DOI: 10.70034/ijmedph.2025.3.537

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2025; 15 (3); 2923-2926

ABSTRACT

Background: White/Blackboard lectures, Power Point presentations, seminars, direct interaction in small groups are various modalities of teaching involved in present day medical education. As PowerPoint is a widely used modality either solely or as an adjunct to other methods, it is important to ascertain student's preference for one method over the other and also determine the attributes of PowerPoint that facilitate their focus and understanding. This study investigates the preferences of 2nd year M.B.B.S. students regarding the teaching methods employed in Pathology classes.

Materials and Methods: This cross-sectional study was conducted in the Department of Pathology at United Institute of Health Sciences, Prayagraj from September 01, 2022 to June 30th, 2025 and involved four M.B.B.S. batches. Data collection utilized a pre-validated questionnaire. Student's perception was assessed via a Likert scale questionnaire in which, the students were asked to rank answers on a five-point scale: strongly agree, agree, neutral, disagree, or strongly disagree. Data was tabulated using google sheets and descriptive statistics were used to evaluate the distribution of their responses.

Results: The study included 465 students. 66.5% of students found Power Point presentations, the most effective teaching method. 58.5% students preferred the use of 10-20 Power Point slides in 1 hour. 60% strongly agreed that animation in PowerPoint is helpful in teaching. 41.9% preferred 3-4 bullet points in 1 slide is apt for understanding. 39.1% were neutral about Power Point increasing student teacher interaction. Clear text/visibility was the most important advantage of Power Point over board teaching.

Conclusion: Second year medical students prefer PowerPoint slides with clear text, animations, 10-20 slides in 1 hour with 3-4 bullet points per slide in Pathology M.B.B.S. classes. As the students feel neutral about student teacher interaction during Power Point sessions, activities using animations can be done to increase interaction, increase interest and engagement in pathology medical education.

Keywords: Power Point teaching, classroom technique, medical education, student perspective, interactive teaching, chalk and board, seminars.

INTRODUCTION

PowerPoint presentations are commonly utilized alone or in conjunction with white/blackboard lectures. They are used as an aid in seminars and small group teaching in medical education to impart knowledge to students. In our current competency-based medical education, the use of the PowerPoint facilitates interactive teaching–learning while teaching a large group of students. PowerPoint slides offer many advantages, such as facilitating topic organization and enabling the presentation of complex topics using simple flowcharts, videos, audio clips, animations, and pictorial representations. These features make PowerPoint an excellent medium for delivering effective lectures within the constraints of time.[1,2] However, the existing literature lacks specific information regarding the preference of Pathology students about Power Point as a learning tool.[1] Hence, this study is aimed to

provide valuable insights into the preferences of Pathology M.B.B.S. students regarding PowerPoint attributes that facilitate their focus, understanding and long- term retention.

MATERIALS AND METHODS

Study type and setting: This study was a cross-sectional, observational study conducted in the Department of Pathology at United Institute of Health Sciences. The cross- sectional study duration extended from September 01, 2022 to June 30th, 2025. The sample size was 465 pathology students and involved M.B.B.S. batches 2020, 2021, 2022 and 2023. A pre-validated questionnaire was used to gather information on student's preference of teaching methodology and attributes of PowerPoint presentations which help them focus and understand better. The questionnaire was administered using printed papers and the answers were fed online using Google Forms. The questionnaire was distributed to the targeted medical student population, accompanied by clear instructions on how to complete the questionnaire. Descriptive statistical analysis was conducted to analyse the data. The responses to the questionnaire items were summarized using percentages. Participants were provided with clear information about the study's purpose, and informed consent was obtained before their participation.

RESULTS

A total of 465 students participated in the study, of which 21.7% students belonged to M.B.B.S. 2023 batch, 22.8% students belonged to M.B.B.S. 2021 batch, 24.9% students belonged to M.B.B.S. 2020 batch and 30.5% students belonged to M.B.B.S. 2022 batch [Table 1]. 66.5% of students found Power Point presentations, the most effective teaching method, followed by 23.82%, 5.2%, 4.9% who preferred white board/black board teaching, seminars and direct interaction in groups, the most effective method respectively [Table 2]. 58.5% students preferred the use of 10-20 Power Point slides in 1 hour [Table 3]. 60% strongly agreed that animation in PowerPoint is helpful in teaching [Table 4]. 41.9% preferred 3-4 bullet points in 1 slide [Table 5]. Clear text/visibility was the most important advantage of Power Point over board teaching [Table 6]. 39.1% were neutral about Power Point increasing student teacher interaction [Table 7]. Other methods of teaching which the students suggested was practical based exposure combined with theory lecture, case-based question solving, quiz with seminars and a combination of all methods.

Table 1: M.B.B.S. batch with number of students

M.B.B.S. Batch	2020	2021	2022	2023
Number of students	116	106	142	101
Percentage	24.9%	22.8%	30.5%	21.7%

Table 2: Student's preference of the most effective teaching method

Most effective teaching method	Power Point	White board/ Black board	Direct interaction without teaching aid	Seminars
Number of students	309	108	23	24
Percentage	66.5%	23.2%	4.9%	5.2%

Table 3: Student's preference of the number of Power Point slides in 1 hour

Number of Power Point slides to be used in 1 hour lecture setting	<10	10-20	20-30	30-40	>40
Number of students	52	272	123	16	02
Percentage	11.2%	58.5%	26.5%	3.4%	0.4%

Table 4: Student's preference about animation in Power Point helpful in teaching

Animation in Power Point is helpful in teaching	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Number of students	279	159	26	00	00
Percentage	60%	34.2%	5.6%	0	0

Table 5: Student's preference about number of bullet points in a Power Point slide

Number of bullet points in a Power Point slide	1-2	2-3	3-4	4-5	5-6
Number of students	09	81	195	136	44
Percentage	1.9%	17.4%	41.9%	29.2%	9.5%

Table 6: Student's opinion on the most important advantage of Power Point over white board teaching

Most important advantage of Power Point over white board teaching	Clear text/visibility	Organisation	Animation	Student teacher interaction	Increases interest
Number of students	161	110	114	27	53
Percentage	34.6%	23.7%	24.5%	5.8%	11.4%

Table 7: Student's opinion on Power Point increases student teacher interaction

Power Point increases student teacher interaction	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Number of students	43	180	182	43	17
Percentage	9.2%	38.7%	39.1%	9.2%	3.7%

DISCUSSION

This study provided insights about the preferences of students regarding teaching methods in Pathology. It also points out the attributes of PowerPoint presentations which aid in their understanding and improved focus in a lecture class setting. In our study, 66.5% of students preferred Power Point presentations as the most effective teaching method in a lecture class followed by 23% students who preferred white /black board teaching. This was in contrast to study by Papanna KM et al where 46.9% students preferred blackboard teaching and study by Mohan L et al which found that both the methods were almost equally preferred.[3,4] Our study correlated with study by Atif M et al and Panda S et al who found that Power-Point was the most preferred.[5,6] This aligns with the notion that visual aids and structured information can enhance comprehension and retention of course material.[1] Hence, preferred by students.

According to our study, 60% students strongly agreed that animation in PowerPoint is helpful in teaching. This observation agreed with study by Brown B et al who suggested that animations add an element of interactivity and engagement to the class. By incorporating animations, complex processes or concepts in pathology can be broken down into smaller, more digestible segments, facilitating better understanding and retention.[7]

Clear text/visibility was the most important advantage of Power Point over board teaching according to 34.6% students followed by topic organization according to 23.7% students. According to Gupta A et al, Power Point had better visibility.[8] According to Jadhav V.S. et al, some of the disadvantages of black board teaching that provides an edge with Power Point teaching includes difficulty in understanding teacher's handwriting, students tend to get distracted when teacher faces board, contents of class is not available for further reference, writing and cleaning of board takes time, many short forms are used, less number of diagrams and flow charts as well as the content of the lecture is limited.[9] According to Panda S et al lectures were better organized with PowerPoint presentation as opined by 56% students.[6] The advantages of Power point over black board include X-ray, pictures, videos, animation can be added, no problem of hand writing, many illustrations are possible and there is good visual retention of knowledge.[9]

Some of the attributes of Power-Point preferred by our students were 10-20 slides in a one- hour lecture class setting (58.5%) with 3-4 bullet points per slide (41.9%). Some reports have shown that student's inactivity in traditional teacher-centred classes would make them bored and exhausted, that consequently would decrease their concentration and learning and finally would result in their absence from the classroom.[10] This agrees with our study as 39.1% students expressed a neutral stance on Power-Point increasing student teacher interaction. This shows the potential limitations of Power-Point within lecture class setting. Factors such as the passive nature of lectures heavily based on reading off slides or the length of the class could contribute to diminished engagement over time.[1]

CONCLUSION

The findings of the study suggest that though majority of students preferred Power-Point presentations as an effective method of learning over other methods, a proportion of students also preferred the traditional chalk and board teaching. More over majority of students were neutral about Power Point increasing student teacher interaction during a lecture. The authors would like to make these recommendations to improve student engagement. First, the classes could be made more interactive by giving multiple choice questions related to the topic at the end of the class. Second, giving clinical scenarios during the beginning, with discussion of the answers at the end. Third, the use of animations in Power Point to create interactive quizzes and games, can engage the students. Fourth, a class prepared with a combination of teaching methods may help engage students, prevent boredom and absenteeism. By considering individual learning preferences and incorporating teaching approaches inclusive of their preferences, educators can create a more effective learning environment in pathology classrooms.

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