ASSESSMENT OF STUDENT'S PREFERENCES OF LECTURE DELIVERY METHOD FOR TEACHING GYNAECOLOGY IN MEDICAL GRADUATION

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ABSTRACT: BACKGROUND: Classroom lectures have been a teaching tool since ages. The methods of lecture delivery have shifted from conventional black board method to use of overhead projector method and from overhead projector method to PowerPoint presentation. It is observed that the teachers continued using all the three methods due to inherent weakness of each of them, which was complemented by the other.

OBJECTIVE: So the study was done to know the strength and weakness of Blackboard, OHP & PowerPoint and to make necessary adjustments while delivering gynaecology lectures.

MATERIALS AND METHODS: A cross sectional was done for the final MBBS students, who were taught by Gynaecology by Blackboard, Overhead projector and PowerPoint presentations at various phases of MBBS graduation till final year. The sample size was 86 members in the survey.

OBSERVATIONS AND RESULTS: the organization of lecture, clarity of lecture, conveying of notes and diagrams were rated better with PowerPoint and OHP (Overhead projector) than Blackboard, but, PowerPoint was better among the two (PPT >OHP >BLACKBOARD). The difference between the three was statistically significant ($p < 0.001$). Stimulation of interest during lecture, scope for participation of student, more engaging, time to take notes, flexibility to amplify a particular point was better with Blackboard teaching as compared to OHP and PowerPoint. The differences were statistically significant ($p < 0.0001$).

CONCLUSION: It can be concluded that the specific learning objectives can be achieved only by combination of teaching delivery methods. For effective teaching, as ascertained by this study, integration of Blackboard teaching and PowerPoint presentations is ideal.

KEYWORDS: Blackboard, Overhead Projector, Power Point Presentation, Student Preference, Lectures Delivery Method.

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INTRODUCTION: Teaching is a means of facilitating and supporting learning and this involves contingent functions.¹ Learning is a cognitive process which brings about change in the behaviour of the learner.^{2,3} Earliest medical education involved watching their masters and obeying their masters in empiric way, not scientifically.⁴ This involved apprenticeship system where knowledge was passed on from father physician to son of aspiring student.

One of the earliest description of requirements for a good students was narrated by Charaka (c 500 B C).⁵ It was Galen who stressed upon the need for writing manuals of instruction,

based on which the roman emperors opened medical schools offering lectures and practices related to dissection.⁶

Thomas Sydenham (1624-1689) and John Locke (1632-1704) made a distinctive mark on medical education emphasising the importance of medical theory and medical practicals.⁷ As more and more medical science and college evolved worldwide, licencing system, curriculum and examination system evolved thought the world.⁸

Lecturing has been one of the oldest methods of teaching since historical times. It is described as the formal presentation of content by educator for subsequent learning and recall in examination by students.⁹

There has been gradual evolution of lecture delivery methods from Black board teaching to Overhead projector and from Overhead projector to PowerPoint with progressive invention of technology.

Looking at various studies conducted earlier, it is clear all the three methods have stayed on as a method for lecture delivery for their inherent advantages and disadvantages.

Students evaluation of lectures have been fundamental in improving teaching methodology and teaching skills. Also student satisfaction is linked to effective teaching.^{10,11}

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So, this study was conducted to know the particular strength and weakness different lecture delivery method while delivery of gynaecological lectures.

MATERIALS AND METHODS: A cross sectional study was done in a medical college, involving final year students. The students were taught Gynaecology at various phases of MBBS. The number of students in this study was 86. A questionnaire based study was conducted using 10 parameters of a lecture. All the three lecture delivery methods, under study, namely Blackboard, OHP, and PowerPoint were assessed for same parameters. Each parameter, across the three lecture delivery method was assessed by a scoring system.

The 10 parameters included were as follows:

1. Good organization of lecture
2. Clarity of lecture.
3. Stimulation of interest.
4. More engaging.
5. Scope for student participation.
6. Conveying of notes.
7. Conveying of diagrams.
8. Time for taking down notes and diagrams.
9. Relaxation during lecture.
10. Flexibility to amplify a particular point.

Scoring system was as, shown below:

Strongly disagree	-2 score
Disagree	-1 score
No opinion	0 score
Agree	1 score
Strongly agree	2 score

At the end of survey sheet, space for comments was given. The students were asked to comment on the reason for particular grading and were asked about advice to improve teaching and learning.

RESULTS: (TABLE 1)

1. Organisation of lecture: 74 students strongly agreed PPT was good, 3 in OHP and 11 in blackboard. Also 43 disagreed with Blackboard. Chi square value was 307. P value < 0.0001
2. Clarity of lecture: 49 students strongly agreed PPT was better. The same was 5 and 8 with OHP and Blackboard respectively. Also 49 disagreed with blackboard. Chi square value was 217.8. P value < 0.001
3. Stimulation of Interest: 28 strongly agreed and 52 agreed with PPT. 30 agreed and 39 had no opinion in OHP group. 64 strongly agreed and 20 agreed in Blackboard group. Chi square value was 154.3. P value < 0.0001.
4. Scope for Students Participation: 40 disagreed with PPT. 42 disagreed with OHP. 65 strongly agreed with Blackboard. Chi square value was 162.6. p value < 0.0001
5. More Engaging: 54 agreed with PPT and 34 had no opinion with OHP. 68 strongly agreed with Blackboard.

6. Conveying of Notes: 55 strongly agreed PPT conveyed good notes. 57 just agreed with OHP. 33 disagreed with blackboard. Chi square value was 133.9. P value < 0.0001.
7. Conveying of Diagram: 81 strongly agreed that PPT conveyed diagrams well. 66 just agreed with OHP. 45 disagreed with Blackboard.
8. Time for taking Notes and Diagrams: 18 strongly agreed and 28 just agreed that PPT gave enough time to take notes. 29 agreed and 32 had no opinion with OHP. 26 strongly agreed and 38 agreed with Blackboard. Chi square value was 29.85. P value < 0.0001.
9. Relaxation during Lecture: 48 strongly agreed that they relaxed more during PPT lecture. 44 just agreed with OHP. 49 strongly disagreed that they could relax with Blackboard teaching. Chi square value was 178.6. p value < 0.0001.
10. Flexibility to Amplify a particular Point: 34 just agreed with PPT. 46 students had no opinion with OHP. 50 students strongly agreed with Blackboard teaching. Chi square value was 141.3. P value < 0.0001.

DISCUSSION: Benjamin Blooms taxonomy of learning objectives involves three domains. They include cognitive, affective and psychomotor domains. The lecture method of teaching mainly deals with the cognitive aspects of learning and lesser levels of affective and psychomotor domains.¹² Lectures are form of teaching method used since historical times. Various methods of lecturing has been used, which includes didactic lectures, role playing, case studies, demonstration through videotape problem based learning.¹³ Didactic lecture method has been critical for being lecturer dominant and one sided and monotonous.¹⁴⁻¹⁵

Lectures remain mainstay of medical education because of its ease and convenience to impart education to large numbers of student even with limited resources. This applies to Asian school, where the number of students in a given classroom are large and resources are limited.^{16,17} It also explains the reasons why many studies have been conducted by Asian researchers regarding superiority of lecture delivery method.

The precursor to blackboard teaching has been the use of clay tablets and personal slates by the Sumerians and Babylonians in ancient times and the Indians in 11th century and gradually moved on to blackboard teaching.¹⁸

With advent of Overhead projector (OHP) in 1960s the student and teachers, suddenly found that clarity of notes, good organisation of lecture, display of notes and diagrams were more appealing and attention drawing than blackboard teaching.

In blackboard teaching, the clarity of writing, especially on repeated cleaning and writing was poor, dusty, pictures were unclear or the teachers avoided drawing difficult pictures thereby making understanding difficult.¹⁹ The present study also revealed that the students were annoyed with poor organisation of lecture, lack of clarity of writing and display of diagrams with blackboard.

The effectiveness of teaching on OHP depended on quality of sheets prepared by the lecturer, amount of material on a single sheet, font size, availability of electricity.^{20,21} This study also found out OHP lectures were less engaging, and could not take notes and diagrams, as in contrast to blackboard teaching.

But in some studies student could follow well and take down notes better with OHP.^{19,20} In the present study, the ratings for Overhead projector (OHP) were seen between Blackboard and Power Point for, clarity of written material, good organisation of lecture, conveying of notes and diagrams. So a Power Point presentation fully replaces OHP for the same parameters having advantages, when compared to Blackboard. With the advent of PowerPoint software and increased availability of internet, lecturers were able to prepare attractive material.

The ability to display three dimension pictures, animations and videos, which is almost required in all specialities of medicine, created excitement among both teachers and students alike.^{19,22,23} The present study revealed that, PowerPoint was the best in organisation of lecture, clarity of lecture, conveying of notes and diagram, when compared to OHP and Blackboard.

However there were complaints that there was less interaction, no time to take notes and diagrams, as lectures were hurried about.^{19,23} Additionally, along with the aforementioned complaints, this study also found that there was no flexibility of a particular point. Finally the students found something missing in PowerPoint which was seen in blackboard teaching. The blackboard teaching possessed features that lacked in Power Point presentations. Blackboard teaching was slow paced, drew the attention of the students to give time to think, take down notes and diagrams.

There was better interaction between teacher and the learner.^{19,22,24} We also noted in this study that blackboards were more engaging ,interesting, student had more time to take notes, and there was flexibility for amplifying a particular point.

In some studies, preferred Power Point presentations better, but when objective testing was done Blackboard taught performed better in scoring marks than Power Point taught students, and also Power Point presentations fared better than OHP.^{19,25,26} However other studies found Power Point better in scoring marks.²⁷

The student in the comment section, of this study, wrote that, integration of Power Point and blackboard was better than using any single method for teaching. PowerPoint supplemented those parameters which were lacking in blackboard and vice-versa. It was concluded by many studies that integrated teaching involving Blackboard and Power Point presentations was most preferred for better learning.^{19,28,29}

CONCLUSION: Teaching and learning involves a human element and complement of technology for fulfilment of the educational objectives. It can be seen that there is conflict of preferences of lecture delivery method in various studies done reflecting the characteristics of teacher, teaching method and the heterogeneity of ability of learning capacity by different student.

Consensus of many studies advocates integration of Blackboard and Power Point presentations for better teaching and learning. Even, this study comes to the same conclusion with regards to teaching in gynaecology. So customisation of teaching method is order of the day, in the present.

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Parameters of lecture delivery									
		Strongly disagree	Disagree	No opinion	Agree	Strongly agree	n=86	Chi Sq Value	p value
1. Good organisation of lecture								307	<0.0001
	BB	12	43	15	5	11	86		
	OHP	1	1	14	67	3	86		
	PPT	1	1	1	9	74	86		
2. Clarity of lecture								217.8	<0.0001
	BB	8	49	12	9	8	86		
	OHP	1	0	34	46	5	86		
	PPT	1	0	4	32	49	86		
3. Stimulation of interest								154.3	<0.0001
	BB	1	1	0	20	64	86		
	OHP	1	13	39	30	3	86		
	PPT	0	4	2	52	28	86		
4. Scope for students participation								162.6	<0.0001
	BB	1	0	2	18	65	86		
	OHP	5	42	16	21	2	86		
	PPT	6	40	8	27	5	86		
5. More engagement									<0.0001
	BB	0	0	0	18	68	86		
	OHP	3	20	34	25	4	86		
	PPT	2	9	7	54	14	86		
6. Good conveyance of notes								133.9	<0.0001
	BB	5	33	17	15	16	86		
	OHP	1	2	22	57	4	86		
	PPT	0	0	3	28	55	86		
7. Conveyance of diagrams									<0.0001
	BB	13	45	12	12	4	86		
	OHP	1	0	11	66	8	86		
	PPT	0	0	0	5	81	86		
8. Enough time for taking notes								29.85	<0.0001
	BB	3	7	12	38	26	86		
	OHP	3	16	32	29	6	86		
	PPT	1	22	17	28	18	86		
9. Good relaxation during lecture								178.6	<0.0001
	BB	49	30	2	2	3	86		
	OHP	0	12	28	44	2	86		
	PPT	0	1	6	31	48	86		
10. Flexibility to amplify a particular point								141.3	<0.0001
	BB	1	0	2	33	50	86		
	OHP	1	24	46	12	3	86		
	PPT	6	22	18	34	6	86		
Table 1: Preferences of teaching methods									