IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 14, Issue 4 Ver. I (Apr. 2015), PP 96-100
www.iosrjournals.org

Students' Opinion towards Audio-Visual Aids Used In Lecture Classes

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Abstract: *Technology moves fast and creates many new applications. Various teaching methodologies have been utilized in medical education, which is an active area of educational research. Use of teaching aids in medical education technology is swiftly changing from blackboard to virtual simulations. The preclinical basic science subjects - Anatomy, Physiology and Biochemistry are taught in the first year. Each discipline follows its own sequence and learning outcomes and is not clearly defined. So, lectures can be supplemented with audiovisual aids for better illustrations, clarity and learning. So, the study was designed to know the preferred teaching aid(s) among first-year medical students. Information has been collected by a pre-structured, pre-tested, pre-coded questionnaire among the first year medical students. Ninety eight (98) first semester medical students, including boys (57%) and girls (53%) participated in this present study.*

Key Words: *Audio-Visual Aids, Over-head projector, Power point.*

I. Introduction

Technological advancements of this era have revolutionised every field of life. Teaching is no exception.[1] Teaching in medical schools has undergone a dramatic change.[2] Technology moves fast and creates many new applications.[3] Various teaching methodologies have been utilized in medical education, which is an active area of educational research.[2] Use of teaching aids in medical education technology is swiftly changing from blackboard to virtual simulations.[4] The chalkboard was once a staple of school classrooms.[3] The traditional chalk board (CB) teaching has given way to PowerPoint presentations (PPT).[5]

Lectures still remain the most common mode of instruction in higher education. Students learn from lectures by listening, observing, summarizing and note taking.[6] Traditional didactic lecture is more passive in nature and less effective as a teaching tool compared with active learning methods. Hence, assistance in the form of audio-visual aid is needed to enhance the quality of lecture.[7]

Medical teachers have conventionally been using different teaching methods to educate medical students that previously dominated by blackboard and slide projectors.[8] Most institutions follow traditional curricula which are discipline based. The preclinical basic science subjects - Anatomy, Physiology and Biochemistry are taught in the first year. Each discipline follows its own sequence and learning outcomes are not clearly defined.[5] So, lectures can be supplemented with audiovisual aids for better illustrations, clarity and learning.[6]

The study was designed to know the preferred teaching aid(s) among first-year medical students. Hence, the present study was undertaken to evaluate students' opinion towards the use of Audio-Visual Aids in lecture classes and to evaluate the opinion in presence of gender differentiation.

II. Materials & Method

This Cross-sectional, pre-structured, pre-tested, pre-coded questionnaire based study was conducted among 98 first year medical students including girls and boys in the Department of Anatomy in Tripura Medical College & Dr. B.R.A.M. Teaching Hospital, Hapania, Tripura. The students willing to participate were included with their consent. The questionnaire consists of Socio-Demographic profile and was constructed to assess views regarding audiovisual aids used in this institution during lecture classes. The audio-visual aids used were Black/white board, Over-head projector, Power point, Mixed of aids. The questionnaire was based upon a review of literature and similar studies conducted elsewhere study was done.

The students were encouraged to furnish their unbiased independent opinion to complete the questionnaires regarding the study. Students were instructed to select appropriate teaching aids for each item in the questionnaire and give their overall opinion regarding the best teaching aid they preferred. All of them completed the questionnaire. No personal identifying information was obtained. The data collected and verified by hand and was analyzed by using the Statistical Package for Social Sciences (SPSS), version 20.

III. Results

The age of the participated 98 first year M.B.B.S. students were found from 17 years to 21 years.

Table 1: Socio-demographic characteristics of the study population.

Sr. No.	Particular characteristics		Number (n=98)	Percentage (%)
1.	Gender	Male	56	57
		Female	42	53
2.	Religion	Hindu	92	93.9
		Muslim	1	1
		Christian	3	3.1
		Buddhist	0	0
		Others	2	2
3.	Community	General	59	60.2
		ST	12	12.2
		SC	15	15.3
		OBC	12	12.2
4.	Education level of Father	Illiterate	0	0
		Primary	0	0
		Secondary	4	4.1
		Higher Secondary	12	12.2
		Graduation & above	82	83.7
5.	Education level of mother	Illiterate	0	0
		Primary	0	0
		Secondary	12	12.2
		Higher Secondary	16	16.3
		Graduation & above	70	71.4
6.	Schooling	Govt. School	43	43.9
		Private school	55	56.1
7.	Medium of education in school	English	88	89.8
		Mother tongue	10	10.2

Table 2: Student's preference for teaching aids to various parameters (n = 98)

Sr. No.	Parameter	Black/ white board(%)	OHP (%)	PPT (%)	Mix of Aids (%)
1.	Visual aids used in school	53 (54.1)	2 (2)	1 (1)	42 (42.9)
2.	Preference of visual aid use during lecture classes	5 (5.1)	10 (10.2)	3 (3.1)	80 (81.6)
3.	Understanding of lecture topics is best with	12 (12.2)	12 (12.2)	5 (5.1)	69 (70.4)
4.	Large number of facts & clarity of concepts can be given by	9 (9.2)	20 (20.4)	15 (15.3)	54 (55.1)
5.	Stress on important points can be given by	46 (46.9)	10 (10.2)	10 (10.2)	32 (32.7)
6.	Media preferred for better perception of diagrams	6 (6.1)	41 (41.8)	28 (28.6)	23 (23.5)
7.	Media preferred for better perception of flow charts	18 (18.4)	19 (19.4)	35 (35.7)	26 (26.5)
8.	Teaching method found the best for taking notes	10 (10.2)	25 (25.5)	13 (13.3)	50 (51)
9.	While taking notes, copying diagram is easier with	28 (28.6)	30 (30.6)	18 (18.4)	22 (22.4)
10.	Copying flow charts is easier with	20 (20.4)	27 (27.6)	35 (35.7)	16 (16.3)
11.	If not preference to take notes, which method is the best for listening and understanding	26 (26.5)	11 (11.2)	17 (17.3)	44 (44.9)

Table 3: Preference of A-V aids amongst study respondents by gender differentiation.

Sr. No.	Parameter	Audio-visual aids							
		Male (n = 56)				Female (n = 42)			
		Black/ white board (%)	OHP (%)	PPT (%)	Mix of Aids (%)	Black/ white board (%)	OHP (%)	PPT (%)	Mix of Aids (%)
1.	Visual aids used in school	28 (50)	1 (1.8)	1 (1.8)	26 (46.4)	25 (59.5)	1 (2.4)	0	16 (38.1)
2.	Preference of visual aid use during lecture classes	4 (7.1)	7 (12.5)	2 (3.6)	43 (76.8)	1 (2.4)	3 (7.1)	1 (2.4)	37 (88.1)

3.	Understanding of lecture topics is best with	8 (14.3)	10 (17.9)	3 (5.4)	35 (62.5)	4 (9.5)	2 (4.8)	2 (4.8)	34 (81)
4.	Large number of facts & clarity of concepts can be given by	2 (3.6)	13 (23.2)	11 (19.6)	30 (53.6)	7 (16.7)	7 (16.7)	4 (9.5)	24 (57.1)
5.	Stress on important points can be given by	27 (48.2)	8 (14.3)	4 (7.1)	17 (30.4)	19 (45.2)	2 (4.8)	6 (14.3)	15 (35.7)
6.	Media preferred for better perception of diagrams	1 (1.8)	25 (44.6)	17 (30.4)	13 (23.2)	5 (11.9)	16 (38.1)	11 (26.2)	10 (23.8)
7.	Media preferred for better perception of flow charts	11 (19.6)	10 (17.9)	18 (32.1)	17 (30.4)	7 (16.7)	9 (21.4)	17 (40.5)	9 (21.4)
8.	Teaching method found the best for taking notes	4 (7.1)	19 (33.9)	6 (10.7)	27 (48.2)	6 (14.3)	6 (14.3)	7 (16.7)	23 (54.8)
9.	While taking notes, copying diagram is easier with	13 (23.2)	20 (35.7)	11 (19.6)	12 (21.4)	15 (35.7)	10 (23.8)	7 (16.7)	10 (23.8)
10.	Copying flow charts is easier with	12 (21.4)	18 (32.1)	18 (32.1)	8 (14.3)	8 (19)	9 (21.4)	17 (40.5)	8 (19)
11.	If not preference to take notes, which method is the best for listening and understanding	16 (28.6)	10 (17.9)	9 (16.1)	21 (37.5)	10 (23.8)	1 (2.4)	8 (19)	23 (54.8)

Table 4: Overall preference in taking notes during lecture classes.

Sr. No.	Parameter	Taking notes during lecture classes					
		Total (n = 98)		Male (n = 56)		Female (n = 42)	
		Yes	No	Yes	No	Yes	No
1.	Preference in taking notes during lecture classes	91 (92.9%)	7 (7.1%)	50 (89.3%)	6 (10.7%)	41 (97.6%)	1 (2.4%)

Table 5: Showing overall preference for method(s) to stimulate for further reading.

Sr. No.	Parameter	Method to stimulate for further reading		
		Total (n = 98)	Male (n = 56)	Female (n = 42)
1.	Only listening to lecture	0	0	0
2.	Listening with visual aids	4 (4.1%)	4 (7.1%)	0
3.	Listening with taking notes	9 (9.2%)	3 (5.4%)	6 (14.3%)
4.	Listening with visual aids and taking notes	85 (86.7%)	49 (87.5%)	36 (85.7%)

IV. Discussion

The major limitation of lectures is that the listener passively receives the material and feels bored and sleepy.[9] Teaching is an art and by making use of best teaching aid, teacher can teach and make the students understands, remember and reproduce well which improves the academic performance of students.[10]

Table 6: Comparison of Student's preference for Audio-Visual aid(s) for present study with various authors observations.

Sl No.	Parameter	Preffered Audio-Visual aid in present study		Comparison of Audio-Visual aid of present study with various authors observations with percentage (%)			
		Audio-Visual aid(s)	Number, Percentage (%)	Mohan L et al.[11] (%)	Hemalatha NR et al.[7] (%)	Giri PA et al.[12] (%)	Kumar A et al.[13] (%)
1.	Visual aids used in school	Black/white board	53 (54.1)			74.4	
2.	Preference of visual aid use during lecture classes	Mix of aids	80 (81.6)	54.9		48.8	58.8
3.	Understanding of lecture topics is best with	Mix of aids	69 (70.4)	42.4	11.5	51.2	41.1
4.	Large number of facts & clarity of concepts can be given by	Mix of aids	54 (55.1)				
5.	Stress on important points can be given by	Black/white board	46 (46.9)		57.5		
6.	Media preferred for better perception of diagrams	OHP	41 (41.8)	15.6	14.9	0.8	23.5
7.	Media preferred for better perception of flow charts	PPT	35 (35.7)	50.9		65.6	63.5
8.	Teaching method found the best for taking notes	Mix of aids	50 (51)	20.5	0	24	32.9
9.	While taking notes, copying	OHP	30				

	diagram is easier with		(30.6)				
10.	Copying flow charts is easier with	PPT	35 (35.7)				
11.	If not preference to take notes, which method is the best for listening and understanding	Mix of aids	44 (44.9)	6.3		25	27

The opinion of students about various active teaching methods revealed that use of Audio-visual aids is the most favoured one.[14] A study done by Garg A et al. have observed that students want the teachers to include audio-visual aids during the lectures, but it is not certain whether it increases effectiveness in their understanding or performance in examination.[15]

The present study revealed that majority of the students favoured the mix of aids. Majority (81.6%) of the students showed a preference for the use of a combination of visual aids during the lecture classes. The studies conducted by Mohan L et al[11], Giri PA et al[12], Kumar A et al[13] found similar results with 54.9%, 48.8%, 50.0% respectively, to the present study. Majority of the students feels AV-aids are essential for lecture delivery and suggested change of AV-aids according to topic.[16]

Review of literature suggest that, the understanding of topics is best possible with a combination of audio visual aids.[11,13] Similar can be compared in the present study with mix of aids.

Students preferred chalk board as it facilitated interaction between students and teacher and felt that diagrams can be easily copied.[7] In the present study, majority of the students opined that stress on important point can be given by black/white board which is found similar with study done by Hemalatha NR et al.[7]

In present study, 92.9% students prefer in taking notes during lecture classes and teaching aid found the best for taking notes was opted for mix of aids by 51% of the students. This was found with less percentage of students when compared with the above mentioned studies in Table 6. Mix of aid was preferred by most of the students (44.9%) for listening and understanding even if they did not prefer to take class notes.

Mohan L et al.[11] observed that power point was the best method accepted by the students for better perception of diagrams. In the present study, media preferred for better perception of diagrams was OHP (41.8%) and the least preferred media was found to be black/white board (6.1%). OHP was preferred media for most of the students (30.6%) for copying diagram while taking notes and followed by black/white board (28.6%). But copying diagram was with the highest score (81.7%) with chalk board teaching.[7]

The studies conducted by Hemalatha NR et al[7], Mohan L et al[11], Giri PA et al[12], Kumar A et al[13] students' preference of the audio-visual aid for was PPT with higher percentage. In this study also, better perception of flow charts and easy copying it was PPT (35.7%).

Majority of the students (86.7%) prefer for listening with visual aids and taking notes to stimulate for further reading.

The issue of gender in medical education and practice gains new momentum with the rapid increase in the enrolment of women in medical schools and gender could influence academic performance and research activity.[17] Differences were seen in the attitude towards listening and understanding a particular topic. Female students preferred power point presentations and taking notes during a lecture.[11] In present study, preference for taking notes during lecture classes was more in female students (97.6%), comparing to the male students (89.3%). Both male and female respondents in majority, preferred for mix of aid for taking notes in classes.

The maximum benefit of visual aids is obtained only in conjunction with a well-structured lecture. Visually and verbally presented lecture information has shown a clear superiority of visual information over verbal information for both immediate and long term recall.[18] The optimum use of audiovisual aids is essential for deriving their benefits.[19]

V. Conclusion

Combination Teaching Aid is most satisfied teaching aid as the inherent deficiency of one aid can be compensated by the other. The present study demonstrated that lecture delivered by using mix of audio-visual aids was more appreciated by the students. This provides insights into student's perceptions which will be very useful in identifying their expectations or requirements. This study will be very helpful for further studies to be undertaken on larger scales to develop more understanding of students' opinion towards audio-visual aids used in lecture classes.

Acknowledgement

I am very much thankful to the 98 First Year Medical Students of 2014-2015 batch for their willing participation in this study to make it a valuable for future improvement of using of Audio-visual Aids during lecture classes.

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