

Student's Perspective on Existing Teaching Process of Forensic Medicine and Toxicology in a Government Medical College, West Bengal

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Abstract

Background: Medical education in Indian Colleges is still mostly dependant on traditional lecture classes along with practical classes for the Undergraduate students. Teaching methods that enhance student engagement and encourage self directed learning can be effective in delivering core knowledge and explaining difficult concepts, leading to increased learning. The present study was conducted to understand the Indian Medical Graduates' perspective on different teaching methods practised and different attributes of a good medical teacher, involved in teaching Forensic Medicine and Toxicology.

Method: This observational, cross-sectional, prospective, questionnaire based study was done among 240 MBBS students of 5th semester in FMT Department, NRSMCH, Kolkata. The study tool was a pre-designed, pre-tested and validated questionnaire with twelve questions about different teaching methods practised in department and also involving attributes of a medical educator.

Results: 71.3% teachers had good communication skills whereas 89.6% faculties were approachable and helpful. Students preferred one-to-one interactions, group discussions and tutorials over normal traditional lectures. Most of the students liked a combination of blackboard teaching and audio-visual aided teaching over their individual use during lecture classes. Good communication skill, good sense of humour, thorough knowledge of subject and politeness emerged as the most important traits of a teacher.

Conclusion: An adaptable, approachable teacher who interacts with the students always wins their hearts. All future doctors are society's assets and thus a Forensic Medicine and Toxicology teacher should be efficient and careful enough to ensure that the students imbibe basic medicolegal knowledge.

Keywords: Lecture class; One-to-one interaction; Demonstration class; Medical Educator; Communication skill; Medicolegal knowledge.

Introduction

The continuous increase in number of Medical institutions countrywide lately with gradually increasing number of medical graduates annually

has made it a challenge for the medical educators to teach larger classes while maintaining and improving the quality of medical education.¹ Out of the different accepted methods of teaching and learning worldwide, lecture classes and practical classes are the most commonly employed teaching methods globally. Lecture classes are the oldest method of teaching in all the streams since time immemorial and are used extensively in medical education, even though academic physicians are not well trained in giving effective lectures.² It has been suggested that teaching methods that

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enhance student engagement and encourage self directed learning can be effective in delivering core knowledge and explaining difficult concepts leading to increased learning.³ Traditional, didactic lectures were perceived by the students as the least effective method used, yet involving students actively within the lecture time was regarded as a more effective learning tool.⁴ A Demonstration class or a Practical class provides information visually instead of verbal delivery. Practical classes are intended for retention of the knowledge gathered from the lecture classes, for scientific reasoning skills by which students can apply their knowledge in real world situations and for conceptual understanding of the particular subject. Unlike lecture class, which is unidirectional, practical class is two directional as it is comprised of smaller groups and are more interactive and specific, where the students can learn things directly from their teacher while having individual attention from him/her and clarifications of problems can be sorted out. In the present study the authors have tried to understand

the problems and preferences of Indian Medical Graduates with respect to Forensic Medicine and Toxicology teaching and also assess the different attributes of a good medical educator. The study aims to help improve the science and art of medical education by identifying key areas for efficient teaching, the critical elements of an effective lecture class and also the traits of a good and interesting teacher.

Materials and Methods

This observational, cross-sectional, prospective, questionnaire based study was carried out on fifth semester students of Nil Ratan Sircar Medical College and Hospital, Kolkata, West Bengal. The study was conducted after obtaining approval from the Institutional Ethics Committee. The study tool used for the study was a pre-designed, pre-tested and validated questionnaire as shown in Fig. 1, having twelve questions about the different

SEX-	Male / Female	AGE-	years
Q1. FMT department faculties covered interesting topics during lectures:			
1. Agree		2. Disagree	3. Can't say
Q2. FMT department faculties are approachable & help to clarify any doubts:			
1. Agree		2. Disagree	3. Can't say
Q3. FMT department faculties have good communication skills:			
1. Agree		2. Disagree	3. Can't say
Q4. FMT department faculties make the lectures interesting:			
1. Agree		2. Disagree	3. Can't say
Q5. FMT department faculties are well versed with the use of Audio Visual aids:			
1. Agree		2. Disagree	3. Can't say
Q6. While taking lecture classes, usually teacher:			
1. Discuss all important topics		2. All important topics are not covered	
3. Discuss above average things that are difficult to understand			
Q7. Which of the following methods of teaching do you find most effective?			
1. Normal lectures		2. Tutorial	3. Seminar
5. Student teacher one-to-one interaction			4. Group Discussion
Q8. Which of these is a most effective method of teaching in a lecture class?			
1. Blackboard (Chalk & Talk) teaching		2. Audio- visual aid assisted teaching	
3. Combination of both		4. None	
Q9. The method of evaluation you find best:			
1. Long essay Question		2. Short essay questions	3. Short notes
5. Combination of all these			4. Multiple choice questions
Q10. Time duration of a lecture class should be:			
1. 30 min		2. 45 min	3. 60 min
			4. More than 60 min
Q11. According to you, which of these traits should a good teacher have:			
1. Punctuality		2. Politeness	3. Proper dressing sense
5. Thorough knowledge of subject		6. Good communication skills	4. Sense of humour
Q12. Which of following qualities makes a teacher interesting? (Choose any one from each option)			
1. Interacts/ does not interact with students while taking a class			
2. Keeps standing at one place/ roams around in the class while teaching			
3. Teaches only in English/ only in regional language / uses both languages			
4. Gives interesting examples/ teaches entirely from book			
5. Describes a topic fully/ discusses Q – A wise during the class			

Fig. 1: Questionnaire

teaching methods practised in the Department and also involving the attributes of a medical educator. All MBBS students of the College attending Forensic Medicine and Toxicology lecture and practical classes were included in the present study. Before supplying the questionnaire, written informed consent was obtained from all the participants. The data collection was done over one month during November, 2015. The students who submitted incompletely answered questionnaire and those who did not consent for voluntary participation were excluded from the study. The students were informed in details about the purpose and relevant details of the study and the questionnaire was distributed among students in a single page printed format during practical classes. Out of the available 250 MBBS students who were given the questionnaire, applying the Exclusion criteria, 240 subjects were selected for the study, who submitted completely filled response forms. They were strictly advised not to disclose their names or roll numbers, thereby ensuring that the data become anonymous and because of this anonymity, frank and honest responses were provided by the students about the teaching methods and the teachers involved in departmental teaching activities. The data collected during the study was tabulated and analysed by the help of standard statistical tool and represented in the form of graph and charts.

Results

Among the study population of 240 students of 5th Semester batch, the age ranged from 19–22 years with mean age being 20.4±0.75 years. There were 135 males and 105 females, with a Male: Female ratio of 1.28:1. Regarding the faculties of Forensic Medicine and Toxicology department of the institute, as seen in Table 1, 77.9% (187) thought their faculties cover interesting topics in lecture, 80.4% (193) students agreed that all the important topics are covered, 69.2% (166) students believed that the faculties manage to make their lecture classes interesting. To 89.6% (215) students their teachers were helpful and approachable at the same time while 71.3% (171) students answered their teachers had good communication skills and 75% (180) students agreed that the faculties are well versed with different audio-visual aids during lecture class. Among the students, maximum number i.e. 32.1% (77) answered that one-to-one interaction with the teacher was the best teaching method, while nearly same 30.8% (74) found Group

Discussion to be best effective method. The least preferred method was Seminar 2.5% (6), followed by Didactic lectures 6.3% (15), as is observed in Fig. 2. Maximum number of students i.e. 70.4% (169) suggested that a combination of both blackboard teaching assisted by audio-visual aids makes a lecture class most effective, as seen in Fig. 3. As far as the evaluation method in examination is concerned, maximum number of students, a 40.4% (97) agreed that a combination of long essay type questions, short essay type questions, short notes and Multiple Choice Question (MCQ) is the best evaluation method; this was followed by MCQs as the best choice for an evaluation, i.e. 36.2% (87), as depicted in Fig. 4. Only 2.9% (7) students suggested that Long answer type question is the best evaluation method in examination. Maximum number of students i.e. 42.1% (101) opted that 45 minutes duration is ideal for a lecture class, while 39.6% (95) students suggested that a lecture class should be of 1 hour duration, as seen in Fig. 5. Only 16.3% (39) students opted that 30 minutes duration is sufficient. The qualities of a good teacher, in their opinion, are good communication skills (90.4%, 217), good sense of humour (62.9%, 151), thorough knowledge about the subject (61.7%, 148), politeness (56.7%, 136), punctuality (34.2%, 82) and proper dressing sense (26.3%, 63), as shown in Fig. 6. Some of the qualities or gestures which made a teacher interesting to this study population, as described in Table 2, were the following: a teacher who interacts with the students (97.9%, 235), who roams continuously while in the class instead of standing still and delivering lectures (92.9%, 223), who uses both English as well as the regional language while teaching (71.3%, 171), who gives some real life scenarios instead of teaching only from the textbook (98.3%, 236) and who does not teach according to the familiar questions on the topic rather teaches the whole topic (63.8%, 153).

Table 1: Statements about Department Faculties.

Statements	Agree (%)	Disagree (%)	Cannot say (%)
Faculties cover Interesting Topics in lectures	187 (77.9)	33 (13.7)	20 (8.4)
Faculties cover important topics in Lectures	193 (80.4)	21 (8.8)	26 (10.8)
Faculties make lectures interesting	166 (69.2)	46 (19.2)	28 (11.7)
Faculties are approachable and helpful	215 (89.6)	8 (3.3)	17 (7.1)
Faculties have good communication skills	171 (71.3)	40 (16.7)	29 (12.1)
Faculties well versed with Audio Visual Aids	180 (75.0)	36 (15.0)	24 (10.0)

Table 2: Qualities of an Interesting Teacher.

Qualities	Response	Number	Percentage (%)
Interaction with Students	Interacts	235	97.9
	Does not Interact	5	2.1
Position during Class	Stands at one place	17	7.1
	Roams around class	223	92.9
Language of Teaching in Class	English Only	60	25.0
	Regional Only	9	3.8
Style of Teaching	Uses Both languages	171	71.3
	Gives examples during Class	236	98.3
During Class	Teaches from Book only	4	1.7
	Teaches full topic	153	63.8
	Teaches Question-Answer	87	36.2

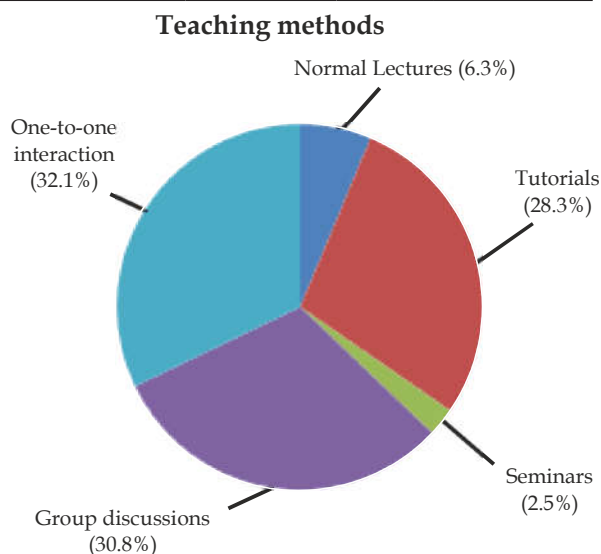


Fig. 2: Most Effective Teaching Method.

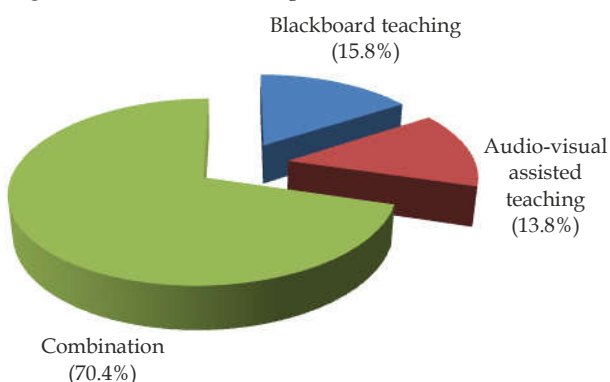


Fig. 3: Best method for a Lecture Class.

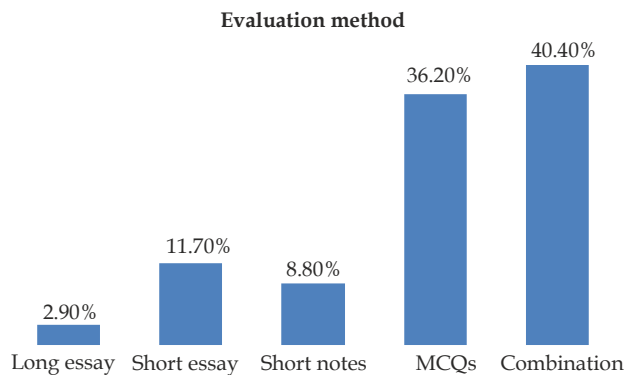


Fig. 4: Best Evaluation Method.

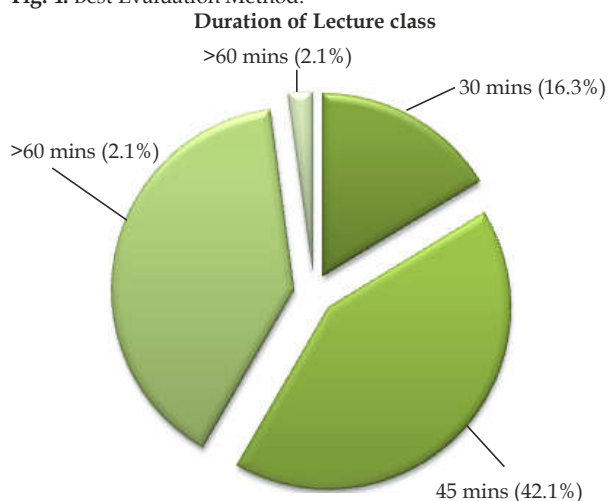


Fig. 5: Duration of Lecture Class.

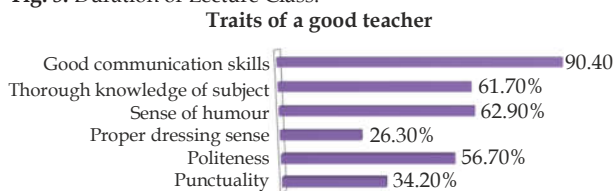


Fig. 6: Traits of Good Teacher.

Discussion

Medical education of the Indian Medical Graduate has undergone several changes over the past few decades. However, learning by means of traditional didactic lecture still remains the most commonly used method for transferring information in medical education.⁵ Reviewing of the existing teaching methodology by students feedback and corresponding modification of methodologies is very important for the undergraduate medical teaching.⁶⁻⁹ Although the didactic lecture method is used extensively in medical education, academic physicians often are not trained in delivering effective lectures.² Lecturing is frequently a one-way process with no interaction, unaccompanied by discussion, questioning or immediate practice,

which makes it a poor teaching tool.¹⁰ In the current study, almost equal number of students preferred one-to-one teacher-student interaction (32.1%) and group discussion (30.8%) as compared to traditional didactic lectures (6.3%). Lecture format for large classes is outdated and ineffective.¹¹ Furthermore, when students have copies of lecture notes or a text, a significant percentage would prefer reading them rather than attending classes that offer little or no interaction. In the present study, maximum number of students i.e. 70.4% endorsed for a combination of blackboard teaching and audio-visual aids over their solo use in a lecture class. This finding is similar to the observations of Bhowmick K et. al. in their study.¹² Most of the students i.e. 40.4% expressed that a combination of long essay type questions, short essay type questions, short notes and MCQs form a best evaluation paper unlike in the study done by Dash SK et. al., who found MCQs to be the preferred evaluation method, in their study.¹³ In our present study most of the students (42.1%) suggested that 45 minutes duration is sufficient for a lecture class in place of a regular 60 minutes duration (39.6%). This finding matches with the study conducted by Abraham G et. al., where it was observed that the main reason mentioned by students for not preferring interactive lecture was their inability to concentrate after 30 minutes of lecture.⁵

Knowledge of subject is a cognitive quality which can be developed and has been found to be an important characteristic in various studies across non-medical disciplines also.¹⁴⁻¹⁶ Apart from the knowledge, which a teacher should have while teaching, there are other prominent traits that can directly affect the teaching-learning process. The medical educator who establishes open communication in the learning system is usually able to complete most of the learning goals.¹⁷ In the present study, only 75% students thought that teachers are well versed with audio visual aids, which may be due to the old age faculty population who are eminent teachers otherwise but finds it difficult to use the said aids. In a study by Young and Shaw, effective communication skills emerged as one of the top seven qualities accounting for teaching effectiveness.¹⁸ Teachers who use regional languages are more accepted by the students for obvious reasons, may be the students can imbibe it better in their own languages and they can relate more to the facilitator. As the lecture class is unidirectional, a teacher standing still on a dais and not interacting with the students always makes the class very boring and is less accepted by the students. A teacher who interacts and moves in the class very often can attract students' visual attention easily.

Also this way a facilitator can activate one student emotionally and academically. Vast knowledge of a teacher can be shared in the class as examples as to different real-life medicolegal situations instead of merely teaching from the book; students get insight and practical understanding of the subject this way.

N Hueppchen et. al.¹⁹ stated that most of the medical faculty learns to teach by observing their mentors or their teachers. Thus a medical teacher should be aware of the different qualities required to be able to produce the ever evolving vastness of the medical education. An ideal medical teacher is a role model who rules the minds and hearts of his students not out of fear and intimidation; but out of respect and admiration. The nature of such a teacher is polite, empathizing and gentle rather than authoritative, impatient or ill-tempered. A punctual, well dressed and polite teacher incorporates certain personality traits among their students like attitudes, values, professionalism, etc. Tang et. al. found that "personality related" features separated an effective teacher from an ineffective one and both effective and ineffective teachers were similar with respect to knowledge of subject.²⁰ Relationships and emotions that a teacher forms with his/her students play an important role in students' retention of knowledge, conceptualization of phenomena, and future behaviors.²¹ In this study students emphasized on good communication skills of the teacher as compared to his/her knowledge, which eventually proves the myth that a knowledgeable person is not necessarily always a good teacher. In this study, only 5th semester MBBS students were considered, hence there is a limited scope of generalization. Inclusion of other confounding factors could not be done in this study. Students from a single institute were considered, and this may not represent the entire student community, which can be explored in a further extensive multi-centric study.

Conclusion

It is very difficult for a teacher to imbibe all the required qualities of a good teacher and deliver an effective and informative lecture every time to the students. All teachers have their own shortcomings, although with experience, they should develop themselves to better medical educators. Teachers' training is aimed to develop the teaching skills, and ensures that a teacher makes his/her class more effective compared to his/her own previous oration. A knowledgeable medical teacher with good communication skills and a sense of humour, who is adaptable, flexible and captures the audience's

attention, is always remembered timelessly. In this country, where majority of medicolegal work is carried out by MBBS doctors only, it is of utmost importance that they should have some preliminary knowledge about the different practical problems in their MBBS course. As these doctors receive exposure to these medicolegal issues only once in their MBBS curriculum, during their Forensic Medicine and Toxicology classes, the role of a teacher becomes crucial in educating them with recent relevant scientific information that can be applied by the students in the future to solve real life scenarios. They should be tactful and updated enough to impart the essential knowledge to their students in this limited time period. To conclude, a medical teacher should remain a lifelong learner and develop his teaching skills regularly to ensure that the students receive effective training to become better doctors in future and conduct their roles efficiently.

Ethical Clearance: Prior approval was obtained from the Institutional Ethics Committee

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Conflict of Interest: None declared

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