



Students' And Teachers' Characteristics Promoting Student's Learning During Lecture Classes

Vasudha Devi¹, Girishankar Samarasam², Noorul Syazweena Binti Sazali², Rashidatul Aniyah Binti Zulkifli², Tan Szi Hong²

¹Pharmacology, ²Students, Melaka Manipal Medical College, Manipal Campus, Manipal University, India

ARTICLE INFO

Received : 13/01/2015

Accepted : 13/04/2015

Published : 10/06/2015

KEYWORD

Lecture
Characteristics
Student
Teacher
Medical

ABSTRACT

Introduction: In spite of general call for a reduction in the number of lecture classes scheduled in a curriculum, the lecture remains one of the most widely used instructional methods in medical schools. Hence, lecture classes must be fine-tuned to meet the requirement of all students. **Objective:** To explore the critical elements that make a lecture class effective. **Method:** The study was cross sectional where 2nd year medical students' and faculty perceptions regarding students' (n= 179) and teachers' (n=76) characteristics promoting student's learning during lecture classes were collected using newly designed validated Likert scale questionnaires. **Result:** According to students' opinion, clear explanation given by the lecturer was identified as the most important factor which promotes effectiveness of the lecture class. Other characteristics which were rated high as promoting factors enhancing learning were related to teaching and communication skills, rapport of teacher with students, use of audio visual aids and resources and personality traits of a lecturer. Faculty also perceived same as enhancing factors promoting lecture effectiveness, however, the extent to which faculty agreed for the same differed significantly for some characteristics. In addition, as per teachers' opinion, student interaction during the lecture class emerged as the important factor enhancing lecture effectiveness and student learning. **Conclusion:** Both students and teachers play a role in generating favorable learning environment in a classroom setting. Awareness of these aspects will lead to the conscious practice of conducive factors by teachers and students, thereby enhancing student learning.

© Medical Education Department, School of Medical Sciences, Universiti Sains Malaysia. All rights reserved.

CORRESPONDING AUTHOR: Vasudha Devi, Professor and Head, Department of Pharmacology, Melaka Manipal Medical College, Manipal University, Manipal, India 576104. Email: v21devi@gmail.com

Introduction

Traditionally lecture classes have been regarded as one of the strategies in teacher-centered education where the teacher acts as a transmitter of information. However, current reforms in medical education emphasize on student-centered strategies with the focus on students'

achievement rather than what the teacher does. In spite of general call for a reduction in the number of lecture classes scheduled in a curriculum, the lecture remains one of the most widely used instructional methods [1]. Students still prefer the lecture method of instruction delivery over other methods [2, 3]. Large class size and ever-expanding medical literature have

made didactic lectures as one of the teaching-learning methods of choice by many medical universities worldwide [4]. However, in an outcome based curriculum, teachers' role goes beyond that of an information provider. Hence, adopting lecture classes to achieve student learning outcomes such as, acquiring critical thinking, problem solving, and analytical and self-directed learning skills is challenging. In addition, students' learning styles may vary in a class room. Students' may prefer various modes of learning styles like visual, auditory, kinesthetic, reading and writing, including combinations of various modes of learning styles [5]. Hence, lecture classes must be fine-tuned to meet the requirement of all students.

At Melaka-Manipal Medical College (MMMC), Manipal Campus, Manipal, India the curriculum followed for the medical program is outcome based where the instruction delivery is through didactic lecture classes, problem based learning, self-directed learning and practical classes. Sixty to seventy percent of the syllabus is covered through lecture classes. During lecture classes, faculty is free to use any innovative method or a combination of innovative methods to make the lecture more interesting and useful to students. Hence, focusing on the quality of lecture classes may bring out what we hope to achieve in students. In the past, related studies had mainly focused on the characteristics of the good teacher considering both cognitive and non-cognitive factors contributing to student learning [5,6,7].

The teacher as the information provider in a class-room setting is one of 12 roles of the good teacher described by Harden and Crosby in the 20th medical education guide of the Association for Medical Education in Europe (AMEE) [1]. Schonwetter et al. attempted to define effective classroom teaching for dental and dental hygiene students [8]. Their study concluded that effective teaching in the classroom was best defined by organization and rapport [8]. Gokcora reported that students perceived that ideal teachers should spend appreciable time with their students, and exhibit interpersonal skills in teaching [9]. Singh et al. reported that medical teachers perceived that the most important desirable qualities of an

effective teacher were knowledge of subject, enthusiasm and communication skills [7].

Qualities of a good or ideal or effective teacher when identified based on both students' and teachers' perception will certainly help in understanding the need of students and identifies what is actually practiced by teachers. Certain characteristics of students may also affect the success of an effective lecture class. Hence, the present study was conducted with the objective of exploring the critical elements that make a lecture effective.

Method

Questionnaire

Two questionnaires were designed to collect students and faculty perception on critical elements of lecture classes that make it effective. The items in the questionnaire were identified after a literature search [8,10]. The student and faculty questionnaires had 39 and 34 closed (in 5-point scale) items, respectively. In addition, the faculty questionnaire had 2 open ended questions. The questionnaire was further refined through pilot testing on a small group of students (n=10) and the content validity of the questionnaire was checked by two faculty members who are Foundation for Advancement of International Medical Education and Research (FAIMER) Fellows. Cronbach's alpha value for reliability of the questionnaire was found to be 0.807 and 0.789 for student and faculty questionnaires, respectively.

Study Design

The study was a cross-sectional survey. The study protocol was approved by the Institutional Research committee at the first author's institute. The questionnaires were distributed among second year undergraduate medical (MBBS) students (n=179) and faculty members (n=76) of Melaka-Manipal Medical College (Manipal Campus, Manipal, India) in January 2013 after obtaining written informed consent from all the participants. The participants responded anonymously by completing the questionnaire in a 5-point Likert scale ranging from strongly disagree to strongly agree.

Statistical Analysis:

The data were statistically analyzed using SPSS, version 16, statistical analysis program (SPSS, Inc., Chicago, IL, USA). The categorical variables were described as median and interquartile range and cumulative percentage of agree and strongly agree responses. Comparison of responses between groups was done using Mann-Whitney test. A p value of less than 0.05 was considered as statistically significant. The responses to open ended questions were coded and tabulated in the decreasing order of frequency of their appearance. Themes were generated from the coded statements independently by two researchers of the study. Finally themes were finalized by consensus.

Result

The response obtained was 168/179 (94%) for students and 34/76 (45%) for teachers. All faculty respondents were Indians from the field of Medicine with a teaching experience that ranged from 1 to 15 years. The student respondents were almost equally divided between males (49%) and females (51%). A

majority of the student participants were of Malaysian origin constituting 95.8%; the rest were from Seychelles and Sri Lanka.

Clear explanation was identified as the most important factor which promotes effectiveness of the lecture class. Characteristics of lecture classes could be grouped as, personality traits, rapport with students, teaching and communication skills, use of audio-visual aids and resources (Table 1). Faculty also perceived the above factors promoting effectiveness of lecture classes, however, the extent to which faculty agreed for the same differed significantly for some characteristics. Compared to students, less number of faculty members agreed that availability of teachers outside the class, providing adequate class notes, fluency in communicating language, providing tips on answering exam related questions as factors promoting learning in lecture class. Similarly, compared to students, more faculty agreed that acknowledging genuine work and revising previous classes promoted learning ($p < 0.05$).

Table 1: Students' perception (median and interquartile range) on characteristics of teacher and a lecture class enhancing student learning in the class

Characteristics	Items	Students' perceptions		Teachers' perception		p value (Students vs teachers perceptions)
		Median (IQR)	Agree and strongly agree, %	Median (IQR)	Agree and strongly agree, %	
Personality traits of lecturer	Teacher who is confident	5 (4, 5)	93.3%	4 (4, 5)	91.0%	0.161
	Teacher who is passionate about teaching	5 (4, 5)	93.3%	5 (4, 5)	93.3%	0.748
	Teaching experience (in years) of the teacher	4 (4, 5)	73.3%	4 (3, 4)	54.5%	0.000
	Highly disciplined teacher who has good control over the class	4 (3, 5)	61.2%	3 (2, 4)	39.4%	0.001
	Qualification of the teacher	3 (3, 4)	46.9%	3 (2, 4)	24.2%	0.003
	Teachers who think that the student do not know anything	3 (2, 4)	39.4%	2 (1, 2)	12.1%	0.000
	Students are afraid of raising question to the teacher as he/she becomes impatient.	3 (2, 4)	34.5%	2 (1, 3)	18.2%	0.001
	Female teachers as they incline to have more maternal approach	3 (3, 4)	32.1%	2 (1, 3)	6.1%	0.000
	Male teachers, as they always excel better in their teaching skills	3 (3, 3)	20.0%	3 (1, 3)	12.1%	0.005
	Female teachers, as they control their classes better than male teachers	3 (2, 3)	18.2%	2 (1, 3)	6.1%	0.001
	Younger teachers, as they understand students better because of the small age-gap	3 (2, 3)	13.3%	3 (2, 3)	21.2%	0.278

Rapport with students	Approachable teacher, so that issues can be discussed	4 (4 , 5)	86.7%	4 (4 , 5)	87.9%	0.759
	Teacher who shows care for the students	4 (4 , 5)	81.8%	4 (4 , 5)	84.9%	0.988
	Availability of teacher to students in their cabins	4 (4 , 5)	79.4%	4 (4 , 4)	65.7%	0.05
	Teacher who recognises and acknowledges students' genuine work	4 (3 , 5)	74.5%	4 (4 , 5)	97.0%	0.015
Communication / teaching skills	A teacher who is able to clearly explain the topic in the lecture class	5 (4 , 5)	94.5%	5 (4 , 5)	96.9%	0.130
	Teachers who is fluent in the communicating language	4 (4 , 5)	90.3%	4 (3 , 4)	66.6%	0.001
	Tips regarding answering related exam questions are given during the lecture class	4 (4 , 5)	86.1%	4 (4 , 5)	75.7%	0.013
	Clinical application of topic covered is taught in the lecture class	4 (4 , 5)	84.9%	4 (4 , 5)	90.9%	0.705
	Teacher who humours to help break the tension in class	5 (4 , 5)	83.6%	4 (4 , 5)	90.9%	0.085
	Assignments given are discussed by the teacher and not left un-explained	5 (4 , 5)	80.6%	4 (4 , 5)	75.8%	0.104
	Teacher who tells students the correct approach of studying	4 (4 , 5)	80.6%	4 (4 , 5)	87.9%	0.476
	Teacher who summaries the topic taught at the end of class	4 (3 , 5)	71.5%	4 (4 , 5)	87.9%	0.435
	Teachers conducts revision of past exam paper to prepare students for the present exams	4 (3 , 5)	71.5%	3 (2 , 4)	27.3%	0.000
	Revision of previous class conducted at beginning of present class	4 (3 , 4)	61.2%	4 (4 , 4)	90.9%	0.091
	The teacher, who expects a silent class	3 (2 , 4)	30.9%	3 (2 , 3)	15.2%	0.022
	Teacher who teaches very fast	2 (1 , 3)	13.3%	2 (1 , 2)	3.0%	0.137
	Teachers who is refraining from asking questions during class	3 (2 , 3)	13.3%	2(2,1)	6.1%	0.000
	Use of AV aids/resources	Teacher who provides adequate class-notes	5 (4 , 5)	90.9%	4 (3 , 4)	75.8%
Animations included in LCD slides to explain a phenomenon		4 (4 , 5)	82.4%	4 (4 , 4)	78.8%	0.046
When topic-related videos played in the lecture class		4 (3 , 5)	75.2%	4 (4 , 5)	81.8%	0.380
Usage of LCD screen during class by the lecturer		4 (3 , 4)	74.5%	4 (4 , 4)	81.8%	0.606
Usage of blackboard during class by the lecturer		4 (3 , 4)	72.7%	4 (4 , 4)	78.8%	0.670

Table 2: Faculty opinion on characteristics or behaviour of students that would promote student learning in classes

Characteristics	No. of responses
Clarifying Doubts	18
Attentiveness	16
Interest	16
Discipline	11
Regular Study Habits	9
Note -Taking	5
Hard-Working	4
Punctuality	3
Being Alert during Class	2
Courteous	1
Humble	1
Inquisitive	1

Priority	1
Eye Contact during class	1

As per the faculty opinion, students' interaction in the class for clarifying doubts emerged as the most important factor enhancing students' learning in the class. The same factor was perceived as the most important factor enhancing teaching effectiveness in the class by lecturers (tables 2 and 3).

Table 3: Faculty opinion on characteristics or behaviour of students that would promote lecturer's teaching effectiveness.

Characteristics	No. of responses
Clarifying Doubts	42
Attentiveness	27
Regular Study	4
Discipline	3
Well prepared for class	2
Note-taking	2
Punctuality	2
Inquisitive	2

Discussion

The study investigated student's and teacher's characteristics promoting student's learning during lecture classes. Our study showed that teaching and communication skills, rapport of teacher with students, use of audio visual aids and resources and personality traits of a lecturer and also characteristic of students influence effectiveness of a lecture class.

In India, training of medical faculty in teaching does not happen before joining to a medical School. Most of us had undergone training in teaching-learning workshops conducted at the Institution in Medical Education units with fixed syllabus. However, few faculty members excel as best/good teachers among student fraternity. This emphasizes on need to find out the qualities of effective teachers from students' point of view. These characteristics need to be emphasized during teaching-learning program of the institution to enhance the effectiveness of teaching.

Clear explanation and confident teacher were rated highest as the characteristic promoting student learning in the lecture class. These characteristics might indirectly reflect teachers' knowledge of the subject. In a study conducted by Singh et al, teachers rated knowledge of the subject foremost important factor enhancing teachers' effectiveness [7].

The important personality related factors which enhance teaching effectiveness is teachers' passion for teaching. Passionate teacher will be enthusiastic about teaching. Tang et al found that personality related factors distinguished effective

from ineffective teachers even though they were similar in their knowledge of subject [11].

Teaching skills of a teacher influence understanding of topics and other factors described in table 1 facilitate these understanding. There is a general belief that revising previously taught topics enhance students understanding and this will be usually stressed in teachers training program. However, in our study students did not agree for it. The reason could be that these practices may not be used by all the lecturers of our institution and hence students may not have perceived the importance of these practices followed by some of the lecturers. The second reason could be that these practices are not followed in the appropriate manner and hence students did not perceive it to be useful.

Literature suggests communication skill is one of the important qualities of effective teacher [12]. In our study, compared to students, significantly less number of teachers agreed that communication skill, including fluency in language enhances lecture effectiveness. This shows that, creating awareness on communication skill and measure to enhance teachers communication skills need to be stressed in teachers training program. Though there was significant difference among students and teachers regarding silent class as the factor enhancing learning, majority of respondents did not agree for that (Table 1). This finding is in line with teachers' opinion that students' interaction in the class, including clarifying doubts as the most important factor enhancing student learning in the class (table 2 and 3).

In the study conducted by Singh et al, teachers opined that teaching experience of teacher enhances effectiveness of lecture class [7]. In our study, less number of faculty agreed for the same compared to students. This finding needs to be communicated to all faculty and they should be encouraged to take measures to enhance their teaching effectiveness.

Another interesting point noted is that students felt that revision of past year question paper

enhanced their learning. Exposure to such questions may enhance problem solving and critical thinking skills there by enhancing students' understanding of the subject matter.

In the era of information explosion, providing adequate class notes is also a skill and Prozesky DR suggest that handout is means of written communication [13]. Hence, teachers need be trained in preparing good notes.

This study has some limitations. The respondents were students from only one batch. Hence opinions may not be representative of whole student community of the institution. The faculty response was only 50%. Hence the study has to be continued with a large sample size. The opinions of students experiencing different curriculum may be compared.

Students' perceptions on characteristics of teacher to enhance lecture effectiveness represent students' expectations from teachers. Hence it is important to communicate the study findings to faculty members, especially related to those questions where students and faculty members differed in their opinion (Table 1). In addition, communicating faculty opinion regarding students' characteristics enhancing lecture effectiveness is also imperative to maintain favorable educational environment in the class. Furthermore, the results of the study may be used in training program of teachers and also while evaluating teachers for teaching awards, recognition and promotions.

Conclusion

To conclude, both students and teachers play a role in generating favorable learning environment in a classroom setting. Clear explanation given by a lecturer was identified by the students as the most important factor promoting effectiveness of the lecture class, whereas, lecturers identified student interaction as the important factor enhancing lecture effectiveness and student learning during lecture class. Students and faculty differed in their opinion regarding availability of teachers outside the class, providing adequate class notes, fluency in communicating language, providing tips on

answering exam related questions as factors promoting learning in lecture class. Awareness of these aspects will lead to the conscious practice of conducive factors by teachers and students, thereby enhancing student learning.

Acknowledgement

The authors thank students of Melaka Manipal Medical College, Manipal Campus, India, for participating in the study.

Reference

1. Harden RM, Crosby J. AMEE Guide No 20: The good teacher is more than a lecturer - the twelve roles of the teacher. *Med Teach* 2000;22:334-47.
2. Ismail S, Rahman NI, Mohamad N, Jusoh NM, Hood AI, Arif LA, et al. Preference of teaching and learning methods in a new medical school of Malaysia. *J Appl Pharm Sci* 2014;4:48-55.
3. Carpenter MJ. Effective teaching methods for large classes. *Journal of Family & Consumer Sciences Education*, Vol. 24, No. 2, Fall/Winter, 2006. 13-23.
4. Koles P, Nelson S, Stolfi A, Parmelee D, Destephen D. Active learning in a year 2 pathology curriculum. *Med Educ* 2005;39:1045-55.
5. Kharb P, Samanta PP, Jindal M, Singh V. The learning styles and the preferred teaching-learning strategies of first year medical students. *J Clin Diagn Res* 2013;7:1089-92.
6. Scarboro A. Student perception of good teaching. *Int J New Trends Arts Sports Sci Educ* 2012;1:49- 66.
7. Singh S, Pai DR, Sinha NK, Kaur A, Soe HH, Barua A. Qualities of an effective teacher: what do medical teachers think? *BMC Med Educ* 2013;13:128.
8. Schonwetter DJ, Lavigne S, Mazurat R, Nazarko O. Students' perceptions of effective classroom and clinical teaching in dental and dental hygiene education. *J Dent Educ* 2006;70:624-35.
9. Gokcora D. Teaching assistants from the People's Republic of China and US undergraduates: perceptions of teaching and teachers. *Int J Acad Dev* 1996;1:34-42.
10. Seth V, Upadhyaya P, Ahmad M, Moghe V. PowerPoint or chalk and talk: perceptions of medical students versus dental students in a

medical college in India. *Adv Med Educ Pract* 2010;11:11–6.

11. Tang FI, Chou SM, Chiang HH: Students' perceptions of effective and ineffective clinical instructors. *J Nurse Educ* 2005;44:187–92.
12. Young S, Shaw DG: Profiles of effective college and university teachers. *J Higher Educ* 1999;70:670–86.
13. Prozesky DR. Communication and effective teaching. *Community Eye Health* 2000;13:44–5.