



IJMIRD 2015; 2(1): 83-87
www.allsubjectjournal.com
Received: 07-11-2014
Accepted: 14-12-2014
e-ISSN: 2349-4182
p-ISSN: 2349-5979
Impact Factor: 3.762

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Would effective lecturing Evoke a Student's interest in learning anatomy?

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Abstract

With the advances in teaching and learning, various teaching methodologies are in practice. Lecture classes are considered to be one of the crucial teaching methodologies in medical schools in India till date. So the present study aims to assess the students' view about the present lecture classes. The present cross sectional study was carried out involving 189 first year MBBS students (95 males and 94 females). The age group of the students ranged between 18 to 20 years. A questionnaire was constructed to acquire the students' feedback regarding their attitude and perception towards the lecture classes. 74.6% of the students considered the lecture classes helpful in understanding a particular topic better. Interestingly 89% of students also agreed that Anatomy was learned better in small groups with the dissected specimens. Small group learning was appreciated by 44.85% students especially for the topics like embryology and osteology. This indicates that the traditional dissection method in Anatomy is still appreciated by the students. The present study affirms that the lecture classes play an important role in medical school in learning Anatomy as opined by the majority of the students. Even though there are lot of advances and evolution in different teaching methodologies the students still prefer the traditional teaching method i.e. lecturing, which could be further effective when they are preceded by small group demonstrations using dissected specimens.

Keywords: didactic lectures, demonstrations, small group learning, traditional teaching, medical education.

1. Introduction

Teaching plays a major role in the learning outcomes in undergraduate medical education and is important in generating effective professionals. Its effectiveness depends on how much has been received by the students or the target audience. Student learning is one of the primary goals of any institution which strives hard to bring out the best in them and make them more presentable to the society.

There are different methods of teaching in medical schools i.e., lectures, tutorials, seminars, brainstorming, videotapes, class discussions, small group discussions, case studies etc [1]. The lecturing or otherwise referred to as didactic teaching is however the most traditional method of imparting knowledge to students. It is the teaching method that is used frequently in the majority of medical schools despite the problems that are often attributed to it [2].

Traditional lectures, also known as didactic lectures, are still the primary methods of instruction in medical and higher education, particularly for large class sizes [3]. However, several studies on comparing the effectiveness of didactic lectures with those of interactive, or effective teaching styles (e.g. case reports, technology assisted, problem-based, and open discussion) showed that student satisfaction, learning outcomes, deeper approach to learning, and knowledge retention is better following interactive lectures [4-6].

Therefore, because of these criticisms of didactic lectures, increasing efforts are being made to transform didactic lectures into effective lectures [7-9]. Several approaches to teaching, such as problem-based learning, team-based learning and case method teachings are increasingly being adopted. However, the lecture format is still the most widely used approach to teaching, especially for a large class size. Nevertheless, traditional lectures or didactic lectures are considered ineffective in affecting learning outcomes of knowledge retention, student satisfaction, synthesis and elaboration of knowledge [10].

With the advances in teaching and learning, various teaching methodologies are in practice. In spite of these changes the didactic lecture classes still holds their perspective.

Thus, Lecture classes are considered to be one of the crucial teaching methodologies in medical schools in India till date. So the present study aims to assess the students' view about the present lecture classes. The valuable feedbacks thus obtained could therefore be incorporated in the art of lecturing so that a better teaching environment can be created for the students to enable a healthier teaching-learning experience.

2. Material and Methods

2.1 Present Anatomy Curriculum

The first year of MBBS course involves learning the basic sciences such as Anatomy, Physiology and Biochemistry. Anatomy curriculum includes gross anatomy, histology, embryology, neuroanatomy and genetics. The main teaching

methodology includes lecturing which is followed by live demonstration using the dissected specimens, histology slides and embryology models.

2.2 Study Design

The present cross sectional study was carried out involving 189 first year MBBS students (95 males and 94 females). The age group of the students ranged between 18 to 20 years. All the students were given an option to participate or to decline the participation in the study. An informed consent was taken from the students who agreed to participate. A questionnaire was therefore constructed as shown in table 1, to acquire the students' feedback regarding their attitude and perception towards the lecture classes and was distributed to them at the end of the academic year 2013-14.

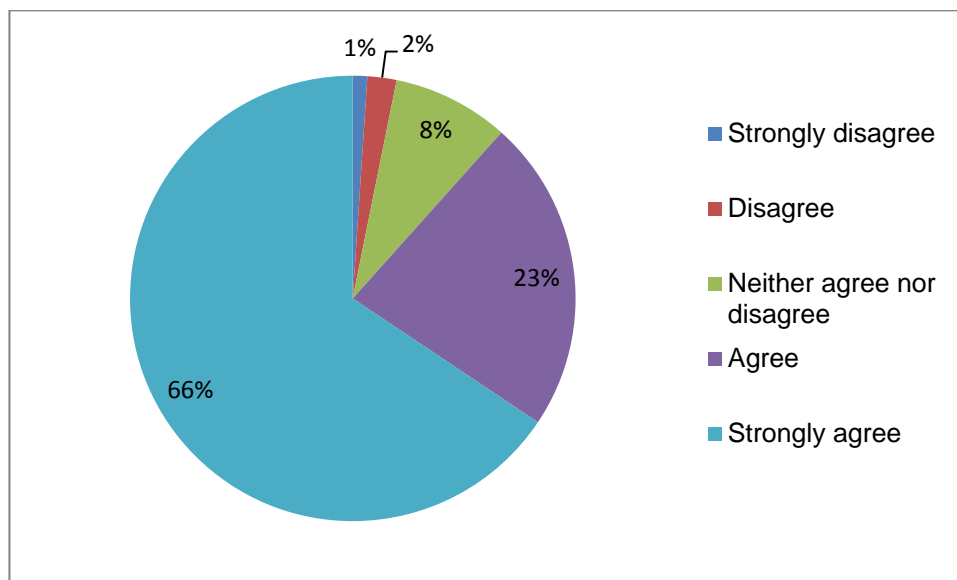
Table 1: A model questionnaire denoting the various aspects of lecture classes assessed.

S. No.	Aspects assessed
1	Lecture classes helps me to understand a particular anatomy topic better
2	I take notes in lecture classes
3	Teacher's attitude determine the effectiveness of the lecture class
4	Dissection classes are more useful in remembering the particular topic than the lectures
5	Anatomy lectures can be restricted only for exam oriented topics
6	Lecture classes provoke interest in me to go back and study
7	Interaction between teacher and students during the lecture class helps to understand the topic better
8	I am comfortable in asking a doubt in the middle of the class
9	Summarizing the topic at the end of the class is useful
10	I attend the lectures only for the purpose of attendance
11	I prefer small group learning than didactic lectures
12	Topics like histology, neuroanatomy and embryology are better understood in lecture classes

The students were encouraged to give their effective feedback regarding some of the major issues like understanding a particular topic in Anatomy, taking down lecture notes, a teacher's attitude towards teaching, lecturing supplemented with demonstrations, student-teacher interactions etc. The responses ranged from strongly disagree to strongly agree with a Likert scale of 1-5. The results were expressed in percentages and were tabulated.

3. Results

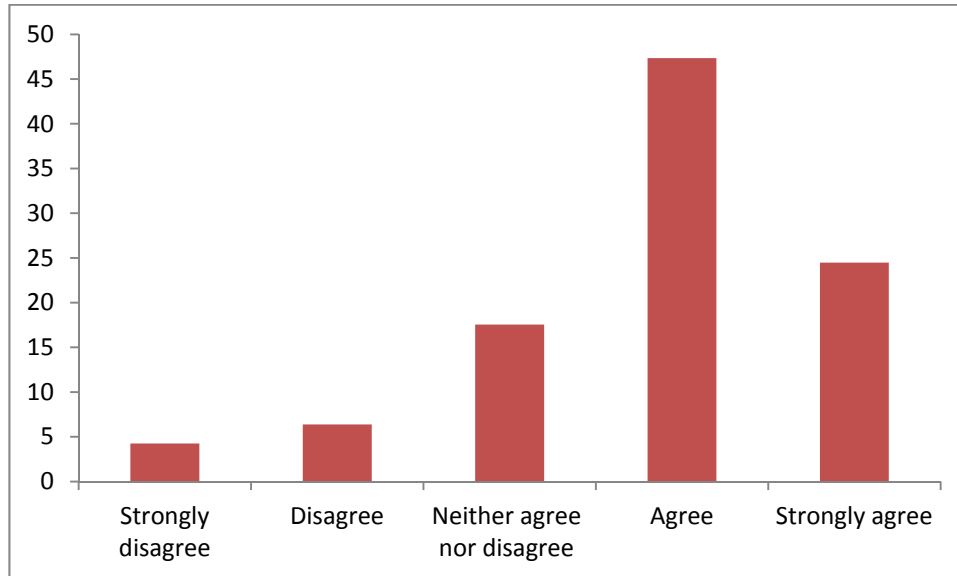
The study questionnaire was distributed to 189 first year MBBS students in which 95 were males and 94 females of age group of 18-20 years. 74.6% of the students considered the lecture classes helpful in understanding a particular topic better. Interestingly 89% of students also agreed that Anatomy was learned better in small groups with the dissected specimens (Graph 1).



Graph 1: comparison of demonstrations and lecture classes

Graph 1: The pie chart shows the responses obtained for the comparison between the lecture classes and live demonstrations in which 89% (66+23) of the students agreed that the demonstrations were more effective than lecturing. Small group learning was appreciated by 44.85% students especially for the topics like embryology and osteology. This indicates that the traditional dissection method in Anatomy is still appreciated by the students. There was a mixture of opinions about the lecture classes provoking interest to get

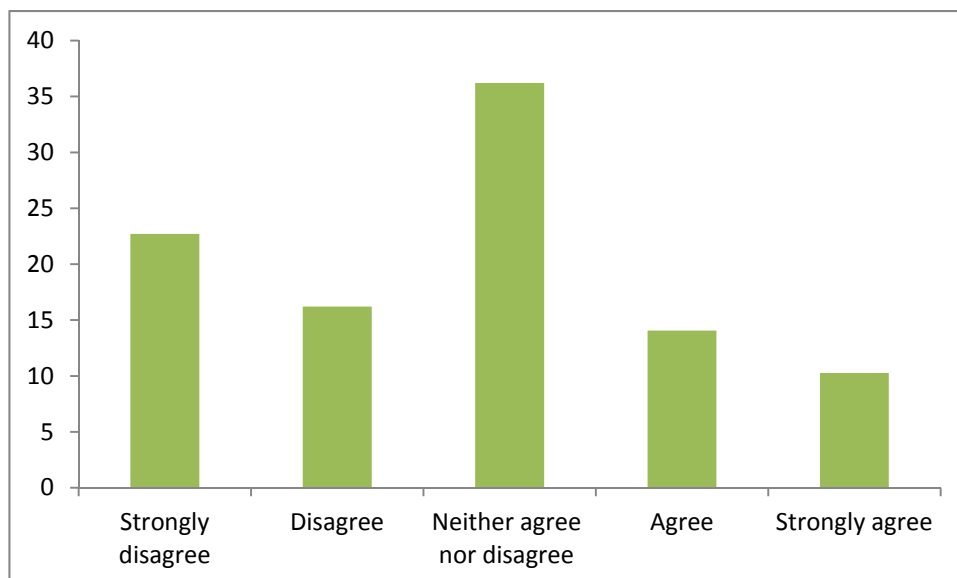
back and study. 38.5% of students agreed to this, 25.12% disagree whereas 36.3% of them failed to respond. A teacher's attitude towards the students makes a remarkable impact during lecturing which was accepted by 88.35% of students. 71.81% of them also agreed that the interaction between teacher and students is essential during lecture classes, the representation of which is denoted in graph 2. Majority of them (85.1%) also asserted that it is crucial for the teacher to summarize the topic at the end of the class.



Graph 2: Frequency distribution of the responses obtained about the interaction between the teacher and students.

Student teacher interaction in the class was believed to be one of the important elements in effective learning. However in the present study it was observed that 38.9% of students were hesitant to ask doubts during the class. 24.33% of

students agreed that they were comfortable in clarifying their doubts whereas 36.25% of them did not respond. The frequency distribution of which is denoted in graph 3.



Graph 3: Frequency distribution of the responses obtained about asking doubts during lectures. A greater number of students hesitant to ask doubts during the lectures.

The students were also asked to put forth their suggestions and remarks on the present lecture classes. A good number of students expressed that the lectures which are both interactive and informative would help them understand a

particular topic better. It was also suggested that the small group learning, case discussions and demonstrations should be encouraged along with routine lectures.

4. Discussion

Lecturing is the most traditional method of teaching which involves an interchange between teachers, students and the lecture content. Lecturing can however turn monotonous and fail to involve the students in the learning process.

Didactic lectures still play an important role as a method of student instruction in anatomy in India. There has been a definite move in many countries to replace the traditional didactic lecture method with the more active learning methods such as problem-based learning (PBL) and team-based learning (TBL). Some studies have shown that there is a comparable level of knowledge in anatomy in students who have studied through a PBL method and the conventional lecture based method [11-13]. However other studies have shown that students in a conventional curriculum have a significantly higher level of anatomical knowledge as compared to peers who went through a PBL curriculum for anatomy [14].

The main problems of lecturing as teaching methods have been thoroughly discussed upon. It includes a rapidly declining quality of student attention and their declining performance in terms of memory [15].

No other source is as reliable as the student population itself in providing information regarding their expectations from a lecture class. Students' feedback is therefore crucial and provides ample information that could be implemented for an effective teaching. The present study also involved a questionnaire to receive the students view on lecturing. Anatomy is taught to the medical students in their first year which involves not only lecturing but also small group learning using dissected specimens. In a class with large number of students the small group learning may not be possible therefore it is always supplemented by didactic lectures.

In the present study a good number of students expressed that the lectures which are both interactive and informative would help them understand a particular topic better. It was also suggested that the small group learning, case discussions and demonstrations should be encouraged along with routine lectures. This is similar to the findings of studies in China, Hong Kong [17] and in Iran [18] in which students preferred small group interactive sessions in terms of participatory learning, team working, effectiveness and developing self-learning skills [16-18].

An effective lecture efficiently transfers knowledge to students by enhancing their conceptual understanding and retention of knowledge and to achieve these goals, students should be motivated to be interested in and focus their attention to a lecture. The first step in delivering an effective lecture could start with "captivating" statements, which will excite students about the lecture [19-22]. The statements should clearly outline the purpose of the lecture. Students could also be encouraged to be active participants during the lectures because classroom attendance and participation leads to success in examinations [23].

Several strategies have been suggested to optimize students' interest and attention during lectures. Posing a question at the beginning of the lecture for the students to think about would create a challenge for the learners and alerts them to focus during the lecture, with the anticipation of seeking answers to that question [24-28].

Avoiding monotonous lectures and involving the students. This can be achieved by asking them questions or encouraging them to put forth their doubts or views, thus

creating a positive and safe learning environment by acknowledging students' responses.

Optimal use of audio-visual aids like power-point, over-head projectors, black boards and video clips may also be beneficial in gaining a students' interest. Multimedia presentations and computer assisted learning also promotes interactivity [29].

Correlating theory with practical and stressing on its application and usefulness would also be beneficial. This can be further supplemented with demonstration classes using dissected specimens.

Clinical cases can also be used in different ways to bring relevance to the discussion [30-31]. The use of cases heightens interest and promotes problem solving in an effective manner. It also encourages clinical reasoning and makes the learning of medicine 'real' important for junior students with limited clinical experience.

Summarizing the topic at the end of the class, stressing on the facts that are important are also very essential and enables the student to absorb the vital information.

Ultimately it is the teachers' positive attitude that matters the most as suggested by the present study. Teachers' skills can improve cognitive and affective learning outcomes, and are positively correlated with teaching effectiveness. These skills include humor, direct eye contact with the learners, vocal inflections, and direct body posturing, gesturing, speaking loudly, using voice for emphasis and exaggeration, and projecting a feeling of enthusiasm and excitement [32].

A good teacher should try all the possible strategies to improve the act of lecturing such that the students are benefitted from the same.

Gathering regular feedbacks from the students regarding their needs and expectations from a lecture is also useful in implementing an effective teaching-learning program.

5. Conclusion

The present study affirms that the lecture classes play an important role in medical school in learning Anatomy as opined by the majority of the students. The teacher's positive attitude towards students and the use of advanced technologies in combination can make the teaching more effective. Even though there are lot of advances and evolution in different teaching methodologies the students still prefer the traditional teaching method i.e. lecturing, which could be further effective when they are preceded by small group demonstrations using dissected specimens. The teaching-learning experience could be made enjoyable for the students in the presence of a teacher who acts as a facilitator. The present study can also help in the quality assessment of the lecture classes so that the necessary modifications could be made.

6. Lessons for Practice

- Lecture classes are considered to be one of the crucial teaching methodologies in medical schools in India till date.
- Lecture classes are helpful in understanding a particular topic better.
- Anatomy is learned better in small groups with the dissected specimens when compared to lecturing especially for the topics like embryology, gross anatomy and osteology.
- Interaction between teacher and students is essential during lecture classes for understanding the topic better.

- The small group learning, case discussions and demonstrations should be encouraged along with routine lectures.

7. Conflict of Interest

Authors declare that there is no conflict of interest.

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