



# Barriers to Effective Utilization of Teaching-Learning Methods: A Qualitative Study Using Focus Group Discussions among First-Year Bachelor of Medicine, Bachelor of Surgery Students in a South Indian Medical College

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## Abstract

**Background:** Lecture, practical, and dissection classes have been the mainstay of teaching in first-year bachelor of medicine, bachelor of surgery (MBBS) courses. Competency-based medical education (CBME) implemented by the National Medical Commission (NMC) in 2019 aims to improve teaching-learning experiences and outcomes. A clear idea about attitudes and perceptions of students toward the present teaching-learning methods will help better implement CBME.

**Objectives:** (1) To find the attitudes and practices of first-year MBBS students toward lecture, practical, and dissection classes, using a focus group discussion (FGD) as a tool of a qualitative study. (2) To analyze the factors that prevent active students from participating in different teaching-learning methods in pre-clinical subjects.

**Methods:** This qualitative study using an FGD was performed after obtaining the Institutional Ethics Committee (IEC) approval in 36 first-year MBBS students, both female and male, divided into six groups. Written informed consent for the audio recording was obtained. A semi-structured interview guide with open-ended questions was used. The FGD was recorded, transcribed in spoken language, and converted into English. Content analysis was performed, key concepts were extracted and coded manually, and common themes were generated.

**Results:** The following seven themes emerged: (1) Attendance being prioritized by students, (2) Note-taking done as a chore during lecture classes, (3) The time duration of the lectures as a hindrance to effective learning, (4) Inadequacy of self-directed learning, (5) Preference of practical sessions over theory sessions, (6) Cell phone usage as a reason for not being attentive in the class, and (7) Interest in interactive methods.

**Conclusions:** This study identifies factors that impede the utilization of teaching-learning methods by medical students. The CBME model addresses many of these problems. Further studies on students under the new curriculum will help refine our teaching-learning methods. The strength of this study is the FGD sessions conducted by a medical student, which would have put the participants at ease.

**Keywords:** Teaching-learning Methods, Medical Education, Focus Group Discussion, Barriers

## 1. Background

The first year of medical university is a difficult time for students due to the challenges in adapting to a new learning environment. This includes changes in teaching methods, interactions with students with different backgrounds, rigorous exam schedules, etc. Lecture, practical, and dissection classes are still the predominant forms of teaching in medical education. The students' presence in lecture classes and their efficiency in comprehending,

note-taking, play an important role in their development as medical practitioners. Due to the ability to share information with a large number of students (1, 2) at the same time, lecturing is the commonly used method to date in spite of a few disadvantages (3-5). The major disadvantage is the lack of active involvement of students. This might affect students' performance in practical and dissection classes due to a lack of better orientation of concepts. Medical students' attention in lecture classes appears to be

high only during the first 10 to 15 minutes and then declines abruptly (6, 7). A good listener is always benefitted, but it is difficult to be always a good listener. Medical colleges usually take in 50 to 250 students per year, so the number of students in each practical class and lecture class is more compared to school classes. While few students actively participate in hands-on methods, some try to avoid active participation, and the desired interest and output are not obtained due to various reasons.

Focus group discussions (FGDs) are used to obtain ideas about knowledge, perspectives, and attitudes of individuals regarding health and other issues, and to seek explanations for behaviors in a way that would be less easily obtained by quantitative studies (8). Another advantage in using focus groups is the opportunity to benefit from group dynamics and the ability to use participant interactions to gain in-depth data that would not be obtained through individual interviews or other forms of group interviews. It is also expected that when participants find out that others have similar experiences, they will feel free to talk openly about their beliefs and practices. This study was conducted to discover the factors that impede the interest, active participation, and performance of first-year MBBS students in lecture, practical, and dissections using a FGD as a tool of qualitative research. This can provide major insights into the attitudes, practices, and opinions that in turn, reflect on students' perceptions of the present situation. It will help better implement the new curriculum planned by the National Medical Commission (NMC) competency-based medical education (CBME).

## 2. Objectives

This study was carried out with the following objectives:

- (1) To find the attitudes and practices of first-year MBBS students toward lecture, practical, and dissection classes, using an (FGD) as a tool of the qualitative studies;
- (2) To analyze the factors that prevent active students from participating in different teaching-learning methods in pre-clinical subjects.

## 3. Methods

Population: First-year MBBS students; Sample Size: Thirty-six students in six groups of six students each; Duration: Two months; Study Period: June and July 2019; Place of Study: A rural medical college hospital in South India; Inclusion Criteria: First-year MBBS students of both genders who were willing to participate in the FGD; Exclusion Criteria: Those not willing to give informed consent for

the audio recording; Study Design: The FGD with a semi-structured interview guide; Equipment: A voice recorder and note-taking materials.

### 3.1. Procedure

The study was started after getting the Institutional Ethics Committee (IEC) clearance and written informed consent from the participants for participating in the FGD and also for the audio recording of the proceedings. Participants were given a brief overview of the study and the importance of their contributions to the study and were assured of secrecy and confidentiality. The FGD was originally planned to be performed in ten groups, each group containing six participants, but data saturation was reached at the level of the sixth group; Hence, the FGD was limited to six groups. The participants were homogenous in each group regarding gender so that freedom of discussion was possible. It was tried to keep close friends in a single group to increase chances of free discussions. Each group was heterogeneous in terms of place of origin and board of education. The participants were gathered in a demonstration hall after their daily classes for the FGD sessions.

### 3.2. Preparation, Setting, and Data Collection

The FGD was performed in a demonstration hall in the rural medical college. The focus group was conducted by the researcher acting as a moderator. The participants were asked to choose a pseudonym for confidentiality. They were introduced to the note-taker. They were informed that the entire discussion will be voice-recorded and all were obtained written informed consent. The questions to be discussed in the FGD were framed to extract the participants' views on routine lecture, practical, and dissection classes by open-ended, unbiased questions that opened up a wide range of conversations. The discussion session was initiated after breaking the ice in the group. Non-verbal responses and interactions among the group members were also observed and recorded. Open questions were used to avoid distraction and to give participants the opportunity to highlight the aspects they found important. Further discussion was performed with probing questions to seek clarification. Words and statements of the participants were recorded verbatim (9). Emphasis was given to the interaction between the group members.

A semi-structured interview guide was followed for guiding the discussion, which involved 18 open-ended questions on attitudes and practices of students on lecture, practical, and dissection classes. Further probes were used regarding the questions to elicit reasons for disinterest in the classes. Semi-structured interview guide ques-

tions, which were grouped into three categories, were used.

### 3.3. Transcription

The audio records obtained were transcribed on the same day (9) by the moderator / researcher after each FGD session. Key concepts and other contributions were extracted. The notes taken were transcribed in spoken language. The emotional context and non-verbal communication were included, and conversion of data from the regional language to English was performed. In situations where literal translation could not convey the intended meaning of the participants, the statement was translated considering the context in which it was stated.

### 3.4. Data Analysis

The transcripts and notes obtained were categorized into broad domains (10), and key concepts were coded. Coding was performed manually, and the codes were sorted into subcategories or themes based on how the different codes were related (11). Content analysis was performed, and the data was interpreted and reported (12).

### 3.5. The Semi-structured Interview Guide

#### 3.5.1. Questions on the Attitudes, Perceptions, and Practices Toward Lectures

- (1) Do you skip the lectures? If yes, why?
- (2) Do you find your pre-clinical lectures interesting? If not, what are the reasons?
- (3) Do you actively take notes in lectures? If not, what are the reasons?
- (4) Do you feel sleepy in classes? Why?
- (5) Which is the best timing for lectures in your view: Morning / afternoon? Why?
- (6) Do you feel that self-learning is adequate?
- (7) What are the major causes of distraction in lectures?
- (8) Do you use a cell phone during class time? If so, why?

#### 3.5.2. Questions on the Attitudes, Perceptions, and Practices Toward Laboratory Classes

- (1) Do you attend your practical classes regularly? If not, why?
- (2) What is your attitude toward practicing experiments in laboratories?
- (3) Do you find your lab hours useful?
- (4) How far do you correlate your theory and practical classes?
- (5) What makes a practical session not interesting?
- (6) Do you think that your practical classes will be useful in your future clinical practices?

#### 3.5.3. Questions on Dissection Classes

- (1) Do you skip dissection sessions? If yes, why?
- (2) Does dissection help you in the better orientation of anatomical structures?
- (3) Do you feel that dissections are meant only for future surgeons?
- (4) Do you actively participate in hands-on dissection practices?

## 4. Results

By transcription of voice-recorded data and content analysis performed, seven basic themes emerged in this study. They are as follows:

### 4.1. Theme 1: Attendance Being Prioritized by Students

The study reveals that mandatory attendance is a major motivation for attending classes with little or no intention of listening to lectures. As said by a participant: "I come for attendance only because there is very little interaction and teachers do not care whether we have understood what they have taught us."

Students attend the classes and then relax in their own way, as said by the participant: "As there is no compulsion for my presence in the class, other than attendance, I don't feel like attending sleepy lectures."

They enjoy their freedom attained in a strict school environment and do what they want unless they are questioned by teachers, which rarely occurs in the college. Students entering medical college are mostly toppers in their schools. When the same does not happen in college, they undergo a lot of psychological stress, and finally, try to adjust in their own way [10]. Supporting this, a participant has said: "Being a backbencher, I don't get much attention from the staff, so who cares what I'm doing and what matters."

In their view, lecture sessions are boring because of reading out from slides. Students who have come with great expectations get disappointed (9). In this context, participants have stated the following: "Boring classes with copied PowerPoints in the morning sessions spoils our study mood for the day." "Topics are interesting, but I feel like it is the duty of a teacher to keep us attentive. A good teacher can keep us attentive on a bad topic, too."

Few participants brought out their views on lecture routines, as follows: "Teachers reproduce what is given in the book and don't share anything new / what they have experienced. If this is going to be the routine, I can read the same in my room; why should I come prepared and sit in a place for a long time and listen like a school kid"; "I thought that I'd be allowed to see and study patients from

the first day, but sitting in a lecture class is disappointing.” Many participants said that they tended to cut many lecture sessions but tried to attend practical sessions since they would lose more attendance percentage, as practical classes were fewer in number compared to lecture classes.

The study shows a different side of students’ perceptions of biochemistry classes, as a participant added: “I correlate my studies with practicals in anatomy and physiology, but not with biochemistry.” Another participant stated: “Regarding a subject of full facts and truth, some of which can’t be experimented in our basic laboratory if the lecturer takes a boring slideshow; it makes biochemistry a dry subject, so you have to just learn what is there!”

#### 4.2. Theme 2: Note-taking Done as a Chore during Lecture Classes

Lecture notes play a major role in learning medicine as the lecturer brings up the concepts not from a single book but from many references; However, perceptions vary, as a participant of the FGD said: “I take notes during the beginning of the class, but in physiology and biochemistry lectures if I see many slides on PowerPoint, I lose interest and stop taking notes; However, if the staff says it is an important question, I’ll note it down and refer to it later.”

One participant brought out another point from the listener side:

“Note-taking keeps me active, so I try taking notes during lectures.”

Regarding note-taking, the following were also stated: “Initially, I used to take notes when the college year started, but later, taking notes reduced as I found it to be of no use”; “I’ll take notes only for difficult topics if the lecturer stresses ‘Take it down!’; if not, mostly I won’t.” This reveals that students try to rationalize their inattentiveness. Also, it is found that some students take notes and use cell phones as an alternate for sleeping in lecture classes. Some participants spoke about taking notes only on topics stressed as important for university exams. Thus, this shows that students are most often directed toward a ‘mark-oriented’ than a ‘clinical-based’ study.

Regarding student seminars, a participant stated, “The student should come with a doubt; the lecturer should clear it there and provide a key for better understanding and further study over the topic concerned.”

#### 4.3. Theme 3: The Time Duration of the Lectures as a Hindrance to Effective Learning

Students who have enjoyed short breaks between classes at schools find it difficult to adapt to lectures taken for a long time with infrequent breaks. As stated by a participant: “Continuous classes make me hungry, and this

makes me distracted. So, classes with enough break time may help me remain focussed.”

Due to time constraints, lecturers might straight away get into the topic of discussion with a little / no proper introduction of the topic. This affects some students who lack prior knowledge / who have skipped the previous sessions. In this context, a participant stated: “Sometimes, we basically lack the basic knowledge of topics discussed, so we feel like ‘why are we sitting?’ This is what happens routinely in my college life.”

Some participants stressed that irrespective of the subject / the lecturer, a continuous lecture for a long time makes their mind exhausted and distracts them. In this regard, a few participants stated, “I’m not able to listen for more than half an hour during lectures.”

As stated by a participant, the lecturer’s tone of teaching was also found to play a critical role in determining the listener’s state and their interaction during the session: “Sometimes, even if I don’t feel sleepy, the teacher puts me to sleep due to very monotonous voice, with no fluctuations in the voice, especially after a heavy lunch.” On questioning about the best timing of lectures, many suggested early morning and late evening classes, as it has become a routine for them to attend coaching classes / during their school days. This brought out the mixed perception of participants over the best timing for lectures; However, many participants were against the afternoon classes. This is supported by another participant as follows,

“Early morning or late evening classes after a snack break may help us remain focused.”

One student stated the following: “If interested, time doesn’t matter.”

Another participant said that they were clear about what was important during their school days but that it was lacking now. “My interest declined compared to school, as there is much to learn, but since I don’t have clarity on what is important, I may miss certain points.”

#### 4.4. Theme 4: Inadequacy of Self-directed Learning

Due to various distractions, students’ attentiveness and involvement in lectures decline. Therefore, self-directed learning—an active learning process—becomes important. Some ideas stated by students in this regard are:

“Self-learning is inadequate, as I find it difficult in finding reasons for symptoms and signs.”

“In schools, I’ve prepared using important question banks for exams, but in college, without knowing what is important, how would I prepare? How could I excel?”

Another participant suggested that: “It is important but not adequate, as it has the drawback of not knowing the life experiences of staff related to the topic of study.”

#### 4.5. Theme 5: Preference of Practical Sessions Over Theory Sessions

Students interested in practical sessions are more than those interested in theory classes because they are grouped among themselves with close friends, which makes them more comfortable, and learning becomes a fun-filled process. "Practical sessions enjoy my active presence, so there will be less distraction, and my concentration will be high."

This is the basic attitude of most participants toward practical sessions. The jolly mood on examining their own friends, no need of mugging up, no distractions, and some correlations with theory make them attracted to practical classes, and subsequently make them feel like a doctor.

A participant brings out the basic mindset of a rural Indian medical student as follows: "I'm attentive in clinical physiology and biochemistry classes, as it will help me examine pulse and blood pressure of my family members and neighbors and comment on their lab reports, leading to improving my self-esteem." However, not all practical classes are correlated with theory due to different reasons; one of these reasons is time lag, as a participant stated: "There is always a time lag between the lecture and its corresponding practical sessions."

Overall, similar to lecture, there also lies certain factors which students feel decrease the effectiveness of practical classes, including (a) lack of self-interest, (b) lack of proper prior theory knowledge, (c) cross-examining friends with known results, (d) behavioral attitudes, and (e) non-functioning instruments in the laboratory. To strengthen this result, a participant stated: "Theory and corresponding practical classes are often not taken simultaneously. Because of this time lag, there is a problem in correlating physiology and biochemistry practical classes with theory, but anatomy is OK compared to other subjects."; "I like dissection classes as I am curious about learning body parts first hand."

However, some students stated the following difficulties in anatomy: "Overcrowded dissection tables make me lose interest."; "I am sensitive to formalin, so I try to avoid touching cadavers."

"Interested students use dissection sessions, whereas, for individuals like me with no mood for hands-on practices, dissection classes appear gross. It's a big achievement if I touch the cadaver at least once for dissecting, other than for exam purposes."

#### 4.6. Theme 6: Cell Phone Usage as a Reason for Not Being Attentive in the Class

The use of cell phones is also seen as an alternate, in addition to taking notes, to keep them awake and entertained during lectures, as a participant said: "Cell phone

usage keeps me awake. Though I'm not listening to the lecture, I use it as an alternate for sleeping." Another participant stated: "I choose a cell phone oversleeping in the class, as it is more fun when we chat about the teacher over the WhatsApp group in their own session without their knowledge."

In this context of cell phone usage, few participants stated: "I use the cell phone mostly during lecture classes and not in practical classes, as it is always boring and we know that they are going to read from what is there in the book"; "If I'm caught sleeping in the class, my friends mock me, but if I'm caught using a cell phone by my teacher, it's cool with my friends."

#### 4.7. Theme 7: Interest in Interactive Methods

The participants have suggested that the active involvement of a learner makes it easier to learn concepts: "Rather than mental attentiveness, involving a student physically in learning activities makes us involved in the subject." Many stated that they liked role-playing, chalk and board technique, and group discussion, etc. Participants were asked about the importance of histology and what they are learning in the first year of MBBS, but many were unaware of its usage in future studies and clinical uses.

## 5. Discussion

This study was carried out among the first-year MBBS students to get an idea about their attitude to medical education techniques and the difficulties they face in utilizing the available methods. This batch of studies has been conducted on the first MBBS course under the old NMC curriculum. Various themes emerged at the end of the study. Students are more interested in interactive teaching-learning methods like group discussions. In his study, David A Lake has also found the same result (13). He stated that problem-based learning increased the involvement of students. In another study by Hin Jang, it was stated that faculty should motivate students toward problem-based learning by bringing up their past clinical experiences, also stated by participants of this study (14). In his study, Howard introduced problem-based learning as a tool for improving the performance of students in medical schools. (15) This study also found that the students were interested in patient / clinical-oriented discussions.

The participants of the present study stated that they were unable to listen to lectures for more than half an hour, irrespective of the subject, which was also stated in the study on 'medical students' attention during lectures' by Stuart J and Rutherford J (6). The study of Bradbury NA suggested that note-taking was not a good surrogate for attention (16). In this study, also, it was found that most students



took notes for being awake rather than being attentive in the class. It was also found that the participants indulged themselves in using a cell phone without the knowledge of the lecturer. The participants stated that physical involvement in activities such as role-playing might help them be actively involved in the subject, the same as quoted by Mary Ainely: "Interest emerges through our feelings, values, and knowledge related to the task in question and that motivational development benefits from an environmental challenge."<sup>(17)</sup> Da Rossa et al. have suggested that active learning is better than lecture-based learning (1). The present study also supports the same comment.

It has been found in the study that students tend to rationalize their behavior of not listening in the class or not taking notes by projecting the fault on the teacher and the infrastructure available and also students lack self-motivation for listening in the class. A few students felt that they would benefit from a change in class timings, integration of theory and practical sessions, clinical problem-based learning, and activity-based learning. The new NMC curriculum -CBME- gives importance to horizontal and vertical integration of topics, early clinical exposure, problem-based learning, and small group teaching. Proper implementation of the new curriculum might improve the student's involvement and learning outcomes. Some students felt that they were clueless about what was expected from them in medical school. The month-long foundation course planned in CBME for first-year students when they enter medical college might solve this problem. Some students stated that they tried to avoid some hands-on sessions unless the teacher noticed and involved them individually. Proper maintenance and periodic updating of log-book for mandatory skills as envisioned in CBME will address this issue to a certain extent.

Improving students' motivation and making classes interactive and interesting by various means, including faculty development programs, will tend to make students attend classes for learning instead of just attendance. As the present generation is tech-savvy, incorporating cell phones in the classes wherever possible as a tool of teaching and assessment, with proper safeguards in place to prevent misuse, will go a long way in holding students' interest.

The strength of this study lies in a student being a moderator of the FGD sessions. The participating students would have been at ease discussing their ideas in front of a fellow student without the intimidating presence of a teaching faculty. The limitation of the study is that it does not involve any student from the Indian certificate of secondary education (ICSE) and international general certificate of secondary education (IGCSE) boards of school education, the inclusion of whom would have improved

the heterogeneity of the FGD group of first-year MBBS students.

This study provides insights into various factors that prevent students from active involvement in the teaching-learning process in the first year of medical college life. From the FGD sessions, the following seven main themes emerged: (1) Attendance being prioritized by students, (2) Note-taking done as a chore during lecture classes, (3) The time duration of the lectures as a hindrance to effective learning, (4) Inadequacy of self-directed learning, (5) Preference of practical sessions over theory sessions, (6) Cell phone usage as a reason for not being attentive in the class, and (7) Interest in interactive methods. Also, we get an idea about the attitude of students and their expectations. The current CBME, which is being implemented in a phased manner, aims at changing the present teacher-centered education system to a more learner-centered, student-friendly, need-based, hands-on model. The results of the study will help in the better implementation and improvement of the CBME. The selection method of students for the rigorous medical curriculum can include aptitude testing in addition to entrance exams so that students with self-motivation to learn medicine can enter the medical profession. The final outcome will be a better health care system. Conducting periodic FGDs among medical students and faculty after the implementation of CBME from this academic year will go a long way in improving medical education in our country. Also, faculty development programs can be fine-tuned to the needs of the medical student community based on the outcomes of these qualitative studies.

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### Footnotes

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