



## Learning by teaching: Role of “peer-assisted learning” in medical education

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### ABSTRACT

**Background:** Many Indian medical colleges follow conventional teaching learning methods, which lack student-centered approach. Many interactive teaching learning strategies are coming forward. One of this is peer-assisted learning (PAL). PAL is described as learning by teaching themselves. Peer teachers reinforce their own knowledge, support and share experiences, and also provide feedback. The study was undertaken to see the role of PAL in medical education.

**Material and Methods:** About 150 first-year MBBS students were selected. After taking informed consent, they were divided into two groups of 75 each. Group A students were exposed to traditional tutorial classes. Group B students were divided into three small groups of 25 students each. Each group was again divided into five subgroups. The students were asked to prepare the tutorial topic as Group A. The topic was divided into subtopics and was allotted to each small group. Randomly selected student from each subgroup was asked to teach their subtopics in front of large group. Student's feedback was taken at the end. A test of multiple choice questions (MCQ) was conducted and outcome compared by student's *t*-test.

**Result and Conclusion:** Our study showed that PAL is an interactive student-centered program. The students were allowed to discuss their opinions. Experience of teaching seemed to be enjoyable and effective in learning. This also improved the communication skills in students. The only limitation we observed was in planning the session and time frame for these types of sessions.

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### Introduction

Medical students are expected to understand, retain, and apply a challenging amount of knowledge and skills in a limited time during their training in medical college [1]. According to the regulations of Medical Council of India (MCI), teaching learning methods should be student centric. The student should be made competent to become a lifelong learner committed to continuous improvement of knowledge and skills [2]. Learning experiences such as small group discussions, patient care scenarios, workshops, seminars, and role plays should be incorporated in the curriculum [2]. Evolution in medical education and training has resulted in moving away from traditional classroom-based didactic methods toward more student-centered active learning [1]. Active learning is supposed to leave students with a greater level of knowledge

and better learning skills compared with students exposed to other forms of learning [3]. As medical students learn to teach, they can become effective communicator also. Hence, various interactive methods have come forward to attain this goal. One of these is PAL, i.e., Peer-Assisted Learning. PAL is described as learning by teaching themselves. Peer teachers reinforce their own knowledge, support, and share experiences with others. Feedback given is found to be useful in their learning process. Hence, the study was undertaken to assess the role of PAL in medical education in our institute.

### Material and Methods

Ethical approval was taken by the Institutional ethics society. About 150 first-year MBBS students were selected for the study. After taking informed

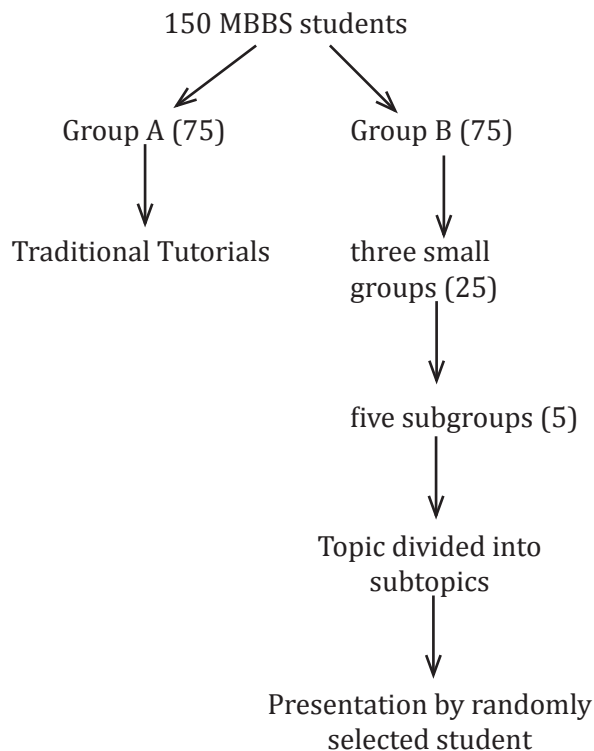
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consent, they were divided into two groups of 75 each. Group A students were exposed to traditional tutorial classes. The traditional tutorials are led by teachers. The topics for the tutorials are based on MUST KNOW syllabus of first-year MBBS. The duration of each tutorial is 1 hour, and students are divided into small groups of 25 students. The teacher asks questions on the topic and students have to answer.

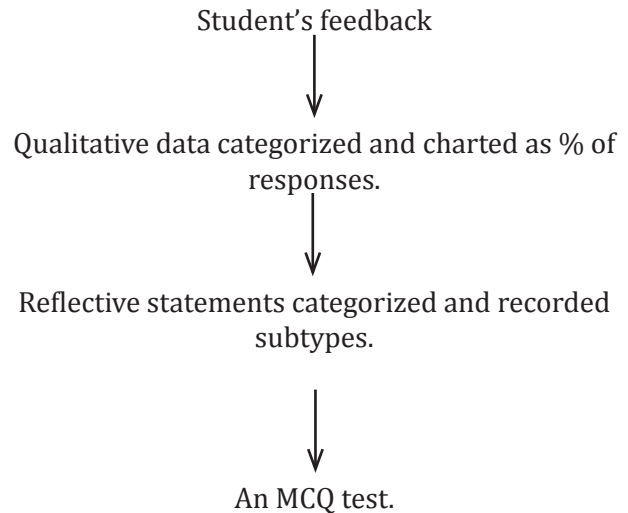
Group B students were divided into three small groups of 25 students each. Each group again is divided into five subgroups of 5 students. The students were asked to prepare the same topic as of Group A. The topic was divided into subtopics and allotted to each subgroup. Randomly selected student was asked to teach their topic in front of large group of 75. Four such sessions were conducted. So, the peer teachers were totally 20 (Each session having five students). Students' feedback was taken at the end of session. Four such sessions were conducted throughout the year. A MCQ test was conducted for both the groups at the end. The outcome was compared by unpaired Student's *t*-test. Level of significance  $<0.05$  was considered as significant. Qualitative data was analyzed by categorization and recorded as percentages of responses. Reflective statements were recorded and categorized into five subtypes.

### Plan of the study

#### STEP I:



#### STEP II:



### Observations and Results

The MCQ test scores were compared. Group A showed a score of 6.60 and Group B showed 7.42. The scores were not statistically significant.

The students' feedback was taken which had closed-ended and open-ended questions. The closed-ended questions were recorded as percentage of responses. According to the students' perception, 53.70% students felt that peer teaching is not stressful and it helped them in their learning. 100% students felt that feedback given after the sessions was very helpful to improve their own knowledge. 98.73% students found the feedback encouraging to self-assess the knowledge. 87.66% agreed to have many more sessions to participate (Table 1).

The students who were attending the peer teaching sessions found it enjoyable (90.77%). 95.39% students tempted to give more attention and 83.76% found it helpful in remembering the topic in better way. Most of the students were motivated to teach by observing the peer teaching sessions (Table 2).

Open ended questions were recorded and categorized in Table 3.

### Discussion

PAL has been effective in learning process, self-directed, and collaborative learning [4]. There have been many attempts to implement PAL in undergraduate [5] and post graduate courses [6–8]. It was accepted that medical graduates must be able to demonstrate appropriate teaching skills.

This study was one more attempt to evidence about the role of PAL in medical education. Our

**Table 1.** Percentage of responses to closed-ended questions by peer teachers ( $n = 20$ ).

Sr. no	Item	Strongly disagree %	Disagree%	Neutral%	Agree %	Strongly agree %
1	I was briefed about teaching skills by the faculty	----	----	----	87.26	12.74
2	Teaching was stressful/taxing	----	53.70	----	34.30	12.00
3	I became more confident about the topic	----	----	10.24	80.56	09.20
4	Teaching enhanced my learning	----	----	----	88.70	11.30
5	I would like to teach again	----	----	12.34	80.40	07.26
6	Feedback was given which was helpful for improving knowledge and teaching skills	-----	-----	-----	02.70	97.30
7	Feedback encouraged to self-assess my knowledge	-----	----	01.27	87.00	11.73

**Table 2.** Percentage of responses to closed-ended questions by Peer listeners,  $n = 55$ .

Sr. no	Item	Strongly disagree %	Disagree%	Neutral%	Agree %	Strongly agree %
1	Class was enjoyable	----	-----	09.23	04.21	86.56
2	Peer teaching tempted to pay meattention	-----	04.61	-----	37.07	58.32
3	By listening to peers I was motivated to teach	-----	-----	-----	56.58	43.42
4	Peer teaching should be encouraged	-----	-----	-----	10.23	89.77
5	Peer teaching is waste of time	67.24	32.76	-----	-----	-----
6	Peer teaching sessions will help to remember the topic in better way	-----	-----	16.24	50.20	33.56
7	Given a chance I would like to teach	-----	-----	02.67	21.10	76.23

**Table 3.** Responses of open-ended questions.

- 1) What was the best part about my experience as a teacher?
  - Self-directed learning
  - Self-assessment
  - Enjoyable
  - Motivating
  - Enhanced learning
- 2) How could I have done better?
  - Better preparation
  - More guidance
  - Alternate teaching media
- 3) What was the best part about being taught by Peers?
  - Interesting
  - Collaborative learning
  - Created interest to learn

institute still follows the traditional tutorial classes. But, as most of these sessions become teacher controlled and lead to absenteeism in such sessions, students feel that tutorial class is just one more didactic lecture where very few interactions take place. So, we planned the activity of interactive PAL ensuring maximum participation.

By feedbacks, we could see that students enjoy the sessions and also improve their team building skills as they have to discuss in small subgroups.

These sessions also improved the student's presentation skills, communication skills, and developed more interest in the subject. Similar observations were seen by Durán et al. [9]. This could help the medical students to develop professionally as they have to act as a source of information for patients, family, and community. By keeping such sessions since beginning of medical curriculum, it helps to develop competent medical graduate.

## Conclusion

PAL provides a valuable opportunity to medical students to learn about fundamentals and gain experience with teaching. This interactive method improves the teaching skills and hence communication skills. Immediate feedback also improves learning. The students attending such sessions are also motivated and found more interested in the learning. PAL sessions, if kept since the beginning and continued throughout, it will definitely help to build the professional competencies. Efforts to keep the records of activity and additional weightage to such sessions should be considered in future.

## Limitations

Inadequate time for planning such sessions resulted in students' apprehension. Long-term effects are not measured in our study.

## Acknowledgments

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