

## Perception of peer teaching on learning anatomy: A qualitative study

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### Abstract

The aim of this study was to identify the effectiveness of peer-assisted learning while giving presentation on assigned anatomy topics in class by medical students for enhancement of their learning and communication skills.

Sixty top performing students were selected for the study. They were given assigned topics related to anatomy to be presented in the class after taking their consent. The duration of the study was 32 weeks.

At the completion of the projects by the students, each of them was interviewed for three to five minutes; the questions were very precise and few in number and were then analysed. Focus group discussions were conducted from the rest of the class who were the audience and enjoyed the activity.

The study showed that by conducting such an activity among medical students their knowledge about the subject, communication and teaching skills and confidence are enhanced. It is a fun activity for them and can be added in the routine timetable for its beneficial outcomes.

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### Introduction

Knowledge is no longer restricted to textbooks and lectures. The student of today have access to journals, the internet resources, educational videos, online conferencing and much more.<sup>1</sup> Team-based learning, problem-based learning, peer-assisted learning and online learning are few of the popular options for acquiring knowledge. Peer-assisted learning (PAL) is practiced in many medical colleges. It has been defined as "the development of knowledge and skills through active help and support among status equals or matched companions".<sup>2</sup> PAL participants say that their experience is enjoyable and beneficial. The type of interaction between the tutor and the tutees is different as

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compared to when an experienced teacher is teaching. PAL tutors are closer to the academic level of the tutees than the expert staff and so they are better able to understand their difficulties. For a tutee, supported learning through interactions with a more experienced peer are very significant.<sup>3</sup> PAL is not meant to replace other learning strategies; however, it is another effective strategy that can be used in medical learning. Participation as a peer tutor should be voluntary, and should include volunteers on the basis of academic performance. It can also be debated that students of greater academic standing may not necessarily be in a better position to assist tutees with difficulties in understanding, as skills in facilitation are important and are not determined by academic ability. There is evidence to suggest that the experience of participating as a peer tutor is more likely to benefit poor performing students and, therefore, they should not be excluded.<sup>4</sup> For this study, good performers were selected so that correct knowledge is imparted as main challenges were proper content coverage and transfer of correct knowledge to avoid misconceptions.<sup>5</sup> The advantages expressed by the participants were strong motivation for students to learn, a source of inspiration, friendly learning environment and conceptual clarity. Published literature claims that PAL results in higher levels of rational thinking and improved interpersonal skills.<sup>6</sup> Many students favour its application in regular teaching practices.<sup>2</sup>

Anatomy is an important section of medical education, as it is critical for the precise analysis of human body organs and systems. The mental interpretation of the shape and organisation of different anatomical structures is a critical step in the learning process.<sup>7</sup> Anatomy is the basis of modern medicine. It is one of the most complex courses in medical curriculum due to the vast levels of knowledge needed and demands for three-dimensional visualisation.<sup>8</sup>

Studies have shown that academic motivation predicts academic performance in college students and includes grades, attendance, and persistence in the study programme. Students whose motivations are more inbuilt do better in school, have lower rates of withdrawal, non-attendance and failure, and are less anxious about

school with higher levels of academic performance.<sup>9</sup>

The objective of the study was to give presentation on assigned anatomy topics to top 20 students of first year, second year MBBS and first year BDS each. At the completion of the project, the students' perception was collected and analysed by taking their feedback to see the role of this project in the enhancement of their learning and social skills.

## Methods and Results

The study was conducted in the anatomy department at Army Medical College, Rawalpindi, with ethical permission. It's a qualitative study with phenomenological descriptive study design. The study was conducted between February 1, 2019 and September 30, 2019. For sampling, "nonprobability purposive sampling" technique was used.<sup>10</sup> Purposive sampling technique is also called 'judgment sampling', as it is the deliberate choice of a participant due to the qualities the participant possesses. For this study, top performers were selected on the summative assessment of the first module. Initially, 20 students from first year MBBS, second year MBBS and first year BDS each were selected. Total number of first and second year MBBS students was two hundred each. BDS first year comprised 50 students; so overall number was 450 students. Due to data saturation, the number of students for second year MBBS was 18 instead of 20, for first year MBBS it was 19 instead of 20 and for first year BDS it was 20. This method may be used to determine when to continue the study to find new themes or stop because of futility.<sup>11</sup>

The participants' consent was taken before hand. As the faculty of the same institution was conducting the study, the element of bias cannot be ruled out. Faculty members also helped the students in preparation of their projects. The students were given assigned topics in anatomy which they agreed to prepare. About two weeks' time was given to each student for preparation, which was considered ample. During that time the students were allowed to interact with their teachers for guidance and help.<sup>12</sup> There was freedom to present the topic as power point presentation or without audio-visual aids on the white board. The duration of the presentation was five to 15 minutes, under the supervision of the facilitators. After the completion of the presentations feedback was taken from the presenters in the form of mini interviews which were recorded and written in the presence of another faculty member. Interview questions were open ended as well as closed ended. Focus group discussions were conducted among the audience.<sup>13</sup> Three groups each comprising eight students were selected on voluntary

basis and the discussions were documented as well as audio recorded.

Inclusion criteria for the participants was the students' performance in the first module in anatomy. Exclusion criteria was poor performing students who couldn't get through the first module exams. Top 20 students were selected in each class and after taking their consent they were assigned the topics. Three students were not willing to participate so three volunteers who were also top performers were then selected with their consent.

The participants were asked the following questions in the mini interview which was a semi-structured interview:

Does this activity improve your learning regarding the topic you gave presentation on?

How will you grade your learning by this activity, from 1-10.

Are there any hurdles you faced during this activity?

Did you find this activity useful?

Will you recommend your friends to take part in such an activity?

As far as the feedback of the rest of the class is concerned, focus group discussions were conducted in which eight students from first and second year MBBS and first year BDS each, who volunteered, were selected on the spot and their group discussion was conducted and recorded by the author along with a co-author. Focus group discussions were held to provide a deep understanding and a clear picture in the minds of the students.<sup>14</sup> The following three open-ended questions were asked from the students in the three focus group sessions in three separate sittings:

1. What are your thoughts about such activity in the class?
2. What are the pros and cons of such activity?
3. Do you want to add something regarding such activity in future?

Anatomy is taught in our institute in the first two years in MBBS and in the first year in BDS along with other basic sciences courses. For MBBS it is taught in three modules each of eight weeks in first year and in second year and for BDS it is in two terms each of 12 weeks in one year. The method of teaching used here includes LGIS, demo and dissection, practical, CBLs, PBLs and SDL.

Interviews were conducted in mixed English and Urdu. Data was analysed by the first author and then verified by another person who was not involved in this research. A

**Table:** Responses of participants.

Sr No.	Theme	Subtheme	Responses of the participants
1	Improve academic self-concept	By enhancing of their confidence. Enhanced their communication skills. Alleviate stage fright.	'Learning improves when you have to present the topic you put maximum efforts and focus on each & everything when you have to face the audience'. (ID 09) 'Yes as you have to thoroughly study the topic'. (ID 08) 'I will recommend it to my friends as it improves confidence and public speaking' (ID 01) 'No hurdles except making the presentation and Public speaking was frightening' (ID 04)
2.	Motivating towards self-directed learning	Searching more information on internet browsing. In depth learning	'I consulted different books as I didn't want to miss any point so I worked hard for it', (ID 02) 'It enhanced long term memory regarding that topic also it improved long term learning, use of pneumatic for memorizing etc.' (ID 05) 'you remember what you have presented environment is comfortable when teaching your peers'. (ID 014) 'I will not recommend as I had to integrate with my time tables'.
3.	Understanding of a teacher's hard work	Realization of a teacher's hard work	

third-party thematic analysis was performed to triangulate the results.<sup>15</sup> The Head of Anatomy department (Brigadier Khadija) helped a lot in the process of data interpretation and triangulation of the study.

The responses of the tutor students is shown in Table. Majority (43/57, 75%) of the students thought it improved their learning regarding that particular topic. A few (23/57, 40%) students responded that they were unsure whether it improved their learning or not and one to two students said it did not or just a little. As for grading their learning by this activity from 1-10 is concerned, majority (54/57, 93%) of the students graded it above 7/10 and just a few (3/57, 5%) graded it 5/10 and 6/10. More than half (35/57, 61%) of the students said they didn't meet any hurdles during this activity, while facing the audience, time management, unfamiliarity with Microsoft power point were few of the hurdles that some students faced. Many (47/57, 82%) students said that they will recommend their friends to take part in such an activity, while a few (9/57, 16%) were unsure about this idea. Few students (1/57, 1%) said they will not recommend their friends to take part in this activity. About the significance of the activity the response was that it improved their learning by motivating them for putting in hard work. It encouraged self-directed and deep learning and enhanced creativity while preparing power point presentation.

**Focus group sessions of the audience:** Three fourth (17/24, 70%) of the audience in focus group discussion said that concepts were not cleared as is done by the experienced faculty. Three fourth (18/24, 75%) of the audience said that selection of students should be random and not based on academic performance and every student should be given a chance. Three fourth

(17/24, 70%) of the students said it was a good activity for the reinforcement of knowledge, but new topic should be taught by the experienced teachers. Students teach with their limited scope without correlating their knowledge as compared to the experienced staff. More than half (15/24, 63%) of the focus group participants said that only the tutors are benefited. About half of them (10/24, 40%) said some acknowledgment should be given at the end for motivation. Few students said that the tutors were not confident enough.

Responses of the audience in the form of focus group discussion showed that:

'There was improved learning as there is same level of understanding as the audience so the tutor explains the topic better. It was interesting as the tutor is a peer.' (ID 15)  
'Just cramming no concepts were delivered; they just delivered lecture no explanation was given'. (ID 17)

'Interesting activity, good memories and good for reinforcement of topic already taught'. (ID 22)

It was suggested that the selection should be random. It should not be on voluntary basis but the facilitator should select the students. 'Selection should be random so that not just the top performers but mediocre students are also selected for the activity'. (ID 02). 'Selection of students should not be on result basis but it should be randomly done'. (ID 35)

'All should be allowed and should be more organised'. (ID 43)

Only minor topics should be taught. 'Anatomy is a difficult course and facilitators can correlate the topics and teach better so when students are tutors small and easy topics should only taught by them.' (ID 03) 'Prior intimation to the class should be

given so that they come prepared and better question and answer session could be conducted'. (ID 26)

Tutors are benefited more. 'Only the presenter does the hard work and benefited as far the learning is concerned.' (ID 11) 'Only the presenter is benefited; it can improve the presentation skills so all should be included. It should not be on voluntary basis'. (ID 52)

'Students should be encouraged by acknowledging the presenter by giving some appreciation certificate, etc.'

## Conclusion

Perception of faculty and students about peer teaching in medical education is that it enhances teaching and communication skills and confidence of medical students. It was a fun activity and both the presenters as well as audience enjoyed it.

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**Conflict of Interest:** None to declare.

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