

The role of medical student's feedback in undergraduate gross anatomy teaching*

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Abstract

Objectives: Teaching gross anatomy to undergraduate students has always been challenging as it lays the foundation for subsequent understanding of clinical teaching. Constant evaluation and re-evaluation, along with updating and remodeling is required to prepare an appropriate and effective clinical based, integrated gross anatomy curriculum. Feedback obtained from students is an essential tool in the process of evaluation of teaching and learning in any institution. Analysis of feedback from students along with inputs from teachers and reflections of teaching bodies can help to achieve appropriate modifications in the course content and teaching methods.

Methods: This study was conducted in the form of an anonymous survey. Six hundred medical students from the 2nd to 9th semesters participated in this study. A questionnaire was circulated amongst them during college hours. The questions in the questionnaire were based on the course content, methods of teaching, quality of teaching, teaching tools, mode of assessment of students, and suggestions to improve the quality of the curriculum in relation to gross anatomy.

Results: Majority (99%) of the students were willing to participate in the survey and gave their honest opinion. It was noted that, though majority of the students liked the subject and the course content, they did not like the methods and tools of teaching. A large number of students (89%) suggested that evaluation should be conducted for each course at the end of the semester.

Conclusion: Feedback by students can play an important role in modification, reconstruction and delivery of an effective, integrated gross anatomy course. Student's feedback in gross anatomy teaching suggests that learning process can be improved if better teaching methods are adopted; latest teaching tools are used along with more interactive teaching sessions between students and faculty.

Keywords: gross anatomy teaching; student's feedback; student's role

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Introduction

Faculty members are an integral part of any educational institution and they contribute directly or indirectly towards the academic program of the department and the institution. Direct contributions of faculty are to facilitate student learning with effective instruction and personal involvement, while indirect contribution is in the building of the department. Evaluating faculty effectiveness is important in nearly every institution of higher education. Student's feedback or rating is an important tool in assessing and reviewing instructional effectiveness and assessment methods in medical education.^[1,2]

Few authors in the past^[3-7] have reported certain misconceptions about students' ratings for example, students cannot make consistent judgment, students ratings are unreliable and invalid, students just want easy courses etc. These, however, have not been supported with research.^[2] Marsh and Dunkin (1992)^[8] and Feldman (1989a)^[4] reported median and average correlation of student's rating and self-rating by instructor. Kulik and McKeachie (1975)^[9] showed that student's rating correlates with administrators moderately. They further demonstrated a moderate correlation of peer faculty rating with students rating. McKeachie (1979)^[10] and Centra (1993)^[11] reported that neither age of the student

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nor the students level (1st year, 3rd year or intern) had any effect on students rating. There is no effect of gender on student rating.^[4] Therefore, various authors and research have concluded that reliability and credibility of student's feedback is quite high.

Analysis of student feedback helps to apprise the faculty of the needs of students, lacunae and strength of teaching and learning process, besides helping to evaluate the effectiveness of teaching and learning methods.^[12-16] Thus, student feedback is an effective tool that contributes to the improvement and modification of curriculum of any subject.

The present study was undertaken to analyze students' feedback in gross anatomy teaching in Gujarat Adani Institute of Medical Sciences, Bhuj, Gujarat.

Aims and objectives were,

- to find out the students' response to the adequate coverage of course content in lectures,
- to find out the students' response with regards to appropriateness of teaching methods used in lectures of gross anatomy,
- to find out the students' response towards quality of teaching in lectures of gross anatomy with regards understanding of subject,
- to find out the students' response to the use of appropriate and latest available teaching tools in lectures, demonstrations and dissection hall, and
- to find out the students' response to the mode of assessments used.

Materials and Methods

This study was conducted in the form of an anonymous survey in Gujarat Adani Institute of Medical Sciences, Bhuj, Gujarat, India, from August 2014 to January 2015. Six hundred medical students belonging to the 2nd, 3rd, 5th and 9th semesters participated in this study. A questionnaire based on Likert's five points scale was circulated amongst them during college hours after obtaining due permission from Institutional Ethics Committee and obtaining consent from students. The questions in the questionnaire were based on the coverage of course content, methods of teaching, quality of teaching, teaching tools used, mode of assessment of students and suggestions to improve the quality of the curriculum in relation to gross anatomy teaching. Questions were validated by 3 faculty members from department of anatomy and 3 faculty members from department of medical education. Questionnaire is attached as **Table 1**. The responses obtained from questionnaire were analyzed in regard to following attributes:

- Coverage of course content (Question number 1, 2 and 3)
- Methods of teaching (Question number 4, 5 and 9)
- Quality of teaching (Question number 6, 7, 8 and 16)
- Teaching tools used (Question number 10, 11 and 12)
- Mode of assessment of students (Question number 13, 14 and 15)

The feedback for each attribute was analyzed with the help of responses of predetermined three questions except quality of teaching where 4 questions were included. Response 1 and 2 of each question were clubbed together and considered as inadequate or dissatisfactory. The response "3" was considered neutral or median bias as per Likert's scale. Response 4 and 5 were clubbed together and considered as adequate or satisfactory. Suggestions by the students to improve gross anatomy teaching in response to question 17 were included in Discussion.

Results

Out of 600 students, 590 students (99%) responded to the questionnaire. Students' responses to the questionnaire are shown in **Table 2**.

Students' responses for the coverage of content and methods of teaching as poor, fair, good, very good and excellent are shown in **Figures 1** and **2**. Students' responses for teaching tools, quality of teaching and mode of assessment for students for learning input are shown in **Figures 3-5**.

Discussion

Students' feedback has been shown to be a relatively reliable and consistent method of assessing teaching-learning process and its effectiveness.^[17] It is also inexpensive and easy to obtain. In the present study, 590 students, meaning 99% of the students, responded to the questionnaire. Various studies have also shown more than 90% response by students.^[18-20]

In the present study, more students (35% in comparison to 21%) were satisfied with the coverage of content in lectures. This is similar to the observations of Rafique and Rafique^[20] who stated that majority of students were satisfied with the content, oration, explanation and language used. Nagar^[21] also showed that around 80% students believed that the lectures and tutorials taken by teachers were adequate.

Studies^[18,19] have shown that most students found practical demonstrations and practical work helpful in

Table 1
Student's feedback questionnaire - gross anatomy teaching.

STUDENT'S FEEDBACK QUESTIONNAIRE - GROSS ANATOMY TEACHING						ROLL NO.	_____
Please grade the following as 1-Poor, 2-Fair, 3-Good, 4-Very Good, 5-Excellent.						Semester	_____
S. No.	Questions	1	2	3	4	5	
1	Coverage of important and relevant content of the topics taught in lectures.						
2	Teaching of clinical correlation wherever relevant in lectures.						
3	Flow of lectures clearly explained the content which helped you to understand the topic well.						
4	Highlighting of important points during lectures that helped you for further study in each topic.						
5	Explanation of the concept behind any statement in gross anatomy in lectures and demonstrations.						
6	Encouragement and freedom of students to ask questions and give answers during lectures.						
7	Delivery and pace of lectures was suitable to the level of your understanding in the class.						
8	Lectures and demonstrations were taken in a way that stimulated interest in the subject and encouraged you to study further.						
9	Supplementation of each session of dissection with suitable instructions that helped in proper identification and study of various structures.						
10	Readability and easy to follow concepts and facts from displayed lecture material.						
11	Usefulness of displayed teaching material e.g. illustrations and photographs in relation to content of lectures.						
12	Innovative tools like videos, animations and clinical case presentations that were included in lectures and demonstrations to help provide understanding of the topic.						
13	Assignments given during the semesters helped you to understand and learn the subject of gross anatomy.						
14	Assessments conducted in the form of written examinations (multiple choice questions and short answer questions) served the purpose to make you aware of your grasp of the subject.						
15	Assessment conducted in the form of viva voce examination helped you to improve your subject knowledge and application skills.						
16	Availability of teachers of department of anatomy to solve subject queries beyond teaching hours.						
17.	What suggestions would you like to give to improve teaching of gross anatomy? Please write in maximum two sentences.						

learning and these helped solve most of their queries. Rani observed that 71.6% students stated that learning anatomy by utilizing skills like drawing diagrams improved their understanding.^[22] In our study, most of the students were dissatisfied with the method of teach-

ing by teachers. They rated the method of explanation and highlighting of important points in lectures and the demonstrations during dissection sessions as unsatisfactory. Majority of students responded that the teaching methods, quality of teaching and teaching tools were

Table 2
Students' responses to the questionnaire as inadequate/dissatisfactory and adequate/satisfactory.

Semester	Attribute	Inadequate/Dissatisfactory % responses (1+2)	Adequate/Satisfactory % responses(4+5)
1	Coverage of content (Fig.1)	21.1%	35%
2	Methods of teaching (Fig.2)	38.5%	23.9%
3	Quality of teaching (Fig.3)	33.65%	31.3%
4	Teaching tools used (Fig.4)	35.25%	25.7%
5	Mode of assessment (Fig.5)	28%	36.3%

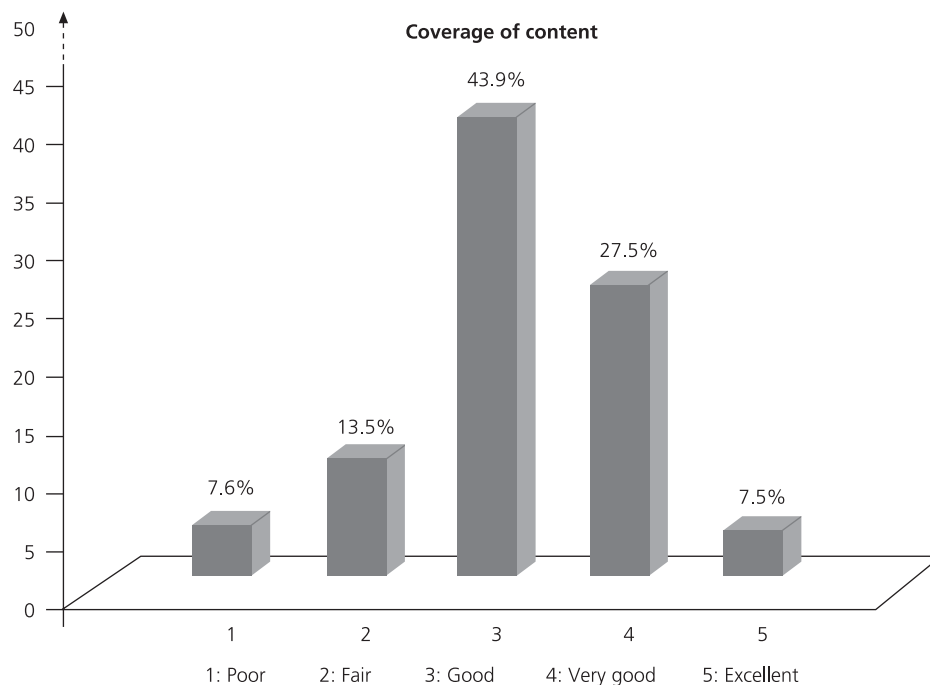


Figure 1. Students' responses for the coverage of content as poor, fair, good, very good and excellent.

inadequate in subject of gross anatomy. This is similar to the findings of other studies,^[18,20,21] in which most of the students were in favor of using multimedia like LCDs

with power point presentations as teaching tools, instead of traditional methods of teaching like blackboard or overhead projectors.

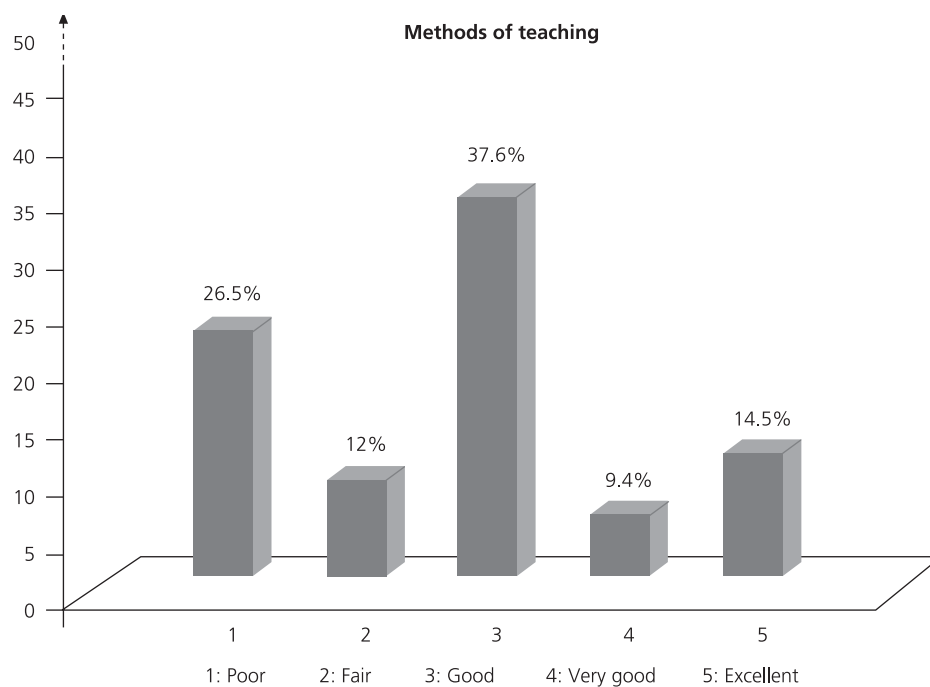


Figure 2. Students' responses for the methods of teaching as poor, fair, good, very good and excellent.

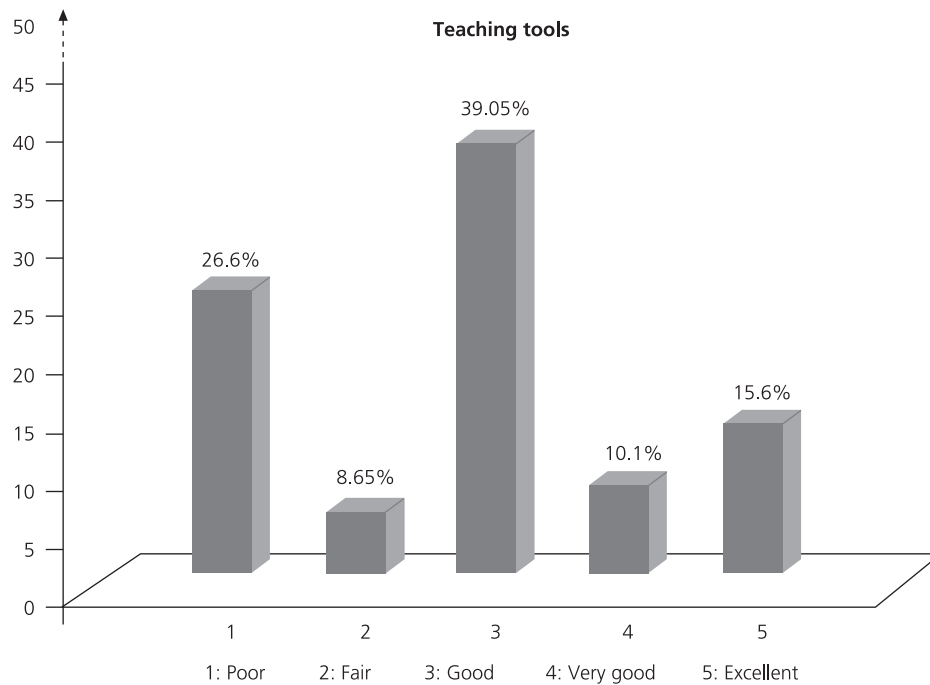


Figure 3. Students' responses for teaching tools as poor, fair, good, very good and excellent.

Majority of responders in the present study were satisfied with the mode of assessment in subject of gross anatomy. Rafique and Rafique^[20] observed that 75% of

the students felt that the multiple modes of assessments, that is MCQs plus short essay type questions and viva etc., improve their knowledge and skill. Larvalmawi et

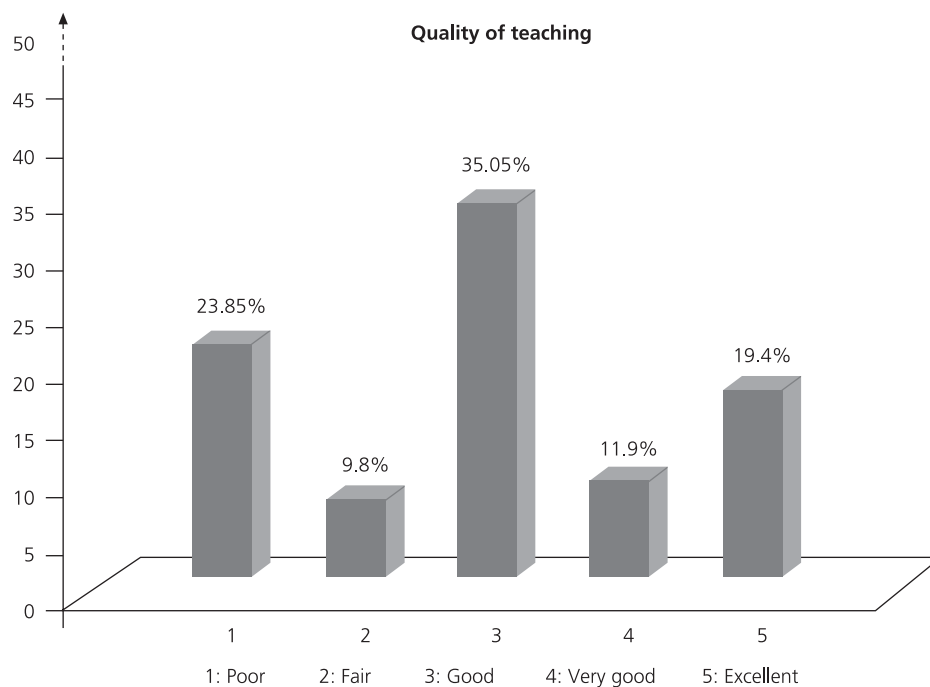


Figure 4. Students' responses for quality of teaching as poor, fair, good, very good and excellent.

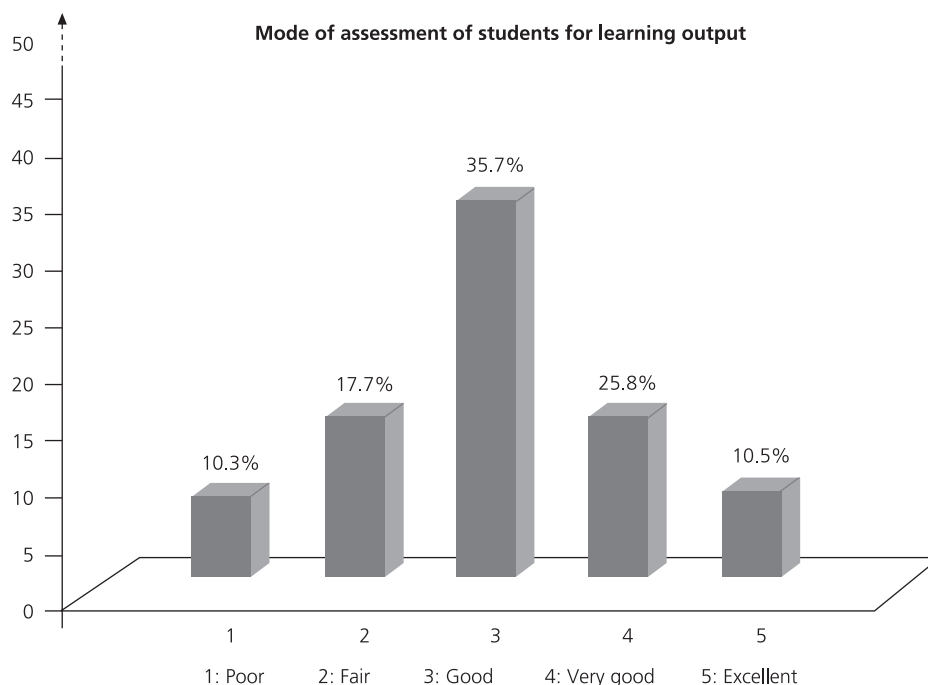


Figure 5. Students' responses for mode of assessment of students for learning input as poor, fair, good, very good and excellent.

al.^[19] reported that 79% students rated the assessments in the form of weekly tutorials as most useful form of assessment which helped prepare for final examinations which is similar to findings by Nagar et al.^[21]

In response to Q. No. 17, students responded with following suggestions:

- Lectures should be more interactive.
- More audio visual aids should be included.
- Teaching with the help of videos can help them to learn gross anatomy better.
- Majority of the students suggested that assessment should be done for each course after the end of semester.

These responses are similar to various studies that have included students suggestions in the questionnaire.^[18,22] The most important points highlighted by the students in these studies were to make the lectures more interactive, help understand concepts rather than just stating facts, use multimedia more and in better form, ensure friendly atmosphere, and to hold frequent assessments.

Conclusion

Feedback by students can play an important role in modification, reconstruction and delivery of an effective,

integrated gross anatomy course. Student's feedback in gross anatomy teaching suggests that learning process can be improved if better teaching methods are adopted; latest teaching tools are used along with more interactive teaching sessions between students and faculty.

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