

Involving postgraduate's students in undergraduate small group teaching promotes active learning in both

Ruchi Kalra, Jyoti Nath Modi, Rashmi Vyas¹

Department of Obstetrics and Gynaecology, People's College of Medical Sciences and Research Centre, Bhopal, Madhya Pradesh, India, ¹Foundation for Advancement of International Medical Education and Research, Philadelphia, USA

ABSTRACT

Background: Lecture is a common traditional method for teaching, but it may not stimulate higher order thinking and students may also be hesitant to express and interact. The postgraduate (PG) students are less involved with undergraduate (UG) teaching. Team based small group active learning method can contribute to better learning experience. **Aim:** To-promote active learning skills among the UG students using small group teaching methods involving PG students as facilitators to impart hands-on supervised training in teaching and managerial skills. **Methodology:** After Institutional approval under faculty supervision 92 UGs and 8 PGs participated in 6 small group sessions utilizing the jigsaw technique. Feedback was collected from both. **Observations:** Undergraduate Feedback (Percentage of Students Agreed): Learning in small groups was a good experience as it helped in better understanding of the subject (72%), students explored multiple reading resources (79%), they were actively involved in self-learning (88%), students reported initial apprehension of performance (71%), identified their learning gaps (86%), team enhanced their learning process (71%), informal learning in place of lecture was a welcome change (86%), it improved their communication skills (82%), small group learning can be useful for future self-learning (75%). Postgraduate Feedback: Majority performed facilitation for first time, perceived their performance as good (75%), it was helpful in self-learning (100%), felt confident of managing students in small groups (100%), as facilitator they improved their teaching skills, found it more useful and better identified own learning gaps (87.5%). **Conclusions:** Learning in small groups adopting team based approach involving both UGs and PGs promoted active learning in both and enhanced the teaching skills of the PGs.

Key words: Postgraduate, small group learning, undergraduate student

Submission: 22-04-2015 **Accepted:** 20-06-2015

INTRODUCTION

Lecture is the most commonly used traditional method for teaching and learning. It has the inherent advantage of addressing and providing knowledge to a large group in a

short period of time. However, there are some limitations. Didactic lectures may not stimulate higher order thinking and students may also be hesitant to express and interact.^[1] The students do not get enough opportunities to identify their "Learning Gaps" or to develop self-directed learning skills. Team based active learning methods contribute to a better learning experience with the emphasis on small group teaching and learning.^[2] Small group teaching does require more resources in terms of space and facilitators. In

Address for correspondence: Dr. Ruchi Kalra,
Department of Obstetrics and Gynaecology, People's College
of Medical Sciences and Research Centre, Bliunpur, Bhopal,
Madhya Pradesh, India.
E-mail: drruchi.kalra15@gmail.com

Access this article online	
Quick Response Code:	Website: www.ijabmr.org
	DOI: 10.4103/2229-516X.162256

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How to cite this article: Kalra R, Modi JN, Vyas R. Involving postgraduate's students in undergraduate small group teaching promotes active learning in both. Int J App Basic Med Res 2015;5:S14-7.

medical colleges, the postgraduate (PG) students have limited involvement with undergraduate (UG) teaching and learning so they miss the opportunities to learn by themselves and develop teaching skills.^[3] If the PG students could be involved in small group teaching of UGs, it may serve as a good learning experience for both.

With these objectives in mind, the present study was planned to - promote active learning skills among the UG students by using small group teaching methods for theory classes; involve PG students in UG small group teaching as facilitators so as to impart hands-on and supervised training to the PGs in teaching and managerial skills.

METHODOLOGY

The study was initiated after obtaining the necessary approvals and a waiver of the consent form. The study participants were 92 UG students of the final year of medical college. Eight PG students of obstetrics and gynecology were recruited as facilitators for UG small group teaching modules. The entire process of small groups formation and the activity was described *a priori* to all UG students by power point presentation and they were motivated to actively participate in the sessions. The PG students were familiarized with effective facilitation skills. They were described how to initiate conversation, create a climate of supportive learning, encourage everyone to participate and manage the time effectively. A feedback questionnaire was prepared which was peer reviewed and pretest validation was done. One session of small group activity was conducted with 30 prefinal UG students. Immediately after the session feedback questionnaire was given to all the participants. Cronbach's alpha value was calculated as 0.8 that suggested good internal consistency of the questionnaire. Subsequently, six topics in obstetrics and gynecology were taught utilizing the small group jigsaw technique. A week prior to the scheduled class, the UG students were divided into six small groups depending on the topic and each group was given a portion of the topic to read

about. On the scheduled day, each of the group first discussed the subtopic within their group for about 20 min with the help of the facilitator. Then, the groups were reshuffled and six new groups were formed where there was a member from each of the initial groups. They then discussed each subtopic within each group for about 20 min with the help of the PG student facilitator. The faculty supervised the discussions moving from group to group. A feedback (using a questionnaire with 5-point Likert scale response and few open ended questions) was taken from UG students with regards to their comfort with the method, perceived benefits/limitations, satisfaction with the study session, perceived learning. A feedback (through questionnaire) was also taken from the PG students who facilitated the discussions with respect to their confidence in handling an UG student's small group and the perceived enhancement of their teaching skill. Chi square test was applied, results found to be statistically significant.

RESULTS

Undergraduate feedback analysis

This has been described in details in Table I and summarized here. Small group learning (SGL) was a good experience as it helped in better understanding of the subject. Students explored multiple reading resources related to the topic. They were more actively involved in their own learning as compared to the didactic lecture. Students felt more confident of learning a topic of their own. It generated their interest in the subject. Students also reported feeling apprehensive before the session. Small group sessions better helped them in self-assessment by identification of learning gaps in a clear way. Team based learning enhanced their learning of the topic. An informal environment in place of formal classroom was a welcome change to break the monotony. Students perceived that learning in small group enhanced their communication and articulation skills. Majority agreed that it is a useful technique for future self-directed learning. SGL should be regularly carried out in all the subjects.

Table I: Analysis of the feedbacks from undergraduate students (values in percentage)

Questionnaire item	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
Understanding of the subject	29	43	17	9	2
Multiple resource exploration	25	54	11	8	2
Active involvement in self-learning	38	50	7	5	0
Confident of learning about topic	29	49	16	6	0
Initial apprehension of performance	14	57	19	10	1
Interest generation in the topic	26	52	12	9	1
Learning gaps identification	29	57	9	5	0
Team learning enhanced the topic learning	27	44	17	10	2
Informal learning in place of lecture was a welcoming change	39	47	5	8	1
Improved communication skills	29	52	14	4	1
Small group learning can be useful for future self-learning	26	49	17	7	1
Small group learning be practiced regularly in all subjects	33	30	13	19	5

Chi-square test for uniform distribution was applied and result was found to be statistically significant ($P < 0.001$)

Responses of open-ended questions favoring small group learning

Some of the comments from the students were: (1) “Good experience as many of the topics were clarified.” (2) “After these sessions I am more confident of learning by myself.” (3) “As compared to a lecture I found it as a really nice method as everyone can share their knowledge with others and enhance each other’s knowledge.” (4) “SGL helps in conveying our doubts more clearly than the traditional lecture method.” (5) “More effective in memorizing things.”

Responses of open ended questions favoring traditional lectures

Some of the comments from the students were: (1) “Traditional lecture method is good as when teacher teaches she gives full knowledge of the topic and also shares her experiences which is lacking in SGL.” (2) “It is better to go with lecture type... No it is not effective.” (3) “It was not very fruitful, No I would not like to attend.” (4) “It’s better to learn by a teacher rather than learning things by us, we need at least first teaching from teacher.” (5) “I personally think that knowledge given by the teacher is more useful, there are students who are reluctant to learn and speak out in front of everyone, I am one of them and like normal learning process, I like traditional lecture method.”

Postgraduate feedback analysis

This has been described in Table 2 and summarized here: All PGs except one had performed the role of facilitation for the first time. Majority perceived their performance as good. All PGs agreed that role as facilitator helped them in self-learning. All of them agreed that as facilitator they were more confident of managing students in small groups. These small group sessions helped them to improve their teaching skills. Majority participants agreed upon more usefulness of SGL over the traditional lecture method as it promotes student autonomy and student-centered learning. Majority also agreed that SGL helped them better in identifying their own learning gaps.

Responses to open-ended questions by the postgraduate students

Some of the comments from the students were: (1) “I felt it to be more communicative, interactive and interesting too, as compared to traditional lecture, topic, we studied in more

detail, it was a good activity.” (2) “UG participants should more actively participate. Time of class should have been more.” (3) “It was more interactive as compared to traditional lecture as students do not hesitate in asking questions and clearing their doubts.” (4) “The sessions will be helpful if prior teaching is conducted to clear their ideas about new topics so that better discussion is possible as students conveyed they were finding it difficult to understand new topic by them.”

DISCUSSION

Education in medical colleges is experiencing a paradigm shift by moving from teacher centered to more learner centered, from being more passive to active learning and also from individual learning to group learning.^[4] This novel flipped team based collaborative learning approach has now become the focus of our interest. In flipped classrooms the students become active learners and are more involved in the role of self-learning. Here, the learning responsibility is placed on the shoulders of the students. They are benefited as they become a lifelong self-learner and also identify their learning gaps in a better way.^[5,6] Team based learning in small groups promotes collaborative learning, interpersonal skill development and improvement of communication skills.^[7-10] The lectures were replaced by small group sessions in the study and students showed a preference for this SGL sessions.^[11] In a series of studies involving learning groups, simply hearing someone explain a set of concepts, as in listening to lecture, or reviewing notes that expose a student to new information, seem to have minimal effect on learning. But students who had to explain the information to their peers, a process that forced them to reconcile the inconsistencies in their understanding to answer their classmates’ questions, increased their learning. Requiring students to apply higher-level thinking skills to the information (i.e., solving problems) further increased their long-term ability to recall the information. Therefore, learning tools, like teaching others and solving problems, that require students to be actively engaged in the education process seem to increase the amount of information one learns. Learning in teams where students work together to

Table 2: Analysis of the feedbacks from postgraduate students (values in percentage)

Questionnaire item	Yes	No			
First experience as facilitator	87.5	12.5			
Performance as facilitator role	Very good 0	Good 75	Average 25	Poor 0	Very poor 0
Facilitation enhanced self-learning	Strongly agree 25	Agree 75	Uncertain 0	Disagree 0	Strongly disagree 0
Better subject learning	25	50	25	0	0
More confident managing students in small groups	50	50	0	0	0
Facilitator role improved their teaching skills	25	62.5	12.5	0	0
Small group learning more useful than traditional lectures	37.5	50	12.5	0	0
Small group learning provides students autonomy and student centered learning	12.5	62.5	25	0	0
Small group learning helped better in identifying the learning gaps	12.5	75	12.5	0	0

solve a problem or learn a complex topic seems to achieve this active engagement.^[12] The students in the present study were more actively involved in their own learning process, felt more confident, explored multiple reading recourses, they could do better self-assessment by identifying their learning gaps and the small group teaching activity could generate their interest in the topic. The in-depth understanding of the subject was better. Small group sessions, give the opportunity to the introvert students to interact with their peers and enhance their learning and communication skills.^[13] The present study of educational research has taken team based approach and involved the PG students in small group teaching as facilitators.^[14-16] This helped the PG students to improve their teaching skills, they felt more confident in teaching small groups, as they had to read and prepare for the class prior, it fostered their own learning also.

CONCLUSIONS

Learning in small group discussions adopting a team-based approach, which involved both UG and PG students, promoted active learning in both. It also enhanced the teaching skills of the PG participants.

Acknowledgments

My sincere thanks to CMCL-FAIMER faculties, senior fellows and my batch mates. I am also thankful to the Honorable Dean, Head of the Department, faculties PG and UG students of my institute.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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