

Use of Small Group Teaching in Underperformers of Class Tests in Biochemistry

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INTRODUCTION

By definition, a small group is a number of people who interact in a face to face situation. About 8-12 is an optimal number. Small group work is a method for generating free communication between the group leader and the members and among all the participants themselves. The faculty who acts as the group leader is a facilitator, allowing the participants to express themselves [1]. It can give the students the chance to monitor their own learning [2].

Formative assessment in the form of class tests is conducted by our Biochemistry Department for the first year medical (MBBS) students. However, a few students underperformed in the initial class tests on relatively easy topics. It was observed from previous batches that the students who underperformed in all class tests, including those on relatively easy initial topics, showed poor academic performance in the final, end of the year examination.

Small group teaching methods can give an opportunity to the underperformers of the initial class tests to improve the subject understanding in a less formal environment. Hence, the small group teaching activity was planned as an early intervention in these medical undergraduates with the objective to help academic improvement in the forthcoming class test and to bring about a positive change in the way that they learn Biochemistry.

METHODS

This study was conducted in the Biochemistry Department of Smt. Kashibai Navale Medical College, a medical school which is located in Pune, Maharashtra state, India. The Institutional Ethical Committee's approval was obtained. This study included the first year medical students of the year 2010-11 batch. They were considered as underperformers of the class tests, based on the following criteria:

1. Attended classes from the beginning of the academic sessions.
2. Appeared for class tests 1 and 2, both.
3. Scored $\leq 35\%$ marks in the class test 2 (i.e. ≤ 7 out of 20 marks)
4. Scored $\leq 50\%$ marks in the class test 2, but had scored $\leq 35\%$ marks in the class test 1.

The number of participant students was ten. Initially, individual counseling was carried out. Seven sessions of group activity were held over a period of 2 weeks between the 2nd and 3rd class tests, each session lasting for about 40 minutes after the college hours. The topics of the 3rd class test i.e. Chemistry of Enzymes and Vitamins were chosen for the group activity.

Group structures such as group rounds, pair and share and snowball groups were used as the teaching/learning activity [2]. The students were encouraged to participate actively and to

communicate freely with the faculty who acted as the facilitator and also with each other regarding the subject matter.

These students then appeared for class test 3 along with other students of their batch. After a period of 6 weeks, a feedback questionnaire, as shown in [Table/Fig-1], was administered to the participant students, in which they were instructed to tick the appropriate choice.

RESULTS

The marks which were obtained in the class test 2 (before intervention) and in the class test 3 (after intervention) were compared by using the paired 't' test. The difference in the marks which were obtained was not significant ($p > 0.05$), as shown in [Table/Fig-2].

SN	Item	Yes	No
1.	Did you attend the small group activity regularly ? (Tick the appropriate answer)		
2.	Did not attend regularly because (Tick your choice from the following)		
	a. Fear of speaking subject matter		
	b. Did not want to study on regular basis as there is lot of time before final exam		
	c. Did not understand lectures		
	d. Would have preferred talking by the teacher		
3.	Attended regularly because (Tick your choice from the following)		
	a. I wanted guidance to do well		
	b. I could ask my doubts		
	c. I liked interaction with teacher		
	d. I liked interaction with fellow students		
	e. Learning to talk about different concepts is important		
4.	Positive change, if any, experienced due to participation (Tick your choice from the following)		
	a. Have become more attentive during lectures		
	b. Give more attention to subheadings of any topic		
	c. Study more seriously than before		
	d. Study more regularly than before		
5.	Any additional reasons and your comments		

[Table/Fig 1]: Feedback questionnaire from students who participated in small group teaching

Before Intervention	After Intervention
7.3±1.859	7.35±2.593*

[Table/Fig 2]: Comparison of Class test marks of participant students before and after intervention (n=10).

Values expressed as Mean ± S.D.; * Non significant ($p > 0.05$).

However, improvement was noted by the faculty member in the way of answering, in case of a few students.

5 students out of 10 students did not attend a few sessions. All 5 gave the reason of fear of speaking and the preference of the teacher's talking as their reasons for the irregular attendance, in their feedback response. The remaining 5 students attended regularly because they wanted guidance to do well and they could ask their doubts. A majority of the students became more serious regarding their study and also started being more attentive during the lectures, according to their feedback responses.

When the students were asked to give their own comments, they wrote, 'I have become more interested in this subject', 'Now I can speak confidently in the viva-voce', 'I can ask my doubts to teachers', 'I got useful guidance for writing' and 'It helped to improve my study pattern.'

DISCUSSION

Some of the participant students attended irregularly in spite of individual counselling. They did not want to be helped. A

similar finding was noted by G.S.Prema in her study on the low achievers of internal assessment [3]. Also, absenteeism may be symptomatic of the low achievers [4]. No overall improvement was observed immediately in the total score in the class test after the intervention, but an improvement was observed in the way in which an attempt was made to write the answers.

The students seemed to prefer passive learning, as was evident in their feedback responses. However, the attitude of a majority of the students towards their studies had become more positive according to the feedback which was taken from the participant students after a period of 6 weeks.

Thus, such small group activity can bring about an improvement in the subject learning. However, some students may be having a learning handicap, which needs to be resolved.

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