

# Effect of students' seminar as a revision strategy in biochemistry among I MBBS students in a medical college in Tamil Nadu



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## ABSTRACT

**Background:** Small group teaching is one of the components of competency-based medical education which was implemented in 2019 by NMC. Seminar is one of the methods of small group teaching which increases the engagement of students, self-directed learning, communication skills, and peer discussion. **Aims and Objectives:** The present idea is to study the effect of students' seminar as a revision strategy in Biochemistry among I MBBS students. **Materials and Methods:** After obtaining the IEC approval, I MBBS students who are 250 in number will be divided into small groups. Each group will be given a particular seminar topic. All the students in the particular group will be instructed to present the topic on random basis. A total of 15 seminars will be conducted on particular topics. Pre-tests and post-tests (immediately after the seminar) will be conducted after the seminars along with pre-test and post-test questionnaires will be obtained and collated to understand how far the student's acceptance of students' seminar and its effectiveness. **Results:** Our study results showed that there is an increase in the percentage of marks in the post-evaluation and also more than 70% of the students responded positively to most of the queries in the feedback questionnaire. **Conclusion:** Our study results showed that there is an increase in the percentage of marks in the post-evaluation and also more than 70% of the students responded positively to most of the queries in the feedback questionnaire.

**Key words:** Student's seminar; Pre- and post-test; Effectiveness

## INTRODUCTION

Teaching methods in medical education in India have to be improvised to make the subject interesting and should be more participatory for the students.<sup>1</sup> Small group teaching is one of the components of competency-based medical education which was implemented in 2019 by NM. Seminar is one of the methods of small group teaching which increases the engagement of students, self-directed learning, communication skills, and peer discussion.<sup>2</sup> Seminar enables a group of people to gather at a particular place and to learn specific topics.

There is a shift in the focus of medical education from student-centered didactic methods to student-centered

teaching-learning methods which play an important role in the comprehension of the concepts by MBBS students. A variety of small group teaching methods such as students' seminars, group discussions, flip classes, and problem-based learning sessions are employed periodically in the medical curriculum.<sup>3</sup>

Seminar enables multi-angle interaction between students and teachers which helps to achieve harmonious unification of teaching and learning. Studies have shown that when students engage in discussions, there is an enhancement of learning from active to passive mode.<sup>4</sup>

With this background, the present idea is to study the effect of students' seminars as a revision strategy in biochemistry among I MBBS students.

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**Table 1: Pre-test evaluation according to Likert scale in percentages**

Feedback Questionnaire n=250	Strongly agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)
Will a seminar be a good academic activity?	36	18	13	22	11
Will the seminar be informative?	41	17	10	21	11
Will the seminar be interactive?	38	15	8	20	18
Will the seminar be helpful in learning the topic?	40	14	8	21	17
Will the seminar help in group activity?	38	17	7	22	16
Will the seminar help in developing communication skills?	39	19	6	22	14
Are the selected topics helpful and relevant?	40	19	5	22	15
Would you like to recommend this activity as a routine for your colleagues?	40%	18	6	20	15

**Table 2: Post-test evaluation according to Likert scale in percentages**

Feedback Questionnaire n=250	Strongly agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)
Was the seminar a good academic activity?	47	24	8	13	8
Was the seminar informative?	52	20	6	16	5
Was the seminar interactive?	50	21	5	15	10
Did the seminar help in learning the topic?	56	18	3	12	11
Did it help in Group activity?	54	22	5	12	6
Did it help in developing communication skills?	52	22	5	13	9
Were the selected topics helpful and relevant?	48	24	4	16	8
Would you like to recommend this activity as a routine for your colleagues?	49	23	4	15	8

### Aims and objectives

The main objective of the Study is to study the effect of student seminar as a revision strategy in Biochemistry among phase I MBBS students.

## MATERIALS AND METHODS

After obtaining the IEC approval from the Institutional Ethics Committee, Dhanalakshmi Srinivasan Medical College and Hospital, Perambalur, Tamil Nadu, under the letter number (IECH/IRCHS/DSMCH/Cert-238), I MBBS students who are 250 in number will be divided into 10 small groups. Each group (25 students in each group) will be given a particular seminar topic. All the students in the particular group will be instructed to present the topic on a random basis.

A total of 15 seminars (each session moderated by Faculty) will be conducted on particular topics. Pre-tests and post-tests (immediately after the seminar) will be conducted after the seminars to assess the effectiveness of the students' seminar.

Pre-test and post test feed back questionnaires from the students are obtained and will be collated to understand how far the student's acceptance of students' seminar.

## RESULTS

The observational study involved 250 students, and each of them underwent pre- and post-test evaluation after the

seminar. The pre-test and post-test feedback questionnaires were also obtained from the participants. The results are tabulated in tabular columns and scatter charts.

The mean and standard deviation of the post-test evaluation ( $61.5 \pm 20.07$ ) was significantly higher than the pre-test evaluation ( $53.1 \pm 21.1$ ) which is depicted in Figure 1. The feedback questionnaire was tabulated in Tables 1 and 2 according to the Likert scale in percentages.

The feedback questionnaire according to the Likert scale is depicted in bar charts in Figures 2 and 3.

## DISCUSSION

New methods of teaching have been developed over a period of time which focus on clinical skills, communication skills, professionalism, and communication skills which lead to excellence and enable the process of learning in a better way.<sup>5</sup>

In our study, 71% of the students in the post-test feedback questionnaire agreed that the seminar was a good academic activity.

Nearly, 72% of the students have found it as informative and interactive, and 74% of the students have found that the seminar helps in learning the topic. 76% and 74% of the students have agreed that seminars help in group activity and in developing communication skills, respectively.

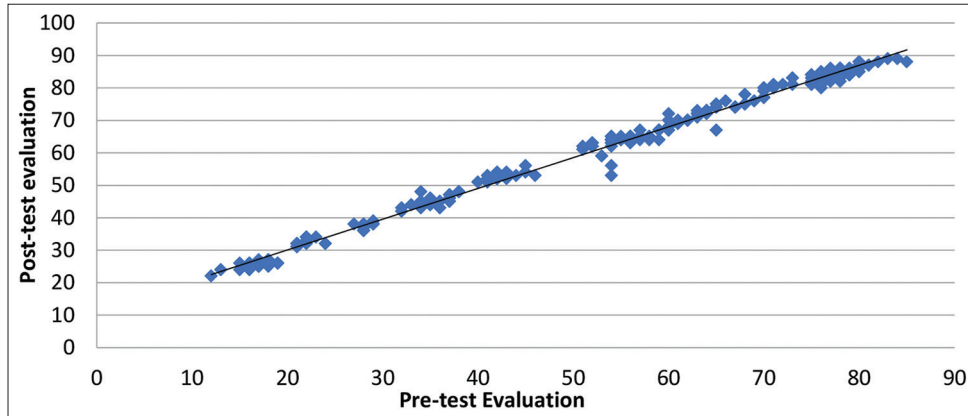


Figure 1: Relationship between pre-test and post test

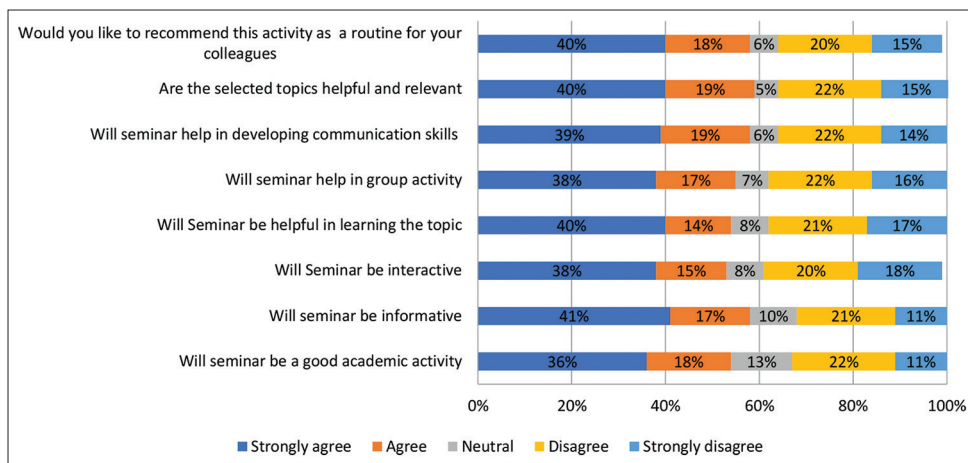


Figure 2: Pre-test feedback questionnaire

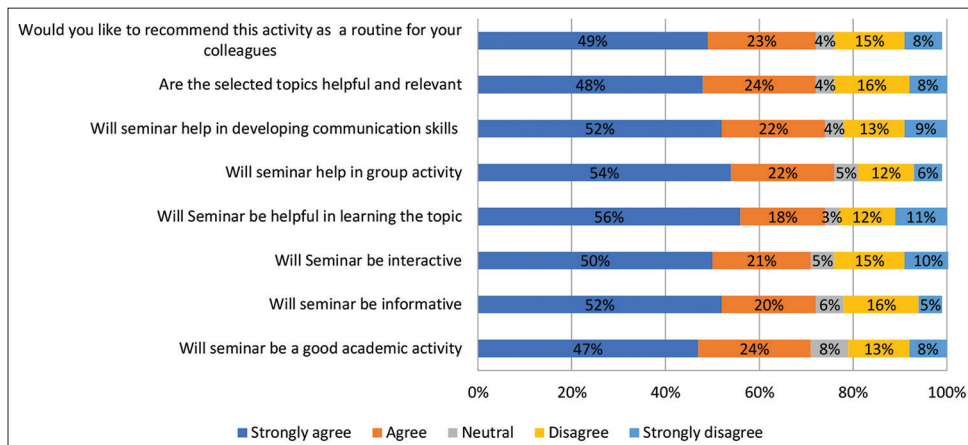


Figure 3: Post-test feedback questionnaire

Almost 72% of the students have found that the selected topics in the seminar were useful and relevant and also recommended this activity as a routine for their colleagues. About 28% of the students had difficulty in understanding the topics. For them, other small group discussions like tutorials are employed. Our study result correlates well with findings of other studies conducted earlier.<sup>6</sup> Post-evaluation

assessment has shown that there is an increase in the percentage of the scores which is in accordance with the results of the feedback questionnaire.

In seminars, students will have the opportunity to actively research the topic and will be preparing the PowerPoint presentation on their own. Seminar also

enhances communication skills with interaction which can enhance learning.<sup>7</sup> Problem-solving exercises, case report analysis, student presentations which are part of small group discussions are employed in medical colleges where students can engage and work in a cooperative manner.<sup>8</sup>

Seminars play an important role in the helpfulness of development of three domains of teaching, namely cognitive, effective, and psychomotor skills.<sup>9</sup> According to a study conducted by Haritha *et al.*, seminar plays an important role in deep understanding of the subject and improves critical thinking thereby improving self-confidence and communication skills of the students when compared with didactic lectures.<sup>10</sup>

Studies conducted by Costa *et al.*, and Doucet *et al.*, have shown that knowledge retention is better in interactive teaching methods like seminars.<sup>11,12</sup> According to a study conducted by Rehman *et al.*, seminars enhance the knowledge and also can be a revision strategy which follows the lectures.<sup>13</sup>

Results from our study showed that seminar improves confidence which in turn encourages the students to learn new topics, also improves communication skills, paves the way for clarification of doubts, and encourages them to give their opinions. Our study results correlate well with the findings of the previous studies.<sup>14,15</sup> However, studies on a larger scale are required to confirm our findings as our sample size is small and it is observational in nature which are the major limitations of the study.

#### Limitations of the study

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## CONCLUSION

From our study, it is concluded that a seminar is an effective teaching-learning method that enhances communication skills and also promotes active learning which will be useful in revising particular topics, which can be employed routinely as a part of academic activities.

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**Authors' Contributions:**

**SJ**- Definition of intellectual content, literature survey, prepared the first draft of the manuscript, implementation of the study protocol, data collection, data analysis, manuscript preparation and submission of article; **AG**- Manuscript preparation, editing, and manuscript revision; **DG**- Literature survey and preparation of figures.

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