

Original article:

Evaluation of effectiveness of seminar based teaching-learning method in first year MBBS students- An observational cross-sectional study

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Abstract:

Background: It is important that doctors require to continue updating professional knowledge time to time for lifelong in self-reliant manner. Self-Directed Learning (SDL) is defined as learning on one's own effort with primary responsibility being of the learner. This concept is implicated into the medical education system in recent years for the undergraduate MBBS students. There are limited studies suggesting the effectiveness of this teaching-learning method and various ways of its implementation.

Aim and Objective: The purpose of the study is to assess the effectiveness of SDL method/module in first year MBBS students and to assess their acceptance to it.

Method & Material: An analytical Cross-sectional study which comprised of a pre- test, a post-test and feedback form that was given to the students after a seminar conducted on "Hemostasis". The total number of participants are 198. Out of which 6 students who presented the seminar and the 192 students who attended it. The questionnaires are locally validated.

Statistical analysis: Analysis of data procured is analyzed on MS Excel and SPSS version 22 and paired/ dependent student's t-test analysis is applied.

Result: The graph obtained indicates that the students strongly agree that the seminar enhanced the in-depth understanding of the topic, solved all their queries, helped upgrade their knowledge, helped develop their oratory skills, the effective use of the audio-visual aids and that it was beneficial. However, most students opined that the seminar was time consuming.

Conclusion: Seminar based education is a powerful SDL teaching-learning method encompassing student involvement, student teacher interaction, student -student interaction, thence proving it to be the beneficial SDL teaching-learning method.

Keywords: Seminar based lecture, Self-directed learning, teaching-learning method, Medical education, Undergraduate curriculum.

Introduction:

The revised Undergraduate medical curriculum is implicated for MBBS students. Which comprises seminar based learning, small group discussions, skills and virtual lab as part of Self-directed learning (SDL) curriculum. It is defined as learning on one's effort with primary responsibility being of the learner.⁴ The paradigm shift from the traditional, didactic lecture based method, which was entirely teacher talk-student listening practice, to a student centered, seminar delivery, small group discussions as a conduit of better learning. It is only prudent to inculcate the practice of self-directed learning as the very foundation of medical education. According to the new curriculum, first-year students are required to participate in or conduct ten seminars to which marks will be given and included in the internal assessment. Students have experienced an improvement in personality, no more stage fear, more confidence to

face the audience, enhancements in oratory skills and better bonding with their teachers.⁵ The newer curriculum incorporates methods such as tutorials, small group discussions, problem based learning, seminars etc. There are various studies stating that embracing this seminar based teaching is proving to be an effective teaching tool posing several advantages ^{Error! Reference source not found.,1,5}. Apropos of the same, the present study is conducted in the Department of Physiology BJ Govt medical college Pune Maharashtra, to substantiate the effectiveness of the seminar via pre and post seminar questionnaire-based evaluation.

Method & Material: Ethically approved, participant-consented Analytical Cross-sectional study is carried out in the Department of Physiology B.J.G.M.C Pune, Maharashtra.

A total of 198 [192 attended + 6 presented] students were enrolled in this study. The topic of Hemostasis was allocated to 6 students of 1st year MBBS to present the seminar. All 198 students had earlier attended a didactic lecture on the topic of Hemostasis few weeks prior to this seminar. Based on which a pre-test questionnaire comprising of total 10 questions was provided. The seminar was then presented by the 6 students to the faculty and 192 fellow 1st-year MBBS classmates in Aug 2023. Each of them presented for 20 minutes. At the end of the seminar, a post-test questionnaire which comprised same 10 questions as were in the pre-test was provided along with the feedback forms were distributed and collected after 15 minutes. The identity of student was not disclosed on the questionnaire and feedback forms. The questions were CBME-based curriculum. [Clinically oriented, case-based, True, and false, and reasoning-based].

Statistical Analysis: The pretest and posttest questionnaire were evaluated, and the data was entered in MS Excel sheet. All the data was checked for possible keyboard errors. The dependent variables are the pre and post-test evaluation, whereas the independent variable are the seminar and feedback form. The dependent variable is presented as mean and SD. The independent variables as percentage. Student t-test was applied. The statistical significance of data in these two tailed studies, considering a confidence interval of 95% will be a p-value < 0.05. Feedback forms is evaluated with the help of MS Excel. Grading and Likert scale [in percentage].

Result:

The results extrapolated and Fig 1.1 represents the comparison of pre and post test results of the participants which elicits a significant improvement in the knowledge on topic, post seminar. Fig 1.2a and 1.2b represents the feedback of all students who attended and presented the seminar respectively. The results were plotted on a graph with “X-axis” being the questions of the feedback form. The percentage of students who strongly agreed with the various components of the feedback form on the “Y-axis”.

A considerable proportion of the presenters and attendees of the seminar have strongly agreed to this seminar being a tool of betterment in many aspects in concern with the subject matter and self-sculpting professionally.

Discussion: The cornerstone of producing proficient doctors in the future rests upon robust clinical expertise, while the bedrock of high quality healthcare hinges on the efficacy of diverse teaching methodologies in fostering critical thinking among students. ^{Error! Reference source not found.} In majority of medical colleges in India, the passive teaching methods as didactic lectures in which the students span of attention will decrease 20 minutes and retention of memory is lesser. This warrants the introduction of interactive teaching methods like interactive seminars and small group discussions etc.¹ An Indian Medical Graduate is required to be good in communication skills, leader. ^{Error! Reference source}

not found. inherently passionate, empathetic yet prudent in addition to the excellence in academics and extra-curricular activities. Old teaching methods encourages passivity, with majorly teacher talk.⁵

	Pre Test	Post Test	P value
Mean	50.626	72.914	(0.000167)
SD	297.6746489	225.73656	Significant (<0.05)

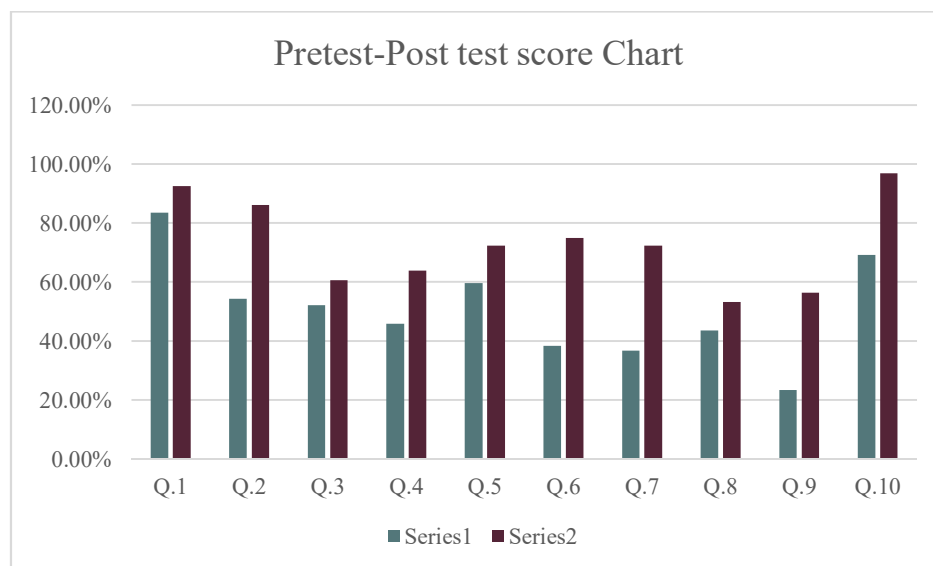


Fig 1.1- pre- and post-evaluation of seminar conducted on the topic Homeostasis.

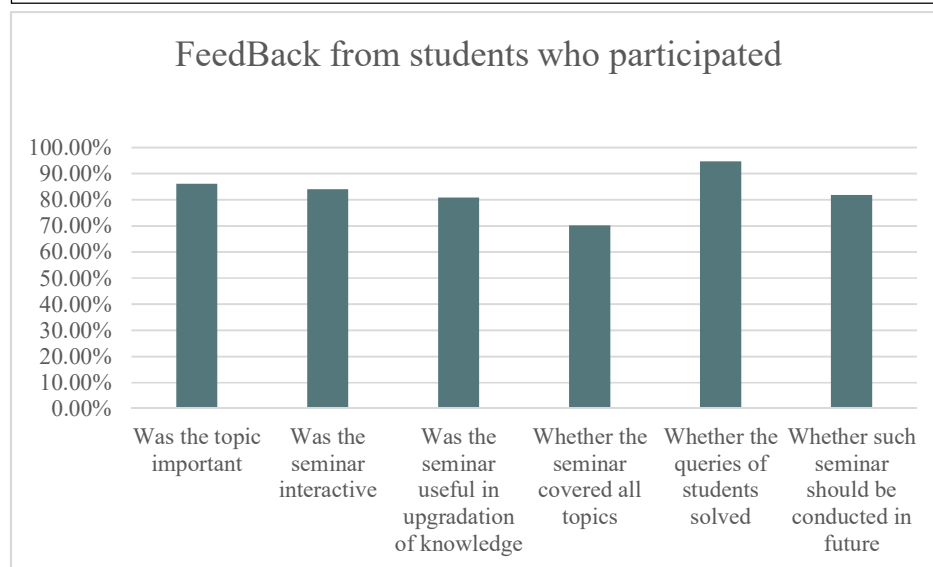


Fig 1.2 a

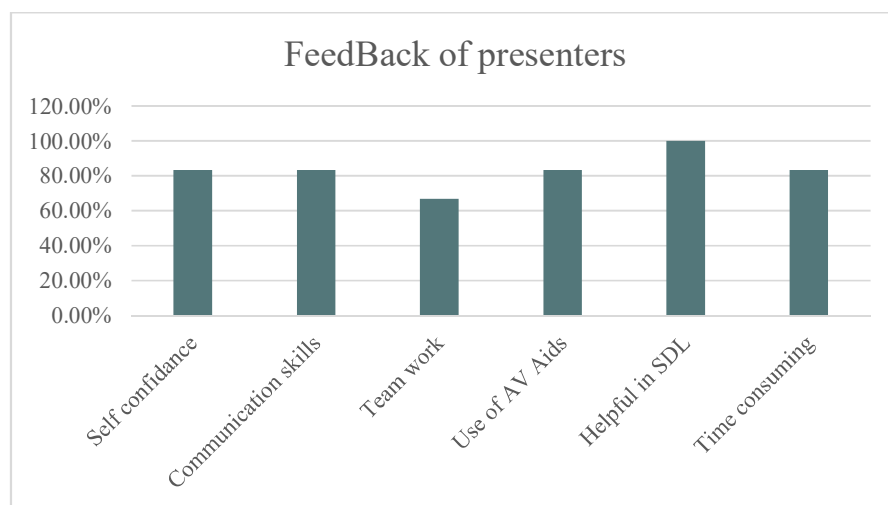


Fig 1.2 b

In effort of same, the traditional methods of didactic teaching is being replaced by newer ways that is student participation oriented, Self-directed Learning fashion. The various teaching methods enhances the vividity of thought process. *Error! Reference source not found.* A cross-sectional study on perception of student -led seminar amongst undergraduate students has concluded a deep understanding of the subject and evoked better analytical thinking than with didactic lectures' and helps improve self-confidence and communication skills.³

One of the effective ways is the method of conduction of seminar on given topics under the guidance of faculty, by the student, to the student, for the student manner. The pattern depicted by the Fig 1.2a representing the feedback of the attendees, indicates that 94.60% of students strongly agreed with the effective use of the audio-visual aids. 86.17% of them opined that the understand the importance of this topic post seminar. 84% of them strongly agreed that this method is interactive aiding in better understanding of subject of discussion. 81.90% students strongly agreed that such seminars helped enhance their knowledge in depth to the topic and better conceptualization and hence look forward to more of it.

Seminar based learning has also been studied in comparison with group discussion wherein group discussion was a better teaching learning method than the conventional seminar in community medicine topics. We assessed the effectiveness of the seminar in terms of understanding theory, grasp of the concepts, motivation to be involved, enhance involvement in the topic, self-development skills such as confidence build up, communication skills, abolishment of audience fear. Seminar presentation can be an active and effective method of learning technique.¹ Seminars can increase and engage the interest of students in the subject by their voluntary participation which can provide better learning experience for students.⁵ Student seminar is a potential important resource of teaching learning method yet to be fully tapped.

Conclusion:

It has been noted that there is improved student comprehension, interest, and participation with the implementation of the new curriculum Seminar based education is a powerful teaching learning method encompassing student

involvement, student teacher interaction, student -student interaction, with mentoring from faculty for a better quality of delivery. Students found the seminar interactive, useful in covering all topics, answering their queries, helped build confidence in self, encouraged, engaged, and oriented to the subject of interest. All the above attributes ultimately led to an interesting stage of learning and conceptualize physiology in a better way.

There is however time constraints and limitation of preparation period being a hurdle in schedule management of syllabus. There is need for conducting even better structured study in this teaching- learning method to extract ways to reduce the limitations as the benefit of SDL teaching- learning method seems promising and potential in making even better doctors with better professional calibre.

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