IAP Journal of Medical Education and Research
Volume 2, Issue 1 - 2025, Pg. No. 6-11
Peer Reviewed & Open Access Journal

Research Article

Seminars as a Self-Directed Learning Tool in Medical Education: An Explanatory Mixed-Method Study

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How to cite this article:
S Kirubakaran, T S R Anjana, Murugan S A, Ammal M M, Kannan T, Karthigeyan T, Girirajan V, Seminars as a Self-Directed Learning Tool in Medical Education: An Explanatory Mixed-Method Study. IAP J. Med. Educ. Res. 2025;2(1):6-11.

Date of Submission: 2024-12-05
Date of Acceptance: 2025-09-25

A B S T R A C T

Introduction: The effectiveness of seminars as a self-directed learning (SDL) tool is increasingly recognized in medical education. While seminars enhance peer-led learning and presentation skills, they also face challenges, such as maintaining engagement and content relevance.

Methods: This study employed an explanatory sequential mixed-methods design. Quantitative data were gathered from 104 final year medical students at Government Medical College, Chennai, through a structured questionnaire post-seminar. Qualitative data was collected via three focus group discussions (FGDs) with 8 participants each, designed to capture perceptions and experiences in seminar preparation and presentation.

Results: Quantitative findings revealed that 59.6% of students agreed that seminars ignite interest in topics, and 86.6% felt seminars help overcome stage fright. Most students (84.6%) noted the time-intensive nature of preparation, and 80.8% reported that rewards during or after seminars improved participation. Qualitative analysis highlighted three categories: Benefits of Seminars (e.g., interactive sessions, self-confidence building), Challenges (e.g., content condensation, engagement), and Other Influencing Factors (e.g., language adaptability).

Conclusion: Seminars are a valuable SDL tool, fostering student confidence, engagement, and knowledge retention. However, effective seminar implementation requires balancing engagement with content preparation. Although seminars promote active learning, opinions are mixed regarding their superiority over traditional classroom teaching.

Keywords: Seminars, Lectures, Active learning, Medical education, Presentations, Self directed learning

Introduction

Students all around the globe find themselves in a tricky position in the 21st century. It has become a tiring trend where students are expected to conduct lectures for their peers. Also, with the advent of technology, students are more at ease creating presentations which can be easily taught to their peers, and if done properly, are easily taken up by the audience too. Seminars as a method of teaching are getting more popular.

According to a study by Zakharia et al[1] (2023), students realise that conducting oral presentations such as seminars to their peer groups definitely plays a crucial role in their careers. They help them substantially improve communication and, language proficiency, and help their studies overall. It has also been observed by a study by Singla et al[2] (2023) that such a method of learning sparks interest and leads to better understanding of the given topic. Additionally, it was noted that self confidence and motivation is augmented.

In this study, a combination of qualitative and quantitative methods was put to use to determine the opinions of the students on seminars as a self-directed learning tool. We acquired the qualitative aspect of the study through. Whereas the quantitative aspect was acquired by holding focus group discussions with the students. The use of both qualitative and quantitative data provides a strong and well- rounded base to the research.

Objectives

1. To assess the impact of seminar-based learning among students as Self Directed Learning method
2. To explore the perceptions and experiences of students about the seminar preparation and presentation

Materials and Methods

Study Design

This study employs an explanatory sequential mixed-methods design [Quan - QUAL]. The quantitative component to measure the impact of seminars on self-directed learning (SDL) followed by a qualitative component explores students' experiences and perceptions.

Study Setting & Population

The study was conducted by Department of Community Medicine in collaboration with Medical Education Unit at Government Medical College, Omandurar Medical College, Chennai-02. This study involved all 104 students from the Final year part-1.

Study Duration

This study was conducted for a period of 6 months.

Data Collection tool & Method

Quantitative Data Collection:

After obtaining digital consent from the participants, data was collected using a pre-designed and pre-tested questionnaire administered through Google Forms. The questionnaire was structured to evaluate the impact of seminar at the end of approximately 25 seminars. The questionnaire was disseminated electronically to all MBBS students who participated in the seminar series. Responses were collected in real-time.

Qualitative Data Collection

Using an open-ended, semi-structured interview guide, 3 focus group discussions were conducted, and 8 participants were in each group. Using purposeful sampling, each containing equal numbers of boys and girls.

These students had also been allotted to the groups based on certain criteria to study the differences between these groups, e.g: day-scholar vs. hosteller, active participants in class vs. passive listeners, students who performed well vs. students with low attendance, etc. Each focus groupdiscussion lasted for 45 mins. After the Third Focus Group Discussion there were no new information.

Data Analysis

Quantitative Data Analysis

Descriptive statistical analysis was performed to summarise the data using frequencies and percentages for categorical variables using SPSS 18 software.

Qualitative Data Analysis

Thematic analysis was employed to analyse the FGD interview transcripts. Data was coded using an inductive approach to identify the categories and they related to students' perceptions of seminar as tool in SDL. Coding was done using software Atlas.ti.

Ethical Considerations

Informed consent will be obtained from all participants. Participation will be voluntary, and students will have the option to withdraw at any time. Confidentiality of participants' data will be maintained, and all data will be anonymised during analysis and reporting. Research was conducted with the approval of the internal ethics committee.

Results

Quantitative Results

Table 1.Evaluation of Seminar among Medical Students

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Seminars ignite interest in the topic covered.	10 (9.6%)	52 (50%)	34 (32.7%)	5 (4.8%)	3 (2.9%)
Seminars require a good amount of attention span which may pose a difficulty.	25 (24%)	55 (52.9%)	21 (20.2%)	3 (2.9%)	nil
Preparation for seminars is time consuming.	37 (35.6%)	51 (49%)	13 (12.5%)	3 (2.9%)	nil
Seminars help to overcome stage fright.	50 (48.1%)	40 (38.5%)	10 (9.6%)	3 (2.9%)	1 (1%)
Seminars help in easy recollection of topics.	23 (22.1%)	45 (43.3%)	24 (23.1%)	10 (9.6%)	2 (1.9%)
Seminars help one understand the topic and motivates them to study on their own.	21 (20.2%)	46 (44.2%)	26 (25%)	8 (7.7%)	3 (2.9%)
Seminars are better than normal classroom teaching.	7 (6.7%)	26 (25%)	38 (36.5%)	24 (23.1%)	9 (8.7%)
Presenting a seminar on a topic improves the presenter's hold over that specific topic compared to other topics.	38 (36.5%)	52 (50%)	14 (13.5%)	nil	nil
Seminars promote active learning over rote memorisation .	12 (11.5%)	53 (51%)	26 (25%)	10 (9.6%)	3 (2.9%)
Rewarding students during/at the end of seminars increases student participation.	40 (38.5%)	44 (42.3%)	18 (17.3%)	nil	2 (1.9%)

A significant number of students (59.6%) either strongly agreed (9.6%) or agreed (50%) that seminars helped ignite their interest in the topic. However, 32.7% remained neutral, and a small percentage (7.7%) disagreed, indicating some variability in engagement. A majority of students (76.9%) felt that seminars required a considerable attention span, which could pose a difficulty, with 24% strongly agreeing and 52.9% agreeing. A smaller group (20.2%) was neutral, while only 2.9% disagreed, showing that maintaining focus was perceived as a challenge by most.

Most students (84.6%) agreed that preparing for seminars was time-consuming, with 35.6% strongly agreeing and 49% agreeing. Only 12.5% were neutral, and a minimal number (2.9%) disagreed, suggesting a general consensus on the effort required for preparation. A large proportion of students (86.6%) felt that seminars helped them overcome stage fright, with 48.1% strongly agreeing and 38.5% agreeing. A small group (9.6%) remained neutral, and very few (3.9%) disagreed, highlighting the perceived benefit of seminars in building presentation confidence.

Around 65.4% of students agreed that seminars aided in easier recollection of topics, while 23.1% were neutral. However, 11.5% of the students disagreed, indicating that some students did not find seminars particularly helpful in memory retention. A majority (64.4%) felt that seminars motivated them to study the topic further on their own, with 20.2% strongly agreeing and 44.2% agreeing. Around 25% were neutral, while 10.6% disagreed, showing mixed responses regarding the seminar's impact on promoting self-directed study. A smaller percentage of students

(31.7%) agreed that seminars were better than traditional classroom teaching, with 6.7% strongly agreeing and 25% agreeing. However, a large proportion (36.5%) was neutral, and 31.8% disagreed, reflecting a divided opinion on the effectiveness of seminars compared to regular classes.

A strong majority (86.5%) agreed that presenting a seminar helped the presenter develop a better understanding of

the specific topic, with 36.5% strongly agreeing and 50% agreeing. No students disagreed, indicating a clear perceived benefit for presenters. Over half of the students (62.5%) agreed that seminars promoted active learning, with 11.5% strongly agreeing and 51% agreeing. However, 25% were neutral, and 12.5% disagreed, indicating some variance in how students perceived the learning style promoted by seminars. A large proportion of students (80.8%) felt that rewarding students during or after seminars increased participation, with 38.5% strongly agreeing and 42.3% agreeing. Only a small number (17.3%) remained neutral, and very few (1.9%) disagreed, suggesting that incentives had a positive impact on engagement.

Qualitative Results

Table 2.Thematic Analysis Code Book for Perception and Experience of Seminar Preparation and Presentation

Codes	Categories	Theme
Interactive Sessions	Benefits of Seminars	Balancing Engagement and Preparation Challenges in Seminars as a Tool for Self Directed Learning
Concise Presentations		
Engaging Tools		
Self-confidence Building		
Real-life Scenarios		
Language Adaptability		
Condensing Vast Content	Challenges of Seminars	
Relevancy of Information		
Time-consuming Process		
Audience Engagement Issues		
Stage Fear		
Learning Preference Variability		
Preparation Time	Other Factors Influencing Seminars	
PPT Posting Before Class		
Combination of Local Language (Tamil) & English		

As a result of the content analysis, three key categories emerged Benefits of Seminars, Challenges of Seminars and Other Factors Influencing Seminars. Based on the codes and categories the theme generated was “Balancing Engagement and Preparation Challenges in Seminars as a Tool for Self Directed Learning” .

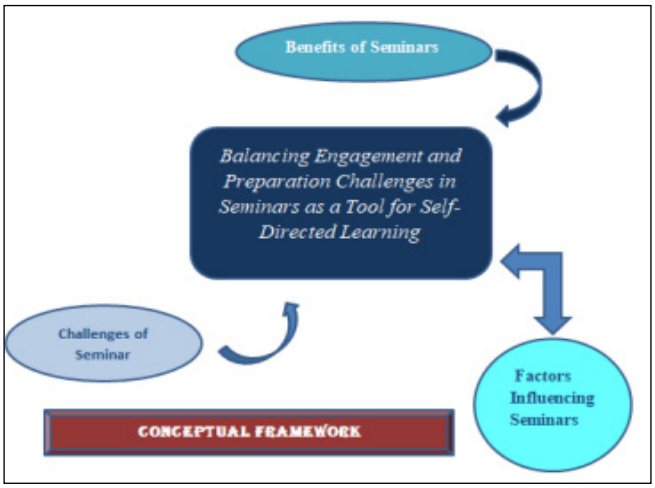

Figure.

Category 1: Benefits of Seminars

Interactive Sessions

Engaging audience through questions, discussions, and interactive elements “Interactive sessions and concise ppt will easily keep the audience’s attention on the speaker.”

Concise Presentations

Presentations that are clear, short, and easy to follow. “The key to holding the audience was by keeping the seminar short and crisp.” Gaining deeper understanding of the topic through preparation. “The individual who takes the seminar will benefit more compared to the audience.”

Engaging Tools

Use of multimedia like memes, pictures and, videos to capture interest. “The majority of the participants used memes, pictures related to cinema and sports, videos and audios to attract the audience.”

Self-confidence Building

Personal development in terms of confidence while speaking and presenting. “Presenters felt that preparing for and delivering the seminar helped them gain confidence.”

Real-life Scenarios

Application of real-life examples to illustrate concepts “Bringing real life scenarios and adding fun elements would grasp their attention.”

Language Adaptability

Use of the native language (Tamil) or a combination of Tamil and English to improve comprehension. "Most of the participants felt that using Tamil improves attention of students... stressing the important points in English."

Category 2: Challenges of Seminars

Condensing Vast Content

Difficulty in summarising large amounts of information into a concise presentation. "Standard books were very vast and creating a concise 15-20 slide presentation posed a challenge."

Relevancy of Information

Struggle in determining which points are most important for the presentation. "It was hard to segregate which points are of importance to be stated in the presentation."

Time-consuming Process

The preparation for the seminar took a significant amount of time. *"Preparing for a seminar is a very laboured and time-consuming process."*

Audience Engagement Issues

Difficulty in keeping the audience's attention throughout the presentation. "A few of them felt a bit difficult to keep the audience engaged...the audience might start feeling monotonous when the number of slides were more." Presenters received a lower level of audience interaction than expected. "Half of them told that the audience response they received was lower than expected."

Learning Preference Variability

Different students benefit from different teaching methods, and seminars may not suit all. "Some said that seminar is the best method of teaching, while some disagreed… they argued that small group discussion might be more effective."

Category 3: Other Factors Influencing Seminars

Preparation Time:

Time taken to prepare for the seminar. "Nearly half of the participants stated that they would start to prepare for the seminar one week before the day of presentation."

PPT Posting Before Class

Whether sharing slides in advance helps with audience engagement and learning. "Two of the participants think that posting Ppt before class doesn't improve audience response…other participants stated that it is a good initiative as students get an idea about the topic."

Combination of Local Language (Tamil) & English

Using a mix of native and common language to improve comprehension. "One participant stated that explaining in Tamil then stressing the important points in English was a good approach."

Discussion

Lecture based teaching is our traditional method of teaching not only in the medical field but in most fields of education. Various new methods of teaching for eg. Gamification, micro learning, etc have come into picture in the last few years. Though seminar is not a new method it is yet to be used for teaching universally. This study is based on the responses from the students on seminars as a method to teach and learn.

About 59.6% of students agreed that seminars ignite an interest in the topic of which 9.6% strongly agreed. A study by Kusum Singla et al[2], produced similar results (76.5% agreed of which 16.7% strongly agreed). 77% of students agreed that seminars are time consuming, in a study by Patel et al[3] 69.1% agreed that seminars are time consuming. 86.5% of learners agreed that seminars improve the presenter's hold over the topic compared to other topics. No one disagreed with this point. 80.8% of students agreed that rewarding students during or at the end of the seminar improves student participation. Only 6.7% of students strongly agreed that seminars are better than normal classroom teaching. In Kusum Singla et al study only 7.8% strongly agreed to the same.

Though lectures are widely used we can't overlook the merits of seminars . In lectures students don't actively participate but in seminars active learning is promoted. Seminars foster motivation for self study and enhance the

learner's confidence. Seminar as a teaching method is an effective method for improving knowledge scores, skill scores, active learning ability, student collaboration, classroom atmosphere, and interaction between teachers and students.[4]

This theme "Balancing Engagement and Preparation Challenges in Seminars as a Tool for Self-Directed Learning" highlights the tension between the potential benefits of seminars in fostering engagement, confidence, and knowledge mastery, and the difficulties faced by students in preparing and delivering these presentations effectively. The analysis reveals that while seminars can be highly engaging when done interactively and using relatable content, they also demand significant effort in terms of condensing vast information, overcoming stage fear, and maintaining audience attention. Furthermore, the use of language (Tamil/English) and multimedia tools play a crucial

role in enhancing comprehension and interest, though the overall success of a seminar depends heavily on the presenter's ability to manage these factors.

Study Limitations - The study is limited to a single institution, which may affect the generalisability of the findings. Quantitative data statistical Analysis was only descriptive.

Conclusion

Our learners agreed that seminars ignite an interest in the topic and improves the presenter's hold over the topic. Majority of students also agreed that rewarding students during or at the end of seminar improved student participation. However opinions were divided on whether seminars are superior to traditional classroom teaching. Seminars foster self-confidence, improve content mastery, and engage students when interactive elements are used effectively.

Acknowledgement: The authors would like to acknowledge Shruthy V., Siddharth Ajith, Sinekhaa C.V., Sri Aakash Arun, Sujit L., Tejas Krishnan Ranganath and Thrivikraman R.D. for their contributions.

Conflict of Interests: None

Source of Funding: None

Author's Contributions: SK, TSRA, AMS and MAM contributed to Study conception and Study design.

TK, VG and TK enabled data collection, SK performed data analysis and interpretation. All authors were involved in manuscript preparation.

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