



SELF-DIRECTED LEARNING- TEACHING LEARNING METHOD- EFFECTIVENESS AMONG SECOND YEAR MBBS STUDENTS IN PATHOLOGY

Pathology

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ABSTRACT

Introduction: Competency-Based Medical Education (CBME) emphasizes student-centered learning approaches, including Self-Directed Learning (SDL). Self-Directed Learning (SDL) promotes lifelong learning through autonomy, guided support, and active participation, while lectures are largely passive and suited for large groups. SDL encourages a learner-centered approach where students set goals, manage resources, and build competencies. **Aim and Objectives:** 1) To evaluate the effectiveness of self-directed learning (SDL) as a teaching-learning strategy in Pathology among second-year MBBS students. 2) To know the perceptions of students towards SDL. **Material and Method:** This study was conducted among 202 second-year MBBS students at Government Medical College from September 2024 to September 2025. Feedback on SDL was collected through a Google Form, and the results were analyzed. Statistical analysis was done. Summative assessment was conducted by MUHS in Winter 2024 and result of pathology subject was analysed. **Results:** The feedback form of 202 second year MBBS were assessed. All the parameters showed a statistically significant p-value. Summative assessment results showed that 197 students out of 202 second-year MBBS students (97.5%) passed Pathology; among them, 13 (6.44%) secured distinction and 125 (61.88%) achieved first class. **Conclusion:** This study demonstrates that self-directed learning (SDL) is well accepted by students and improves knowledge and comprehension compared to traditional lectures.

KEYWORDS

Self Directed Learning, Pathology, MBBS Students, Routine Conventional Teaching Method

INTRODUCTION

The Medical council of India proposed curricular reform in MBBS curriculum for undergraduate education to focus on integration, clinical competency, flexibility and improvement in quality of training of MBBS students. The undergraduate medical education programme is designed with a goal to create an "Indian Medical Graduate" for possessing requisite knowledge, skills, attitude, values and responsiveness. So, National Medical Commission (NMC) introduced Competency-Based Medical Education (CBME) pattern in Medical Education in India. Competency-Based Medical Education (CBME) in India emphasizes student-centered approaches such as Self-Directed Learning (SDL).¹ SDL promotes lifelong learning by encouraging students to identify their learning needs, set goals, utilize resources, and evaluate outcomes, with faculty acting as facilitators.^{2,3,4,5,6,7}

SDL enhances competency, critical thinking, self-awareness, and communication skills.^{1,8,9,10} In contrast, traditional lectures are effective for delivering structured content to large groups but often involve passive learning with limited engagement.^{6,11} The effectiveness of SDL depends on the learner's level, as beginners require guidance and structure. Therefore, a blended approach combining lectures with SDL ensures better understanding while gradually fostering independent and lifelong learning skills.^{6,12}

Aim and Objectives:

- 1) To evaluate the effectiveness of self-directed learning (SDL) as a teaching-learning strategy in Pathology among second-year MBBS students.
- 2) To know the perceptions of students towards SDL.

Material & Methods:

The present study was observational and descriptive done in Government medical college, Solapur for a period of one year from September 2024 to September 2025 on second year MBBS students. Second year MBBS students were subjected to routine conventional teaching methods (lectures and practical) as well as self-directed learning methods (home assignment, continuous class test, seminars, museum activity, certifiable skill-based competencies, simulated virtual activities and research activity). At the end of all sessions, Feedback on SDL was collected through a Google Form to assess perception of students towards SDL and the results were analyzed. Statistical analysis (Z test and p-value) was applied. Also,

the effectiveness of SDL is assessed based on the result of the summative assessment conducted by MUHS.

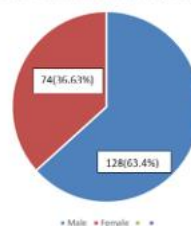
Inclusion criteria 1. Second MBBS students who attended both self directed learning method and routine conventional teaching method 2. Students who had given feedback 3. Students appearing for second MUHS

Exclusion criteria Second MBBS students who had not attended any one method of teaching and not submitted feedback form.

The parameters assessed by students in feedback for comparison of routine conventional teaching method and self-directed learning method includes questionnaire as which method helps for better understanding of topic, which method involves more interactive learning, which method helps to access different aspect of topic, which method helps for better clinico-pathological understanding and which method is best for overall teaching-learning method.

The parameters to assess effectiveness of SDL includes questionnaire as whether topics are relevant or not, whether SDL helps to build research activity or not, whether SDL promotes independent learning or not, whether SDL arouse interest in pathology or not and Whether SDL helps in better conceptual understanding or not.

Chart 1: Distribution with respect to sex



RESULTS:

The study was conducted at Government medical college for a period of one year from September 2024 to September 2025 on second year MBBS students. A total of 202 second year MBBS students in the participated study with male predominance.

At the end of all sessions, feedback in a google form was filled by students and were analysed.

Table 3: Student feedback form which includes comparison of routine conventional teaching method and self-directed learning method (n=202)

Sr. no	Parameter assessed	Routine conventional teaching method (%)	Self-Directed learning method (%)	p- value
1	Better understanding of topic	34.3	65.7	<0.001(significant)
2	More interactive learning	25.7	74.3	<0.001(significant)
3	Helps to access different aspect of topic	29.8	70.2	<0.001(significant)
4	Better clinic-pathological understanding	37.7	62.3	<0.001(significant)
5	Best overall teaching-learning method	34	66.0	<0.001(significant)

p-value <0.001 is significant

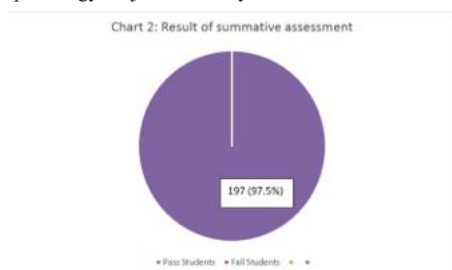
Table 4: Students feedback form on Effectiveness of SDL (n=202)

Sr no.	Parameter assessed	Yes (%)	No (%)	Z test	p-value
1	Topics are relevant	99.2	0.8	Z=14.0	<0.001(significant)
2	Helps build research activity	95.1	4.9	Z=12.8	<0.001(significant)
3	Promotes independent learning	90.9	9.1	Z=11.6	<0.001(significant)
4	Arouse interest in pathology	94.7	5.3	Z=12.7	<0.001(significant)
5	Helps in better conceptual understanding	92.1	7.9	Z=12.0	<0.001(significant)

p-value <0.001 is significant, Z test for two proportion

All the parameters were assessed and showed a statistically significant p-value. So the results are statistically significant.

Summative assessment was conducted by MUHS in Winter 2024 and result of pathology subject was analysed.



Out of 202 MUHS exam appearing students of 2nd year MBBS 197 (97.5%) students passed in pathology subject. Out of 197 students who passed, 13 (6.44%) students secured distinction in pathology and 125 (61.88%) students passed in first class.

Table 5: Result of summative assessment

	Theory passed students (%)	Practical passed students (%)	Total passed students (n=197)
Distinction (>75%)	9 (4.46%)	37 (18.32%)	13 (6.44%)
First Class passing (60%-75%)	105 (51.98%)	133 (65.84%)	125 (61.88%)
Remaining (<60%)	88(43.56%)	32(15.84%)	64 (31.68%)

DISCUSSION:

The taxonomy of education objectives was first developed and presented by Benjamin Bloom in 1956. Taxonomy of learning has categorized various learning activities into three domains. 1) Cognitive Domain 2)Psychomotor Domain 3)Affective Domain. Within each domain multiple levels of learning that progress from more basic,surface level learning to more complex, deeper level learning. Learning at higher levels is dependent on having attained prerequisite knowledge and skills at lower levels.

The undergraduate medical education programme is designed with a goal to create an “Indian Medical Graduate” for possessing requisite knowledge, skills, attitude, values and responsiveness. To achieve this goal and to become good clinical practitioner better understanding of pathology of diseases is must. To achieve this self directed learning method is introduced by NMC in MBBS undergraduate curriculum. In present study, SDL is more effective than routine conventional lectures among second-phase MBBS students, promoting active learning, better understanding, and improved performance. It enhances interest, conceptual clarity, and clinicopathological correlation, supporting lifelong independent learning.

The present study findings are consistent with previous research showing that SDL promotes active learning, enhances conceptual understanding, and improves long-term retention compared routine conventional teaching method by Masava B et al and Thota S et al.^{6,13,14}

A study by Premkumar et al. reported that medical students engaged in SDL demonstrated significantly higher problem-solving skills and deeper learning strategies than those in conventional lecture-based groups.¹⁵ Similar outcomes have been noted in microbiology, biochemistry, physiology and pharmacology teaching, where SDL improved self-assessment skills and independent learning capabilities by N. Padmaja et al, Ramya et al, Abraham et al, Sahoo PK et al respectively.^{2,6,16,17}

Self directed learning method is most effective learning teaching-Learning method as it helps students to achieve all three domains (Cognitive, Psychomotor and Affective) and should be accepted by teachers and students.

CONCLUSION:

This study showed that self-directed learning (SDL) was well accepted by students, with improved knowledge and comprehension compared to traditional lectures. SDL promoted active participation, deeper understanding, confidence, and long-term retention. A combination of routine conventional lectures and SDL provided better clarity, especially for beginners, and supported lifelong learning skills.

Limitations of the Study: This study was conducted in a single institution limiting generalizability. Time-bound SDL sessions may not reflect the extended learning cycles required for true self-directed learning

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