



Perception of new CBME curriculum among undergraduate medical students: A questionnaire based analytical study

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ABSTRACT

Background:-The teaching and learning process is most effective when implemented in an organized way. The National Medical Commission (NMC) revised the traditional curriculum by introducing the competency-based medical education (CBME), making its implementation mandatory for undergraduate medical courses starting in 2019. Additionally, approaches such as self-directed learning, tutorials, demonstration classes and small group teaching activities foster one-on-one interactions within the groups and make them more active, improving their knowledge, attitudes and overall learning outcome. **Aim & Objectives:-**The aim of this study is to evaluate and systematically record the perspectives of medical students regarding the recently introduced teaching methods and strategies. **Materials and Methods:-**A total of 100 first-year MBBS students were selected for the study following approval and clearance from the institutional ethics committee. A questionnaire, developed in English through an extensive literature review and thoroughly validated, was utilized. The teaching and learning methods were analyzed first for their effectiveness and subsequently for their usefulness. The questionnaire was emailed to all participants via Google Forms, and responses recorded using a five-point Likert scale. The collected data was then systematically processed and analyzed for statistical insights. **Results:-**The majority of students acknowledged that small-group discussions significantly enhance learning outcomes. Additionally, 37% of the respondents strongly agreed on the effectiveness of demonstration classes and tutorial sessions, while about 36% strongly agreed on their overall usefulness. **Conclusions:-**Effective teaching and learning play a crucial role in shaping the future of medical graduates, and their successful implementation is key to meeting the evolving needs of the healthcare profession.

Key Words: Teaching Module, AETCOM,SDL,SGT,DEMO,TUTORIAL.

INTRODUCTION :

The teaching and learning process is most effective when implemented in an organized way. Its success depends on various factors, including the number of participants, the discipline being taught, the technology employed, the skills of the individuals involved, and the resources available¹.

The teaching style of the faculty plays a pivotal role in the effective implementation of different classroom models. Educators now have a wider range of teaching methods to choose from, moving beyond traditional or didactic lecture sessions to embrace more interactive approaches.

The teaching methodology focuses on identifying student's readiness to learn, their behavior, affinity for the subject, and ways to enhance their motivation. Additionally, approaches such as self-directed learning, tutorials, demonstration classes and small group teaching activities promote one-on-one interactions within the group and make them more active, improving their knowledge and attitudes. These teaching methods indirectly enhance the necessity of pre-class preparation, fostering better participation and improving overall learning outcome². Effective teaching and learning are vital for molding the future of medical graduates, providing them with the skills, knowledge, and professional values needed to succeed in their careers and contribute to the healthcare system.

Competency-based medical education (CBME) is an outcomes-based approach that prioritizes flexibility and learner-centered framework, where learner progression is dependent on achievement of competencies, rather than the amount of time that has passed³. A 2013 study to insight the CBME curriculum and they compared a competency-based curriculum with a former non-CBME curriculum and found no significant difference in clinical performance or perceived preparedness among students⁴. However, the study was limited by a short study duration within a single institution. Subsequent studies have described their process of implementing undergraduate CBME, but they have not examined any prospective outcomes resulting from these curricular changes⁵⁻⁸.

The National Medical Commission (NMC) revised the traditional curriculum by introducing the competency-based medical education (CBME), making its implementation mandatory for undergraduate medical courses starting in 2019. Following its introduction in India, this study also examines the challenges faced by medical educators in implementing the new CBME curriculum⁹. The CBME curriculum incorporates modules such as AETCOM (Attitude, Ethics, and Communication), SDL (Self-Directed Learning), SGT (Small Group Teaching), DEMO (Demonstration Classes, and Tutorials). These modules are designed to foster the development of appropriate attitudes, effective communication skills, and a strong knowledge base while enhancing student's overall learning experience. The curriculum equips medical graduates to practice ethically in their medical profession.

Aim & Objectives: The aim of study was to evaluate and systematically record the perspectives of medical students towards the recently introduced teaching methods and strategies. Our Objectives was to Analyze the new teaching modules of CBME through questionnaire based study, and collect feedback from the participants to know the importance of the new teaching modules. In-depth exploration of students experiences, satisfaction levels, and the overall impact to learning process and academic development.

METHODOLOGY :

A total of 100 first-year MBBS Students were selected for the study. After obtaining approval and clearance from the institutional ethics committee, an analytical, comparative, questionnaire-based study was carried out in the Department of Physiology under the guidance and supervision of faculty members. The questionnaire was distributed to all participants via email, through a Google Form link. The study proforma and procedure were presented through a Power Point presentation before the study, begins, and verbal consent was obtained from the participants. The study focused on the student's Experience level and their academic strategies that was conducted from December 2024 to April 2025 in a six months of period.

An questionnaire, developed in English through an extensive literature review and thoroughly validated, was used as the primary data collection tool¹⁰. Each Questionnaire based on New teaching methods such as Class lectures, Self-directed learning, Small group teaching, Demonstration classes and Tutorials, . Each Questionnaire contains 10 questions specifically designed to assess the effectiveness and usefulness and 2 Feedback Questions which are not mandatory. The questions were designed based on factors such as the learning environment, skill development, clinical strategies, performance, motivation, collaboration and standardization of curriculum.

The Questionnaire One (I) was asked repeatedly to record the student's responses for each individual teaching methods. The teaching and learning methods were analyzed first for their effectiveness using questionnaire One (I), followed by of their usefulness through questionnaire Two (II), and responses were recorded using five-point likert scale¹¹.

Responses & Data collection:- Students were instructed to provide their responses using a five-point Likert scale (table 1,2). The responses were automatically collected and stored in a Google Sheet. The responses for questionnaire One (I), which assessed the effectiveness of the teaching methodology, were recorded on an Agreeance-based grading scale as follows: 0 - Strongly Disagree, 1 - Disagree, 2 - Neutral, 3- Agree, 4- Strongly Agree.

The responses for new teaching modules were collected separately based on Questionnaire One (I) criteria. Student's perception was recorded again to findout the effectiveness of each individual teaching methods (Table 1,1A). For questionnaire Two (II), which evaluated the usefulness of the new teaching methods, the responses were recorded on their extent use, using grading scale as : 0- Not at all, 1- Very little, 2-To some extent, 3- To a great extent, 4 - To the full extent, (Table 2).

The responses was kept anonymous, and the data was collected, compiled, and systematically analyzed through tabulation . The results were processed by analyzing the distribution of frequency of responses for statistical evaluation.

RESULTS :

A total of 60 medical students participated in Questionnaire One (I) and 100 students participated in Questionnaire Two (II) in our study.

The student's perceptions according the "effectiveness" of the New teaching modules of CBME curriculum indicates, the new teaching modules enable more effective learning, understanding and interaction among students. Most participants acknowledged the significance of tutorial session and small group discussions, with 95% agreeing that small group discussions effectively enhance participation. Furthermore, 37% of the students strongly agreed that tutorials and demonstration sessions are highly effective for understanding the clinical and applied aspects of medical science.

The student's perceptions based on the "usefulness" criteria show a higher frequency of responses for small group discussions and demonstration classes, with 80% of participants favoring their extensive use. These methods were highly regarded for improving learning, motivation, confidence, professional attitudes, and collaboration. Most of students supported that classroom lectures and demonstration classes are necessary for achieving comprehensive progress and proficiency . About 39% strongly appreciated the value of demonstration classes, and 36% strongly agreed on their overall usefulness. A significant proportion of students also acknowledged that these classes help reduce anxiety and stress levels related to their studies. Additionally, these teaching methods were found to encourage and improve reading and writing skills, as well as overall understanding.

The total perception of students for Questionnaire One(I) was as follows: Strongly Disagree 1, Disagree 3, Neutral 54, Agree 389, Strongly Agree 153 and overall perception of students for Questionnaire Two(II) was as follows: Not at all - 8, Very little - 70, To some extent - 995, To a great extent - 2151, and To the full extent - 1786 (Table 3). Which are reflect their arrogance and extent use of new teaching modules of CBME curriculum. Only 5% expressed disagreement regarding the effectiveness of SDL, and 2% for tutorials. Additionally, 1-2% of students considered these modules to have very little usefulness.

Each teaching methods are even useful and they explore more discussion, motivation, collaboration and Intensify the comprehensive knowledge in studies & Learning ability for Practical and Clinical aspect required to become a good physician. Among them, Small group discussion and demonstration classes stand out highly effective modules, they enhance learning ,understanding, participation and increases affinity for the subject & more clarification .

Table 1:-Student's perception on Likert's scale towards New Teaching Modules of CBME curriculum on their effectiveness (Questionnaire one).

Question /Objective	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Enable More Supportive and Effective Learning Environment	0	0	5	42	13
They help to enhance understanding	0	0	4	41	15
They Brought in more interaction	0	0	6	43	11
They enhance self learning and knowledge	0	0	6	37	17
These modules explore more discussion	0	1	7	38	14
They improve interpretational skills , critical thinking & more productive	1	1	6	37	15
They increase affinity for the subject & clarification	0	1	4	37	18
These methods maintained the standard of curriculum	0	0	5	39	16
They Intensify interpersonal attitude and performance	0	0	6	37	17
These modules enhance clinical strategy & Practical knowledge	0	0	5	38	17

Table 1A :-Overall Student's perception on Likert's scale towards each Teaching Modules of CBME curriculum On Questionnaire One .

Teaching Methodology (Grading)	Class Lecture	SDL	SGT	Demo class	Tutorial
Zero	0	0	0	0	0
One	0	3	0	0	1
Two	7	6	3	5	3
Three	38	33	38	33	34
Four	15	18	19	22	22

Table 2:-Student's perception on Likert's scale towards New Teaching Modules of CBME curriculum on their Usefulness (Questionnaire Two).

Objective	Teaching Methodology	Not at all	Very little	To some extent	To great extent	To the full extent
Teaching Methods Improve learning & efficiency	Class Lecture	0	0	23	40	37
	SDL	0	1	23	40	36
	SGT	0	0	20	46	34
	Demo class	0	0	20	41	39
	Tutorial	0	1	20	38	41
Encourage & Motivation to Reading , Writing and Understanding	Class Lecture	1	0	21	39	39
	SDL	1	3	17	43	36
	SGT	0	1	19	47	33
	Demo class	0	2	15	41	42
	Tutorial	0	2	17	46	35
Develop Skills like Discussion ,Presentation ,Interaction	Class Lecture	0	3	16	43	38
	SDL	0	2	19	47	32
	SGT	0	2	19	46	33
	Demo class	0	2	15	45	38
	Tutorial	1	1	20	46	32
They enhance opportunity to Engage more faculty	Class Lecture	0	1	20	47	32
	SDL	0	4	20	45	31
	SGT	0	1	19	47	33
	Demo class	0	0	20	43	37
	Tutorial	0	0	19	46	35
Enhance Participation, and Problem solving	Class Lecture	0	2	16	47	35
	SDL	1	3	15	45	36
	SGT	0	1	17	44	38
	Demo class	0	1	16	45	38
	Tutorial	0	1	23	40	36
Improve Professional attitude & Collaborative performance	Class Lecture	0	3	15	42	40
	SDL	0	1	20	41	38
	SGT	0	1	15	48	36
	Demo	0	0	14	48	38
	Tutorial	0	1	25	40	34
They reduce your anxiety and stress	Class Lecture	0	3	21	40	36

level in studies	SDL	0	3	21	42	34
	SGT	0	2	23	38	37
	Demo class	0	1	20	43	36
	Tutorial	2	1	23	44	30
Boost the self -Confidence & Consistency	Class Lecture	0	3	20	43	34
	SDL	0	2	25	43	30
	SGT	0	1	19	48	32
	Demo class	0	0	23	43	34
	Tutorial	0	2	21	41	36
These are necessary for Comprehensive Progress or Proficiency in studies	Class Lecture	0	1	22	42	35
	SDL	1	2	23	37	37
	SGT	0	0	23	40	37
	Demo class	0	1	22	38	39
	Tutorial	0	1	23	41	35
They Intensify the Learning ability for Practical and Clinical aspect required to become a good physician	Class Lecture	0	3	20	43	34
	SDL	0	1	17	44	38
	SGT	0	0	23	43	34
	Demo class	0	2	24	38	36
	Tutorial	1	1	24	36	38

Table 3 :-Analysis of New teaching Modules of CBME Curriculum in study, according percentage of Student's Perceptions and Grading, On the effectiveness and Usefulness.

<i>Effectiveness n=(% Response)</i>	<i>Class Lectures</i>	<i>SDL</i>	<i>SGT</i>	<i>Demo</i>	<i>Tutorial</i>
Zero	0	0	0	0	0
One	0	5	0	0	2
Two	12	10	5	8	5
Three	63	55	63	55	57
Four	25	30	32	37	37
<i>Usefulness n=(%Response)</i>	<i>Class Lectures</i>	<i>SDL</i>	<i>SGT</i>	<i>Demo</i>	<i>Tutorial</i>
Zero	0	0	0	0	0
One	2	2	1	1	1
Two	20	20	19	18	21
Three	42	43	45	42	42
Four	36	35	35	39	36
<i>Method Analysis (Grading)</i>	<i>Zero (Very least)</i>	<i>One (least)</i>	<i>Two (Satisfactory)</i>	<i>Three (Most)</i>	<i>Four (Very most)</i>
Effectiveness (n=600 response)	1	3	54	389	153
Usefulness (n=5000 response)	8	70	995	2151	1786

Where zero = very least , strongly disagree and four = very most, or strongly agree. In reference to the usefulness of the new teaching modules, where 0 represents 'Not at all useful' and 4 represents 'full extent usefulness.

DISCUSSION :

The results of our study highlighted student's positive perceptions of new teaching methods, which enhance learning outcomes, practical and clinical knowledge, and improved professional attitudes & collaborative performance. Our findings highlighted the broad effectiveness for small group discussion and demonstration classes and even utility of these new methods, and emphasizing their necessity in the medical curriculum.

Notably, 95% of the responses supported small group discussions, and 37% of students strongly agreed that tutorials and demonstration sessions effectively enhanced learning. Additionally, 80% of responses favored the extensive use of small

group discussions and demonstration classes, while 39% strongly appreciated the impact of demonstration classes in improving the learning experience.

A study conducted by Jyoti D, Urmil C, Rajender C, et al. Usefulness of New Competency-Based Medical Education (CBME) Ophthalmology Curriculum – Student's Perspective (March 2025). The study revealed that 66.4% of students found self-directed learning (SDL) to be useful, 80.1% appreciated small group discussions, 95.4% valued tutorials, and 78% found seminar presentations on key topics beneficial for learning ophthalmology. Additionally, 92.5% of students reported that supervisor-student interactions during clinical postings were beneficial, while 95% felt that vertical and horizontal integrations enhanced their understanding of key topics. These are key findings that align with the results of our study. An overwhelming 98.3% believed that MCQ-based evaluations would be valuable for future competitive exams, and 92.1% felt that incorporating the subject of attitude, ethics, and communication (AETCOM) was beneficial for their development as future doctors. However, 41.1% of students found the theory exam pattern challenging for achieving good marks. Overall, 62.7% supported the implementation of the new CBME curriculum in MBBS education. The study concluded that students favored the inclusion of case-based, problem-solving, and multiple-choice question discussions in regular teaching sessions ¹².

A study by Krishnamurthy S, Ganapathy K, et al. Implementation and Evaluation of Competency-based Medical Education in Phase I of Undergraduate Medical Curriculum (Oct 2022). The interviews were audio-recorded, and a thematic analysis of the transcripts was conducted for 12 faculty members, including professors, from Sri Manakula Vinayagar Medical College and Hospital, Puducherry. The study, based on faculty development programs, explored the implementation of early clinical exposure, AETCOM, integrated modules, and skill modules during the COVID-19 pandemic. The study's findings were consistent with our results, highlighting the benefits of the new CBME curriculum. However, the study also highlighted certain challenges, particularly in assessment as a component of CBME. The study concluded that frequent and continuous hands-on training through "Faculty Development Programs" is vital for the successful implementation of CBME. These programs play a pivotal role in addressing the challenges and ensuring the curriculum's effectiveness ¹³.

A study conducted by Snehil G, Vikas M, et al. A Global Perspective and Implications for India's CBME Curriculum (June 2022). The study highlighted that CBME programs were adopted earlier in several developed nations, but challenges such as a shortage of trained educators, limited resources, and overburdened teachers or consultants continued to hinder their effectiveness. The study emphasized the importance of ensuring quality education within the curriculum which adds greater acceptability to our findings. They concluded that structural changes in the curriculum, along with proper orientation for both teachers and students, are crucial for fostering professional development and ensuring the successful implementation of CBME ¹.

A study done by Yoon M., Hill J., Kim D., et al. (2021), Designing Supports for Promoting Self-Regulated Learning in the Flipped Classroom, revealed that student's overall performance was significantly better and more effective in the flipped classroom (FCR) module compared to traditional lecture sessions. The flipped classroom model differs from our study modules, offering an innovative approach that enhances student participation. This methodology has a positive impact on student outcomes and supporting modern teaching strategies. Furthermore, the findings of this model align with the results of our study. The authors concluded that their study would provide valuable insights for academicians, enabling them to redesign and optimize their teaching methods to enhance student engagement and learning outcomes ².

CONFLICT OF INTEREST AND FUNDING :

We declare that there are no conflicts of interest in this study. The decisions and actions related to the methods used were not influenced or compromised by any individual's personal interests, whether familial, financial, social, or due to friendships.

CONCLUSION :

The New CBME curriculum enhanced student's attitudes, communication skills, knowledge, engagement, hospitality skills, and overall learning outcomes. Some methodology are highly effective while also being consistently useful. Effective teaching and learning play a crucial role in shaping the future of medical graduates, and their successful implementation is key to meeting the evolving needs of the healthcare profession.

LIMITATION OF STUDY :

The study includes certain limitations, such as a restricted follow-up duration, a limited literature review, and the use of an distinctive English questionnaire.

KEY WORDS :

New Teaching Module, AETCOM, Self Directed Learning (SDL) , Small Group Teaching and Discussion (SGT), Demonstration Classes (DEMO), Tutorial, Competency-Based UG Curriculum, Effectiveness, Usefulness, Student's perception.

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