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From Passive Listeners to Active Learners: Teaching Method Preferences Among First-Year MBBS Students

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ABSTRACT

Background: First-year MBBS students are introduced to foundational biomedical sciences through predominantly teacher-centered, passive instructional methods. With the implementation of Competency-Based Medical Education (CBME) in India, there is an increasing need to understand whether current teaching practices align with student learning preferences and expectations.

Objectives: To evaluate first-year MBBS students' satisfaction with existing teaching-learning methods and to identify their preferences for transitioning toward more active, interactive, and technology-integrated pedagogical approaches.

Methods: A cross-sectional, questionnaire-based survey was conducted among first-year MBBS students in June 2026 using a structured Google Form. Voluntary informed consent was obtained prior to participation. Complete anonymity was maintained throughout. Data analyzed using descriptive statistics and thematic analysis of qualitative responses. No external funding was received, and no conflict of interest exists. Many students who consented”No” in form were excluded from the study.

Results: Of 100 responses collected, 75 valid consented responses were analyzed. Audio-visual aids (Mean = 3.84) and Practical/Dissection sessions (Mean = 3.78) received the highest satisfaction scores among current methods. Students expressed strong agreement for clinical correlation (Mean = 4.12), recorded lectures (Mean = 4.08), and integrated teaching (Mean = 4.01) as desired future changes. Case-Based Learning (69.3%) and Problem-Based Learning (62.7%) were the most preferred future methods. Qualitatively, students expressed dissatisfaction with passive slide-reading lectures and desired story-based, AI-assisted, and clinically contextualized learning.

Conclusion: First-year MBBS students demonstrate a clear shift in learning preferences - from passive reception of information toward active, clinically relevant, and technology-enhanced engagement. Institutions must urgently incorporate these insights into curriculum planning to improve learning outcomes and student satisfaction.

Keywords: Active learning, Medical education, First-year MBBS, Teaching-learning methods, Clinical correlation, Case-based learning, CBME, Student satisfaction, Pre-clinical education, Digital learning

I. INTRODUCTION

Becoming a physician begins with the first-year of the MBBS programme - a year defined by voluminous content, unfamiliar terminology, and an abrupt transition from school-level learning to the demanding world of medical academia. The three foundational subjects of this year - Anatomy, Physiology, and Biochemistry, form the bedrock upon which all future clinical knowledge is constructed [1].

Historically, medical education in India has relied heavily on didactic, teacher-centered methods: chalk-and-talk lectures, rote memorization, and laboratory demonstrations conducted in a largely passive learning environment. While these methods have served as the cornerstone of pre-clinical education for decades, their limitations in fostering critical thinking, clinical reasoning, and long-term retention have been increasingly documented in contemporary medical education literature [2,3].

The landscape of medical education is undergoing a significant transformation. The National Medical Commission (NMC) introduced Competency-Based Medical Education (CBME) in 2019, fundamentally shifting the educational paradigm from content delivery to outcome-oriented learning [4]. CBME emphasizes early clinical exposure, integrated teaching, self-directed learning, and formative assessment - elements that align closely with active learning philosophies.

Active learning encompasses a broad spectrum of pedagogical strategies - including Case-Based Learning (CBL), Problem-Based Learning (PBL), flipped classrooms, peer-assisted learning, and technology-enhanced instruction - all of which engage students as participants rather than passive recipients of information [5]. Research consistently demonstrates that active learning strategies produce superior outcomes in knowledge retention, clinical reasoning development, and student motivation compared to traditional lecture-based approaches [6,7].

However, a critical and often overlooked factor in educational reform is the student's own perspective. Students are the primary stakeholders in the educational process, and their satisfaction with current methods, as well as their aspirations for change, provide invaluable data for curriculum designers and institutional planners [8]. Despite the growing body of literature on medical pedagogy, student-focused surveys examining the specific satisfaction-preference gap in first-year MBBS education remain limited, particularly in the Indian context.

This study was therefore designed to:

- Quantitatively assess satisfaction with current teaching methods
- Identify preferences for future active learning strategies
- Qualitatively explore student experiences and suggestions

The findings aim to provide evidence-based foundation for pedagogical reform at the institutional level, contributing to the broader national agenda of transforming Indian medical education from passive instruction to active, competency-driven learning.

II. AIMS AND OBJECTIVES

2.1 Aim

To assess the transition preference of first-year MBBS students from passive to active teaching-learning methods and to identify the most desired pedagogical reforms.

2.2 Objectives

To evaluate the level of satisfaction of first-year MBBS students with currently employed teaching-learning methods.
To assess student agreement with proposed active and technology-integrated teaching strategies.
To identify the single most important teaching-learning change desired by students.
To qualitatively explore student perceptions, likes, dislikes, and suggestions regarding their teaching-learning environment.

III. METHODOLOGY

3.1 Study Design
Cross-sectional, questionnaire-based observational study.

3.2 Study Setting
A medical college in India, conducted during June 2026.

3.3 Study Population
First-year MBBS students currently enrolled at the institution.

3.4 Sample Size
A total of 100 responses were received. After applying exclusion criteria, 75 valid responses were analyzed.

3.5 Inclusion Criteria
- First-year MBBS students
- Participants who voluntarily provided informed consent
- Responses with sufficient data completeness for analysis

3.6 Exclusion Criteria
- Participants who declined consent
- Incomplete or blank responses
- Responses with implausible patterned data suggesting disengagement
- Responses lacking demographic information

3.7 Data Collection Instrument
A structured Google Form questionnaire was developed with help of a faculty member with expertise in medical education. The instrument was informed by the NMC-CBME competency framework, active learning literature, and the authors' direct institutional experience with first-year MBBS teaching. Questions were reviewed for content relevance and clarity prior to deployment. While formal pilot testing and psychometric validation were not conducted, face validity was supported by the logical coherence of response patterns and convergence between quantitative Likert scores and qualitative thematic findings. The questionnaire comprised six sections:

Table 1: Questionnaire Structure

Section	Domain	Type of Response
Section 1	**Demographics (age, gender, school type, medium of instruction)**	**Multiple Choice**
Section 2	**Satisfaction with current teaching methods**	**5-point Likert Scale**
Section 3	**Agreement with desired future teaching changes**	**5-point Likert Scale**
Section 4	**Preferred teaching methods**	**Multiple Selection**
Section 5	**Single most important desired change**	**Single Choice**
Section 6	**Open-ended qualitative responses**	**Free Text**

3.8 Likert Scale Interpretation

Table 2: Likert Scale Scoring Criteria

Score	Satisfaction (Section 2)	Agreement (Section 3)
1	Very Dissatisfied	Strongly Disagree
2	Dissatisfied	Disagree
3	Neutral	Neutral
4	Satisfied	Agree
5	Very Satisfied	Strongly Agree

3.9 Statistical Analysis

- Quantitative data: Descriptive statistics including frequencies, percentages, and mean Likert scores with standard deviations
- Qualitative data: Inductive thematic analysis of open-ended responses
- Data were compiled and analyzed using Microsoft Excel
- Internal consistency of the Likert scale sections was assessed using Cronbach's alpha

3.10 Ethical Considerations

- Informed Consent - Voluntary; obtained at the beginning of the survey
- Anonymity - Complete anonymity maintained; no personal identifiers collected
- Funding - None received
- Conflict of Interest - None declared
- Data Use - Only consented responses included in analysis

IV. RESULTS

4.1 Demographic Profile of Respondents

A total of 100 responses were received between June 6–18, 2026. After applying exclusion criteria, 75 valid consented responses were included in the final analysis.

Table 3: Demographic Characteristics of Study Participants (n=75)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Female	53	70.7
	Male	21	28.0
	Prefer Not to Disclose	1	1.3
Age Group (years)	17–19	46	61.3
	20–22	25	33.3
	23–27	4	5.3
Type of School	Private School	71	94.7
	Government School	2	2.7
	Other	2	2.7
Medium of Instruction	English	58	77.3
	Bilingual	8	10.7
	Regional Language	7	9.3
	Not Specified	2	2.7

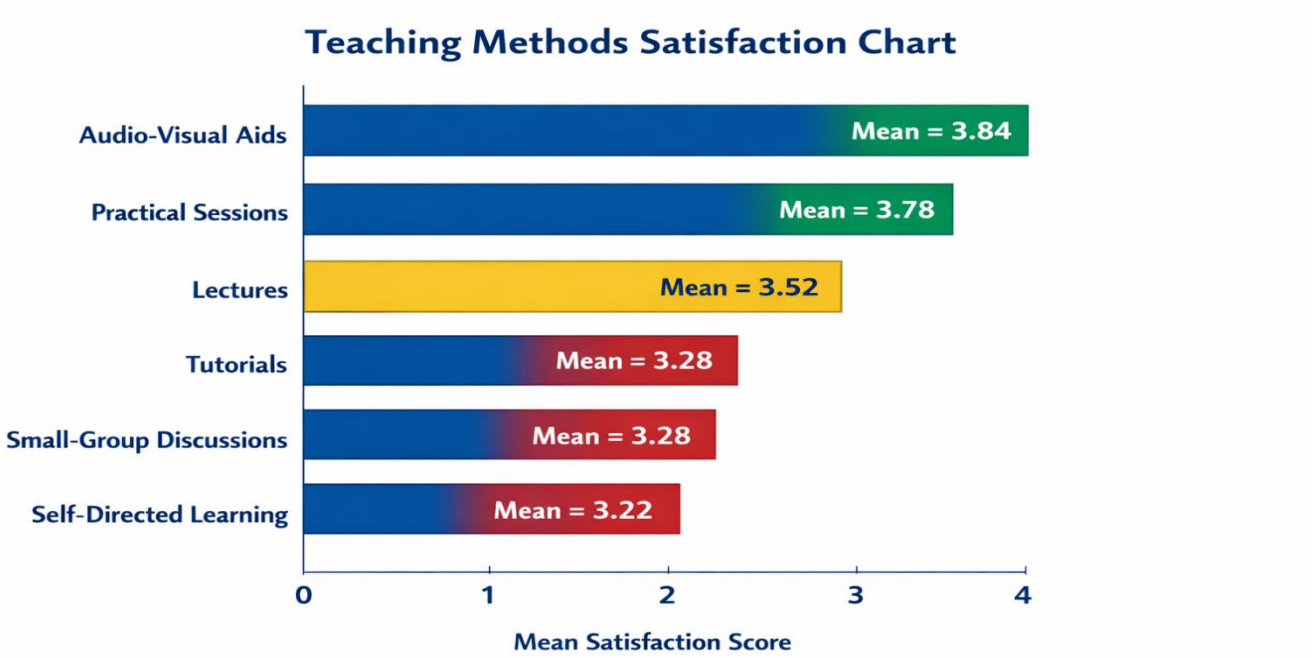
The cohort was predominantly female (70.7%), in the 17–19 year age group (61.3%), from private schools (94.7%), and educated in English medium (77.3%).

4.2 Section 2: Satisfaction with Current Teaching-Learning Methods

Table 4: Mean Satisfaction Scores for Current Teaching Methods (n=75)

Teaching Method	Mean Score	SD	Satisfaction Level
Audio-Visual Teaching Aids	3.84	±1.07	Moderate–High
Practical Sessions/Dissections	3.78	±1.10	Moderate–High
Traditional Lectures	3.52	±1.18	Moderate
Tutorials/Q&A Sessions	3.41	±1.20	Moderate
Small-Group Discussions	3.28	±1.21	Moderate
Self-Directed Learning	3.22	±1.28	Moderate

Figure 1: Satisfaction with Current Teaching Methods



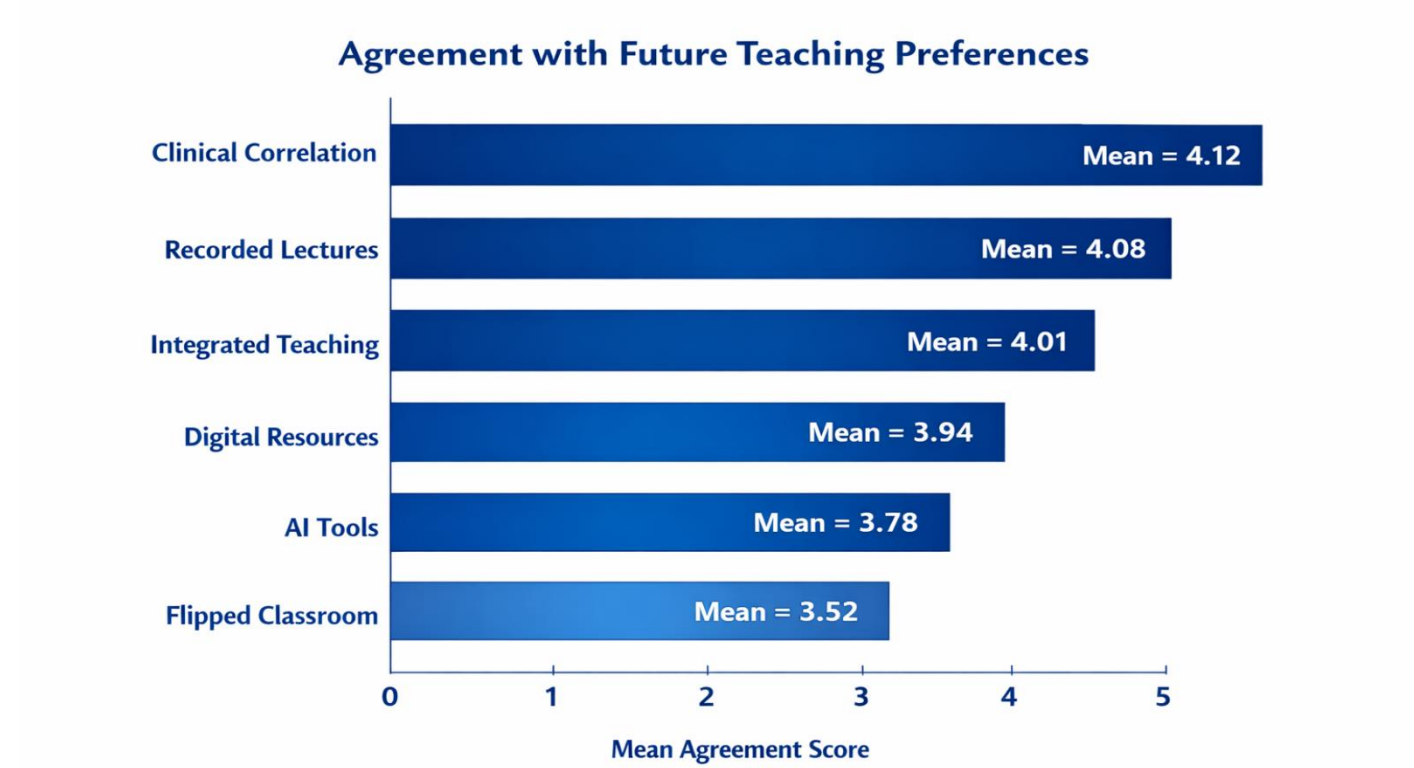
4.3 Section 3: Agreement with Desired Future Teaching Methods

Table 5: Mean Agreement Scores for Desired Future Teaching Changes (n=75)

Desired Future Change	Mean Score	SD	Agreement Level
More clinical correlation in first-year subjects	4.12	±0.98	Strong Agreement
Recorded lectures available for review	4.08	±1.02	Strong Agreement
Integrated-teaching (Anatomy,Physiology,Biochemistry)	4.01	±1.04	Strong Agreement
More case-based learning	3.97	±1.05	Agreement
Digital resources to supplement classroom teaching	3.94	±1.09	Agreement
Lectures should be more interactive	3.89	±1.08	Agreement
Immediate feedback improves learning	3.89	±1.08	Agreement
More PBL sessions	3.81	±1.10	Agreement
AI-assisted learning tools	3.78	±1.15	Agreement
Small-group teaching more effective than large-group	3.72	±1.14	Agreement

More formative assessments	3.74	±1.12	Agreement
Peer-assisted learning	3.61	±1.13	Agreement
Flipped classroom	3.52	±1.18	Moderate Agreement

Figure 2: Agreement with Future Teaching Preferences



4.4 Section 4: Preferred Teaching Methods

4.4.1 Most Preferred Methods (Select All That Apply)

Table 6: Student Preferences for Teaching Methods (n=75)

Teaching Method	No. of Students	Percentage (%)	Rank
Practical/Dissection Sessions	54	72.0	1st
Case-Based Learning	52	69.3	2nd
Problem-Based Learning	47	62.7	3rd
Traditional Lectures	38	50.7	4th
Tutorials/Q&A Sessions	36	48.0	5th
Recorded Video Lectures	34	45.3	6th
Small-Group Discussions	30	40.0	7th
Integrated Teaching Sessions	29	38.7	8th
Self-Directed Learning	22	29.3	9th
Peer-Assisted Learning	14	18.7	10th

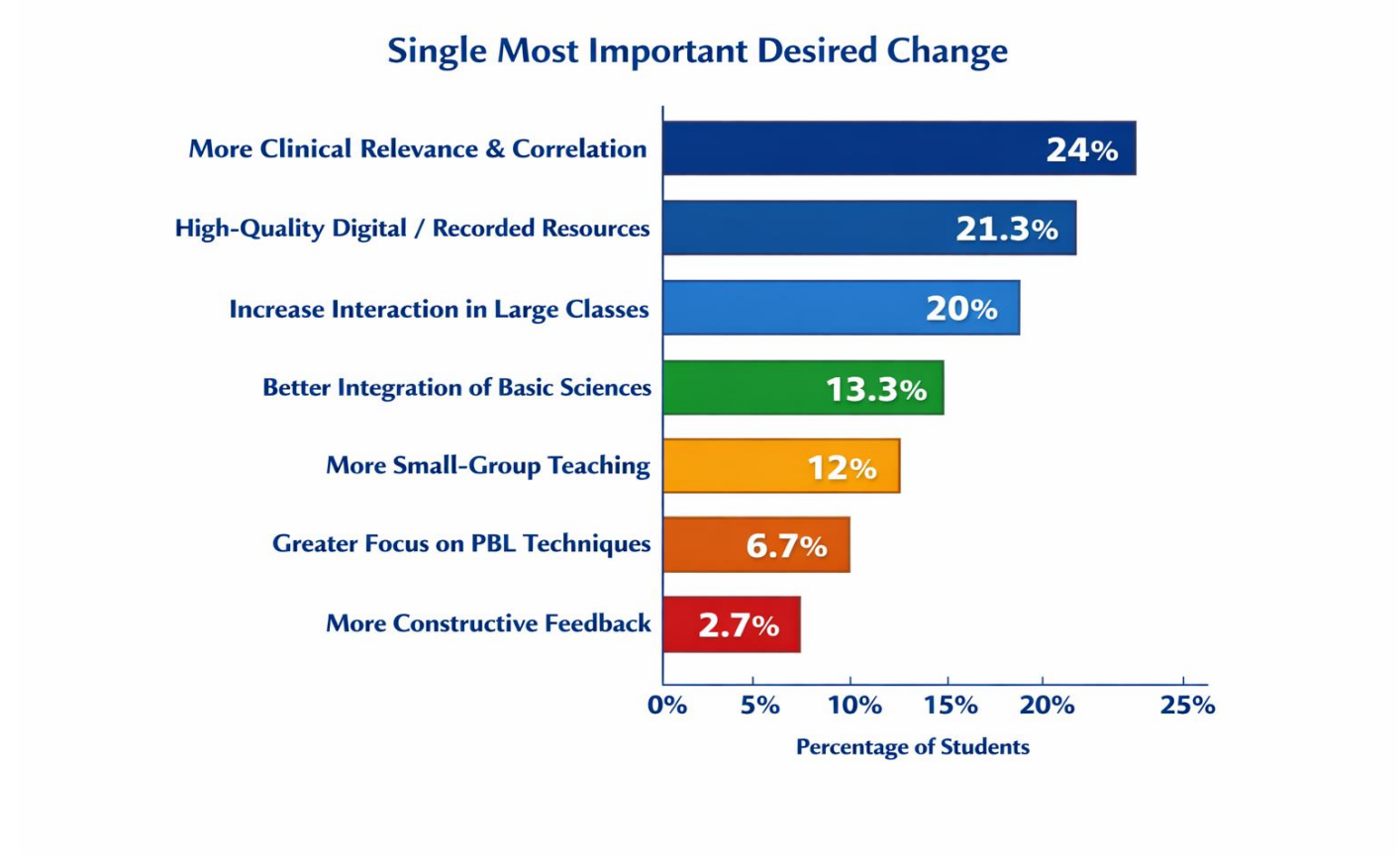
Despite moderate satisfaction scores for traditional lectures, only 50.7% preferred them as a future method CBL (69.3%) and PBL (62.7%) were preferred by more students than traditional lectures - clearly indicating a preference shift toward active learning

4.4.2 Single Most Important Change Desired

Table 7: Most Important Single Change Requested by Students (n=75)

Desired Change	Frequency (n)	Percentage (%)	Rank
More clinical relevance and correlation	18	24.0	1st
Availability of high-quality digital/recorded resources	16	21.3	2nd
Increase interaction and engagement in large classes	15	20.0	3rd
Better integration of basic sciences	10	13.3	4th
Increase in small-group teaching sessions	9	12.0	5th
Greater focus on PBL techniques	5	6.7	6th
More frequent and constructive feedback	2	2.7	7th

Figure 3: Single Most Important Desired Change



4.5 Section 6: Qualitative Findings - Thematic Analysis

Open-ended responses were analyzed inductively, yielding five dominant themes:

Theme 1: Appreciation for Hands-On and Practical Learning

Students consistently identified practical and experiential learning as the most valued component of their current education.

"Practicals of every subject"
"Interactive classes, clear explanations, and practical learning make subjects easier to understand"
"Dissection hall"
"Interactive learning"

This theme reflects the enduring value students place on experiential, tactile learning - consistent with Kolb's Experiential Learning Theory [9].

Theme 2: Dissatisfaction with Passive Lecture Delivery
A recurring and prominent theme was dissatisfaction with un-engaging, one-directional lecture formats.

"Just slide reading by some professors"
"Long hour lecture"
"Lectures with no interactions"
"Continuous 2-hour lectures"
"Nothing — student-direct learning"

Students were particularly critical of lectures that lacked interaction, clinical context, or pedagogical creativity.

Theme 3: Strong Desire for Clinical Contextualization
Many students explicitly articulated the need for clinical relevance in preclinical teaching — a finding that strongly corroborates the quantitative data.

"Would like to discuss cases that are filled everyday at the hospital as a case study question — one case a day"
"Clinical based learning"
"Uses case-based study in lectures also"
"Involvement of more case-based questions in the class"
"Quiz for disorder clinical application"

This theme reveals a sophisticated metacognitive awareness among students — they understand that contextualizing basic science concepts in clinical scenarios enhances both meaning and memorability.

Theme 4: Demand for Technology and Creative Pedagogy
Students expressed enthusiasm for innovative, technology-driven, and creatively structured learning.

"Topics should be explained in the form of a story because it helps us easily memorize anything, as well as AI-generated videos for improvement in our learning"
"Recorded lectures"
"AI tools and AI-generated videos"
"Interesting PPT"
"Simulations and educational apps"

The metaphor of "story-based learning" is particularly noteworthy - it reflects principles of narrative medicine and suggests students intuitively seek contextualized, meaning-rich knowledge frameworks [10].

Theme 5: Interpersonal and Environmental Factors
Beyond pedagogy, students highlighted the importance of the teacher-student relationship and classroom atmosphere.

"Behaviour of lecturers"
"Some teachers' rude behaviour"
"Less interaction with faculties"
"More one-to-one interaction with teachers and getting advice and support from them"
"Personal attention"

This theme reveals that the hidden curriculum - faculty attitudes, professional modeling, and interpersonal dynamics — significantly influences student learning experiences [11].

V. DISCUSSION

5.1 Overview

The results of this study paint a compelling picture of a student cohort that has outgrown passive instruction. While traditional methods continue to be present in the educational landscape, students demonstrate a clear, consistent, and multidimensional preference for active, clinically relevant, and technology-integrated learning. This transition preference — from passive listeners to active learners — is the central finding of this study and carries significant implications for medical education reform.

5.2 The Passive Learning Problem

The moderate satisfaction scores for traditional lectures (Mean = 3.52) and the qualitative dissatisfaction expressed with slide-reading and long lectures align with a growing body of evidence questioning the efficacy of passive instruction in medical education. Freeman et al. (2014), in a landmark meta-analysis of 225 studies, demonstrated that students in active learning classrooms were 1.5 times less likely to fail compared to those in traditional lecture-based settings [6]. The finding that only 50.7% of students preferred traditional lectures as a future method — despite it being the most commonly delivered format — represents a meaningful satisfaction-preference gap that institutions must address.

5.3 The Clinical Correlation Imperative

The strongest finding of this study — the highest agreement score for clinical correlation (Mean = 4.12) and its selection as the single most desired change by 24.0% of students — reflects a fundamental cognitive need. Students learn more effectively when new information is anchored to meaningful, real-world contexts [12]. The NMC's CBME framework specifically incorporates Early Clinical Exposure (ECE) as a mandatory component of first-year MBBS education precisely for this reason [4].

The student suggestion of "one case a day" is both practically feasible and pedagogically sound. Brief, structured case discussions at the beginning or end of lectures can provide the clinical anchor students need without requiring significant restructuring of existing timetables. This approach aligns with the "illness scripts" model of clinical reasoning, where basic science knowledge is organized around clinical presentations [13].

5.4 Case-Based and Problem-Based Learning

The strong preference for CBL (69.3%) and PBL (62.7%) over traditional lectures (50.7%) confirms the shift in learning preferences documented globally among medical students. Both CBL and PBL activate higher-order cognitive processes — analysis, synthesis, and evaluation — that correspond to the upper tiers of Bloom's Taxonomy [14]. These methods are particularly suited to the CBME framework, where the ability to apply knowledge to clinical problems is the central competency being developed.

A meta-analysis by Koh et al. (2008) found that PBL graduates demonstrated significantly better clinical competence, problem-solving skills, and self-directed learning abilities compared to graduates of traditional curricula [15]. The integration of CBL and PBL in first-year teaching — even in modified, case-triggered forms — can therefore have long-term benefits extending well into clinical training.

5.5 Digital and Recorded Resources

The strong agreement for recorded lectures (Mean = 4.08) and digital resources (Mean = 3.94) reflects the post-pandemic normalization of blended learning. The COVID-19 pandemic fundamentally altered students' relationship with digital education, demonstrating that recorded lectures could supplement — and in some cases enhance - traditional classroom instruction by providing flexibility, repeatability, and self-paced review [16].

For complex subjects like Neuroanatomy, Biochemical pathways, or Physiological mechanisms, the ability to pause, rewind, and re-watch recordings is particularly valuable. Institutions that invest in lecture recording infrastructure and curated digital resource libraries are likely to see measurable improvements in student satisfaction and examination performance.

5.6 AI-Assisted Learning

The moderate-to-strong agreement for AI-assisted learning tools (Mean = 3.78) - including personalized learning pathways -represents an emerging frontier in medical education. While AI in education is still nascent, early evidence suggests that adaptive learning platforms can identify individual knowledge gaps and tailor content delivery accordingly [17]. The student suggestion of "AI-generated videos" and "personalized learning" indicates that today's medical students are not only receptive to AI integration but actively aspire to it.

5.7 Integrated Teaching

The strong agreement for integrated teaching (Mean = 4.01) and its selection as the fourth most important desired change (13.3%) directly supports the NMC's vision of horizontal integration across Anatomy, Physiology, and Biochemistry. When students understand, for example, that the histological structure of the renal corpuscle (Anatomy) determines the glomerular filtration mechanism (Physiology), which in turn regulates acid-base balance (Biochemistry), the conceptual coherence dramatically improves retention and understanding [18].

Integration reduces cognitive fragmentation - the experience of learning isolated facts without perceiving their interconnectedness - which is a common complaint among first-year medical students.

5.8 The Hidden Curriculum - Faculty Behavior and Classroom Environment

Perhaps the most striking qualitative finding was the repeated mention of faculty behavior as a significant factor in learning experience. Comments referencing "rude behaviour", "behaviour of lecturers", and desires for "more one-to-one interaction and support" highlight that the affective dimension of teaching - empathy, approachability, mentorship - is as important to students as the cognitive dimension.

Hafferty (1998) famously argued that the hidden curriculum - the unspoken values, attitudes, and behaviors modeled by faculty, profoundly shapes medical students' professional identity and wellbeing [11]. Institutions should recognize that faculty development programs must address not only pedagogical skills but also interpersonal competencies and professional role modeling.

5.9 Story-Based and Narrative Learning

The creative suggestion that "topics should be explained in the form of a story" resonates deeply with the concept of narrative medicine, developed by Rita Charon at Columbia University [10]. Narrative frameworks activate multiple cognitive processes simultaneously — temporal sequencing, emotional engagement, and contextual memory encoding — making them powerful tools for complex information retention. Faculty who naturally teach through anecdotes, patient stories, and clinical narratives are implicitly employing this powerful pedagogical strategy.

5.10 Limitations

- Single-institution study - Limits generalizability to other medical colleges with different teaching infrastructures and student demographics.
- Self-report bias - Likert scale responses may not fully capture nuanced student experiences.
- Patterned responses - Some responses appeared to show uniform ratings across all items, suggesting possible disengagement or misunderstanding of the scale; these were flagged during analysis.
- No validated instrument - The questionnaire was researcher-developed with expert faculty input but without formal pilot testing or psychometric validation. The use of established instruments (e.g., DREEM, ASSIST) in future studies would enhance comparability with published literature.
- Cross-sectional design - Causal inferences regarding the impact of teaching methods on learning outcomes cannot be made.
- Gender imbalance - The predominance of female respondents (70.7%) may influence preference patterns and should be considered in interpretation.

VII. CONCLUSION

This study confirms what many educators have intuitively known - that first-year MBBS students are no longer content with being passive recipients of information. They arrive in medical school with high expectations, digital fluency, and a desire for learning that is interactive, clinically meaningful, and technologically enriched.

The transition from passive listeners to active learners is not merely a pedagogical aspiration - it is an educational imperative in the era of CBME. The findings of this study demonstrate that:

Students are moderately satisfied with current methods but strongly desire change
Clinical correlation, recorded lectures, and integrated teaching are the most urgently desired reforms
Case-based and problem-based learning are preferred over traditional lectures as future methods
Faculty behavior and interpersonal dynamics are critical, often-overlooked determinants of learning experience
Technology integration — from recorded lectures to AI tools - is both desired and feasible
Institutions that listen to their students and act on these insights will not only improve satisfaction scores but will fundamentally enhance the quality of medical graduates they produce. The voice of the first-year MBBS student, as captured in this study, is clear:

"We want to learn - not just listen."

ACKNOWLEDGEMENTS

The authors sincerely thank all first-year MBBS students who voluntarily participated in this study and provided their honest, thoughtful responses. Their willingness to share their learning experiences and aspirations forms the foundation of this work.

ETHICAL STATEMENT

- Voluntary informed consent was obtained from all participants prior to inclusion in the study
- Complete anonymity was maintained throughout; no personal identifiers were collected or stored
- Conflict of Interest - The authors declare no conflict of interest
- This study received no external funding from any public, commercial, or not-for-profit organization
- Only responses from participants who explicitly consented were included in the final analysis

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