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Phase Two Medical Students Perception about the Integrated Teaching Sessions: A cross-sectional study

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ABSTRACT

Background: Integrated teaching refers to the organization of educational content in a way that bridges and unifies subjects that are typically taught separately. Incorporating student feedback is essential to enhancing the effectiveness of integrated teaching sessions. Therefore, the present study was conducted to evaluate the perceptions of Phase Two medical students regarding the effectiveness and usefulness of integrated teaching, along with their suggestions for improving future sessions.

Materials and Methods: This cross-sectional study was conducted among Phase Two medical students at a tertiary care teaching institute. A validated questionnaire comprising 12 items was used. Ten questions utilized a five-point Likert scale, one question focused on the students' preferred integrated teaching sessions, and one open-ended question gathered suggestions for improvement.

Results: Out of 104 students, 96 provided informed consent and participated in the study. The responses indicated a strong positive perception of integrated teaching. High levels of agreement were noted for statements such as "Clarifies concepts" (84.38%) and "Provides knowledge" (90.62%). A notable majority also strongly agreed with the effectiveness of case-based learning (83.33%). Additionally, a significant proportion of students felt that integrated teaching enhances active learning (72.92%) and should be more interactive (67.71%).

Conclusion: The study reveals that Phase Two medical students hold a favorable view of integrated teaching, particularly in its ability to clarify concepts and deliver valuable knowledge. Suggestions for improving integrated sessions include increasing interactivity, focusing on essential topics, managing time efficiently, and incorporating breaks during sessions.

Keywords: Competency-Based Medical Education, Integration, Integrated teaching, Medical students, Perception.

INTRODUCTION

Integrated teaching refers to the systematic organization of educational content that connects or unifies subjects traditionally taught in isolation across departments [1]. Harden expanded this concept by proposing an "integration ladder" comprising eleven steps, each representing progressively deeper levels of integration. Integrated teaching has been shown to enhance student-teacher engagement and promote cohesive learning by linking concepts across various disciplines [2]. In recognition of its value, the National Medical Commission (NMC) of India implemented the Competency-Based Medical Education (CBME) curriculum in August 2019. This curriculum emphasizes the use of integrated approach for teaching, both horizontally and vertically, across different phases of medical education. Horizontal integration, conducted within the same phase, aims to minimize content redundancy and encourage interdepartmental synergy. While vertical integration

bridges foundational and clinical sciences across different phases, fostering early clinical relevance and reinforcing prior knowledge [3].

Various departments have begun conducting integrated teaching sessions as part of curriculum implementation. However, optimizing the effectiveness of these sessions requires a student-centered approach that incorporates learner feedback. In this context, the present study was undertaken to assess the perceptions of phase two medical students regarding the effectiveness and usefulness of integrated teaching sessions, and to obtain their suggestions for further enhancement.

Objectives:
1. To determine the effectiveness of integrated teaching sessions among phase two medical students.
2. To assess the usefulness of integrated teaching sessions among phase two medical students.

MATERIALS AND METHODS:
Study Design: This was a cross-sectional study conducted among undergraduate phase two medical students at a tertiary care teaching institute.

Study Participants: The study population comprised 104 phase two medical students.

Study Site: The study was conducted in the Department of Pharmacology.

Study Duration: Data collection was carried out over a two-month period, from August 2024 to September 2024.

Ethical Approval and Consent: The study protocol was approved by the Institutional Ethics Committee prior to commencement. Students were informed about the purpose of the study, and participation was voluntary. Only those who provided informed consent after reading the information sheet were included. Responses were collected anonymously to maintain confidentiality.

Data Collection Tool: A validated, structured questionnaire was used to collect data. The questionnaire comprised a total of 12 items:

- Ten items were measured using a five-point Likert scale to assess student perceptions.
- One item required participants to choose from predefined options using a tick-box format.
- One open-ended question solicited student suggestions for improving integrated teaching sessions.

Validation of the Questionnaire: Content validation of the questionnaire was conducted by four faculty members from different departments. Each item was evaluated for **relevance, clarity, simplicity,** and **ambiguity** using a four-point scale. The **Item-level Content Validity Index (I-CVI)** ranged from 0.75 to 1.00, while the **Scale-level Content Validity Index (S-CVI/Ave)** was calculated to be 0.98, indicating excellent content validity [4].

Data Collection Procedure: The questionnaire was digitized using Google Forms and distributed to the participants. Only students who gave informed consent were granted access to complete the form.

Data Entry and Analysis: Responses were entered into Microsoft Excel 2019 for analysis. Descriptive statistics, including frequencies and percentages, were used to summarize Likert scale responses. The internal consistency of the Likert scale items was assessed using **Cronbach's alpha**.

RESULT:
A feedback form was distributed to 104 Phase two medical students, of whom 96 consented to participate in the study. The validated questionnaire comprised 12 items, including 10 statements measured using a five-point Likert scale. Internal consistency of the Likert-scale items was assessed using Cronbach's alpha, yielding a value of 0.85 (n = 96), which indicates satisfactory reliability and suggests that the items measured a cohesive construct.

Table:1 represents an overview of students' perceptions regarding the effectiveness and usefulness of integrated teaching sessions in enhancing their learning experience. Responses indicated a generally positive perception. High levels of agreement (strongly agree and agree) were reported for statements such as *"Clears the concepts"* (84.38%) and *"Provides knowledge"* (90.62%). Similarly, *"Case-based learning"* was strongly supported (83.33%). A substantial proportion of students agreed that integrated teaching promotes active learning (72.92%) and expressed a preference for more interactive sessions (67.71%).

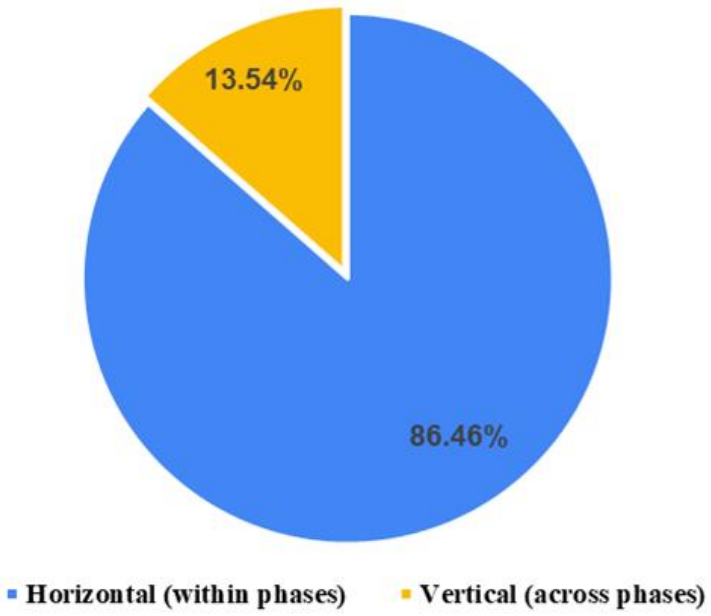
Table: 1 Perception of phase two medical students about integrated teaching sessions

	Strongly agree %	Agree %	Neutral %	Disagree %	Strongly disagree %
Clear the concepts	21.88	62.50	15.63	0.00	0.00
Provide knowledge	27.08	63.54	7.29	2.08	0.00
Reduce time for study	20.83	47.92	19.79	9.38	2.08
Improve active learning	22.92	50.00	22.92	3.13	1.04
Improve performance	13.54	42.71	35.42	7.29	1.04
Preferred over traditional teaching	12.5	48.96	36.46	1.04	1.04
Allot more time	21.88	34.38	33.33	9.38	1.04
More interactive	17.71	50.00	26.04	4.17	2.08
Incorporate in routine curriculum	18.75	47.92	28.13	3.13	2.08
Case based approach	38.54	44.79	14.58	2.08	0.00

However, certain responses indicated areas requiring further attention. Agreement with the statement *"Reduces time for study"* was lower (68.75%), with 19.79% of students responding neutrally. While 61.46% preferred integrated teaching over traditional methods, 36.46% selected a neutral option. Additionally, although 56.25% believed integrated teaching improved their performance, 35.42% gave neutral responses, reflecting some uncertainty.

Figure 1 illustrates student preferences regarding the type of integrated teaching sessions. The majority (86.46%) favored horizontally integrated teaching formats.

Figure: 1 Preference of Integrated teaching sessions among phase two medical students



Qualitative feedback from open-ended responses was analyzed and summarized in Table 2. A notable proportion of students (41.67%) did not offer specific suggestions for improvement. However, 12.50% explicitly recommended *"Case-based integrated lectures"*, reinforcing the quantitative findings. Positive sentiments were also reflected in responses such as *"Already good"* (11.46%) and *"Helpful to study"* (5.21%).

Table: 2 Key words from open ended question regarding suggestions to improve integrated teaching sessions

Key words	**No.**	**%**
No suggestion	40	41.67
Case based integrated lecture	12	12.50
Already good	11	11.46
Make it more Interactive	8	8.33

Cover important topic	6	6.25
Helpful to study	5	5.21
More time for each subject	5	5.21
Break between the sessions	4	4.17
Conduct test at the end of session	2	2.08
Make it interesting	2	2.08
More understanding in traditional teaching	1	1.04

Suggestions for improvement included: *"Make it more interactive"* (8.33%), *"Cover important topics"* (6.25%), *"Allow more time for each subject"* (5.21%), *"Include breaks between sessions"* (4.17%), and *"Make it interesting"* (2.08%).

DISCUSSION

The primary objective of medical education is to provide students with the knowledge and skills required for effective application across various disciplines, ultimately benefiting patients and society [5]. Competency-Based Medical Education (CBME) emphasizes integrated teaching approaches that connect concepts across different phases of the curriculum, facilitating better conceptual clarity and the practical application of knowledge [3].

The present study aimed to evaluate Phase II medical students' perceptions of the effectiveness and usefulness of integrated teaching, along with their suggestions for improvement. The findings revealed an overall positive perception, which was in consistent with earlier studies [6,7]. A majority of students agreed that integrated teaching helped in clarifying concepts (84.38%) and enhancing knowledge (90.62%), indicating its value in promoting understanding and retention. These observations align with prior research, including a study from Kerala reporting 79.6% positive responses [8], and findings by Neeli D. et al., where 83.7% of students had favorable views, 92.2% acknowledged improved understanding, and 94.5% agreed that concepts were clarified [1]. Other studies also support the idea that integrated teaching is well-received by the students [9]. Ambwani et al, mention that integrated teaching is considered a major educational reform in medical education [10].

Students also showed strong support for the case-based approach (83.33%), highlighting its role in linking theory to real-world clinical practice. Neeli D. et al. also reported that 87.5% of students found case-based learning helpful for differential diagnosis and treatment planning [1]. Furthermore, a considerable proportion of students believed that integrated sessions promote active learning (72.92%) and make it more interactive (67.71%), suggesting increased student engagement, which was in accordance with findings from other studies [8,9,11].

However, a lower agreement rate was observed regarding the perception that integrated teaching reduces study time (68.75%), suggesting students may not find it particularly time-efficient, which is in contrast with study conducted by Yadav et al [12]. While a majority of students agree that integrated teaching improves performance (56.25%), the high neutral response (35.42%) indicates uncertainty. This might be because it's hard to link performance directly to integrated teaching session. Although most students prefer integrated teaching over traditional methods (61.46%), but some students remained neutral (36.46%), suggesting that they may not be fully convinced with integrated approach. This aligns with other study where 36.1% students preferred traditional teaching method [8].

The interpretation of qualitative data in the form of keywords were helpful to prepare integrated teaching session more effective. A significant number of students (12.50%) specifically mentioned *Case based integrated lecture,* reinforcing that students value this approach. Several keywords point to potential areas for improvement: *Make it more Interactive* (8.33%) suggests a desire for even more active engagement during sessions. *Cover important topic* (6.25%) implies that students want the sessions to focus on key concepts and topics relevant to their curriculum. *More time for each subject* (5.21%) reflect the concern raised about time management. *Break between the sessions* (4.17%) suggests that some students may find the sessions too long. *Make it interesting* (2.08%) indicate the need for a more engaging delivery of the content. Only a very small number of students (1.04%) expressed that More understanding in traditional teaching, indicating that the integrated approach is generally well-received. These findings can be used to further refine and optimize integrated teaching sessions to better meet the needs of phase two medical students.

Limitations:

This study was conducted among students from a single phase and institution, which may limit the generalizability of the findings. Future studies should aim for a larger, more diverse sample and include pre- and post-intervention performance data to better evaluate the actual impact of integrated teaching.

CONCLUSION:

The present study highlights the positive perception of integrated teaching among Phase II medical students. Most students reported that integrated sessions help in clarifying concepts, enhancing knowledge, and promoting active learning - especially when case-based approaches are employed. Although some concerns were noted regarding time efficiency and preference for traditional methods among some students, the overall feedback supports the continued use of integrated teaching by addressing students' suggestions like increasing interactivity, optimizing session length, and focusing on key concepts. On the basis of that future integrated teaching sessions can be made even more effective.

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Conflicting Interest: NIL

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