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# A COMPARATIVE ANALYSIS OF TRADITIONAL AND MODERN INSTRUCTIONAL METHODS: IMPACT ON STUDENT ENGAGEMENT AND ACADEMIC PERFORMANCE

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**ABSTRACT**

**Purpose**

The paper will address the contrast in the implications of traditional and modern teaching methods for student engagement and learning outcomes in dental higher education. The educational priorities are shifting toward the learning process of technology-based, student-centered approaches; thus, it is vital in health professions education to assess the feasibility of such approaches.

**Method**

This study employed a qualitative research design, with thematic analysis used to examine students' and teachers' views at Vyas Dental College. Open-ended questions and questionnaires were used to gather information, and the data provided insights into traditional and modern teaching methods, the use of digital tools, and blended instructional methods. The evaluation aimed to identify the strengths, weaknesses, and effectiveness of the instructional methods for engagement, comprehension, and participation. As the research was based on a qualitative design, no statistical analysis or P-values were involved.

**Results**

Findings indicated that traditional methods were conducive to discipline, structure, and clarity of concepts, but not to self-directed learning and creativity. Modern methods, particularly those centered on technology, enabled active participation and critical thinking, but digital distractions and limited resources were issues. The blended model, incorporating the rigidity of traditional approaches with the flexibility and involvement of contemporary approaches, has been formulated to offer the most effective framework for ensuring continued interactions and learning in the education of health professions.

**Conclusion**

The study highlights the need for a balanced pedagogical approach in health professions education, integrating a high degree of instructional organisation with sufficient student-centred flexibility. In dental and health professions programs, blended approaches can enhance learning outcomes by integrating well-organized content delivery with active, technology-enabled engagement. These findings imply that there are effective methods for instructors to differentiate their delivery to different students, depending on the learning conditions and resource limitations.

**Keywords**: Old methods; New Methods; Blended Learning; Student Engagement; Health Professions Education; Instructional Approaches (designed by BioRender).

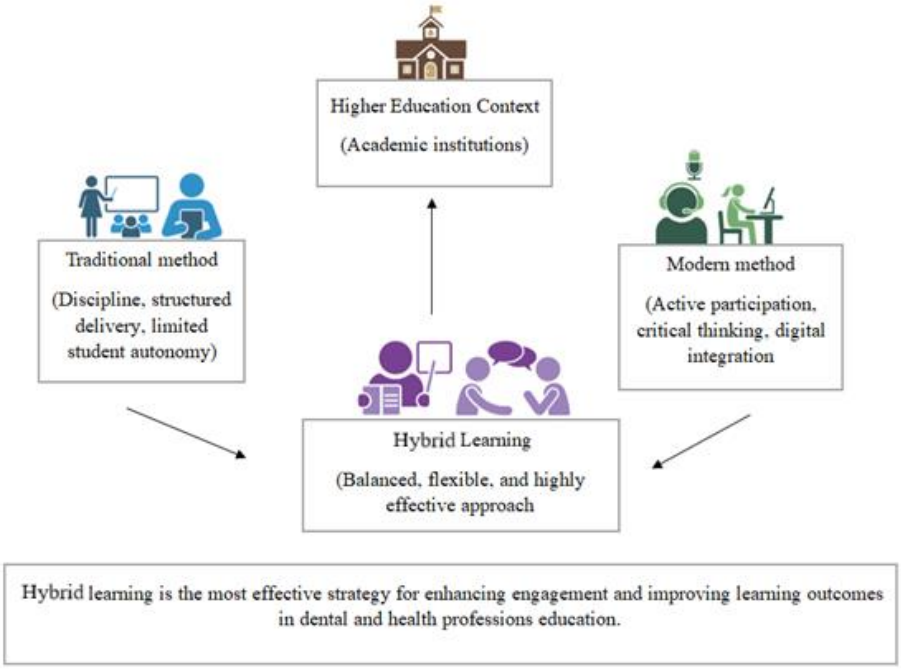


*Fig.1. Conceptual framework of study, illustrating the relationships between traditional, modern, and Hybrid learning*

## 1. INTRODUCTION

Education is a source of social and professional growth, and effective instructional strategies are considered a significant factor in helping students become engaged, achieve better academic results, and develop overall [1]. The end goal in the education of health professionals is to equip competent, reflective, and capable practitioners. The methods of instruction, consequently, influence not only the acquisition of knowledge but also the formation of clinical knowledge, cooperation, and necessary learning skills [2], [3].

They still use traditional approaches, including lectures, following the curriculum, and straightforward note-taking. Although the primary goal is to equip students to conduct assessments, they provide limited independence and active involvement [4].

In comparison, technological advances in pedagogy have led to a shift toward developmental, student-centered methods in the classroom. On the other hand, collaborative online platforms, flipped classes, and multimedia are current practices that can be used to improve instruction quality and aid academic success [5],[6]. The practices enhance interaction through flexibility and student-based approaches. The issues that come with these strategies, however, are the teachers' willingness, the high institutional cost, and unequal digital skills [7].

Despite recent advances in the teaching literature, limited research has examined the efficiency of traditional and modern teaching strategies in the health professions. In addition, the widespread use of technology-based learning during and after the COVID-19 crisis underscores the need to reconsider the two strategies in the context of the modern academic environment [8].

This is the gap being addressed in the given study, which is conducted through a comparative analysis of teaching practice and its effectiveness in terms of student engagement and achievement in higher education. The paper will critically examine the strengths and weaknesses of the two strategies, the use of digital technologies in modern pedagogy, and the versatility of blended strategies to address the needs of every student. Thus, the research questions of the given paper are as follows:

- How do the modern and traditional techniques differ, in terms of principles, contact with the students, and their performance?

- How do the teaching methods of the two approaches assist in motivating, engaging, and learning in students?
- What contributions has the integration of technology made to the transformation of contemporary teaching practices, and what have been the resulting impacts?
- What are the pros and cons of using both traditional and modern approaches in contemporary learning environments?
- How efficient is a mixed system in improving learner interaction and general learning outcomes?

## 2. LITERATURE REVIEW

### 2.1 Traditional Methods

These approaches are mostly teacher-focused, treating students as passive recipients of knowledge. Lectures and curriculum-based tests are among the strategies that emphasize rote memorization and the progressive delivery of content [9], [11]. The strategies enhance classroom discipline and teaching effectiveness and can therefore be applied in large classrooms with limited resources [12]. Although they are effective, they offer fewer opportunities for interaction and feedback, which often hinders students' creativity, critical thinking, and autonomy [13].

### 2.2 Modern Methods

These approaches are student-oriented and encourage creativity, personalized learning, and group learning. Teachers are facilitators who aid students by questioning, real-life applications, and group tasks [14], [15]. Case-based and problem-based methods are active learning techniques that have been demonstrated to increase engagement and motivation as well as long-term learning [16], [17].

In health professions education, these techniques help develop advanced skills, such as clinical knowledge and decision-making. However, they are primarily dependent on adequate resources, reduced course load, and teacher readiness, which may not be viable in all circumstances.

### 2.3 Comparative Perspectives

Effectiveness defines instructional practices based on the subject matter, instructional objectives, and learners. The traditional methods offer consistency and form, while the modern ones offer opportunities to interact more and learn by doing. There is evidence that hybrid structures combining both methods can yield the best results [20], [21]. This shows that traditional and modern teaching can be overdrawn; instead, synthesis can exploit the strengths of both and overcome their weaknesses.

Table 1 [22], [27] contains a comparative analysis of the key distinctions between the traditional and modern approaches.

**Table 1: Key distinctions between traditional and modern methods**

| Dimension | Traditional Teaching | Modern Teaching | References |
|---|---|---|---|
| Instructional Approach | Teacher-centered | Student-centered | 26, 22 |
| Tools | Blackboard, notes, textbooks | Digital platforms, simulations, multimedia | 20, 39 |
| Student Role | Passive recipient | Active participant | 65, 19 |
| Feedback | Delayed and occasional | Ongoing and rapid | 1, 20 |
| Evaluation | Memory-focused | Continuous, competency-based | 27, 41 |
| Pedagogical Setting | Consistent and orderly | Interactive and flexible | 67, 48 |

### 2.4 Role of Technology

The use of technological innovations has transformed instruction by incorporating digital platforms, simulations, and multimedia materials. Technologies such as flipped classrooms, high-fidelity simulations, and audio- and video-enhanced learning environments promote learner autonomy, support self-directed learning,

and foster greater engagement [5], [28], [44]. In particular, simulation-based education and flipped classroom approaches are highly effective in developing key competencies in health professions students, including collaboration, critical thinking, and problem-solving [4], [30].

However, there are also problems such as resource unavailability, a lack of digital skills, and the inability to integrate technology into current curricula [8], [40]. It means that technology is not meant to replace teacher-led learning, but to supplement it.

**Passive and Interactive Approaches**

Passive learning environments focus on structured content presentation and work well with large groups, especially when resources are scarce [2], [10], [24]. Nonetheless, they prevent critical thinking and applied learning skills [18].

The key methods are interaction, collaboration, and problem-solving skills, which are improved through engaging techniques; these may include group learning, active learning activities, and teacher feedback [31], [60]. The element of interactivity is crucial to enhancing health professional education, as it provides nurses with opportunities for teamwork, communication, and clinical competence [35].

**Teacher-Centered and Student-Centered Approaches**

The teacher-centered systems follow a highly organized syllabus and place greater emphasis on outcomes-based evaluation, with active consideration of extrinsic incentives, thereby crippling innovation and autonomy [22], [53]. In comparison, student-centered models provide flexibility and self-directed learning, and to date, there are signs of better health professions education, such as improved clinical reasoning and higher achievement scores [16], [36], [62].

Although these advantages exist, the disadvantages of integration include resource limitations, training, and inadequate digital infrastructure [49], [64]. The combination of these two frameworks should then be offered under moderation to encourage student learning and professional readiness [32], [59].

**Synthesis**

In general, both traditional and modern approaches are beneficial and disadvantageous, as it was argued in the literature. Conventional methods focus more on structure and uniformity, and contemporary methods focus on creativity, extensive learning, and communication. The technology, combined with student interaction, improves learning outcomes, but issues of access and distribution arise. Therefore, an interactive, context-based approach is most suitable for motivating students to participate and preparing them for future tasks.

## 3. METHOD

### 3.1 Research Design

The study has adopted a qualitative research design based on an interpretive approach in order to examine the experiences and perceptions of the students towards teaching strategies. The methodology offered insights into students' and teachers' comprehension of the traditional, modern, and blended models in colleges.

### 3.2 Participants

The interviewees were educators and learners from Vyas Dental College, Jodhpur. The purposive sample consisted of 15 third-year undergraduate students and five instructors with more than seven years of teaching experience. The students were selected because they had been exposed to a wide range of instructional methods, and the teachers were selected for their extensive experience with both traditional and contemporary teaching approaches.

### 3.3 Procedure

Data collection was conducted over one month following approval from the college authorities. Two sets of interview-based questionnaires were offered to students and teachers, but in different ways. They were designed using available literature on teaching practices and systematically reviewed to make them clear. The questionnaires were sent through a WhatsApp group, which students use very regularly to communicate about their studies, to make them accessible and convenient. The participants gave written responses to every question

(two to three sentences). The answers were transcribed and assessed in the form of written interview transcripts, which could be analysed in a structured way.

### 3.4 Data Analysis

Additionally, the responses were coded and analyzed using the six phases of thematic analysis proposed by Braun and Clarke: (1) familiarizing oneself with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the report [1], [3].

The assessment was also based on the reflexive thematic analysis as elaborated by Braun and Clarke, which emphasizes the interpretive nature of the scholar in developing themes, rather than assuming they can be elicited from the data [23]. Deductive and inductive coding have been conducted both according to the research questions and according to the answers of the participants, respectively. The themes of engagement, understanding, challenges, instructional preferences, and blended learning were developed.

### 3.5 Methodological Limitations

The study was also limited by the use of only one institution, which restricted generalizability. The answers were also brief, and there was no opportunity to ask follow-up questions. Despite these constraints, the information provided was sufficient to conduct a thematic analysis, yielding valuable insights into pedagogical practices in higher education. This research was not conducted using double coding, which would have improved the research's credibility in the future. The responses of all the participants are presented word-for-word, with grammatical errors retained to ensure sincerity, even in colloquial expressions.

## 4. RESULTS

### 4.1 Students' responses

The students' responses were sorted into five broad themes: engagement, understanding, challenges, instructional preferences, and blended learning. The key perceptions of the participants are expounded using quotations.

#### Student Engagement and Participation

Most students were more attracted to modern techniques because they were interactive and used visual representations. One example is when S6 said he uses videos, presentations, and applications to keep himself interested and to understand the concepts better. Another respondent, S5, said that the most interactive and memorable course was the oral anatomy course that was reversed. Likewise, S12 responded that it piqued my interest, not that I was standing there with a blank mind. On the other hand, some students emphasized the importance of one-on-one instruction in conventional classrooms. For example, S3 observed that with the old system, one-on-one interaction was possible, whereas S1 observed close supervision, stating that each student would receive attention and that every fault would be known and addressed.

#### Knowledge Retention and Comprehension

The use of modern methods is usually associated with better recall due to their visual and experiential attributes. S13 embodied that a prosthodontics video illustration helped her understand much faster, better, and remember better. S6 indicated that simulations, such as a 3D heart model, sparked my curiosity and inspired me to learn more. Alternatively, conventional means were considered a way to develop solid conceptual knowledge. According to S15, direct interaction with the teacher allows one to clarify questions and doubts immediately, which is difficult to achieve in an online environment.

#### Limitations of Each Method

Students had different limitations under both approaches. Classical teaching might be boring and not very interactive (S6) or inflexible (S12). The new approaches, though innovative, focused on distraction possibilities. Respondent S8 mentioned that social media notifications are being distracting, while S4 discussed the risk of errors in online sources.

#### Preferred Modes of Instruction

The vast majority of students were fond of modern ways because of their versatility and usefulness in the digitalized world. S9 clarified that we are living in a digital age and that teacher tools and encouragement are

helpful. The other students chose to follow the traditional method because they were in a structured environment. S14 and S15 asserted that conventional learning is more social and builds greater confidence in speaking, and S15 was more focused in physical classes with fewer distractions.

**Preference for a Blended Approach**

The tendency to adopt blended learning that embraces the benefits of both approaches was one of the recurrent themes in the answers. S10 argued that merging is preferred because it combines the strengths of each approach, helping address the needs of different individuals. S6 replied that the old system is sound, since it provides discipline to students... the new system makes the educational process more real and exciting. Students who experienced this approach affirmed that it helped improve their learning and enthusiasm (S11, S3).

**4.2 Teachers' Responses**

The teachers' responses reflected a balanced perspective, positioned between traditional and modern approaches. They consistently highlighted the strengths and weaknesses of both strategies while strongly supporting blended learning as the most effective and appropriate approach.

**Key Themes**

The teachers' answers were analysed, and four significant themes were identified. First, the conventional methods were considered significant for providing practical theoretical foundations and for building classroom discipline. Second, modern methods were used to develop students' curiosity, critical thinking, and teamwork. Third, teachers noted time constraints, limited resources, and technical barriers as factors that hindered the adoption of modern strategies. Lastly, there was a unanimous opinion that the most suitable solution, a hybrid of the traditional practice's structure and the digital capabilities of modern tools, was blended learning.

**Summary of Findings**

Lastly, the teachers alleged that conventional strategies offer a well-established system, unlike modern strategies, which offer creativity and interrelation. However, they emphasized a mixed-methods approach as the most effective, as it allows balancing structure and creativity and meeting the needs of various students.

**5. DISCUSSION**

In this paper, the impacts of older and newer methods on student engagement, comprehension, and learning performance were assessed, and the research question of whether a hybrid structure is the most suitable alternative was answered. Modern techniques can be more engaging for students when technological gadgets and interactive tasks are involved. The findings align with existing literature, which highlights enhanced student motivation through digitally integrated and active learning approaches [6], [45].

On the other hand, the findings showed that the conventional methods promote theoretical learning, discipline, and in-person intercourse between learners and lecturers. This aligns with studies that emphasize the need for systematic teaching and instructor engagement [7]. The results show that both strategies promote a range of learning characteristics. Modern strategies promote intrinsic motivation and the ability to memorize information through multimedia materials, whereas traditional strategies foster intellectual discipline and provide timely feedback.

Teachers discussed this two-sidedness and the benefits of modern ways that encourage active engagement, but also testified to a lack of resources, time, and the changing level of technological skills as obstacles to their systematic application. These gaps represent the inherent problems of higher education, such as the digital divide and institutional obstacles to educational transformation [8], [9].

Interestingly, students and instructors reported support for blended learning, which aligns with previous studies highlighting its advantages in integrating traditional and digital approaches [10], [11].

To sum up, the study re-emphasizes the necessity of employing both the traditional and the modern perspectives. Being a good teacher means incorporating a mix of both approaches: more relaxed, yet academically rigorous and disciplined in the classroom.

### 5.1 Limitations

Even though the article provides some good insights, the conclusions made should be considered within a limited scope. Using a single college as a research participant means the findings will be confined to that setting and may overlook the views of other learning institutions. The information was collected through written responses, which could not allow for any cross-questioning, and the thematic analysis was limited by this method. Techniques that were not employed in the analysis process, such as independent double coding, would help enhance the rigor of future research.

### 5.2 Comparison of Teaching Methods and Their Impact on Student Engagement

A significant difference between the conventional and new approaches was found in the literature. The traditional method creates a teacher-centred system that focuses on the sharing of knowledge, discipline, and compliance with the syllabus [1], [2]. The methods result in a lack of student interaction and memorization. According to previous research, student-centered approaches encourage students to become active learners and, consequently, develop their critical thinking and teamwork skills [56].

### Impact of Digital Tools on Learning Outcomes

It was a decisive addition of digital tools to students' learning. The technological platforms, virtual simulations, and multimedia sources have been noted to play a significant role in aiding student content engagement in other previous studies [7], [8]. Such tools render the conventional methods more adaptable and personalized. The flipped learning model may be used, where learners access the content on a digital platform and spend time in the classroom engaging in problem-solving activities. This proposal not only promotes student agency (or student autonomy), but also provides an opportunity for long-term retention and performance [9], [10]. Experience has shown that e-learning encourages self-directed learning and supports fair, interactive pedagogy.

### Toward an Integrated Instructional Framework

Modern strategies increase students' flexibility and interaction. However, traditional methods remain educationally relevant in given learning situations. Such subjects include mathematics and science, which involve an extensive teaching process that tendsare effective when taught in an orderly way [11], [12]. The methods enhance students' engagement and their appreciation of complex problems.

Given the benefits of the different approaches, multiple studies show that a hybrid framework is successful. The combination of the instructive pattern of the traditional approach and the flexibility of modern approaches could assist specific learner needs and achieve learning outcomes [13], [14]. The findings reinforce the notion that instructional methods must be flexible and depend on the content, learning objectives, and classroom setting.

## 6. CONCLUSION

The paper compares the influence of traditional and modern approaches on student involvement and achievement in university education. The findings indicate that traditional approaches provide a relatively disciplined, systematic environment, and active engagement is not always possible. In turn, the existing strategies, such as technological and active learning plans, enhance learning, motivation, and engagement. All these indicate that the frameworks are not complete unto themselves. Instead, a hybrid solution that seeks to embrace the best of both is most appropriate for successful learning and teaching [1], [3], [5], [13].

Even though this study provides a contextual background, it has an impact on the field of teaching research by highlighting the significance of a flexible instructional design. This study indicates that educators and colleges should balance classical pedagogy and innovation to create effective and equitable learning environments. The paper concludes that higher education should not be developed in the direction of either classic or modern pedagogies, but rather in integrating them to create transformative, learner-centered learning experiences [14].

### 6.1 Recommendation

To enhance the generalizability of the findings, future research should involve participants from multiple institutions and encompass a wider range of disciplines/subject areas. Research must embrace more stringent approaches, such as focus groups, interviews, and classroom observation. It is advised that longitudinal studies

be conducted to investigate changes in views over time. Furthermore, subject-specific evaluations of blended structures should be suggested, as they are common in professional fields where the theory-practice balance is essential.

**Appendix A**

**Interview-based questions for students**

1. How would you describe your learning experience in classes that implement traditional methods (example- lectures and note-taking)?
2. In what ways do modern methods (example- digital tools, flipped classrooms, group work) affect your engagement in class?
3. Which teaching method do you find more engaging, and why? (traditional or modern)
4. Can you share an instance of a lesson or activity where you felt particularly involved or motivated?
5. In your opinion, which method helps you better understand and retain concepts: traditional or modern? Why?
6. What challenges, if any, do you face with either traditional or modern methods?
7. If you could choose, which method of teaching would you prefer to have more often, and why? (traditional or modern)
8. Do you think a combination of both traditional and modern methods would be more effective? Why or why not?
9. Have you experienced a blended approach (a mix of traditional and modern methods)? If so, how did it affect your learning compared to using only one method?
10. Do you feel more motivated or independent when taught through modern methods? Why or why not?

**Appendix B**

**Interview-based questions for teachers**

1. How do you balance traditional and modern methods in your classroom?
2. What factors influence your choice of approach (example- subject matter, student level, available resources)?
3. In your observation, how do students respond to traditional methods compared to modern strategies?
4. Have you observed any changes in the performance of the student when using technology-integrated instruction?
5. What do you see as the main benefits of using interactive or student-centered teaching methods?
6. What obstacles or challenges do you encounter when implementing modern teaching strategies?
7. Based on your experience as a teacher, how do you find the combination of both approaches important?
8. What are some of the support and training you would need to better implement modern strategies?
9. What has been the role of modern practices in your own teaching?
10. Have you gone through an integrated approach? What do you think is its effectiveness as compared to using a single method?
11. What do you think has changed about your teaching experiences since the transition to the digital instruction since the COVID-19?

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