

Integrating Hybrid Team-Based and Case-Based Learning in Dental Education Transformation

Sidra Abid¹, Humna Rafiq²

Aga Khan University¹, Dow University of Health Sciences², Karachi.

In the context of dental education, the adoption of Hybrid team based learning (TBL) and case based learning (CBL) is a promising approach towards meeting the needs of whether competencies-based or outcome-based medical education by promoting active, collaborative, and self-directed learning. This hybrid methodology retains the advantages of both paradigms, as demonstrated in the existing literature. In this vein the combination of CBL and TBL at tertiary level contributes to the improvement of students' academic performance and engagement so the hybrid form of CBL and TBL is qualified to narrow the gap between secondary and higher educational systems creating active learning and positive social interdependence¹ and this means that this tactic allows students not only to participate in the topic fully, but also to encourage ethical-based decision-making.²

Hybrid TBL is the method where students learn all concepts of their studies in a way that students are really being engaged. Never do Hybrid TBL processes focus on passive learning, as both team spirit and individualism are encouraged. Instead, it is a more interactive process in that students are required to contribute in discussions, exchange ideas based on case study readings, or even collaborate in project teams. The research findings indicate that a variety of strategies for TBL are beneficial not just in terms of enhancing students' perception of learning outcomes, but also shows improvement in competencies and efficacy in dental education.³ It is a matter of involving dynamic participation, collaboration, and the development of critical abilities. The CBL is another way to fill the

TBL 'gap' which is a student-centered learning method in which regular clinical scenarios are solved as case reports, responsibilities of Student-to-Student teaching in particular topics to promote professional diagnosing, and ethical practice planning. The CBL helps students step closer to actual dental practice by allowing them to immerse themselves in genuine cases. The idea is that students are more likely to apply theoretical knowledge to read scenarios that emulate the issues they will face in their actual dental practice. Learning CBL allows students to improve clinical reasoning, think critically, and cooperate more fully.²

Hybrid TBL and CBL have a vital impact on dental and medical education. They support active cooperation, teamwork, and the development of judgment, which are fundamental during clinical practice. According to the findings, students have a favourable attitude toward the hybrid TBL-CBL combination. They enjoy intense teamwork and group discussions because these activities are productive. In addition, they positively affect clinical knowledge and experience.⁴ The combination of TBL and CBL methodologies in the dental curriculum at the Medical University of Pakistan demonstrates a major move forward in dental education. The university expects to improve the education experience and create a program of adaptable dentistry practitioners equipped to meet the growing needs in the healthcare setting by incorporating these two methodologies.⁵ Research indicates that such hybrid models significantly improve academic performance and foster essential skills like teamwork and critical thinking, which are crucial in healthcare settings.⁶

Overall, this educational strategy aligns with the demands of modern healthcare, ensuring that future dental professionals are well-equipped for collaborative clinical management. However, challenges such as resource availability and the need for comprehensive reviews of existing methodologies must be addressed to optimize the implementation of this hybrid pedagogy.⁷ Conclusively, integrating CBL with team-based

Corresponding Author:

Sidra Abid

Aga Khan University
Karachi.

Email: sidraabid200@gmail.com

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learning cultivates a more competent and adaptable dental workforce, better prepared for real-world clinical scenarios.

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