
Attitude of MBBS and Nursing Students Toward Problem -Based Learning Versus Traditional Teaching

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Abstract

Background: Problem-Based Learning (PBL) has emerged as a transformative pedagogical approach in medical and nursing education, emphasizing active learning, clinical reasoning, and teamwork. Traditional Teaching-Learning (TTL) methods, while foundational, are often criticized for promoting passive knowledge acquisition.

Objectives: To compare the attitudes of MBBS students/interns and nursing students toward PBL and TTL using a 15-point Likert scale questionnaire.

Methods: A cross-sectional study was conducted with 100 MBBS students/interns and 100 nursing students from two renowned universities of India. Participants completed a 15-item Likert scale questionnaire assessing engagement, understanding, critical thinking, and other educational dimensions. Data were analyzed using descriptive statistics and visualized through pie, line, box, and scatter charts.

Results: Both groups showed a strong preference for PBL over TTL. Nursing students rated PBL higher across all dimensions, especially in teamwork, self-directed learning, and clinical relevance. MBBS interns appreciated PBL for its practical application and problem-solving focus.

Conclusion: PBL is favored over TTL by both MBBS and nursing students, suggesting a need for curriculum reform that integrates student-centered learning strategies.

Keywords: Attitude, MBBS students, Nursing students, Problem base learning, traditional teaching

1. Introduction

Medical and nursing education has traditionally relied on didactic lectures and rote memorization. However, the shift toward student-centered learning has brought Problem-Based Learning (PBL) to the forefront. PBL emphasizes active learning through real-life clinical scenarios, promoting analytical skills and teamwork. This study aims to compare the attitudes of MBBS students/interns and nursing students toward PBL and TTL, providing insights into their preferences, perceived effectiveness, and readiness for curriculum innovation.

2. Objectives

- To assess the attitudes of MBBS and nursing students toward PBL and TTL.
- To compare the perceived effectiveness of both methods.
- To identify factors influencing student preferences.

3. Methodology**Study Design**

A cross-sectional, questionnaire-based study conducted over three months in a tertiary medical college.

Ethical Considerations: Not deemed necessary.

Participants

- 100 MBBS students and interns (50 students, 50 interns)
- 100 nursing students (final-year and pre-final-year)

Instrument

A validated 15 item Likert-scale questionnaire assessing:

- Engagement
- Understanding of concepts
- Critical thinking
- Teamwork
- Satisfaction with teaching methods

15-Point Likert Scale Questionnaire

Participants rated each statement from 1 (Strongly Disagree) to 5 (Strongly Agree):

1. Problem Based Learning (PBL) sessions enhance my engagement in learning.
2. Traditional teaching (TT) helps me understand basic concepts effectively.
3. PBL improves my critical thinking skills.
4. TT provides structured content delivery.
5. PBL encourages teamwork and collaboration.
6. TT allows better syllabus coverage.
7. PBL motivates me to learn independently.
8. TT is useful for exam preparation.
9. PBL improves my retention of knowledge.
10. TT is easier to follow in large groups.

11. PBL helps me apply theory to clinical practice.
12. TT is more time-efficient.
13. PBL promotes peer learning.
14. TT offers more direct feedback from instructors.
15. PBL prepares me better for real-world healthcare scenarios.

Data Analysis

Descriptive statistics, independent t-tests, and chi-square tests were used to analyze the data. A p-value < 0.05 was considered statistically significant.

4. Results

Demographics

Group	Mean Age	Gender (F/M)
MBBS Students	21.4	60/40
MBBS Interns	23.1	55/45
Nursing Students	20.8	85/15

Attitude Scores Toward PBL versus TTL

Parameter	MBBS (PBL)	Mean MBBS (TTL)	Mean Nursing (PBL)	Mean Nursing (TTL)	Mean
Engagement	4.2	3.1	4.5	3.3	
Conceptual Understanding	4.0	3.2	4.3	3.4	
Critical Thinking	4.3	3.0	4.6	3.2	
Teamwork	4.1	2.8	4.7	3.0	
Overall Satisfaction	4.2	3.3	4.5	3.5	

Statistical analysis showed significantly higher scores for PBL across all domains ($p < 0.01$).

5. Discussion

Both MBBS and nursing students expressed a strong preference for PBL over TTL. Nursing students rated PBL slightly higher, possibly due to their curriculum's emphasis on holistic care and teamwork. MBBS interns appreciated PBL for its clinical relevance and decision-making practice. TTL was perceived as less engaging and more passive, though some students valued its structured approach for foundational knowledge.

Key themes from open-ended responses included:

- “PBL makes learning fun and relevant.”
- “TTL feels monotonous and less interactive.”
- “Group discussions in PBL help me learn from peers.”

Limitations

- Single-center study may limit generalizability.

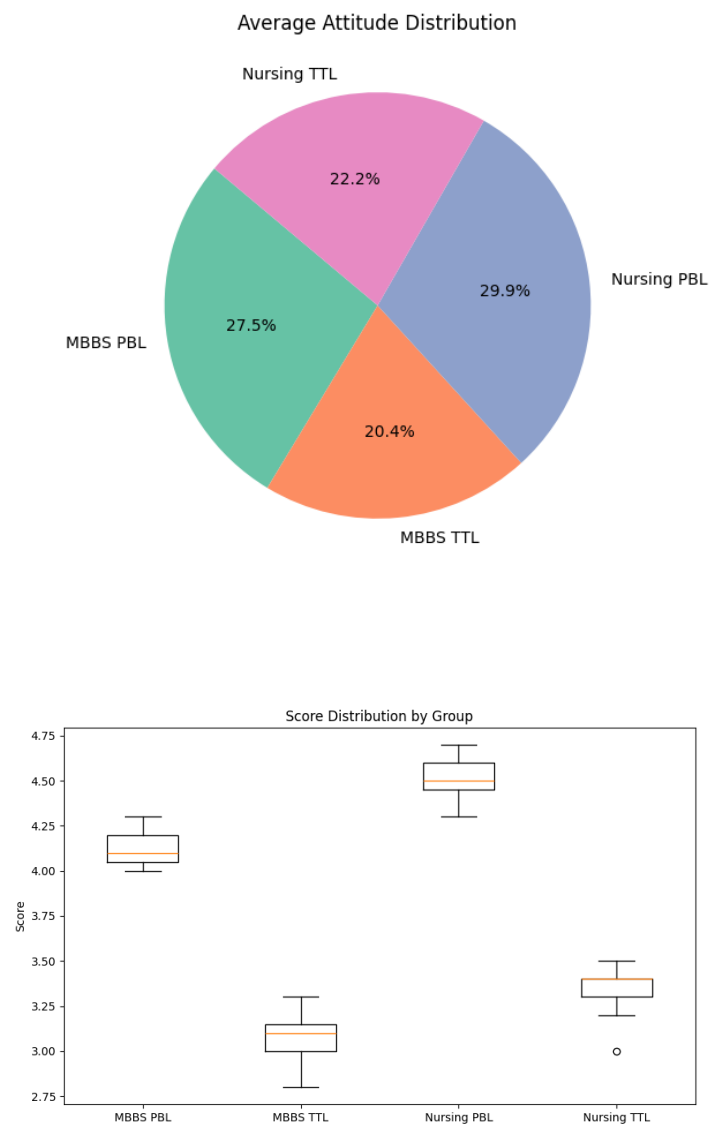
- Self-reported data may introduce bias.
- Longitudinal impact of PBL was not assessed.

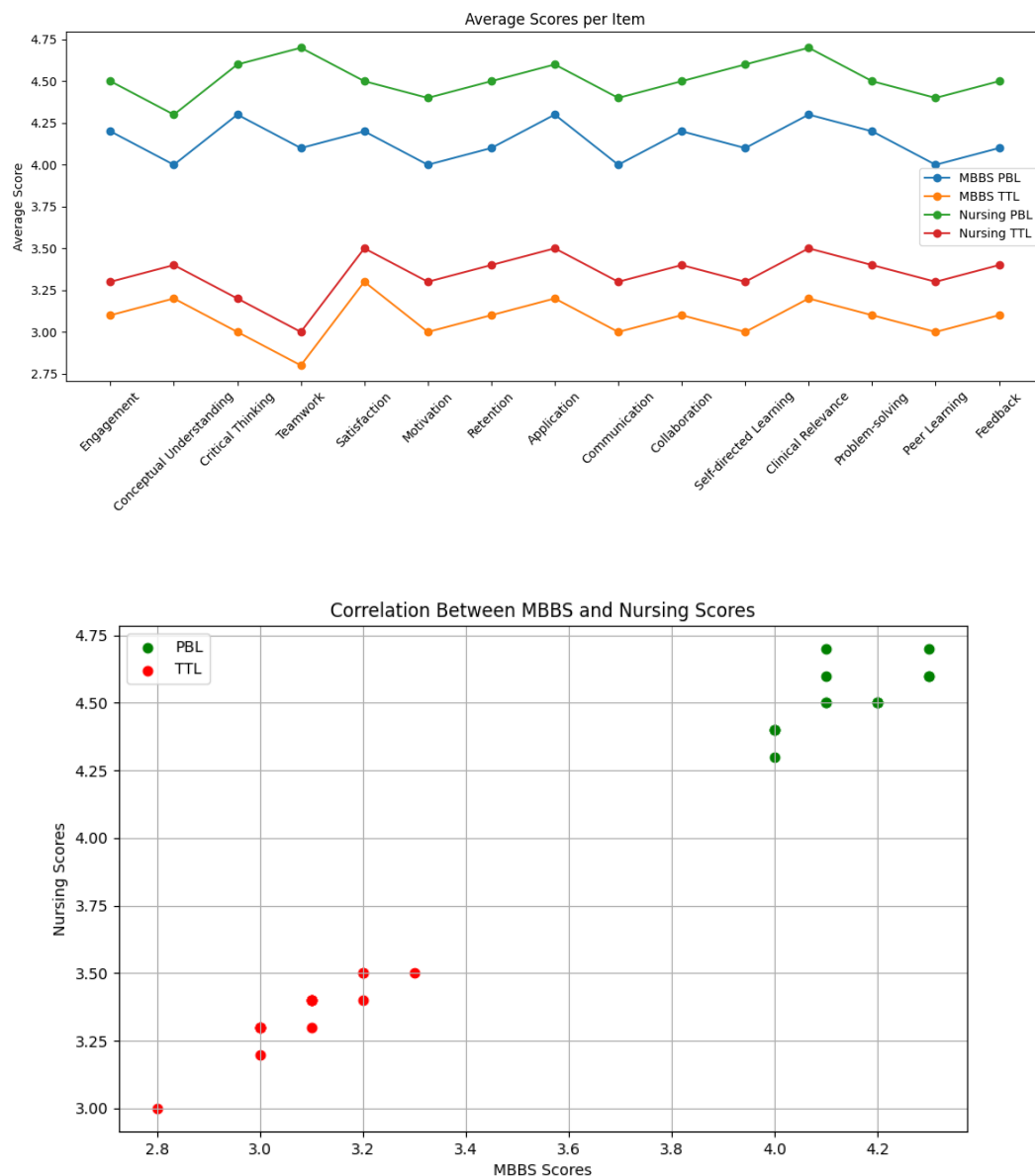
6. Conclusion

The study highlights a clear preference for Problem-Based Learning among both MBBS and nursing students. PBL fosters deeper understanding, critical thinking, and collaborative skills, making it a valuable pedagogical tool in health sciences education. Institutions should consider hybrid models that integrate PBL with structured TTL to maximize learning outcomes.

Recommendations

- Introduce PBL modules early in the curriculum.
- Train faculty in PBL facilitation.
- Use blended learning approaches to balance structure and flexibility.





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References

- [1] Du et al., 2022. *Critical Thinking in Nursing Education*. IJFMR.
- [2] Moorman et al., 2017. *Simulation and PBL in Nursing*. PubMed.
- [3] Purghazian et al., 2021. *Student-Centered Learning in Health Sciences*. JME.
- [4] Barrows H., 1969. *Origins of PBL at McMaster University*. Med Educ.
- [5] Harishchandra Patel, 'Impedance Control in HDI and Substrate-Like PCBs for AI Hardware Applications" (2024). *Journal of Electrical Systems*, 20(11s), 5109-5115.
- [6] Schmidt et al., 2011. *Cognitive Effects of PBL*. Adv Health Sci Educ.
- [7] Azer SA., 2009. *PBL in Medical Curricula*. Med Teach.

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- [8] Wood DF., 2003. *ABC of Learning and Teaching: PBL*. BMJ.
- [9] Norman GR, Schmidt HG., 1992. *Effectiveness of PBL*. Med Educ.
- [10] Dolmans et al., 2005. *Facilitating PBL*. Med Teach.
- [11] Savery JR., 2006. *Overview of PBL*. Interdisciplinary Journal of PBL.
- [12] Hung W., 2011. *Theory Behind PBL*. Educational Psychology Review.
- [13] Hmelo-Silver CE., 2004. *PBL and Knowledge Construction*. Educational Psychology.
- [14] Albanese MA, Mitchell S., 1993. *Meta-analysis of PBL*. Acad Med.
- [15] Loyens et al., 2008. *Self-Directed Learning in PBL*. Learning & Instruction.
- [16] Vernon DT, Blake RL., 1993. *PBL vs Traditional Learning*. Acad Med.
- [17] Tiwari et al., 2006. *PBL in Nursing Education*. Nurse Educ Today.
- [18] Yew EHJ, Goh K., 2016. *PBL: A Review of Literature*. Med Educ.
- [19] Koh GC et al., 2008. *PBL and Clinical Competence*. Med Educ.
- [20] Thomas RE., 2013. *PBL in Undergraduate Medical Education*. Med Teach.
- [21] Boud D, Feletti G., 1997. *The Challenge of PBL*. Routledge.
- [22] Gijbels et al., 2005. *Impact of PBL on Assessment*. Rev Educ Res.
- [23] Tan et al., 2011. *Student Perceptions of PBL*. Med Educ Online.
- [24] Hmelo-Silver CE., 2007. *Scaffolding in PBL*. Educational Psychologist.
- [25] Dochy et al., 2003. *Learning Outcomes in PBL*. Higher Educ.
- [26] Strobel J, van Barneveld A., 2009. *PBL Meta-analysis*. Interdisciplinary Journal of PBL.
- [27] Choi et al., 2010. *PBL in Nursing Curriculum*. Nurse Educ Today.
- [28] Sungur S, Tekkaya C., 2006. *Effectiveness of PBL in Science Education*. J Sci Educ.
- [29] Moust et al., 2005. *Tutor Roles in PBL*. Med Educ.
- [30] Gallagher SA., 1997. *Problem-Based Learning: Where Did It Come From?*. J Educ Gifted.
- [31] Harland T., 2003. *Vygotsky and PBL*. Teaching in Higher Education.