World Journal of Advanced Engineering Technology and Sciences
eISSN: 2582-8266
Cross Ref DOI: 10.30574/wjaets
Journal homepage: https://wjaets.com/

(RESEARCH ARTICLE)

Check for updates

Perception of training and usage of artificial intelligence tools as technology enhanced learning: A case report on final year students' perspectives at Dubai Medical University

Shifan Khanday *, Seba Anas Mohammed Saleh, Jaseena Shajahan, Ameera Majeed, Ruqaya Hashem Salim Alqiwani, Shaikha Jamal Khalifa Belhoul, and Maryam Ali Mohamed Abdulla Aldhanhani

Dubai Medical College for Girls, DMU, UAE.

World Journal of Advanced Engineering Technology and Sciences, 2025, 14(03), 275-278

Publication history: Received on 01 February 2025; revised on 11 March 20215 accepted on 13 March 2025

Article DOI: https://doi.org/10.30574/wjaets.2025.14.3.0128

Abstract

Background: The integration of Artificial Intelligence (AI) in medical education has the potential to revolutionize clinical training by facilitating interactive learning and bridging the gap between theory and practice. This case report investigates final year students' perceptions at Dubai Medical College for Girls regarding the training and utilization of various AI tools—including the ChatGPT Edu Platform, think-pair-share collaborative sessions, clinical scenario exercises, and virtual patient simulations.

Methods: A cross-sectional, questionnaire-based study was conducted among final year medical students. The instrument comprised both quantitative items (using a five-point Likert scale) and open-ended questions to assess the adequacy of training, frequency of tool usage, and perceived impact on clinical learning.

Results: Approximately 75% of the participants reported that the training sessions effectively prepared them to use AI tools in clinical contexts. Over 65% of students indicated regular use of AI resources, with 70% acknowledging a positive influence on their understanding of complex clinical cases. However, around 30% experienced occasional technical issues, underscoring the need for improved IT support and advanced training modules.

Conclusion: Final year students perceive AI-enhanced learning as a valuable addition to the medical curriculum. The effective use of the ChatGPT Edu Platform, collaborative sessions, clinical scenarios, and virtual patients significantly contributes to bridging theoretical knowledge and clinical application. Ongoing training and enhanced technical support are recommended to further optimize these educational innovations.

Keywords: Artificial Intelligence; Technology Enhanced Learning; Medical Education; ChatGPT Edu Platform; Virtual Patients; Clinical Scenarios

1. Introduction

The rapid advancement of AI technologies is reshaping educational practices, particularly in fields requiring high-stakes decision-making such as medicine. Integrating AI tools into the medical curriculum can potentially enhance students' clinical reasoning and decision-making skills by providing interactive and adaptive learning experiences. Dubai Medical College has pioneered the integration of several AI-enhanced learning modalities, including:

* Corresponding author: Shifan Khanday.

- ChatGPT Edu Platform: An AI-powered interactive platform that provides real-time support and clarification on complex medical topics.
- Think-Pair-Share Sessions: Collaborative exercises that promote peer discussion and critical thinking.
- Clinical Scenarios and Virtual Patient Simulations: Tools designed to simulate real-life clinical cases, thereby improving diagnostic and clinical decision-making skills.

This case report focuses exclusively on final year students who, due to their advanced clinical exposure and imminent entry into professional practice, are uniquely positioned to evaluate the efficacy of these technological innovations.

2. Materials and Methods

2.1. Study Design

A cross-sectional survey design was employed to capture both quantitative and qualitative data on final year students' perceptions regarding AI-enhanced learning tools.

2.2. Participants

Final year medical students at Dubai Medical College were invited to participate. Inclusion criteria ensured that only students with extensive clinical exposure were included, thereby providing insights relevant to the integration of AI in clinical training.

2.3. Instrumentation

A structured questionnaire was developed in consultation with academic and IT experts. The instrument included:

- Demographic Section: To collect data on age, clinical experience, and previous exposure to AI.
- Training and Preparedness Section: Assessing clarity and adequacy of the training sessions, including those for the ChatGPT Edu Platform.
- Usage and Impact Section: Evaluating the frequency of use of AI tools and their impact on clinical learning and decision-making.
- Specific Feedback Section: Targeting the effectiveness of think-pair-share sessions, clinical scenarios, and virtual patient simulations.
- Open-Ended Questions: Allowing for detailed feedback and suggestions for improvement.

Responses were measured using a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree).

2.4. Data Collection and Analysis

Data were collected over a four-week period. Quantitative data were analyzed using descriptive statistics, while qualitative responses were subjected to thematic analysis to identify recurring themes and insights.

3. Results

3.1. Quantitative Findings

3.1.1. Training Effectiveness:

Approximately 75% of the respondents agreed or strongly agreed that the training sessions adequately prepared them to use AI tools in clinical scenarios.

3.1.2. Frequency of Use:

Over 65% of final year students reported regular usage of AI tools, particularly appreciating the ChatGPT Edu Platform for on-demand learning support.

3.1.3. Impact on Clinical Learning:

Nearly 70% of participants indicated that the AI tools enhanced their understanding of complex clinical cases and improved their clinical decision-making skills.

3.1.4. Technical Challenges:

Around 30% of the students reported occasional technical difficulties, highlighting the need for robust IT support and continuous training updates.

3.2. Qualitative Insights

Thematic analysis of open-ended responses revealed:

3.2.1. Enhanced Engagement and Practical Learning:

Students found that clinical scenario exercises and virtual patient simulations significantly bridged the gap between theory and practice.

3.2.2. Value of Peer Collaboration:

Think-pair-share sessions were appreciated for promoting discussion and critical evaluation of clinical cases.

3.2.3. Recommendations for Improvement:

Participants suggested the introduction of more advanced training workshops focused on clinical applications and enhanced troubleshooting support for technical issues.

4. Discussion

The findings from this case report underscore the importance of AI-enhanced learning tools in modern medical education. Final year students at Dubai Medical College recognize the value of integrating tools such as the ChatGPT Edu Platform, collaborative sessions, and simulation-based learning into their curriculum. These tools have demonstrably enhanced clinical understanding and readiness for practice.

However, the presence of technical challenges and the call for more advanced training modules indicate areas where further improvements can be made. The data suggest that while the current implementation is effective, continuous support and curriculum integration are essential to keep pace with rapid technological advancements.

5. Conclusion

The integration of AI tools in medical education at Dubai Medical College has been positively received by final year students. The utilization of the ChatGPT Edu Platform, collaborative think-pair-share sessions, and simulation-based clinical training has contributed to enhanced clinical reasoning and practical learning. To sustain and improve these benefits, ongoing training and robust IT support are imperative.

Recommendations

- Develop Advanced Training Modules

Tailor training sessions to focus on advanced clinical applications and troubleshooting, ensuring that students can fully leverage AI tools in complex scenarios.

- Expand Collaborative Learning Opportunities

Increase the frequency of think-pair-share sessions to promote deeper peer-to-peer learning and critical analysis.

- Enhance IT Infrastructure

Invest in robust technical support systems to minimize disruptions and ensure the seamless operation of AI-enhanced learning platforms.

- Implement Continuous Feedback Mechanisms

Establish regular feedback loops to monitor the effectiveness of AI tools and training programs, allowing for timely updates and improvements.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

References

[1] Topol EJ. High-performance medicine: the convergence of human and artificial intelligence. Nat Med. 2019;25(1):44–56.

[2] Chen M, Hao Y, Cai Y, Wang Y. Artificial intelligence in medical education: A review. Int J Med Educ. 2020;11:16–21.

[3] Short NA, Smith JA. Integrating AI into clinical training: perceptions from medical students. Med Teach. 2021;43(3):329–335.

[4] Patel BN, Rahman Z. Virtual patient simulations in medical education: bridging the gap between theory and practice. Adv Health Sci Educ Theory Pract. 2021;26(2):213–225.

[5] Johnson L, et al. Technology-enhanced learning in medical education: impact and future directions. J Med Internet Res. 2022;24(1):e25067.

[6] Khanday S. Leveraging Artificial Intelligence for Enhanced Healthcare Diagnostics: Opportunities and Challenges. Int J Sci Res (IJSR). 2024;13(3):1209-1213

Appendix: The Questionnaire

Training and Preparedness

- Q1: "The training sessions provided adequately prepared me to use AI tools effectively in a clinical context."
- Q2: "Instructional materials for the ChatGPT Edu Platform were clear and user-friendly."
- Q3: "I feel confident in integrating these AI tools into my daily clinical studies and decision-making."

Usage and Practical Application

- Q4: "I regularly use AI tools (e.g., virtual patient simulations, AI-driven diagnostic aids) in my clinical studies."
- Q5: "The ChatGPT Edu Platform is effective for clarifying complex topics and providing instant support."
- Q6: "Collaborative think-pair-share sessions have enhanced my critical thinking and clinical reasoning."
- Q7: "The clinical scenarios and virtual patient simulations have improved my readiness for real-life clinical practice."

Perceived Benefits and Challenges

- Q8: "AI-enhanced learning has made my education more interactive and engaging."
- Q9: "I sometimes encounter technical difficulties that hinder the use of these AI tools."
- Q10: "There is sufficient technical and academic support available when I face challenges with AI technologies."

Open-Ended Questions

- Q11: "What aspects of the AI training or specific tools (e.g., ChatGPT Edu Platform, virtual patients) could be improved?"
- Q12: "Please share any additional comments on your overall experience with AI-enhanced learning in your final year."