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Letter to Editor

A new approach to the peer-learning: Artificial intelligence-assisted peer-learning

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Dear Editor,

Despite the term 'artificial intelligence' (AI) being first coined by McCarthy approximately 67 years ago, it was Alan Turing who developed the theory that machines could mimic human behavior.[1] AI is a transformative phenomenon that enables systems to perform tasks that usually require human intelligence. Today, AI has infiltrated numerous facets of life, including education.[2] AI holds significant potential to revolutionize medical education in several ways: through virtual inquiry systems, distance learning and management in medicine, and the production of instructional videos for medical schools. Given that medical education is a continuous process involving a broad spectrum of healthcare professionals - including general practitioners, specialists, nurses, and allied healthcare professionals - the integration of new technology is crucial.[3,4] With the rapid evolution of technology, teaching methodologies are transforming, leading to a gradual shift away from traditional education.

Peer learning is an educational strategy that revolves around group formation, where individuals engage in mutual teaching and learning. In this approach, individuals capitalize on the experiences and information of others while imparting their knowledge. This significantly contributes to enhancing participants' self-confidence and clinical skills.[5] Furthermore, AI is recognized as one of the most effective tools for group formation. Its rapid advancement has made it a focal point in scientific communities. The adoption of this technology is steadily increasing, to the extent that it is poised to become an indispensable part of human life. Moreover, its exceptional capabilities enable students to participate in education and learning seamlessly, free from geographical or temporal constraints.[6,7]

In terms of interrelation, the use of AI to facilitate peer learning expands opportunities for both AI systems and medical learners.[8] Given the heavy workloads and demanding shifts, allocating time for learning can be a challenge for medical students, making this form of education particularly attractive to them.[9] Furthermore, this innovative educational approach is receiving substantial investment, with funds reaching into the tens of billions of dollars.[4,10]

Given the pervasive influence of modern technologies on contemporary life, people predominantly rely on these technologies.[10]

Among these advancements, AI can prove particularly advantageous for students in the creation and sharing of mind and concept maps, which serve as invaluable educational tools. These maps assist students in efficiently organizing the copious amounts of information they come across. Furthermore, they can be employed as valuable resources for content review during exam preparation. AI facilitates global communication and knowledge sharing among students by establishing discussion groups. Students can exchange information, pose questions about medical concepts and diagnoses, and listen to their peers' opinions. In fact, a machine will serve as their tool for answers and communication.[6] Peer learning can be challenging for individuals with advanced skills and knowledge due to the scarcity of peers at a similar knowledge level. However, AI can facilitate enriched education for these individuals. This is particularly crucial for those with advanced skills and knowledge who may lack comparable peers, as well as for introverted individuals who find communication challenging. By creating a platform for student interaction, AI enables immediate feedback, enhancing the dynamism and enjoyment of peer learning.

Before incorporating AI into medical education and the broader educational framework, it is crucial to comprehend and mitigate its potential drawbacks.[8] Excessive reliance on AI has the potential to erode

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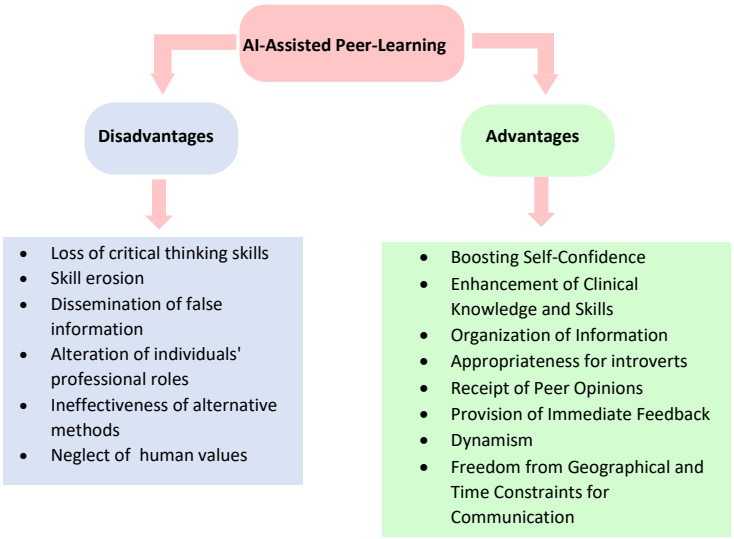

Figure 1. A summary of the AI-assisted peer-learning advantages and disadvantages

individuals' critical thinking abilities over time and reduce the efficacy of other educational approaches. A strong dependency on AI also increases the risk of disseminating misinformation and could jeopardize the quality of education by restricting diversity in peer teaching. This overdependence could relegate experts to the role of mere recipients of information, thereby diminishing their professional roles.[10] Additionally, AI might not effectively serve auditory and visual learners. While it holds value in specialized science education, it may encounter challenges in instilling human values and fostering empathy, which are fundamental aspects of clinical education[8] (Figure 1).

Undeniably, AI is a robust tool capable of effecting substantial changes in medical education. However, while acknowledging these benefits, considering its limitations is equally important. Students can augment their understanding by asking questions, listening to peer opinions, and receiving accurate responses from AI. They can readily access the most recent resources. However, this ease of access to medical information can pose challenges for non-experts. Furthermore, the potential loss of human interactions and empathetic experiences in healthcare education is a concern that warrants serious attention.

Authors' Contribution

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Competing Interests

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