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# Artificial Intelligence in Health Professional Training: A companion or an adversary?

The practice of medicine and provision of healthcare is evolving rapidly, driven not just by advancements in new treatment modalities but also by the integration of modern technologies in providing precision care to our patients. It is important to understand and embrace, where appropriate, innovative technologies to respond effectively to the evolving needs of a modern society. What will be seen in this transformative wave is how Artificial Intelligence (AI) has the potential to revolutionise various sectors in medicine and healthcare (Yu et al., 2018).

Focusing on health professions education, AI emerges as a pivotal force in training the future healthcare practitioners and preparing them for the multifaceted challenges of the modern medical landscape (Paranjape et al., 2019). There are 3 distinct uses of AI in education which was reported by Baker et al. (2019): Learner-oriented AI, Instructor-oriented AI and Institution-oriented AI. Let's focus on some of these areas:

## *A. Enriched Learning Experiences*

One of the most significant advantages of integrating AI into health professions education is the enhancement of learning experiences. AI-powered platforms can provide personalised, adaptive learning modules tailored to individual students' needs and learning paces (Kong et al., 2021). This personalisation not only accelerates the learning process but also ensures that students grasp complex concepts thoroughly, laying a robust foundation for their future careers. Furthermore, AI provides the opportunity for the students as well as for the trainers to use and adapt the best materials from multiple sources. It also enhances their networking through AI search capabilities and the ability to link up with other experts in the field or learning communities (Luke et al., 2021).

## *B. Simulation and Practical Training*

AI-driven simulations are revolutionising practical training in healthcare education. Medical students can now practice patient safety, surgical procedures, diagnose illnesses, and interact with virtual patients in a risk-free environment. These simulations not only refine their technical skills but also improve their decision-making and inter-professional teamwork abilities. By repeatedly engaging in realistic scenarios, students can hone their expertise, fostering confidence and competence before they enter real-world clinical settings, a critical step to ensure patient safety and ethical practice of medicine.

## *C. Data-Driven Insights*

AI's ability to analyse large amounts of data quickly and efficiently provide an excellent platform to improve systems and processes (American Medical Association [AMA], 2016). In the context of health professions education, this capability translates into valuable insights. Educational institutions can collect data on students' performance, identify areas where they struggle, and provide targeted interventions. Educators can adapt their teaching methods based on this data, ensuring that their teaching-learning approaches are appropriate and leading to good outcomes. Moreover, AI can predict trends in learning, enabling institutions to proactively address challenges and optimise their curricula. Funding and resource allocations can also be done where it is needed most or areas of future needs to build capacity and relevance of programs.

## *D. Fostering Research and Innovation*

AI-powered tools are accelerating Scholarship of Teaching and Learning in the areas of research and innovation. AI algorithms help to analyse large amounts of data quickly and identify patterns that researchers could potentially miss. This

could help us better understand the complex datasets, find relationships between variables faster, and draw appropriate conclusions and recommendations. AI has also reduced the time required to conduct literature review by analysing large amounts of scientific articles, identifying relevant research, and summarising the content in seconds.

#### *E. Addressing Global Health Disparities*

Focusing on medical and health professions education, we believe that this is another area AI could assist and enhance the training of healthcare practitioners in resource poor settings. Unbundling of curricula and connecting with the best training materials as well as experts are key advantages of AI capable training environments could support the resource poor settings.

Another area that AI driven knowledge and skills sharing could be addressing the present shortage of skilled healthcare professionals, leading to significant disparities in healthcare access. AI-based education has the potential to bridge this gap. Online platforms and mobile applications powered by AI can deliver high-quality continuous professional development to remote and underserved communities, reaching out to healthcare professionals irrespective of their geographical location. With this unbundling, the present set programs or training, we believe has the potential to significantly reduce global healthcare disparities.

#### *F. Ethical Considerations and Collaboration*

While the potential of AI in health professions education is immense, it is crucial to navigate ethical challenges. In the process of developing AI capable environments, we must ensure that the systems are transparent, unbiased and fair. However, we do not see in any medical school or a healthcare training site developing or having conversations on the use of guidelines/protocols on ethical use of AI in health professional education. Educators, policymakers, and technology developers must collaborate to establish ethical guidelines that ensure the responsible use of AI. This collaboration should prioritise transparency, fairness, and equity, safeguarding the integrity of healthcare education and the welfare of future patients (Chan & Zary, 2019).

Artificial Intelligence provides huge benefits to health professions education in many ways. By embracing AI-powered tools and methodologies, educational institutions can produce a generation of healthcare professionals who are not only adept at leveraging advanced technologies, but also compassionate and skilled in delivering patient-centred care. As we advance and evolve, it is clear that we need to channel our efforts into the investment of AI capabilities, aiming to elevate the learning experiences of our students and residents, propel educational scholarship and research forward, and foster enhanced collaboration. This strategic commitment is essential to maximising the potential advantages of this technology, with a primary objective of ultimately enhancing the health and well-being of patients within both local and global communities. The achievement of success in this pursuit necessitates a united front, where educators, institutions, and policymakers collaborate seamlessly. Only through such concerted efforts can we guarantee that AI not only benefits current learners but also ensures future positive impact on the well-being of the patients they will serve.

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