Special Editorial

Hello AI: Is it Time for A Revolutionary Change in the Health Professional Education System?

Waqar M. Naqvi [1,2,3] , Gaurav V. Mishra [4]

[1] Department of Physiotherapy, College of Health Sciences, Gulf Medical University, Ajman, UAE.
[2] Faculty of Interdisciplinary Sciences, Datta Meghe Institute of Higher Education and Research, Wardha, India.
[3] Adjunct Faculty, NKP Salve Institute of Medical Sciences and Research Center, Nagpur, India
[4] Department of Radiodiagnosis, Jawaharlal Nehru Medical College, Datta Meghe Institute of Higher Education and Research, Wardha, India.

Corresponding Author

Waqar M. Naqvi, PhD,

Address: Assistant Professor, Department of Physiotherapy, College of Health Sciences, Gulf Medical University, Ajman, UAE.

E-mail: dr.waqar@gmu.ac.ae

ABSTRACT

The integration of Artificial Intelligence (AI) into healthcare and health professional education has become imperative. This editorial examines how AI technologies, including large language models (LLMs) and extended reality (XR), reshape medical education. We discuss the transition from traditional teaching methods to AI tools, emphasising the need to incorporate AI and programming skills into the medical curricula. Recent advancements such as ChatGPT and BioMedLM have demonstrated the potential of AI to enhance educational methodologies and improve competency assessments. We advocate the adoption of AI in education in order to prepare future healthcare professionals for technologically advanced landscapes.

Keywords: Artificial Intelligence, Medical Education, Competency-Based Education, Extended reality, Virtual Reality, Curriculum development

We did not expect Artificial Intelligence (AI) to move inside health care and health profession education. Recently, there has been a significant rise in papers on AI in healthcare and health professions education, starting from the role of Large Language Models (LLM) in medical sciences to how ChatGPT is cracking most of the examinations in the world [1-3]. We can also say that research papers on AI and Medical sciences are giving tough fights to the number of papers on COVID 19. Various LLMs exist for biomedical sciences, and new daily models are being built from scratch. Stanford is one of the pioneers of BiomedLM, whose dataset has already cleared the USMLE exam [4].

During my undergraduate years, we were in the education system where we had printed exam papers, books from the library, and overhead projector for presentations in which we had to buy the transparent plastic and write over it and present it. This was a different period. While being in the education system for almost 15 years, we have seen a paradigm shift to the Internet, PowerPoint presentations, teaching, and exams on computers using different learning resource management and real-time exam software. Students now hardly use pens, and they mostly use tablets and computers in the education system. Educational assessment and evaluation, teaching, and learning are all computer based.

Just some days ago, open AI launched ChatGPT 4o, i was awestruck with its capabilities, which can be a game changer

even for health sciences. I did not expected to grow this much from ChatGPT 3.5 to 4 and now ChatGPT 4o. Various generative AI are coming up daily, including Med-Gemini which is giving a promising home to revolutionise the health professions education and health sciences. It is a pure pandemic of AI which is growing not only daily, but also every second. The students used GenAi for their studies, assignments, exams, and mock practices.

The question I have for the us is, with this rise -

Will students now need PowerPoints?

Will they read books?

They have everything on their fingertips and millions of bytes of data on their hands. Yesterday, some of my students came with Virtual reality (VR) headsets and showed me a simulated OSCE app which was an exception, with a simulated patient examination. With the rise of AI and the metaverse, we are witnessing a paradigm shift in the education system. The question now arises to use the existing education system of teaching and assessment with the challenges we face with the rise of AI. Yes, we have an AI plagiarism detector, but there is software to neutralise it. My concern is that we should consider upgrading the teaching and assessment methods that we use. We need to inculcate AI not only in practice but also in the curriculum [5]. Therefore, we need to consider the grading system. I feel that we need to think about measuring competency more than just a quantitative analysis of marks. Do we really need conventional rubrics for grading systems, do we need to improvise it with recent evolution or AI, or do we need to start using upgrading and test the competencies? I will keep this question open for us to think and act.

I strongly advocate having a course on AI and teaching Python at the undergraduate level. The next generation of doctors will surely need it, and it is the need of time. We cannot deny that we will see a greater increase in AI, ML, and robotics in the future. From ultramodern AI based hi-tech hospitals to telemedicine using virtual reality is the reality right in front of our eyes [6]. We are the part of change, and I really feel that academicians and practitioners in health sciences should not only be users but also important contributors to the emerging time of AI and technology. It is a peak time for us to get involved.

REFERENCES

[1] Artsi Y, Sorin V, Konen E, Glicksberg BS, Nadkarni G, Klang E (2024) Large language models for generating medical examinations: systematic review. BMC Med Educ 24:354. https://doi.org/10.1186/s12909-024-05239-y

[2] Mihalache A, Grad J, Patil NS, Huang RS, Popovic MM, Mallipatna A, Kertes PJ, Muni RH (2024) Google Gemini and Bard artificial intelligence chatbot performance in ophthalmology knowledge assessment. Eye (Lond). https://doi.org/10.1038/s41433-024-03067-4

[3] Yaneva V, Baldwin P, Jurich DP, Swygert K, Clauser BE (2024) Examining ChatGPT Performance on USMLE Sample Items and Implications for Assessment. Acad Med 99:192-197. https://doi.org/10.1097/ACM.0000000000005549

[4] Bolton, E., Hall, D., Yasunaga, M., Lee, T., Manning, C., & Liang, P. (2021). BioMedLm. Retrieved from https://crfm.stanford.edu/2022/12/15/biomedlm.html

[5] Naqvi WM, Sundus H, Mishra G, Muthukrishnan R, Kandakurti PK (2024) AI in Medical Education Curriculum: The Future of Healthcare Learning. European Journal of Therapeutics 30:e23-e25. https://doi.org/10.58600/eurjther1995

[6] Tang Y, Liang H, Zhan J (2024) The application of metaverse in occupational health. Front Public Health 12:1396878. https://doi.org/10.3389/fpubh.2024.1396878