Canadian Medical Education Journal

Editorial

AI in health professions education

IA en formation des professionnels de la santé

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This December Special Issue of CMEJ includes papers about the use of artificial intelligence (AI) in health professions education. AI agents, products, innovations, ethical dilemmas, and so on feel exciting to some of us, overwhelming to others. AI is changing things rapidly, and we don't know where we are headed. Well-paid consultants forecast we will build new ecosystems collaborating with AI that fully restructure how we work. Soothsayers claim the future is now: there is no turning back. Doomsayers cry the end is near: we're all losing our jobs and may lose humanity. Who to believe? How to move forward?

Thomas Kuhn would agree there is no turning back. His taxonomic incommensurability thesis explains our shifting terrain.[1,2]

When a scientific taxonomy changes, the network of related terms (i.e., its lexicon) shifts, which leads to a need for the taxonomy to re-align. This creates a challenge whereby the new terms do not translate into a meaning coherent with terms of the old taxonomy. In other words, changing one part necessitates a change in all the parts, to the extent that the original parts can't be preserved and used within the new set of parts. Kuhn later developed this as an analogy for evolutionary epistemology to explain scientific progress. Hence, no turning back. With AI in health professions education, AI innovations are and will similarly redefine the terms of our teaching and the students' learning. For example, what will it mean to say radiology findings led to the physician's "diagnosis" of a blood clot, if AI did the finding and the diagnosing? Is "assessment" the right term to use if AI determines from a student's performance on its generated practice questions that a student needs a particular set of exam questions that the same AI then selects for that individual student? As the activities and categorical explanations of our work shift, so will the taxonomy terms shift to more accurately describe our more refined roles and contributions. In this taxonomic incommensurability, we need new terms, new metaphors, even new landscapes.

This season of shifting terrain affords great opportunity. In a time without mastery or standards, we are free to create, experiment, fail, and try again. Inspiration comes from surprising places, and possibility seems endless. The collection of papers in this special issue attests to such creativity and possibility.

Embracing *l'esprit du temps*, I turned to ChatGPT to help compose this editorial. With instructions to "set the context for readers to consider articles, which may include program evaluation studies, comparison research studies, and opinion commentary papers," ChatGPT wrote "As a community, our task is to build a culture of responsible innovation. AI should not replace the human relationships that define medicine and education, but it can augment them when used thoughtfully." And "We are entering a phase where every educator, reviewer, and learner will need to develop discernment about when and how to collaborate with machines." Well, duh.

I challenged ChatGPT to critique what it wrote and improve upon its critique. Could it function like a peer reviewer/editor, I wondered. Could it actually help me? It produced, "From adaptive learning platforms and virtual patients to automated feedback and assessment, AI tools promise greater efficiency, personalization, and

scalability." Hmm. Self-promotion with increased vaguery. Another iteration using the same challenge led to "AI literacy must now be recognized as a core competency in medical education" with a set of steps, such as "establish clear disclosure standards" and "support faculty development." Shiny object syndrome? We seem to have gotten off-track.

Although my foray into using AI for this editorial was minimally helpful at best, there are truly amazing examples of useful innovations and efficiencies for medical education by partnering with AI. It is a collection worth reading.

Original Research

Guo et al.'s article, OSCEai: personalized interactive learning for undergraduate medical education,[3] evaluated OSCEai, an AI-based tool for medical training. Learners appreciated its on-demand information, self-paced structure, and realistic patient interactions.

Investigating the threat of AI to undergraduate medical school admissions: a study of its potential impact on the rating of applicant essays by Choi and co-authors investigated the use of AI to write essays used for medical school admissions.[4] Their results showed no difference between essays written with or without AI. Thus, they suggested that personal essays may have limited value in the admissions process.

Brief Reports

Re-evaluating the role of personal statements in pediatric residency admissions in the era of artificial intelligence: comparing faculty ratings of human and AI-generated statements by Curry et al. explored the efficiency and authenticity of Large Language Model-generated personal statements compared to human-generated statements in residency applications to understand better how increasing AI use may affect applicant evaluation.[5]

Black Ice

Golrokhian-Sani and team's Six ways to get a grip on computer vision syndrome in medical school examinations outlined strategies that examiners can use to reduce harm from heavy screen use during long, uninterrupted exams, such as incorporating structured breaks to ease visual strain.[6]

You Should Try This

OSCEai dermatology: augmenting dermatologic medical education with Large Language Model GPT-4 by Park et al. showcased how Large Language Models (LLMs) can support medical education by simulating OSCE-style scenarios, especially in fields like dermatology, to introduce trainees to a broader range of clinical cases. Their model enables improved diagnostic skills and culturally sensitive care.[7]

AI that teaches: an evidence-based GPT model to improve medical student understanding of pulmonary function tests by Aiyer and Moon used an enhanced GPT tool trained on trusted scientific sources to teach medical students how to interpret pulmonary function tests more accurately.[8]

Canadiana

Advancing AI literacy in Canadian orthopedic education: a framework for equitable and inclusive training by Kumar and team explored the potential for AI to reshape orthopedic education and care across North America by improving training, curricula, and clinical planning, but it must be developed and taught in ways that address rural and Indigenous inequities.[9]

Commentary and Opinions

Artificial Intelligence can transform formative assessment in medical education by Feldman and team explored how AI can enhance assessment and feedback processes by creating practice questions and providing detailed, timely feedback to students.[10]

Waisberg and team's OpenAI's Sora in medical education: artificial videos in the classroom of the future highlighted the potential of AI to enhance medical education through the production of AI-generated educational content.[11] However, they also emphasized the need for validation and refinement to avoid inaccuracies in detail and to ensure reliable educational content.

Generative artificial intelligence in medical education: moving from potential to practice: when AI surpasses MDs by Morjaria and Sibbald advocated for cautious, practical experimentation with generative artificial intelligence in medical education, highlighting its potential to automate tasks and enhance learning.[12]

AI literacy starts at the bedside: a call for grassroots and reflective approaches in medical education by Solak and team highlighted the need for medical students to be equipped with tools and education to safely and effectively use AI within clinical care.[13]

Enhancing equity in medical school interview prep with ChatGPT by Li and team outlined their experience using ChatGPT's voice feature to prepare for medical school interviews.[14] They described it as a free and accessible option for interview practice.

The impact of artificial intelligence on case-based learning during pre-clerkship education by Chai and team explored how medical students' reliance on AI in case-based learning (CBL) reduces critical thinking and deep learning.[15] They suggest adapting CBL by using new in-class cases to maintain engagement and skill development in an AI-driven environment.

Amal Khan's commentary, Between stethoscope and algorithm: is Canadian medical education ready for AI-enabled care?, argued that Canadian medical education must intentionally integrate AI and virtual care technologies into training to prepare physicians for modern clinical realities.[16]

Works-in-Progress

Elma et al.'s Compassionate primary care training and practice in the digital technology sphere: a scoping review protocol will explore how AI, electronic health records, and virtual care are expected to influence the delivery and teaching of compassionate care in primary care settings.[17]

Letters to the Editor

Matsubara's letter, Writing and artificial intelligence: *apprivoiser* one's own paper responds to the increased discussion around the use of generative AI in medical education.[18] He notes that even if AI saves time, authors must slow down and take ownership of their work.

Bridging global dermatology education gaps: the promise and challenges of leveraging AI-driven medical training to advance equity and personalization with OSCEai dermatology by Ma and team responded to the authors of a study about an app that uses GPT-4 to help teach dermatology students.[3,20] The writers praise the app for creating realistic, diverse AI-generated scenarios, especially given that dermatology education has often lacked representation across different skin tones.

Finally, in response to Feldman et al.'s commentary,[10] Matsubara's letter, Assessment in medical education: rethinking the reasons for introducing AI, argued that AI should be introduced to support learners, not simply to reduce teachers' workload.[21]

With this editorial, I close out my role as Senior Section Editor for Brief Reports. It's been an honor serving with my CMEJ colleagues and mentoring authors, reviewers, and editors. You have challenged me to grow and cheered me on. This experience has given me my own taxonomic incommensurability in only the best of ways. Thank you all.

Cindy Schmidt, CMEJ Senior Section Editor

Cover image: Abstract illustration of a teacher and medical students using AI in learning. Created with Canva, 2025.

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