2025 Digital Summit

THE PEDAGOGY OF AI: IMPLICATIONS FOR HEALTHCARE EDUCATION

ELSEVIER

Council of Deans of Health

OVERVIEW

Artificial intelligence (AI) is becoming increasingly integrated into education, and its potential to transform teaching methods is being explored across various fields. Whilst traditional healthcare education has relied heavily on classroom-based learning and hands-on clinical experience, these methods have limitations particularly in terms of scalability and the ability to offer personalised learning opportunities.

The Council of Deans of Health represents the UK's university faculties engaged in education and/or research for nursing, midwifery and the allied health professions. As part of its recent 2025 Digital Summit, there was a critical discussion about the opportunities of AI technology in healthcare education and how educators can be best prepared to embrace its potential for curriculum innovation, and manage any potential risks or challenges.

The Panel

To foster a dynamic discussion, the Council of Deans of Health assembled a distinguished panel of speakers from across education, regulation, and industry sectors.

- David Game, SVP Global Product for Medical Education, Elsevier
- Jamie Hunt, Head of Education, Health and Care Professions Council (HCPC)
- Paul Stern, Senior Research and Policy Officer, General Osteopathic Council (GoC)
- Sundeep Watkins, Education Adviser, Chartered Society of Physiotherapy (CSP)

The conversation was facilitated by Associate Professor Ruth Paterson, Head of Nursing, School of Health and Social Care at Edinburgh Napier University and Chair of the Council of Deans of Health's Innovation and Pedagogy Group.

AI OPPORTUNITIES IN HEALTHCARE EDUCATION

One of the major opportunities AI presents in healthcare education is the ability to enhance simulation-based education. AI-driven simulations can provide students with standardised, repeatable, and customisable immersive training experiences. These tools allow students to practise diverse clinical procedures and diagnostics in a safe, controlled setting, enhancing their practical skills without the risk associated with real-life scenarios.

Blended learning models that combine simulation and real-world clinical experiences are an example of how technology can enhance traditional learning methods. AI also supports personalised learning by adapting educational content to each students' pace and performance, allowing for more individualised and efficient learning experiences.

Sundeep Watkins focused her presentation on the potential role for AI in enhancing programme content and design, particularly the use of virtual patients, interactive case studies, communication practise, and diagnostic training. She also highlighted how AI could be harnessed to enhance learner engagement by helping students to plan their study, generate initial ideas, and interact with diverse contexts and media.

REGULATION AND ETHICAL PRACTICE

Jamie Hunt raised the importance of aligning AI integration with the HCPC standards of education and training, particularly in relation to requirements around resources, curriculum, and assessments. He noted that the HCPC is focusing on ethical practice, and the research and principles that underpin these standards are crucial. He stressed that professionals are accountable for their decisions, and therefore, students must be encouraged to engage critically with AI as part of their education and future practice. HCPC has produced some guidance for education providers on how to proactively consider AI and ensure continued adherence with their standards in a changing environment.

Similarly, Paul Stern from the General Osteopathic Council discussed collaboration with other regulators (including the HCPC) to reduce overlap in regulatory processes. He emphasised that regulators are working together to consider whether shared principles linked to AI in education are desirable and workable in keeping with independent regulatory roles.

In discussion, concerns were raised about the risk of patients losing confidence in clinical decisions made through AI. Some argued that as long as professionals are using AI critically, it will enhance their clinical reasoning and improve patient safety. For example, AI has the potential to assist in diagnosing and predicting conditions, thereby supporting more informed decision-making. However, challenges may arise in reverse-engineering AI-generated decisions, making it difficult to evidence how a particular clinical decision was reached using AI. This lack of transparency can hinder trust and accountability in clinical settings.

To address these concerns, it is essential to develop frameworks that ensure AI systems are interpretable and their decision-making processes are transparent. Additionally, continuous monitoring and validation of AI systems are crucial to ensure they remain accurate and unbiased.

DEVELOPING CRITICAL THINKERS

David Game explored the diverse applications of AI for students, emphasising the necessity of challenging the notion of AI as a trusted source of information. He highlighted the importance of guiding students' engagement with AI, including teaching them how to craft effective prompts. Additionally, fostering critical thinking skills is crucial to help students identify and avoid misinformation, and to prevent an over-reliance on AI.

BIAS IN AI MODELS

David also explored the risk of systemic bias in AI models, which could perpetuate inequalities and stereotypes in healthcare education, leading to disparities in learning outcomes or healthcare delivery. AI systems may provide an incomplete picture, potentially missing critical information. For example, certain demographic groups may be underrepresented in health data. Consequently, AI can inadvertently perpetuate existing biases in clinical decision-making, thereby reinforcing healthcare disparities. This highlights the importance of ensuring that students remain critical thinkers and do not become overly reliant on AI tools.

Notably, perspectives of education providers on the use of AI are still evolving as technological opportunities advance. To address the various issues and mitigate risks, it is crucial to offer education providers and key stakeholders opportunities to contribute to the development of AI systems. Additionally, incorporating diverse perspectives ensures that these contributions reflect a wide range of experiences, fostering more inclusive and effective AI solutions.

EDUCATING THE EDUCATORS

Paul Stern identified inequality in education resources and skills as a key risk associated with AI, noting that not all institutions and practitioners have equal access to technology or training. To successfully integrate AI into healthcare education, it is essential to develop AI literacy amongst staff and adequate access to AI tools. This would help to ensure that educators can maximise AI's capabilities while maintaining high teaching standards. In addition, involving healthcare professionals, educators, and technology developers in the design of AI tools ensures that these tools are both relevant and effective.

Technological barriers, such as access to advanced technologies and disparities in digital literacy, may hinder some students and institutions from fully benefiting from AI tools. It was suggested that there would be some benefit for educator collaboration, allowing them to share experience and expertise. This could be used to help guide professional bodies on their training needs.

COLLABORATION AND BEST PRACTICE

It was emphasised that bringing together educational, ethical, and technical expertise, along with a diverse range of skills, is crucial to the successful integration of AI in healthcare education. Additionally, professional bodies can play a significant role in disseminating best practices.

EQUITY

An audience member highlighted that students who do not use AI may be at a disadvantage compared to their peers who do, raising questions about evolving the design and purpose of students assessment and consideration of whose efforts are truly being rewarded in an AI-driven learning environment.

Conversely, AI has the potential to make healthcare education more accessible, especially in regions with limited resources, by providing remote learning opportunities.

PREPARING THE HEALTHCARE WORKFORCE FOR THE FUTURE

The Government's 10-year plan for the NHS proposes a shift from analogue to digital. AI will be a key tool in this digital transformation and therefore it is essential that students are prepared to use it effectively, as the healthcare workforce of the future. Preparing students to use AI involves integrating AI literacy into the curriculum, providing hands-on experience with AI tools, and fostering an understanding of ethical considerations related to AI in healthcare. By doing so, future healthcare professionals will be equipped to harness the full potential of AI, leading to improved patient outcomes and a more resilient healthcare system. This preparation is crucial as AI continues to evolve and become an integral part of healthcare practice.

RECOMMENDATIONS

AI Principles and Guidelines

The voice of higher education should be included in discussions about AI frameworks, principles, implementation and monitoring for use by future health professionals. The Innovation and Pedagogy Strategic Policy group is developing a set of principles for the use of AI in healthcare education. These will aim to address some of the challenges educations providers are encountering and to support best practice and consistency across the healthcare higher education sector. Elsevier have already created its Responsible AI Principles which help to navigate the relationship between machine learning technologies and researchers, clinicians, and educators.

Continue collaborative working

Key to future working will be continuing to develop sector wide collaboration between HEIs, professional bodies, regulators, AI experts, and industry partners such as Elsevier.

Promoting critical thinking and AI literacy

The sector must ensure that both students and educators are aware of the limitations of AI, the susceptibility to bias and incompleteness. It is essential to foster critical thinking to evaluate AI outcomes effectively. This is in keeping with regulatory standards for professionals, which require that they are autonomous in their practice, and are able to use tools critically in the best interests of service users.

CHIEF EXECUTIVE STATEMENT

“Used appropriately, AI offers huge potential in healthcare education to enhance learning experiences, equip the healthcare workforce with the skills necessary for the future and foster innovation both in pedagogy and clinical practice. The Council of Deans of Health is committed to advancing this agenda and ensuring that educators are actively involved throughout the development and implementation of AI technologies to meet the specific needs of healthcare education. We will continue to work collaboratively with stakeholders to ensure that AI is integrated responsibly and ethically to best serve students, professionals, educators and patients. Through these discussions and partnerships, we aim to create a supportive environment where educators and students feel empowered to explore and leverage the opportunities of AI.”

Ed Hughes
Chief Executive, Council of Deans of Health

2025 Digital Summit

For more information:

events@cod-health.ac.uk

20 Tavistock Square, London

020 3841 7520

www.councilofdeans.org.uk

els-education@elsevier.com

125 London Wall, London

www.elsevier.com/en-gb/solutions/medical-education

ELSEVIER

Council of Deans of Health