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From cognitive deskilling to practical wisdom: Reimagining medical education in the age of artificial intelligence

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The impact of artificial intelligence on medical education is examined in this article, with a particular emphasis on the difficulties associated with social and cognitive deskilling. It emphasizes how crucial it is to promote AI literacy and critical thinking to maintain clinical judgment, empathy, and communication abilities. To ensure that technology enhances cognition rather than replaces human agency, the paper advocates for a wisdom-oriented approach in medical curricula.

Recent advancements in artificial intelligence have ushered medical education into a new era, one where the boundary between human learning and technological learning is being rapidly redefined. The 2025AMEE international conference clearly highlighted a fundamental question facing the global medical education community: How can we balance technological efficiency with human authenticity in medical education?

A central challenge discussed at this event was the phenomenon of cognitive deskilling, the gradual erosion of critical thinking, problem-solving, and clinical judgment abilities due to over-reliance on smart technologies. We live in a world where "digital enhancement" often coincides with "human diminishment," as tools designed to facilitate human work gradually corrode human agency from within.

This trend threatens not only human cognition but also social skills, a phenomenon referred to as social deskilling. Social deskilling denotes the erosion of empathy, communication, and genuine interaction in an increasingly digitalized world. In medical education, where learning is contextualized within the relationships between teacher, student, and patient, this poses a serious risk to the formation of "human knowledge" (1, 2).

Recent research in medical education has also shown that excessive use of AI-based clinical decision support systems leads to reduced mental practice and a decline in clinical judgment among students. However, the solution to cognitive deskilling lies not in rejecting technology but in fostering AI literacy and reflective thinking, the ability to understand and use technology consciously without surrendering judgment to it (3).

In this context, Thiele 2025) introduces the concept of Digital Distancing, a conscious distancing that allows humans to maintain mindfulness, reflection, and their own agency. This idea can be operationalized in medical education through ethics-based scenario learning, reflective feedback sessions, and training teachers to become "facilitators of wisdom."

In the authors' view, addressing the crisis of deskilling hinges on reviving the concept of Practical Wisdom Phronesis), a notion with

Aristotelian roots that has been revisited by Flyvbjerg 2001). Thiele 2025) also calls it the "last bastion of human agency"—the ability to discern what is worthy of attention and action in a fast-paced, data-saturated world (4). Future medical education must transcend mere skills training and move towards a "wisdom orientation," fostering ethical judgment, professional reflection, and the ability to think in complex, real-world situations. This requires designing learning experiences that involve students' active participation and encourage the development of metacognitive skills (5).

Therefore, the primary mission of medical education in the age of AI is not to compete with machines, but to cultivate humans who know how to use technology for humanity. Faculty, as stewards of AI literacy in medical education, must create learning environments in which students, while using AI tools to search for answers, simultaneously challenge the ethical and humanistic rationale behind their decisions. This ensures that technology acts as a cognitive enhancer for deeply thoughtful and wise physicians, not as a replacement for their critical judgment (6). As also stated at AMEE 2025, the future of medical education lies in the synergy between human and machine, not in the substitution of one for the other. Building on this vision of synergy, important questions arise for medical educators and curriculum designers: To what extent do current medical curricula create opportunities for cultivating practical wisdom alongside technological skills? How can medical educators ensure that AI tools enhance, rather than diminish, students' critical judgment and empathy?

Keywords: Artificial Intelligence, Cognitive Deskilling, Practical Wisdom, Medical Education, Critical Judgment

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