



Bridging theory and practice in generative artificial intelligence for medical education: insights from clinical teaching experience

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The narrative review by Kang and Ahn [1] on integrating generative artificial intelligence (GenAI) into medical education provides a timely framework for educators navigating this rapidly evolving field. As a practicing obstetrician–gynecologist who has taught artificial intelligence (AI) applications to medical professionals over the past 2 years, I wish to share practical observations that complement their theoretical analysis.

Kang and Ahn [1] correctly note that most medical schools lack formal GenAI policies and structured training programs. In my experience conducting AI education workshops for practicing physicians, this gap extends beyond institutional policy to fundamental questions regarding how clinicians should interact with these tools. Although the review emphasizes AI literacy—including prompt engineering and critical appraisal skills—the practical challenge lies in teaching these competencies to clinicians who are already managing demanding patient care responsibilities. In my experience, short, case-based training sessions focused on immediate clinical applications have proven more effective than comprehensive theoretical courses.

Although the review discusses GenAI applications broadly, domain-specific considerations warrant further attention. Previous work on AI in obstetrics has demonstrated that several machine learning methods can be used for the early diagnosis of maternal–fetal conditions, including preterm birth and abnormal fetal growth [2]. These findings illustrate that AI tools are both task- and domain-dependent; accordingly, GenAI tools should undergo specialty- and task-specific validation before adoption for educational use.

Kang and Ahn [1] appropriately highlight the risk of hallucinations in AI-generated content, a concern that is particularly rele-

vant for medical education, where inaccurate information could affect patient care. Studies have reported substantial hallucination rates in systematic review contexts [3], underscoring the need for rigorous verification protocols. In my teaching practice, I emphasize the principle of “verify before trust” and require learners to cross-reference AI outputs with established medical references. This approach aligns with the DEFT (diagnosis, evidence, feedback, and teaching)-AI framework described in the review, which promotes critical evaluation of AI-generated content.

Algorithmic bias represents another key concern raised by the authors, and emerging evidence supports this caution. Recent research has demonstrated sociodemographic biases in large language models during medical decision-making scenarios [4]. For medical educators, this finding has important implications: AI-generated case scenarios, assessment materials, and learning content may inadvertently perpetuate healthcare disparities. Integrating bias awareness into AI education curricula should therefore be prioritized, as recommended in current frameworks for responsible AI integration [5,6].

One practical avenue that is not extensively discussed in the review is the development of custom GPT applications for specific educational purposes. Guidelines for creating custom GPTs in health professions education provide a framework for developing tailored AI tools that address specific learning objectives while maintaining appropriate guardrails [7]. In my work, I have developed custom GPTs for obstetric ultrasound education and pregnancy counseling, enabling more controlled and contextually appropriate AI interactions than those provided by general-purpose models.

Kang and Ahn [1] propose reimaging assessment in the AI

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era, emphasizing higher-order cognitive skills and AI-resilient assessment formats. ChatGPT has demonstrated passing-level performance on licensing examinations [8], which has implications for medical education that extend beyond examination security. The fundamental question is whether current assessment paradigms adequately capture competencies that will remain distinctly human in an AI-augmented healthcare environment. Comprehensive reviews of AI in medical education suggest that innovations in the domain of assessment should focus on clinical reasoning processes, ethical judgment, and interpersonal communication skills that AI cannot reliably replicate [9].

The review advocates for structured AI literacy programs integrated into medical curricula. Scoping reviews of curriculum frameworks for AI education provide useful models for such integration [10]. However, the rapid pace of AI advancement presents a unique challenge: curricula developed today may become outdated before they are fully implemented. A modular, continuously updated approach to AI education may therefore be more sustainable than static curriculum reform.

In conclusion, Kang and Ahn [1] provide a strong foundation for understanding GenAI integration in medical education. From a practitioner-educator perspective, particular emphasis should be placed on domain-specific validation, practical skill-focused training, and flexible curriculum structures capable of adapting to rapid technological change. As the review concludes, AI should function as a collaborator rather than a replacement, helping cultivate physicians with strong clinical judgment, ethical reasoning, and empathy. Achieving this goal will require ongoing dialogue among AI researchers, medical educators, and practicing clinicians to ensure that theoretical frameworks translate into effective educational practice.

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