Introduction: Applying a How Might We Framework

Elizabeth R. Hornsby
Independent Scholar

Introduction

Artificial Intelligence (AI) is rapidly transforming teaching and learning in higher education. As we continue to navigate the challenges brought about by the global pandemic, AI provides a unique opportunity to enhance online teaching and learning practices. More specifically, generative AI is recognized as a "disruptive" technology, as it uses language to train itself in an iterative learning cycle (Bozkurt, 2023, 2024; Harari, 2023). This special edition seeks to explore the strengths, weaknesses, opportunities, and threats associated with the use of AI in higher education and online teaching and learning. While the special edition does not seek to stifle connotative and denotative explorations of AI and, more specifically, generative AI, below are foundational definitions to help ground the research.

- AI refers to the simulation of human intelligence in machines that are programmed to think and act like humans.
- Generative AI refers to a type of AI that is able to generate new content, such as text, images, or music, based on certain inputs. (Pavlik, 2023, p. 86)

Higher education institutions are increasingly adopting innovative AI tools like adaptive learning platforms, conversational chatbots, and virtual teaching assistants to personalize learning experiences, boost student engagement, and improve learning outcomes in online learning environments (Kumar Basak et al., 2018; Miao, et al., 2021). These advanced tools leverage algorithms and machine learning to dynamically offer students personalized feedback, recommendations, and learning pathways tailored to their individual needs, strengths, knowledge gaps, evolving skills, and learning preferences, and have the potential to foster greater learner agency, motivation, and comprehension of material through self-paced, customized instruction (Chopra et al., 2024).

Integration of generative artificial intelligence capabilities expands accessibility dramatically for learners across varying literacy proficiency levels (Farrelly & Baker, 2023).

Features like automatic text transcription, translation into multiple languages, and text-to-speech functions empower students with diverse needs—including those with learning disabilities, physical challenges, and/or those who are English language learners—to engage with educational content compatible with their abilities and learning styles (Kumar et al., 2023). Speech synthesis technology, which converts text into human-sounding speech, can increase accessibility and inclusion in education when used thoughtfully. Having course materials and texts read aloud can aid students with visual impairments, reading disabilities, or different learning styles in accessing information. Implementing speech synthesis enables students to listen to content, which promotes equitable access to learning, as opposed to their reading text solely (Hu & Hamdulla, 2021). Beyond broadening access, conversational AI chatbots embedded into learning management systems can provide scaffolded guidance and support to help learners gain vital digital skills for full workforce participation and citizenship in today's economy (Miao et al., 2021). Step-by-step coaching on tasks like setting up devices, utilizing software tools, identifying misinformation online, and protecting privacy can cultivate greater digital literacy (Tinmaz et al., 2022).

Introducing AI within online course materials also offers an approachable environment for learners to build foundational familiarity with and evaluative awareness of increasingly pervasive algorithmic technologies before higher-stakes encounters (Seo et al., 2021). This fosters important knowledge and critical capacities for responsibly navigating AI-driven systems and the biases they may perpetuate (Al-Zahrani, 2024). Strategic investment in secure, AI-capable online teaching and learning infrastructures, when coupled with expanded professional development on effective virtual pedagogy, significantly bolsters the resilience of educational continuity during emergencies or disruptions (Ng et al., 2023, Sum & Oancea, 2022). AI features like virtual assistants and chatbots are already proving immensely valuable for crisis response efforts by rapidly addressing common queries, redirecting learners to relevant resources, and maintaining social connections vital for motivation and well-being (Balderes et al., 2023; Belda-Medina & Kokošková, 2023).

Leveraging AI-enabled tools, infrastructure, and training to empower blended human–AI instructional ecosystems can help uphold academic integrity while reducing overreliance on physical campuses and geographic proximity (Elkhatat et al., 2023). When harnessed thoughtfully with vigilant oversight of algorithmic bias alongside human judgment and instructional expertise (Lalonde, 2023; Wiley, 2023), productive AI integration represents a promising path for securing

educational opportunity at scale. However, realizing AI's full potential requires proactive, user-centered, cross-sector collaboration centered on equity to ethically expand access and opportunity.

How Might We?

As we explore empowering education with AI, we should ask aspirational questions about how to guide this technology. Rather than just minimizing risks, what if we harness AI's potential to increase access, engagement, and empowerment? Design thinking is a well-established process used by organizations to address problems and spark innovation (Brown, 2008). The "How might we" framework comes from design thinking (Rosala, 2021). It pushes us to imagine groundbreaking possibilities beyond minimizing negative impacts. For educators, the framework works within a larger construct of "articulation as embodied pedagogy" that "establishes a view of pedagogy as an engagement, a conversation, and a process of collective discovery, rather than an act of masterly revelation" (Clarke, 2015, pp. 6–7). Typically, emerging technologies prompt questions like "What are the risks?" or "How can we mitigate harm?" But "How might we" questions take a more creative approach. In thinking about how to organize this special issue and how I imagined readers might move through the pieces, I wanted to offer guiding points of inquiry focusing on three key areas addressed in this special issue:

- personalized learning pathways and mentorship
- enhanced accessibility and digital skills training
- resilient teaching and learning through disruptions

Similarly, the "How might we" questions are designed to reframe the conversation about AI and online teaching and learning in a human-centered way. These questions open space for audacious thinking and allow us to envision how AI could radically advance higher education's core mission. "How might we" also implies collective agency. It suggests we have the power to shape technology for human flourishing. This framing is especially important for institutions of higher education built on shared missions and values. In short, the "How might we" questions aim to spark aspirational thinking about AI. This mindset can guide us to integrate AI in ways that powerfully advance higher education's public good mission worldwide.

As you move through the issue, here are some framing questions to consider:

1. How might we use AI to create truly customized learning pathways that adapt to each student's evolving needs?

2. How might we design AI mentor chatbots to provide personalized guidance supporting students' self-directed learning?
3. How might we leverage natural language processing to make learning materials more accessible through features like translation and text-to-speech?
4. How might we coach adult learners on gaining crucial digital skills through scaffolded guidance from AI chatbots?
5. How might we invest in secure, ethical online infrastructure with AI to ensure resilient teaching and learning through any disruption?
6. How might we effectively blend human judgment with AI supports to uphold academic integrity and reduce reliance on physical proximity?

Contributors to the Themed Issue

Undergirding the special edition is a conceptual piece introducing Meredith King's concept of "cognicy"—the ability to understand and judge one's own thought processes separate from AI-generated outputs. This framework underscores the human skills vital for properly directing emergent AI capabilities. Complementing this, Megan Lowe's essay synthesizes ethical considerations across institutional domains to help practitioners navigate gray areas. Adronisha Frazier's framework provides a conduit to move from theory to practice, explores the practical applications of AI tools, examines educators' stances of both opposition to and support of AI, and assesses the ethical and social consequences arising from the implementation of AI in higher education. The next three articles shift to application with Imre Csaszar and Jennifer Curry exploring AI use in counselor education; Melanie Lemoine examines the use of AI in preparing future teachers to conduct parent-teacher conferences, and Bruce Craft provides a lesson plan on how AI might be used in a writing assignment. The final article by Henderson, Norris, and Hornsby posits refocusing higher education on core competencies while also leveraging innovations like AI to empower graduates to thrive amidst technological and economic disruption. The special issue closes with Danielle Bergeron's book review of Sandra Abegglen, Marianna Karatsiori, and Antonio Marinez-Arboleda's (Eds.) *101 Creative Ideas to Use AI in Education*.

Conclusion

The articles in this edition provide diverse perspectives on leveraging AI to transform education across modalities. Key themes include using AI to personalize learning, address

academic integrity concerns, and promoting critical thinking and ethical reasoning skills. Several pieces highlight AI's potential to boost student engagement, achievement, and inclusion through data-driven adaptations. Others critically examine the technology's disruption of assessment and tightened entanglement with issues of academic integrity. Multiple authors surface urgent questions about equitable access and privacy, while others offer practical ideas for constructive integration of generative tools like chatbots. Together, these contributions further the conversation about if and how AI might enhance, rather than replace, uniquely human elements of teaching and learning. They provide research, frameworks, and recommendations to guide institutions wrestling with rapid technological change, and they open critical dialogue about upholding ethics and access in AI implementation. This special edition offers a thoughtful, multifaceted exploration of AI's mounting influence and offers valuable, timely insights for practice and policy.

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Author Biography

Dr. Elizabeth R. Hornsby is an independent scholar and adjunct professor at Southern University at New Orleans. Her research focuses on the intersection of communication, media, technology, and culture.