Chapter 6
Augmenting Intelligence With Generative AI:
A Guide for Teaching Talented Students

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ABSTRACT

This chapter explores the integration of generative artificial intelligence into the learning environment to guide students on how to augment their human intelligence. It advocates thoughtful adoption of AI to realize benefits while mitigating risks. Key practices include fostering inquiry-driven learning, cultivating critical thinking, enhancing curriculum with adaptive content and assessment, stimulating creativity and innovation through AI prompts and simulations, enabling personalized trajectories, and upskilling students in AI fluencies. However, human wisdom must direct integration aligned with core values. AI generated content and personalization should complement teacher guidance and social learning. Assessment must evolve to nurture ethical discernment and integrity. With prudent implementation elevating human ingenuity, AI can expand possibilities for developing talented, creative individuals who consciously apply technology for shared prosperity.

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INTRODUCTION

Education faces new challenges and opportunities with the emergence of generative artificial intelligence (AI) tools that can produce text, images, code, and other outputs that resemble human work. While this AI technology holds immense promise for transforming learning, concerns exist around potential misuse and overreliance on its capabilities. As AI rapidly evolves, educators need guidance to thoughtfully leverage its potential while upholding academic rigor and integrity (Ali et al., 2023; Pagano et al., 2023). This is especially crucial when considering the integration of AI into learning experiences for talented students.

This chapter delves into pivotal didactic practices for harnessing the capabilities of generative AI to empower talented students inside and outside of the classroom. It explores how educators can proactively adopt this technology to expand possibilities for gifted learners by personalizing education, accelerating knowledge generation, and preparing youth to navigate an AI-infused future (Jovanovic et al., 2017). However, realizing this potential requires judicious and responsible integration that continues to cultivate in-demand capabilities that are verifiable through rigorous AI resilient assessment, and ethical discernment (Pagano et al., 2023; Williamson, 2021). Core practices covered include fostering inquiry-driven learning, AI-enhanced curriculum design, developing metacognition for appropriate use, stimulating creativity, enabling personalized growth, and upskilling students in AI fluencies (Liu et al., 2022).

Education is at an inflection point, where the thoughtful adoption of emerging innovations like AI can either displace human intelligence or augment it (Zawacki-Richter et al., 2019). As Ouyang et al. (2022) observe, finding an optimal balance between human teachers and AI technologies is pivotal for the future of education. By reconceiving learning alongside such advances, we can develop capable citizens who use technology for good through enhanced human ingenuity. This chapter offers key practices for educators seeking to prepare talented students to thrive in an AI-transformed landscape.

The Promise and Potential of Generative AI

Artificial intelligence (AI) has made remarkable advances in recent years, especially in the field of generative AI, which can create new content and artifacts that resemble human work. The archetypal example is chatbots like ChatGPT that can engage in detailed conversational exchanges on arbitrary topics and generate human-like long form text responding to prompts (Bommasani et al., 2022). Unlike previous AI focused on analysis and prediction, generative AI mimics human creativity to produce novel expressions and ideas (Shailer, 2023).

Conceptual Model of Generic Learning Design to Teach Cultural Artifacts in Computing Education: An Analysis Based on Akan Culture in Ghana

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