

Exploring Generative Artificial Intelligence as a Real-Time Collaborator for Educators

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Abstract

This study explores the metacognitive benefits that emerge when preservice and inservice educators use generative AI tools as a collaborative thought partner in developing and deepening their professional expertise. Through analysis of preservice and inservice educators' AI journals and doctoral students' development of problem of practice statements, we examine how AI serves as a metacognitive scaffold—prompting reflection, revealing assumptions, and supporting iterative refinement of professional thinking. Rather than positioning AI as merely a productivity tool for instructional planning and delivery, this research illuminates how thoughtful engagement with AI can deepen educators' awareness of their own learning processes and strengthen their capacity for reflective practice in education.

This presentation examines how educators leverage generative AI as a metacognitive scaffold for professional growth. Participants will gain insights into concrete examples of AI-supported reflection and learn how to intentionally design learning experiences that position AI as a thinking partner rather than merely an efficiency tool.

Participants will be able to distinguish between AI as a productivity tool versus AI as a metacognitive scaffold, and recognize key features of learning designs that promote reflective practice through AI collaboration.

Teacher turnover remains a persistent issue. Almost half of all new teachers leave the profession within the first five years of teaching (Maready et al., 2021). Teachers face challenging working conditions with many time demands (Jerrim & Sims, 2021). Teachers report that heavy workloads negatively impact their job satisfaction and increase the likelihood of them considering leaving the profession (Schaak et al., 2022).

To prepare teachers for school contexts, education faculty might consider strategies that leverage generative AI tools as metacognitive scaffolds and thought partners (Gao et al., 2025). Although the use of AI is pervasive in other industries, its utility in supporting teachers' job tasks has not yet taken hold in teacher education (Wu et al., 2023). Faculty skepticism may influence AI use; however, a significant reason for AI's limited application in teacher education could be a lack of faculty training and understanding of how to integrate AI into coursework (Wu et al., 2023).



Recent research indicates that metacognitive support in generative AI environments significantly enhances self-regulated learning and reduces cognitive load (Xu et al., 2025). When AI functions as a reflective partner, it provides timely, non-judgmental prompts that help educators develop metacognitive awareness (Xerri, 2025). Collaborative reflection with AI tools can enhance shared metacognition and improve academic achievement (Gao et al., 2025). This study focused on the use of AI by 24 preservice teachers in a literacy methods course at a large US university. The study's purpose was to gain students' perspectives on AI as a metacognitive tool and to inform future AI integration in education courses.

Keywords: generative AI, metacognition, teacher preparation, preservice teachers, reflective practice, self-regulated learning, literacy education