Chapter 7
Smart Tools, Smarter Teachers:
Perspectives and Practices of AI in Literacy Planning for Pre-Service Teachers

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ABSTRACT

This chapter investigates the use of artificial intelligence (AI) tools in preservice teacher education, with a specific focus on Elementary English Language Arts (ELA). It explores how AI tools can be used to support preservice teachers (PSTs) to create effective lesson plans, develop engaging instructional resources, differentiate instruction, and promote active student participation. The chapter explores tools like ChatGPT, MagicSchool.ai, Brisk, Perplexity, Canva, Diffit, and Curipod and illustrates how they can be used responsibly and effectively, offering valuable insights for educators seeking to integrate AI into teacher preparation programs. The chapter concludes with an overview of PSTs' perspectives on AI, addressing perceived benefits, limitations, and ethical considerations in educational settings, as well as offering a glimpse into the next steps of AI in teacher education.

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SETTING THE STAGE: AI'S PLACE IN TEACHER PREPARATION

Artificial Intelligence (AI) has shifted from a theoretical innovation to a practical tool that is reshaping the way teachers plan, instruct, and engage with students in today's classrooms. From adaptive learning platforms to AI-driven content generation, technology is shifting the ways in which teachers plan, teach, and assess student learning in the classroom (Kamalov et al., 2023). With AI-powered tools, educators can automate lesson planning, personalize instruction, and analyze student progress more efficiently than ever before. However, while AI offers numerous benefits, it should not serve as a substitute for the expertise, creativity, and professional judgment of educators. Instead, it should serve as a powerful support system, helping teachers engage students in new and innovative ways and more effectively manage their workload of more tedious tasks. When used thoughtfully and with a critical lens, AI has the potential to enhance both productivity and creativity, allowing educators to focus on building meaningful connections and relationships with their students, perhaps the most critical aspect of teaching.

For pre-service teachers (PSTs), understanding AI's impact on education is not just beneficial, it is essential. As future educators, they must be prepared to navigate classroom environments where technology is deeply embedded in instructional practices. There are numerous theoretical frameworks that support the integration of technology and instruction, and this chapter uses the Technological Pedagogical Content Knowledge (TPACK) framework which was developed to explain how teachers can effectively integrate technology into their teaching practices (Mishra & Koehler, 2006; Bautista et al., 2024; Tarisayia, 2024; Wang et al., 2024). Today's classrooms demand tech-savvy teachers who can apply AI's capabilities while maintaining a critical perspective on its limitations and ethical implications. It is not enough to simply use AI; educators must develop the ability to evaluate its outputs, refine its suggestions, and ensure that it aligns with best practices in teaching and learning. A thoughtful and intentional approach to AI integration will empower PSTs to make informed decisions about lesson design, student assessment, and classroom engagement, as supported by the TPACK framework.

As AI continues to evolve, teacher preparation programs must also adapt, ensuring that future educators are well-equipped to integrate these tools effectively and responsibly. This requires not only hands-on experience with AI-driven educational platforms but also opportunities for PSTs to reflect on the pedagogical and ethical considerations of AI use in the classroom under the guidance of their professors and mentor teachers. By emphasizing a balanced, research-informed approach to AI in education, teacher preparation programs can help prepare a generation of educators who are both innovative and intentional in their use of technology.