


# Chapter 1

## Locate, Interrogate, and Challenge: The Promise of AI for Connecting Research to Practice for Teachers

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### **ABSTRACT**

*This chapter explores how artificial intelligence (AI) can support teachers in bridging the longstanding gap between educational research and classroom practice. Rather than positioning AI as a replacement for professional expertise, the chapter frames it as a mediational tool that amplifies teacher agency. Through three vignettes—focused on locating relevant research, interrogating program mandates, and challenging policy directives—the chapter illustrates how various AI tools enable more contextualized and critical engagement with research. Drawing on Vygotsky's cultural-historical theory, it emphasizes how AI can function as a cognitive partner in the professional learning process. The chapter also foregrounds ethical considerations, highlighting the need to examine algorithmic bias, equity of access, and the importance of teacher judgment. Practical steps and a teacher-centered checklist are included to guide responsible use. Overall, the chapter argues for a vision of AI that empowers teachers as co-constructors of knowledge, not passive recipients of policy.*

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## INTRODUCTION

Ms. Carter sits through another district training, taking careful notes. She hears the phrase “research-based strategies” again. Curiosity sparks: Which research? Whose research? Later at home, she searches for studies online, only to hit paywalls or jargon-filled articles that do not resonate. Time runs short, and her lesson plans demand attention. Her genuine curiosity fades into familiar frustration. Ms. Carter is not alone.

Teacher professional development most often focuses on evidence-based practices supported by research. Yet, too often, that evidence feels distant, inaccessible, or irrelevant. The problem is not teachers’ lack of interest it is the barriers of access, time, and translation that widen the research-practice gap (Biesta, 2007; Pedró et al., 2019). Bridging this gap demands tools that are not just efficient but empowering. Artificial intelligence (AI) offers this potential.

This chapter explores how AI can support teachers in taking a more active, critical stance toward research. It is not about automating teaching; it is about amplifying teachers’ professional judgment. Through AI tools, educators can locate meaningful studies, interrogate the quality and context of research claims, and challenge policies disconnected from classroom realities. AI helps teachers mediate the flow of research not merely as a shortcut to information, but as a catalyst for transforming findings into actionable classroom insights.

Three vignettes ground this exploration, illustrating concrete examples of AI-supported inquiry. Mr. Patel discovers relevant research tailored to his rural students’ needs. Ms. Rivera questions the suitability of a mandated phonics program for her multilingual learners. Ms. Chen advocates for instructional practices that honor her AP English students’ advanced analytical skills. Each narrative reveals how AI can move teachers from passive receivers of research to active participants in knowledge construction.

However, using AI ethically matters. Algorithms carry biases; fluent summaries can obscure nuance. And uneven access risks widening divides. Ethical considerations ensure AI is a supportive tool, not an authoritative voice. In what follows, we examine AI’s promise, possibilities, and pitfalls. Practical guidelines and an ethical checklist are provided to help teachers confidently leverage AI. The goal is not just better-informed decisions: it is professional agency reclaimed and revitalized.

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