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Best Practices for AI-Supported Lesson Planning

A Research Practice Brief for Teachers New to AI

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Audience and Purpose

This brief is designed to support teachers who are new to AI in their exploration of incorporating–or making decisions not to use–AI in their teaching practice. In this document, we focus on lesson planning as the teaching activity, but this is just one way that teachers may seek to use (or not use) AI. We hope that some of the processes we describe can also apply to other teaching tasks (e.g., assessment), though the details may look a little different depending on the task, teaching context, and students. It is guided by questions like these:

- What should teachers know about AI in order to use it ethically and effectively?
- What should teachers do to ethically and effectively use AI to support their teaching practice?
- How might AI guidance and support need to be adapted for educators with varying levels of teaching experience and across different educational settings?

What We Know…And What We Don't

AI now dominates many of the conversations and research about education. Since the public release of ChatGPT in 2022, educators, parents, researchers, and educational technologists have rushed to make, understand, adopt, and resist generative AI tools and models. We have recently seen growing parental backlash against AI–and "screens" more broadly–in educational spaces (e.g., Klein & Langreo, 2026). But we also see districts and individual educators adopt and apply AI tools in a variety of ways, incorporating the technology into daily practice, while companies are using AI to create assessments, and support teaching. Entering into this milieu, especially as a beginning teacher, can be daunting; is AI useful and necessary or dangerous and damaging?

Although investigations into, and reporting and publications about, AI and education have rapidly gained speed in recent years, there are still many open questions about its impact and how it should evolve. In addition, emerging research often lags behind rapid changes in the capabilities and applications of the technology. A few areas to note here are (1) the effects of (pseudo)social relationships that people, particularly children, develop with increasingly humanoid AI; (2) the environmental costs of AI and its supporting infrastructure, which is notoriously difficult to calculate; (3) the cognitive impact of AI when

used in education; and (4) tracing the subtle and broad ways that AI-generated products shift ideas and language.

Humans, AI, and Teaching

Our perspectives and experience as a teacher, instructional coach, and education researcher shape the recommendations below. In particular, we view teaching as a social practice, inseparable from human relationship-building. This means that, in our paradigm, AI cannot meaningfully replace essential teaching functions, though it may disrupt them. We also believe that, when applied thoughtfully, AI can serve as a support for human-centered teaching. Most importantly, we think teachers should make informed decisions about if, when, and how they want to use AI to perform these supportive functions. It is important to identify specific ways that AI cannot replace human thinking and acting–even as we are providing guidance for how it may support these activities. In our view, high-quality teaching means having or developing your own personal teaching style, building relationships with students, fostering their peer-to-peer collaborations and relationships, being content experts creating a warm learning environment. AI cannot (nor should it) do these things.

AI is Like a…

There are many different ways we can think about AI. Some people compare it to a calculator, arguing that, despite resistance to calculators when they first became readily available to students, they are ubiquitous and acceptable learning tools now. Science fiction author Ted Chiang compared generative AI to a forklift, saying that, “Using ChatGPT to complete assignments is like bringing a forklift into the weight room; you will never improve your cognitive fitness that way” (Chiang, 2024). The language we use to describe AI is important for shaping how we think of it. In this brief, we use the analogy of a road trip to evoke a sense of discovery and to emphasize that learning to use (or deciding not to use) AI is a process. Just like on a road trip, there are certain things you must do to prepare and tools you can use to make the journey richer and easier. You can bring a friend, and you may experience challenges and obstacles–both literal and figurative. The sections below use this analogy to highlight the preparation, exploration, and reflection necessary to ethically and effectively use AI. Marvin Minsky, one of the scientists who worked to develop AI in the 1960s, called AI a “suitcase word” for the amount of different definitions that could be stuffed into it (Minsky, 2007). In this journey, AI may be like this suitcase–something you bring along with you on a journey, with some items from home and some you gather along the way.

In the accompanying guide, you will find a map for exploring lesson planning with AI. This will take you through the process of deciding if/how/when to use AI to plan an effective lesson for your teaching context, starting with steps to prepare for lesson planning and AI use; selecting an AI tool and prompting it to generate a draft, critiquing, editing, and iterating on the draft; implementing and reflecting on your lesson; and finally, revising your AI process for future lesson planning.

A Travel Guide for

Lesson Planning With AI

Created by: Nia Cannon, *Atlanta Public Schools*
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This guide provides practical advice for teachers who are new to AI and want to explore its use in teaching and learning. The goal is to help educators make informed decisions about when, why, and how AI can support their professional practice.

Before You Go



Before you get started using AI to lesson plan, there are a few things to do.

- ☐ Assess your own knowledge, beliefs, and needs. You can do this by taking a survey like ours here.
- ☐ Identify the lesson/standards that need to be taught.
- ☐ Establish criteria for success, for the lesson plan and the lesson. How will you know what is a good product, and whether your plan went well in implementation? You may want to use our ROUTE AI mnemonic to make sure you have all of the pieces you'll need.
- ☐ Decide whether you want to use AI for the next steps. You might ask, is this a part of the process I want to automate? Do I have enough opportunities to exercise my lesson planning muscles on my own? Will I be able to accurately judge whether the plan will be a success in my teaching context. (Sometimes you'll want a staycation, not a road trip!)
- ☐ If you decide to use AI, choose the tool(s) you want to use. You may want to use an education-specific tool like Magic School, NotebookLM, Diffit, or a general-purpose one like ChatGPT, Claude, Copilot, or Gemini.

On the Road



After you've made your plan and picked your tool, get started designing your lesson!

- ☐ Craft your prompt. You may want to use a promting framework, like RACE, CLEAR, or our lesson plan-specific one, ROUTE AI. Instead of thinking of your prompt as (just) instructions for AI, think of the process as helping clarify your own ideas about your lesson.
- ☐ Create a draft of your lesson plan using your AI tool(s) of choice. Check that your plan has all of the right elements (see ROUTE AI and your own evaluation criteria).
- ☐ Revise manually and/or re-prompt to refine the AI product. Unsure of whether it'll work? Get a second opinion from an experienced educator/someone who knows your students & context!

R — Rigor & Readiness
- Grade level
- Academic rigor expectations
- What students should already know

O — Overview
- Lesson title & focus
- Standard(s)
- Scope and sequence placement

U — Understanding Goal
- Guiding question
- What students should know and be able to do by the end

T — Travelers & Time
- Number of students
- Total lesson length
- Timing for each lesson segment

E — Equity Through Differentiation
- Accommodations & modifications
- Differentiation strategies for diverse learners

A — Attention Grabber
- Hook
- Engaging opening activity

I — Instructional Journey
- Work period/guided practice
- Independent practice
- Closing, reflection, and assessment

ROUTE AI

Lesson Planning Framework

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Upon Arrival

You made it!

- **Now it's time to implement your lesson. Put the AI-generated lesson into practice with students while remaining flexible and responsive to their needs. Use your professional judgment to adjust pacing, clarify misconceptions, and capitalize on teachable moments.**
- **Make notes about how things go and what you might need to change going forward. Check in with your students to see how it's going.**

Getting Home & Unpacking



You've reached your destination, but your journey is not over.

- **After your lesson, take a look at your notes. Consider what worked well and what could be improved.**

You might ask yourself,

- **Did students meet the learning objectives?**
- **Were the lesson activities, differentiation, timing, and assessments effective for your students? (How do you know?)**
- **Did using AI add value to your lesson planning process? Why or why not?**

Plan Your Next Trip:



- **Use your reflections and student evidence to refine the lesson. Modify prompts, adjust instructional strategies, strengthen differentiation, improve pacing, and address any gaps in learning. Treat AI-generated content as a draft that becomes more effective through continuous teacher-led revision and iteration.**
- **Check out other resources for prompting, lesson planning, ethical AI use, and tool evaluation. You might want to look at**
  - **Defining and Understanding AI: CIRCLS AI Glossary, Common Sense Media AI Basics for K-12 Teachers**
  - **Prompting for Education: OSSE Defining Effective Prompts**
  - **AI Ethics & Governance: MIT Media Lab**
  - **Global Perspectives on AI in Education: UNESCO**
  - **Evaluating AI Tools: Common Sense Media AI Risk Assessments, Digital Promise Responsible AI Certification**

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