

AI: A Co-Planning Think Partner

Background and Context

- Teachers struggle with planning on their own for lessons in high-level mathematics curricula and often have little access to supportive think partners due to scheduling and building constraints.
- Teachers and districts have less time for professional learning to support planning for and implementing high-level curricula due to schedules, budget cuts, and a lack of substitute coverage.

AI as a Think Partner

- Several of the IFL's district partners use the high-level mathematics curriculum Illustrative Mathematics (IM) v.360. IFL provides professional learning and lesson planning support. Teachers consistently raise the issue that the co-planning with an IFL fellow is effective because they have think partners.
- coteach.ai is an AI assistant for IM v. 360 built to co-plan for lessons while maintaining IM's pedagogical approach.

Perspectives

- Good teaching has never been the result of shortcuts, especially shortcuts in lesson planning. Good teaching requires a deep understanding of mathematical content, student thinking, and effective student-centered pedagogies.
- Use of AI can result in cognitive offloading, which can have benefits and risks.

Questions We Have Been Asking Ourselves

- How can teachers decide which AI-generated ideas maintain cognitive demand, and which do not?
- Can an AI-generated lesson plan be useful as a starting point?
- What does a teacher need to understand and believe about effective practices in order to make decisions about AI-generated planning ideas?



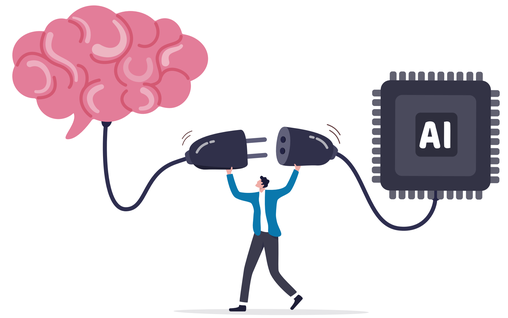
- When planning with AI, how can AI be a think partner that does not preclude the types of understanding and thinking that educators need when planning for and implementing student-centered, cognitively challenging lessons?
- What research/literature/tools does AI need to align to when generating planning ideas?
- What planning protocols can be helpful when educators plan with AI?
- In times when there is little time and no human co-planner, will teachers skip the crucial step of doing the math and simply ask the AI how students might solve the task? What effect will this have?
- How might AI be part of professional learning?

Current Partnerships:

School District of the City of York
Prince George's County Public Schools

We made our partners aware of coteach.ai in Summer 2026. Before asking for planning ideas, we now prompt coteach.ai to align to the IFL tools and resources from our professional development. This prompt to align to IFL tools and resources seems to help coteach.ai to

- provide lesson ideas that maintain the cognitive demand of the IM lessons and
- suggest planning ideas aligned to questions from our lesson planning protocol.



INSTITUTE for LEARNING
UNIVERSITY OF PITTSBURGH