Welcome to GAIDE: Generative AI for Instructional Development and Education

A streamlined approach for educators to enhance course content with AI.

Article: E. Dickey and A. Bejarano, "GAIDE: A Framework for Using Generative AI to Assist in Course Content Development," 2024 *IEEE Frontiers in Education Conference (FIE)*, Washington, DC, USA, 2024, pp. 1-9, doi: 10.1109/FIE61694.2024.10893132. Supplementary material available at https://arxiv.org/abs/2308.12276.

Key Steps in GAIDE:

- *Set Clear Goals*: Define what you want students to achieve with your content.
- *Contextualize*: Tailor AI content to student knowledge levels and course objectives.
- *Generate Objectives*: Use Bloom's revised taxonomy to craft measurable learning outcomes.
- *Content Creation*: Guide AI to produce initial content drafts.
- *Iterative Refinement*: Continuously improve AI outputs for quality and relevance.
- *Evaluation*: Assess the AI's work and decide if further refinement is needed.

Practical Examples:

- Use AI to generate a variety of problem statements for algorithm practice. Refine the best ones into full exercises with answer keys and rubrics. Use GenAI to evaluate your problems from diverse perspectives.
- Start with a lecture topic and an appropriate context. Use GenAI to flesh out proper learning objectives, lesson plan, detailed lecture notes, and lecture activity suggestions.
- Choose a challenging topic in your curriculum. Use GenAI to develop discussion prompts that stimulate debate and deepen understanding. Refine to ensure they are open-ended and encourage diverse perspectives.
- Use AI to generate case study scenarios relevant to your course material. Transform these scenarios into discussion starters that require students to apply theoretical concepts to real-world situations.

Tips for Success with GenAI:

- Most importantly: *Give feedback conversationally, as you would to a Content Development TA*. This helps it steer closer to your goals, perspectives, and preferences throughout your session.
- Be specific with your prompts to the AI. Make measurable requests when appropriate ("5 unique examples").
- Semi-regularly update the AI on your goals and the context to maintain relevance.
- Set realistic expectations: expect to find some unusable ideas in a larger set of generated content.
- Utilize segmented, incremental refinement: Start with broad strokes and only do detailed refinement when you have specified a small portion of the content to work on.
- Encourage critical thinking: Use AI to pose challenging questions or scenarios that spur student analysis and discussion.

Frequently Asked Questions:

- *Q: How specific do AI prompts need to be?* A: The more specific, the better. Include details like course level, topics, and desired format. Be clear and concise in your communication.
- *Q: Can AI create entire lesson plans?* A: AI can draft outlines and specific components, but educators should not try to generate and refine entire lesson plans at once. Break it into pieces and refine the smaller pieces for much higher quality results.
- *Q: Is it possible to align AI-generated content with my specific course objectives?* A: Yes, by clearly outlining your course objectives in the AI prompts, you can steer the generated content to align with your specific goals.

Stay Connected: Questions? Want to discuss further? Contact us at [dickeye and abejara @purdue.edu]

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