



AI in Formative Assessment and Feedback Loops

Course Syllabus

Course Description

Artificial Intelligence is rapidly transforming the way we teach, learn, and give feedback, but how can educators use it meaningfully while keeping students at the center? This course will guide you through the powerful intersection of AI and formative assessment, helping you build classroom practices that are efficient, responsive, and deeply human.

Through hands-on exploration of a wide variety of AI tools, real-world case studies, and peer-reviewed research, you'll learn how to design assessments and feedback loops that move learning forward. You'll explore how AI can support personalized feedback, track student growth, and save time, all while staying aligned with your values and your students' needs. This is an activity-rich course designed to give you an ethically informed, reflective understanding of how to use AI tools for feedback and formative assessment in your classroom.

Together, we'll take on the big questions: How do we ensure equity, privacy, and fairness when AI is involved? What are the risks and responsibilities of using AI in the classroom? By the end of the course, you'll walk away with a ready-to-implement AI use policy, a personalized feedback toolkit, and a set of classroom-ready resources to help you support learners across subjects and grade levels.

This course enhances classroom teaching effectiveness and supports improved student outcomes by introducing new knowledge in AI-powered formative assessment strategies that improve efficiency, foster engagement, and promote ethical, student-centered teaching. Designed for grades K-12 educators, this eight-module asynchronous course combines theory, reflection, and implementation planning. Each unit includes peer-reviewed readings, multimedia resources, guided self-reflection, and classroom application tasks.

Course Objectives

At the end of this course you should be able to:

1. Develop a foundational understanding of artificial intelligence and reflect on its role, potential, and limitations in education.
2. Analyze key principles of formative assessment and explore how student-centered strategies support learning and engagement.
3. Evaluate and apply AI tools to create or improve formative assessments that align with instructional goals and student needs.
4. Explore how AI can support the delivery of timely, personalized feedback that helps students understand their progress and deepen learning.



5. Design assessment and feedback strategies that promote student voice, encourage reflection, and use AI as a support tool, not a grader.
6. Identify ethical concerns about AI use in assessment and feedback and develop strategies to address bias, privacy, and equity.
7. Implement and reflect on using AI-supported formative assessment strategies through classroom-based practice or simulation.
8. Compile a personalized toolkit of AI-informed formative assessment and feedback strategies, including an ethical use plan for continued implementation.

Modules

- Module 1: Getting Grounded: What AI Is and Isn't for Educators, Quiz 1
- Module 2: Foundations of Formative Assessment and Feedback Loops, Quiz 2
- Module 3: Designing Smart Formative Assessments with AI Tools, Quiz 3
- Module 4: Giving Feedback That Matters: AI as a Teaching Assistant, Quiz 4
- Module 5: Feedback as Dialogue: Partnering with Students (and AI), Quiz 5
- Module 6: Real-World Challenges: Ethics, Equity, and AI, Quiz 6
- Module 7: Putting It into Practice: Piloting, Reflecting, Adapting, Quiz 7
- Module 8: Your AI Toolkit: Policies, Practices, and Next Steps, Quiz 8

Grading

Each quiz must be passed at an 80% or higher (three attempts allowed).

Format

This is a self-paced, asynchronous (no required live meetings) course. Throughout the PD course, you will find it helpful to take notes along the way to assist with the quizzes. Within each module, you will find reflection assessments that are not graded but will help in your journey through the course. There is an interactive forum in the course to help you connect with peers and instructors, share ideas, and collaborate on best practices throughout your learning journey.