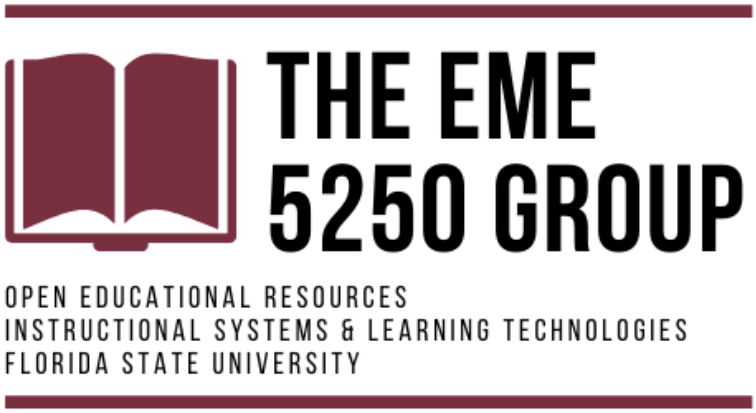

GenAI-Driven Instructional Design for Personalized Learning

Vivian Krause

July 24, 2025

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THE EME 5250 GROUP

Open Educational Resources
Instructional Systems & Learning Technologies
Florida State University

AI Driven Instructional Design for Personalized Learning Statement

This module introduces the fundamental concepts of GenAI and its ethical applications in developing sustainable instructional design materials for individualized learning. It aims to bridge the integration of AI capabilities with instructional design, ensuring practical implementation while promoting responsible and innovative teaching and learning practices. These resources can be used in flipped classrooms, independent study, or professional development workshops and can be adapted freely.

Learning Objectives

This module introduces the fundamental concepts of GenAI and its ethical applications in developing sustainable instructional design materials for individualized learning. It aims to bridge the integration of AI capabilities with instructional design, ensuring practical implementation while promoting responsible and innovative teaching and learning practices. These resources can be used in flipped classrooms, independent study, or professional development workshops and can be adapted freely.

Module Instructions

For those who are not as familiar or comfortable with generative AI, it is recommended to start with the Foundations of GenAI-Personalized Learning and explore the AI technologies section to learn more about the intricacies of generative AI. For those acquainted with Generative AI may prefer to dive into the resources and materials provided.

WHAT IS GENERATIVE ARTIFICIAL INTELLIGENCE

Generative Artificial Intelligence

What is it and How Does it Work?

- Generative AI is a type of artificial intelligence that learns from existing data and can be used to create new content, such as text, images, videos, educational materials, and more.
- GenAI leverages machine learning models, primarily neural networks, to develop outputs that mimic the patterns and structures found in the training data.
- GenAI is a powerful tool that can be used for the instructional design of personalized learning materials. These tools can develop educational materials tailored to meet the needs of individual learners.
- Use these tools to make adaptive learning modules that adjust the difficulty level based on the learner's progress, generate interactive simulations for hands-on learning, and even construct automated feedback on assignments.

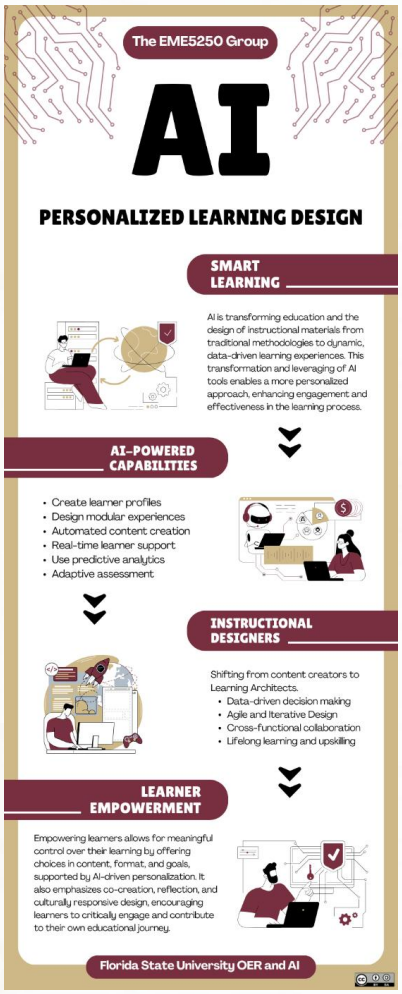
This video was created using *InVideo AI* and was designed to provide an overview of Generative Artificial Intelligence and its implications for instructional design and education as well as demonstrate how AI can be used to develop personalized learning materials.

GenAI Video Overview Transcript

Generative AI is a type of artificial intelligence that can create new content — like text, images, code, music, and even video — based

FOUNDATIONS OF GENAI – PERSONALIZED LEARNING

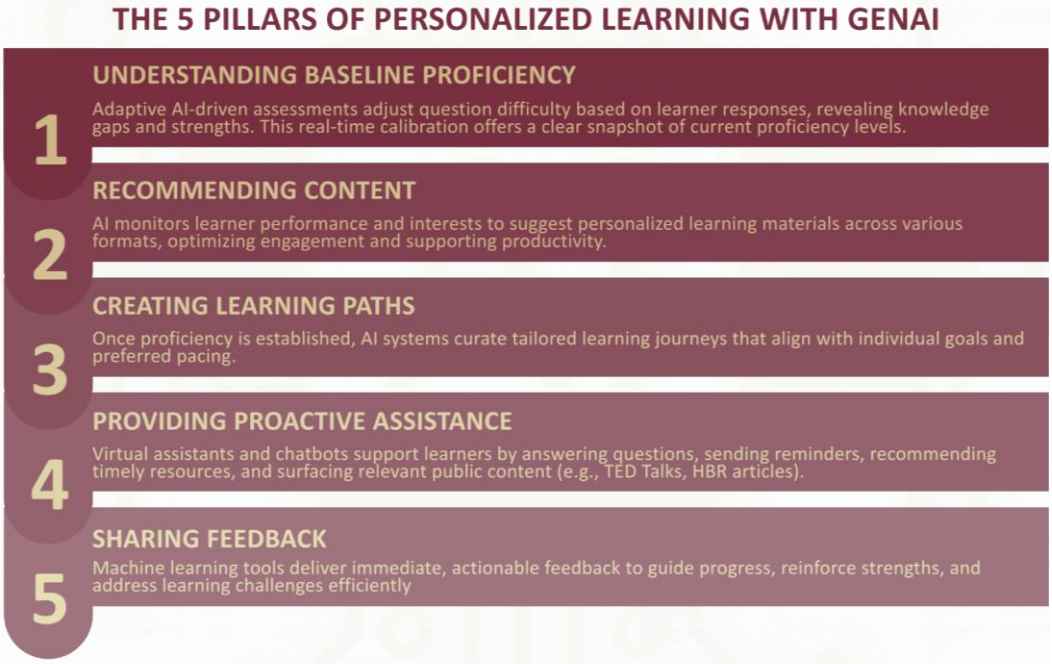
- Generative AI describes a subset of artificial intelligence that uses patterns discovered in massive datasets to create new content, including text, images, simulations, and code.
- AI's incorporation into instructional design in the field of education is opening new avenues for developing adaptable, learner-centered experiences that accommodate a range of needs, preferences, and learning styles.
- Generative AI offers Instructional Designers and Educators the ability to:
  - ***Customize Learning Materials*** to meet the needs of different learners.
  - ***Analyze learner behavior and progress*** to create personalized learning content.
  - ***Automate processes*** like content summarization or quiz creation.
  - ***Develop inclusive materials*** using sustainable, open, and transparent design.
- The biggest challenge educators and designers may encounter using generative AI is understanding what these tools can accomplish and how to effectively use them for creative instructional materials.



The Five Pillars of Personalized Learning with GenAI

AI-powered tools help provide solutions that can assist educators and instructional designers with determining a learner's proficiency level, or prior knowledge to suggest a tailored learning path that is appropriate for the learner using five pillars for GenAI.

This model is particularly effective for higher education or corporate training settings where maintaining individualized support can be challenging.



Sourced from: Lake, K. (2023, November 15). How to personalize learning using AI. eLearning Industry. https://elearningindustry.com/how-to-personalize-learning-using-ai\

AI Tools for Instructional Design

This section was designed by a team member.

GenAI Tools for Instructional Design

These are just a few of the GenAI tools that can be used to develop different types of instructional materials.

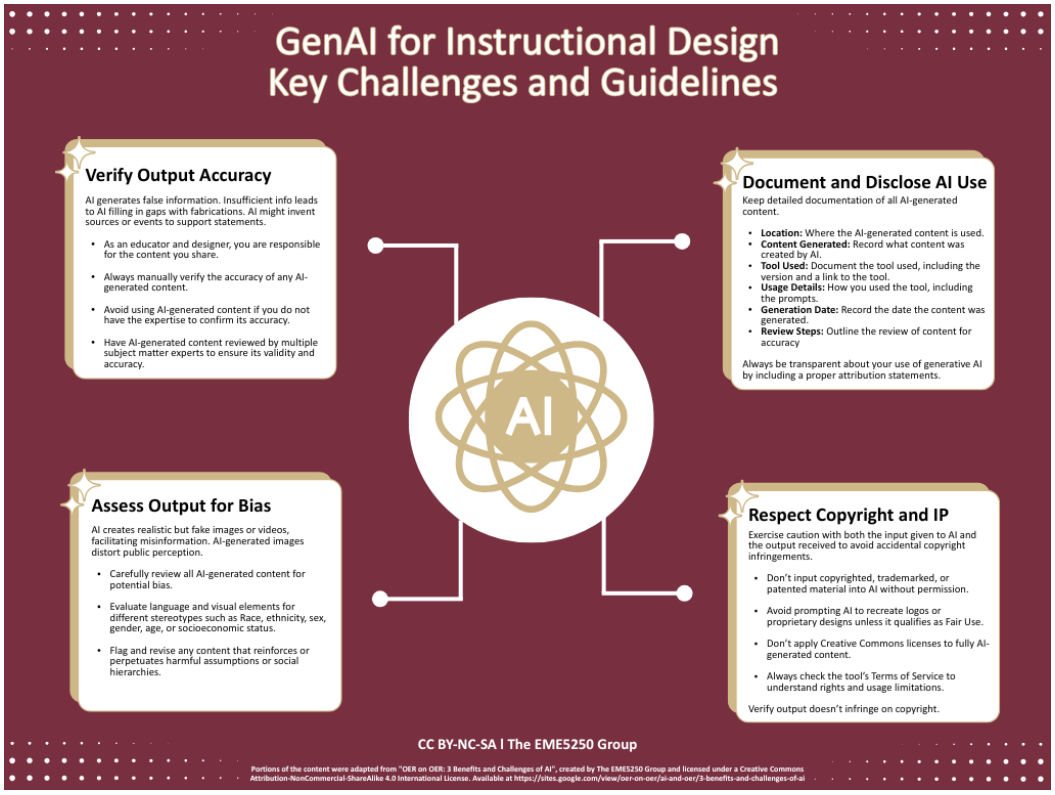
- **ChatGPT**: A versatile chatbot for content generation, research, and even code creation.
- **DALL-E:** A powerful image generation tool for creating visuals.
- **Jasper:** An AI writing assistant for drafting and editing content, including illustrations.
- **WellSaid Labs:** A tool for generating high-quality voiceovers.
- **Quizlet:** An AI-powered learning tool that personalizes study materials.
- **Midjourney:** An AI art generator for creating unique images.
- **Adobe Firefly:** An AI tool for creating custom images and graphics.
- **ElevenLabs:** AI voice generation and editing tools.
- **Vyond:** A tool for creating animations.
- **Kahoot!:** A gamification platform that uses AI to personalize learning experiences.
- **Disco AI:** An AI-powered platform designed to boost content development efficiency for instructional designers.
- **Magic School AI:** A platform that helps with lesson planning, assessment creation, and more.
- **Eduaide.AI:** Another platform for lesson planning, assessment creation, and IEP development.

Evaluating GenAI Tools for Instructional Design

This section was designed by a team member.

Guidelines for Ethical GenAI in Instructional Design

Educators and designers can leverage GenAI tools to efficiently and effectively develop personalized. It is imperative to understand the potential risks and ethical issues when using them to create educational materials. Exercise caution when developing AI-generated content by using the guidelines outlined in this section.



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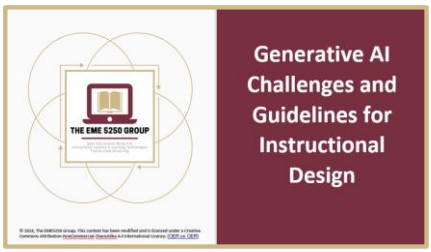
- Generative artificial intelligence (AI) in higher education: a comprehensive review of challenges, opportunities, and implications. Michal Bobula. Journal of Learning Development in Higher Education,

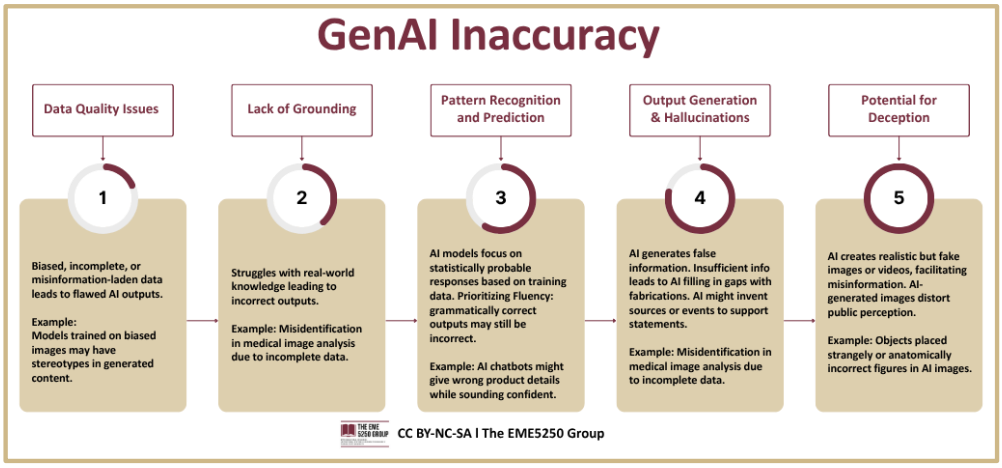
Evaluating the Benefits and Challenges of GenAI in Learning Design

The integration of generative artificial intelligence (GenAI) in instructional design offers numerous benefits, including enhanced customization and efficiency in the development of instructional materials.



Click here to access this editable version of this presentation.

By leveraging GenAI tools, educators and designers can create content that is tailored to diverse learning needs and preferences. However, it is essential to maintain a balanced perspective, ensuring that while GenAI enhances OER creation, the irreplaceable value of human insight and creativity in instructional design remains at the forefront.



THE CASE OF LEARNING ANALYTICS

Suggested Material retention and placement from OER on OER Legacy site.

As artificial intelligence (AI) evolves, there are numerous implications or educators, researchers, and designers particularly learning analytics, in the creation of instructional materials It is still imperative to maintain a balanced perspective to avoid over-reliance on learning analytics.

Practical Examples and Tools

1. **Learning Management Systems (LMS):** Platforms like Moodle and Canvas integrate learning analytics tools that track student progress, engagement, and performance. Educators can use these insights to adapt their teaching strategies and improve OER content.
2. **Adaptive Learning Platforms:** Tools like Knewton and Smart Sparrow use AI to deliver personalized learning experiences. These platforms adjust the difficulty and type of content based on student performance data.
3. **Intelligent Tutoring Systems (ITS):** Systems like Carnegie Learning and ALEKS provide automated,

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personalized tutoring by leveraging learning analytics to understand and respond to student needs in real-time.	

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Ethical Guidelines

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This section was designed by a team member.

Data Privacy and Responsibility for AI Adoption

This section was designed by a team member.

Designing Adaptive Personalized Learning with GenAI

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Generative AI (GenAI) in instructional design is revolutionizing education through personalized learning and efficient development of instructional materials. As GenAI adapts and evolves, it is important for educators to be versed in these technologies and their implications in learning which includes teaching learners how to appropriately utilize this technology for coursework.

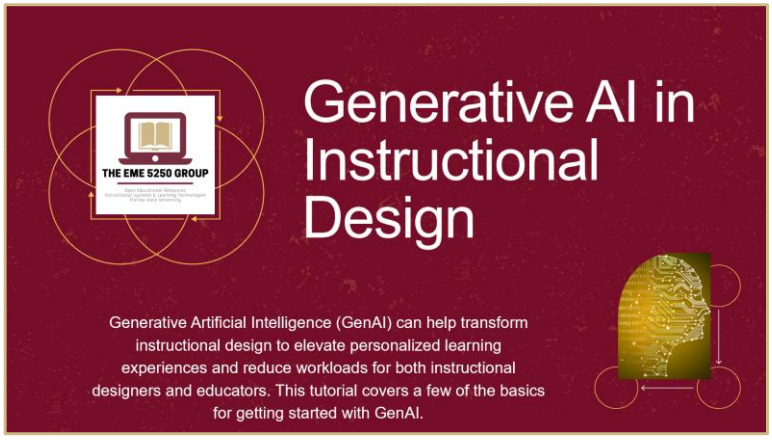
Tutorials and Workshops

The tutorials and materials provided in this section cover some of the basics for getting started with developing Instructional Materials using some of the most used GenAI programs.

Getting Started with GenAI for Instructional Design

This presentation covers the basics for getting started with creating a lesson plan, PowerPoint presentation and assessing the learning outcomes. This presentation offers links to additional training and workshops offered through YouTube's Creative Commons by various content creators.

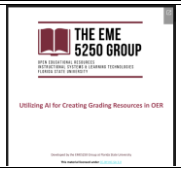
Click here or the Image below to open to access and view an editable version of this presentation.



Downloadable Instructional Guides

This section was designed by a team member.

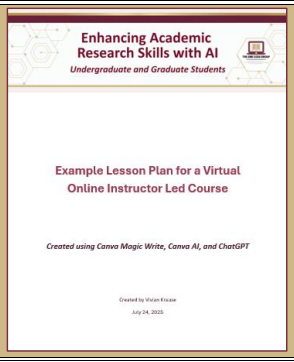
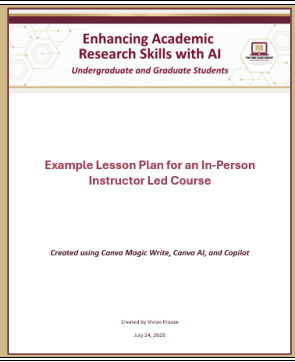
Suggested Material retention and placement from OER on OER Legacy site.

Section	Topic	Document	Placement
Overview: AI and OER	**Utilizing AI for Creating Grading Resources in OER**		Downloadable Instructional Guides within this section.
Using AI Tools for OER	**Gamma for Presentations Resources:** ▪ **Gamma for Presentations PowerPoint** ▪ **Use this FSU Theme on Gamma** ▪ **Gamma** ▪ **Gamma YouTube Channel** ▪ **Guide to Creating a PPT Presentation Using Gamma**		Downloadable Instructional Guides within this section.

Downloadable Lesson Plans

These example lesson plan templates were created using GenAI techniques as outlined in the Generative AI in Instructional Design presentation in the "Getting Started with GenAI for Instructional Design" section of this module. These lessons were designed to demonstrate how to use GenAI for instructional design and offer a guide for educators on teaching students to responsibly use GenAI effectively in academic research while upholding academic integrity.

Click the Image or links below to open to access and view an editable version of this presentation.

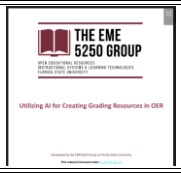
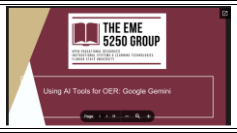
Click ***here*** to view the Example Lesson Plan for a Virtual Online Instructor Led Course	Click ***here*** to view the Example Lesson Plan for the In-Person Instructor Led Course
	

Downloadable Templates

This section was designed by a team member.

OER on OER Retention Suggestions

The table below provides a list of current materials on the OER Legacy site suggested for retention and placement on the new site. This information is not intended to be included in the materials for our team's section on the new OER.

Section	Topic	Document	Placement
Overview: AI and OER	**Utilizing AI for Creating Grading Resources in OER**		Downloadable Instructional Guides within this section.
Using AI Tools for OER	**Gamma for Presentations Resources:** ▪ **Gamma for Presentations PowerPoint** ▪ **Use this FSU Theme on Gamma** ▪ **Gamma** ▪ **Gamma YouTube Channel** ▪ **Guide to Creating a PPT Presentation Using Gamma**		Downloadable Instructional Guides within this section.
Critical Thinking	**Google Gemini**		Downloadable Instructional Guides within this section.
Benefits and Challenges of Using AI for OER	**Section**: Challenges and Considerations **Section**: Guidelines and Recommendations	*While generative AI tools offer significant value, there are numerous ethical concerns and potential risks to consider when using these tools to develop OER. Understanding these challenges is crucial to making informed decisions and ensuring responsible use of AI for OER creation. Using AI comes with its challenges and risks, so it is important to exercise caution when utilizing AI-generated content. This section offers some guidelines to consider if you plan to use generative AI tools during the OER content creation process. While we provide these suggestions, keep in mind that AI technologies and practices are rapidly developing, and these*	Guidelines for ethical GenAi in instructional design Overview Section has shown above.

Section	Topic	Document	Placement
		recommendations may change as the field and legislation evolve. ***Attribution*** *The content of this section was pulled from the OER on OER Legacy Site which was adapted from the following works:* ▪ Generative artificial intelligence (AI) in higher education: a comprehensive review of challenges, opportunities, and implications. Michal Bobula. Journal of Learning Development in Higher Education, (30). Copyright (c) 2024 Journal of Learning Development in Higher Education. Licensed under CC BY 4.0. ▪ "Getting Started: OER Publishing at BCcampus" by the BCcampus OER Production Team and is licensed under CC BY 4.0. ▪ "Getting Started: OER Publishing at BCcampus" by the BCcampus OER Production Team is licensed under CC BY 4.0. ▪ "Creating OER with AI" by TCC Libraries is licensed under CC BY 4.0. ▪ "Guidelines for Using Generative AI Tools in Open Educational Resources" by Affordable	

Section	Topic	Document	Placement
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Tools & Platforms

- **Google Scholar** – https://scholar.google.com *(Free academic tool.)*
- **Canva AI / Magic Write** – https://www.canva.com *(Proprietary; subject to Canva's licensing.)*
- **ChatGPT** – https://chat.openai.com *(Free and pro tiers; OpenAI terms apply.)*
- Microsoft. (n.d.). *Copilot*. https://copilot.microsoft.com