Companion Document to DL&I/CTL's Generative AI Fall Information Series

Session 3:
Additional Course Material Examples and Resources

Generative AI tools can be used to carry out initial development of course materials in order to save time and effort. They can also be used to analyze and provide feedback on existing course materials for further improvement. The examples presented here are intended to complement those from the Seminar Series presentation on Using Generative AI to Create Course Materials.

Develop and improve course syllabi

Syllabus templates or outlines can be created for customization. Using a ChatGPT plugin such as Ask Your PDF to upload your syllabus as a PDF for analysis and review.
- Using Chat GPT to create a syllabus outline (can be easily and quickly modified)
  - Checklist and framework for faculty to follow when creating a syllabus. (Example of checklist and example of a template framework with LO's for a marketing course)
  - Input learning outcomes for syllabus template (Example syllabus prompt with LO's for Introductory Business course)
  - Example of using AskPDF to chat with a journal article about active learning.
- Article: How to Prepare a course syllabus in 15 min with ChatGPT

Develop case studies, lab assignments, and lesson plans

Determine the learning outcomes to be assessed and input into LLM. Generative AI tools can then be used to create assignments and questions that are aligned.

- Input learning outcomes for exam/quiz questions development.
  - Example question building exercise in ChatGPT for an Introductory Business Course. This exercise is an example of creating and revising formative assessment questions.
- Input lesson objectives and ask for example assignment:
  - Example of an assignment creation exercise for a freshman introductory biology course. Chat GPT was used to create a set of learning outcomes for a specific lesson and then asked to create an assignment that aligns with the objectives. The chat example includes a revision of a question to better focus on contextualization of the learning outcomes and create a more summative assessment of the topic.

- [Example Uses from POD Resources](#): A set of example uses of generative AI from instructors at other institutions.
- CHATGPT4 Used to design an introductory lab experiment to demonstrate DNA replication to first-year level college students. Includes experiment instructions, supplies, suggested lab report. [ChatGPT Experiment Design Link to Results](#)

Develop practice problem sets and quizzes

Generative AI can be used to create course readings, design simple experiments, and develop exercises for use in class.

- [Example:](#) ChatGPT was asked to create a set of instructions for students to search, filter, and download US Census data from the web for use in an Introduction to Social Economics course at BU. Following the results, ChatGPT was asked to create a project for students using the data from the instructions. The prompt included general learning outcomes for the project.

  Example: MS Bing was used to create a set of images based on the following prompt: *Create an image that expresses the emotions of happiness, joy, and peacefulness. The image should have elements of nature and humanity combined.*

- Create images for presentations
- Create images to prompt to prompt class discussions
    - Use image creation for assignments with students.
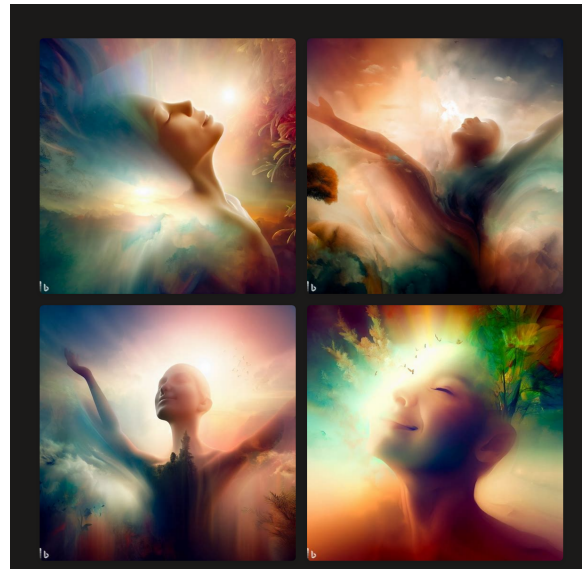
[Example of ChatGPT](#) being used to plan a lesson in an introductory biology course. The chat was used to create all of the following materials:

- Content specific learning outcomes with details
- Lesson plan for a single 50 minute lecture aligned to established learning outcomes
    - Included lecture time, active learning activity, reflection
- Organization of a slide presentation (framework for customization later)
- Outline of lecture to provide to students
- In class worksheet for activity aligned to learning outcomes
- Homework assignment aligned to learning outcomes
- Quiz questions aligned to learning outcomes
- Exam questions (various types) aligned to learning outcomes

Revision is often necessary. The following example shows revision of the slide presentation initially provided. (This is the same chat as above, please scroll to the bottom to see the revision exchange) Extended Example with Revisions

Develop examples, active learning exercises, and other ideas to increase student engagement in the classroom.

Example of using ChatGPT to create 3 different active learning activities for an Art History course using three learning outcomes.

Example of using ChatGPT to brainstorm engagement ideas for a classroom lecture that has an enrollment of 150 or more. The thread includes asking for general engagement strategies, teaching strategies for engagement in a lecture presentation, and increasing engagement in homework. An example homework assignment using one the homework engagement strategies is also developed.

Additional Resources:

- Using AI to Implement Effective Teaching Strategies in Classrooms: Five Strategies, Including Prompts - pre-print by Ethan R. Mollick and Lilach Mollick at the University of Pennsylvania Wharton School.
  - Summary of above article by author

- AI Prompts for Teaching: Cynthia Alby PhD at Georgia College Center for Teaching and Learning and Georgia Governor's Teaching Fellows Lead Lecturer.

- AI Literacy guide for faculty and students. This document outlines multiple areas of consideration and guidelines faculty and students can use when working with generative AI. Faculty may find it helpful to use some of the guidelines when creating assignments or syllabus language for AI in their classes.

Sneak Preview
ChatGPT being used to create ways to streamline grading processes for professors.
We will say more about these in Session 5 of the series.

CTL is available for consultations with faculty looking for support in developing uses for generative AI in their course.