How Faculty Can Harness Generative AI for Enhanced Learning

Curtis J. Bonk, IST Professor
Indiana University
cjbonk@indiana.edu; http://curtbonk.com/

Poll #1 and #2. Warm-up questions...
1. Have you used ChatGPT or other Generative AI tools for any teaching, training, or tutoring that you have done? Yes. No.
2. Have you used ChatGPT or other Generative AI tools for any of your formal or informal learning? Yes. No.

Poll #3. Warm-up questions...
3. How often do you use ChatGPT or other Generative AI tools?
   a. Gobs of times each day.
   b. Nearly every day.
   c. About once a week.
   d. About once a month.
   e. Just once or twice to test it out.

November 17 (to November 22), 2023
OpenAI Fires CEO Sam Altman, Citing Lack Of Confidence
Robin Grenoble, Huffington Post
https://www.huffpost.com/entry/openai-fires-sam-altman_n_6557d064e4b05723e4bd3e48

May 25, 2023
How Will Artificial Intelligence Change Higher Ed?
The Chronicle of Higher Education

2023: AI, AI, AI, AI...
AI in Higher Ed News

We're Asking the Wrong Questions
Our preconceived notion of AI is at odds with the facts.
BY DARRAH BAYO

AI Can Enhance the Pleasures of Learning
It will contribute to the deeply human parts of us.
BY U. GABRIELLE STONE

An Optimistic View
AI will make the university more human.
November 15, 2023
Why teachers should explore ChatGPT’s potential—despite the risks
Editorial, Nature
https://www.nature.com/articles/d41586-023-03505-5

November 13, 2023
Why You Should Rethink Your Resistance to ChatGPT
Flower Darby, Chronicle of Higher Education
https://www.chronicle.com/article/why-you-should-rethink-your-resistance-to-chatgpt

A more recent study found that nearly half (49 percent) of college students are using generative AI tools, but only 22 percent of faculty members. That disconnect highlights faculty hesitation to use AI as much as it reveals potential resistance.

November 13, 2023
Why You Should Rethink Your Resistance to ChatGPT
Flower Darby, Chronicle of Higher Education
https://www.chronicle.com/article/why-you-should-rethink-your-resistance-to-chatgpt

Teach them how to use AI tools appropriately. In her video, Maha Bali, who teaches digital literacies at the American University of Cairo, says she shows students how they might benefit from AI use in her class. For example, she encourages them to use AI to generate ideas, refine their first drafts, or even start an assignment with a ChatGPT-created draft and then make it their own.

August 14, 2023
Why Professors Are Polarized on AI
Susan D-Agostino, Inside Higher Ed

"What’s the real harm for students who opt to cheat by using AI to write papers in passing the class?" a commenter who identified as Jason Mittell, professor of film and media culture and American studies at Middlebury College, wrote. “After 23 years of teaching, I’ve come to realize that my job is neither to police students who don’t want to learn nor to rank students via grades, but to maximize learning for those who want to learn and try to inspire the others to try to join in the learning.”

November 16, 2023
Exclusive: OpenAI explores how to get ChatGPT into classrooms
Anna Tong, Reuters

Sources
Teaching with AI
https://openai.com/blog/teaching-with-ai
June 13, 2023
U.S. Department of Educational Technology
Artificial Intelligence

Artificial Intelligence and the Future of Teaching and Learning

June 26, 2023
International Association for Language Learning Technology (IALLT): https://iallt.org/
Free Language Technology Magazine (FLTMAG): https://fltmag.com/

Sources

June 12, 2023
Assigning AI: Seven Ways of Using AI in Class
One Useful Thing Blog
Ethan Mollick, Associate Professor of Management, the University of Pennsylvania
https://www.oneusefulthing.org/p/assigning-ai-seven-ways-of-using?

Here are the eight categories I’ve identified so far (in no particular order):
1. Intentional Misuse
2. Text Revision
3. Critiques of AI-Generated Content
4. Creative Writing/Brainstorming
5. Role-Play
6. Presentation Preparation
7. Research and Inspiration
8. Instructional Design

April 22, 2023
In UNESCO “Quick Start Guide to ChatGPT and AI in Higher Education”

Assigning AI: Seven Ways of Using AI in Class
One Useful Thing Blog
Ethan Mollick, Associate Professor of Management, the University of Pennsylvania
https://www.oneusefulthing.org/p/assigning-ai-seven-ways-of-using?

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4. Creative Writing/Brainstorming
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6. Presentation Preparation
7. Research and Inspiration
8. Instructional Design

July 12, 2023
Incorporating AI in Teaching:
Practical Examples for Busy Instructors
Daniel Stanford’s Substack

Here are the eight categories I’ve identified so far (in no particular order):
1. Intentional Misuse
2. Text Revision
3. Critiques of AI-Generated Content
4. Creative Writing/Brainstorming
5. Role-Play
6. Presentation Preparation
7. Research and Inspiration
8. Instructional Design

August 15, 2023
ChatGPT and generative AI: 25 applications in teaching and assessment
Seb Dianati & Suman Laudari, Charles Darwin University
November 23, 2023
TextGenEd: An Introduction to Teaching with Text Generation Technologies
WAC Clearinghouse
https://wac.colostate.edu/repository/collections/textgened/


July 23, 2023
101 creative ideas to use AI in education, A crowdsourced collection

July 23, 2023
101 creative ideas to use AI in education, A crowdsourced collection
**November 2023**  
**Design Prompts**  
Exploring Applications of ChatGPT to English Language Teaching: Opportunities, Challenges, and Recommendations  

**April 3, 2023**  
**Affordances and Pedagogical Benefits**  
ChatGPT for Language Teaching and Learning  

- It can:  
  1. Identify the meaning of a word in context,  
  2. Correct and explain language mistakes,  
  3. Create texts in various genres (e.g., emails, stories, recipes),  
  4. Develop quizzes,  
  5. Annotate texts, and  
  6. Offer dictionary definitions, example sentences, and translations

**April 3, 2023**  
**Clarify Word Meanings**  
ChatGPT for Language Teaching and Learning  

**Introducing the TEC-VARIETY Framework**  
http://tec-variety.com/  

**August 21, 2023**  
**1. Tone/Climate:**  
A. ChatPDF: Generate Questions for Guest Speakers  
https://curtbonk.com/R622_online_syllabus_Fall_2023.htm

**Option:** We are reading... "Exploring Interactions in a Synchronous Hybrid Language" Class (by Dr. Chaoran Wang). Input one or more assigned articles from guest(s) into ChatPDF and have it generate questions. Ask those questions during session.
<table>
<thead>
<tr>
<th>Date</th>
<th>Section</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>March 7, 2022</td>
<td><strong>1. Tone/Climate:</strong></td>
<td>B. Use ChatGPT to Generate Polls and Engage in Brainstorming</td>
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<td><a href="https://padlet.com/basdogan2/ywl19ct98styollbw">Link</a></td>
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<tr>
<td>August 31, 2023</td>
<td><strong>2. Encouragement, Feedback:</strong></td>
<td>A. Crafting Quiz Questions</td>
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<td></td>
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<td><a href="https://openai.com/blog/teaching-with-ai">Link</a></td>
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<td>Fran Bellas, a professor at Universidade da Coruña in Spain, recommends teachers use ChatGPT as an assistant in crafting quizzes, exams and lesson plans for classes. He says to first share the curriculum to ChatGPT and then ask for things like fresh quiz and lesson plan ideas that use modern or culturally relevant examples. Bellas also turns to ChatGPT to help teachers make sure questions they write themselves are inclusive and accessible for the students’ learning level.</td>
</tr>
<tr>
<td>September 8, 2023</td>
<td><strong>2. Encouragement, Feedback:</strong></td>
<td>B. Exam Preparation</td>
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<td></td>
<td><a href="https://cybernews.com/academy/news/chatgpt-your-new-academic-mentor/">Link</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. The program can review course material, create a tailored study schedule, summarize and condense information, provide past exam questions, and even offer helpful tips that might make studying easier.</td>
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<td></td>
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<td>2. By providing the specific areas of study, ChatGPT can help familiarize you with your chosen topic.</td>
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<tr>
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<td></td>
<td>3. ChatGPT can explain concepts, summarize key points, generate practical questions, and help you review quizzes and assessments.</td>
</tr>
<tr>
<td>August 31, 2023</td>
<td><strong>2. Encouragement, Feedback:</strong></td>
<td>C. Online Practice Tests and Interactive Flash Cards (Q-chat)</td>
</tr>
<tr>
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<td><a href="https://fltmag.com/quizlet-q-chat/">Link</a></td>
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<td>Using Spanish quizlets, Q-chat was able to give corrective feedback, explaining the lexical and grammatical errors in English and giving a correct example in Spanish. Another possibility would be to use a Q-chat story as a writing prompt and have students finish the story and then vote on their favorite ending.</td>
</tr>
<tr>
<td>August 15, 2023</td>
<td><strong>3. Curiosity, Intrigue, Unknowns:</strong></td>
<td>D. Translation Assistance to Improve Writing and Conversation Skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td><a href="https://openai.com/blog/teaching-with-ai">Link</a></td>
</tr>
<tr>
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<td></td>
<td>Dr. Anthony Kaziboni, the Head of Research at the University of Johannesburg, teaches students who mostly don’t speak English outside of the classroom. Kaziboni believes that command of English is a tremendous advantage in the academic world, and that misunderstandings of even small details of English grammar can hold back students from recognition and opportunity. He encourages his students to use ChatGPT for translation assistance, to improve their English writing, and to practice conversation.</td>
</tr>
</tbody>
</table>
Curiosity, Intrigue, Unknowns: Critique AI Generated Content

Critiques of AI-Generated Content

Example Activity: Critique AI-generated arguments.

- **Example AI prompt:** Should governments provide tax credits for electric vehicles?
- **Student task:** Paste AI response into a document and use “track changes” mode to critique/revise.

Variety, Novelty, Fun, Fantasy:

A. Learn new words through images by making suggestions for things to add or change

- [Example](https://fltmag.com/discovering-the-potential-of-lang-chat-for-language-learning/)

Autonomy, Choice:

A. Supplemental Language Lessons Online

- e.g., BBC Learning English, Duolingo, Babbel, SpanishPod, etc.
- (Zixi Li & Curt Bonk, June 2022, Duolingo Research)

B. Brave People Option: Scholar Essay

- [Scholar Essay](https://curtbonk.com/R511_online_syllabus_fall_2023.htm)
- **Brave People Option:** Have ChatPDF, ChatGPT, or another generative AI tool or platform generate a 2,000-3,000 word summary or essay of a scholar. Next, write a 2-3 page single-spaced reflection paper, review, or critique of that scholar and incorporate a couple of quotes and aspects of what generative AI produced.
August 21, 2023

5. Autonomy, Choice:
C. Brave People Option:
Book Review
https://curtbonk.com/R511_online_syllabus_Fall_2023.htm

Brave People Option: Put a PDF of the chosen book or books into ChatPDF, ChatGPT, or other generative AI tool or platform and have it do a critique or a book review on it. Next, write a reflection paper, review, or critique of what generative AI produced. A mini-glossary of personal definitions for 20-25 key terms and concepts found in this book might be included in an appendix at the end of the review.

July 12, 2023

6. Relevance, Meaningfulness:
A. Discuss Ethical Issues
Autumn Caines, University of Michigan Dearborn
https://autumm.edtech.fm/2023/01/18/priority-to-ai-instead-of-using-ai/with-your-students/

Labor Issues Using ChatGPT is providing free labor to OpenAI in their product development. They are clear about this in their terms and in their faq page.

- I don’t want to go down the “robots are coming for our jobs” path but many people (including the people building these tools) do envision AI having major impacts on the job market. Is it okay to ask students to help train the very thing that might take opportunities from them? It could be making opportunities too but shouldn’t they understand that?

October 5, 2023

7. Interactive, Collaborative:
A. Book Summary Comparison
https://curtbonk.com/R622_online_syllabus_Fall_2023.htm

Brave People Option: Feel free to utilize generative AI tools like ChatGPT or ChatPDF to generate starter text and up to three quotes in your Learning Environment Critique and Analysis paper as long as they are marked or you have reworded them a cited them properly.

July 12, 2023

7. Interactive, Collaborative:
B. Text Revision
Daniel Stanford’s Substack

Text Revision: For activities where students revise or critique AI-generated text, consider how students will annotate their work. For example, your instructions might include one or more of the following guidelines:

- **Highlight text in yellow** if at least 50% of the sentence was AI-generated without major revisions on your part.
- **Use track changes when revising AI-generated text** so that the AI text is crossed out and your revised version is shown in a different color.
- **Identify at least one place where the AI-generated text is problematic.** Highlight this text and use the comment feature to briefly explain why it’s problematic and how you would change the text to fix the issue.

Example Activity: Expand on an outline.
- Example AI prompt: Take the following outline and expand on each point with one to two paragraphs of text. [Paste outline here.]
November 15, 2023

7. Interactive, Collaborative:

D. ChatGPT as Tool or Thought Partner:
ChatGPT has entered the classroom: how LLMs could transform education
Andy Extance, Nature
https://www.nature.com/articles/d41586-023-03507-3

Last month, educational psychologist Ronald Beghetto asked a group of graduate students and teaching professionals to discuss their work in an unusual way. As well as talking to each other, they conversed with a collection of creativity-focused chatbots based on ChatGPT...at Arizona State University (ASU). Beghetto prompts the bots to take on various personas to encourage creativity—for example, by deliberately challenging someone's assumptions. One student discussed various dissertation topics with the chatbots.

August 31, 2023

7. Interactive, Collaborative:

E. Role Playing Challenging Conversations
https://openai.com/blog/teaching-with-ai

Dr. Helen Crompton, Professor of Instructional Technology at Old Dominion University, encourages her education graduate students to use ChatGPT as a stand-in for a particular persona—like a debate partner who will point out weaknesses in their arguments, a recruiter who’s interviewing them for a job, or a new boss who might deliver feedback in a specific way.

July 12, 2023

8. Engagement, Involvement:

A. Analyze AI Bias
Daniel Stanford’s Substack
https://danielstanford.substack.com/p/incorporating-ai-in-teaching-practical

Example Activity: Analyze examples of bias in AI output.
- Example prompt: Write a scene in a movie script where people in specific professions interact (e.g., a doctor/nurse, pilot and flight attendant).
- Student reflection question: What gender did AI assign to each role? How did this reinforce or contradict common stereotypes?
- Additional example assignment: Analyze how AI handles racial or gender representation depending on prompt wording. See examples at bit.ly/bias-in-ai-images.
May 11, 2020

9. Tension, Challenge, Controversy, etc.:
A. What is smileUP & How to use it?

SMILE, Stanford
https://www.youtube.com/watch?v=pblU8sSALWo

SMILE is connected to ChatGPT to give feedback and guidance. Have student experiment to see who can ask Level 4 and Level 5 questions. Professor Trang Phan fosters critical thinking by having her education students at Fresno State ask the same question and phrase differently every time and reflect on the authenticity, accuracy, trustworthiness, and the ethical and moral nature of the responses. And also record the level of question according to SMILE.

May 25, 2023

9. Tension, Challenge, Controversy, etc.:
B. ChatGPT as Co-Pilot, Normalize Citing AI

When used properly, ChatGPT can be a student’s co-pilot. It can help them brainstorm, improve phrasing, and learn new concepts…Panelist Anna Mills of City College of San Francisco said she teaches critical AI literacy and believes in “setting a norm of transparency and labeling of AI text.” She recommends students clearly label any portion of an assignment that was generated with ChatGPT or another AI tool—just like they would cite other sources.

October 5, 2023

10. Yields Products, Goals:
A. Support for Job Applications and Resumes
Grace Homils, a lecturer in the English department at Texas A&M University
https://www.chronicle.com/newsletter/teaching/2023-10-05

Students were asked to work with ChatGPT in a technical professional-writing course and a writing about literature course. In both courses, she says, students were underwhelmed by the product. In the technical writing course, students used ChatGPT to write job-application materials, such as cover letters and resumes. Most of them, she wrote, found that the chatbot actually created work because, even with multiple prompts, the writing did not have much personality and was repetitive. The same held true in her writing course when she used ChatGPT in class and also when students reviewed a ChatGPT-generated essay.

July 12, 2023

10. Yields Products, Goals:
B. Compare Ethical Decisions of Technology
Autumm Caines, University of Michigan Dearborn
https://www.civicsoftechnology.org/edtechaudit
https://autumm.edtech.fm/2023/01/18/prior-or-instead-of-using-chatgpt-with-your-students/

Civics of Technology
Make Commitments: Stop and Share in Chat Window:
Which principle(s) of TEC-VARIETY will you use?
- Tone/Climate
- Encouragement, Feedback
- Curiosity
- Variety
- Autonomy
- Relevance
- Interactive Engagement
- Tension
- Yields Products

The R2D2 Model: Read, Reflect, Display, Do...

1. Auditory or Verbal Learners
   - Auditory and verbal learners prefer words, spoken or written explanations.

August 21, 2023
Read 1a. ChatPDF: Summarize assigned articles and Generate Starter questions
https://curtbank.com/R622_online_syllabus_Fall_2023.htm
Option: Input one or more of the assigned articles and have ChatPDF generate questions on it or key points or both.

June 7, 2023
Read 1b. Bing Chat for stories, plays, poems, images, etc.
Users can easily write a prompt to create an image directly in the chat. OpenAI’s DALL·E (it can also be used at bing.com/create).
Users can create as many images as they would like for free. https://tesl-ej.org/pdf/ej107/int.pdf
2. Reflective and Observational Learners

- Reflective and observational learners prefer to reflect, observe, view, and watch learning; they make careful judgments and view things from different perspectives.

August 31, 2023
Reflect 2b. Critical Thinking on the Credibility of Sources
https://openai.com/blog/teaching-with-ai

Geetha Venugopal, a high school computer science teacher at the American International School in Chennai, India, likens teaching students about AI tools to teaching students how to use the internet responsibly. In her classroom, she advises students to remember that the answers that ChatGPT gives may not be credible and accurate all the time, and to think critically about whether they should trust the answer, and then confirm the information through other primary resources. The goal is to help them "understand the importance of constantly working on their original critical thinking, problem solving and creativity skills."

November 23, 2023
Reflect 2c. Translating Policy Document into Plain English (TextGenEd)
Timothy Laquintano, Lafayette College
https://wac.colostate.edu/repository/collections/textgened/professional-writing/translating-a-policy-document-into-plain-english/

This assignment asks undergraduate students to translate a complex policy document into plain English and then compare their output to the output of a large language model asked to do the same task. Students critically compare the semantic choices and sacrifices they made during the translation with the meaning lost during the machine translation, which attunes them to the risks and benefits of LLM output. It can be adapted to most disciplines and course levels.

November 23, 2023
Reflect 2d. Using LLMs as Peer Reviewers for Revising Essays (TextGenEd)
Antonio Byrd, Univ. of Missouri at KC
https://wac.colostate.edu/repository/collections/textgened/rhetorical-engagements/using-llms-as-peer-reviewers-for-revising-essays/

In this assignment, undergraduates use large language models (LLMs) to assist in revising their essay drafts by asking LLMs to respond to common peer review prompts. Students learn prompt engineering and develop rhetorical judgments on the effectiveness of LLMs’ language analysis to heighten their revision processes. This assignment can be adapted to most disciplines and course levels. (advanced expository course on literacy studies and technology)

November 23, 2023
Reflect 2e. AI for Editing (TextGenEd)
Nupoor Ranade, George Mason University
https://wac.colostate.edu/repository/collections/textgened/professional-writing/ai-for-editing/

This assignment asks students to generate a complex essay using an AI text generation tool, edit the essay using principles taught in class to improve the readability score of the generated content. Students are asked to share the final output along with visuals that demonstrate the comparison between the various versions of the generated content. This assignment can be adapted for all course levels, especially for first-year writing and professional and technical writing classrooms.

How can AI make credible contributions to the writing and editing process?
November 23, 2023
Reflect 2f. Decoding an AI Bot’s Chatting Pattern (TextGenEd)
Bhushan Aryal & Ordner W. Taylor, Delaware State University
https://wac.colostate.edu/repository/collections/textgened/rhetorical-engagements/decoding-an-ai-bots-chatting-pattern/

This 4-week assignment asks advanced undergraduate students to hold a sustained ‘conversation’ on a topic with an AI chatbot to decode the pattern, limitations and possibilities of the AI-based writing technology. Students analyze their conversation, write a report, and make an oral presentation. The assignment provides writing faculty a wide window to teach almost any issue of interest in AI writing while offering students an immersive, analytical, and writing experience.

November 23, 2023
Reflect 2g. The Term Paper Turing Test (TextGenEd)
Paul Fyfe, North Carolina State University
https://wac.colostate.edu/repository/collections/textgened/ethical-considerations/

This assignment asks students to use an accessible language model to write their term papers—with the goal of fooling the instructor. While initially framed as something sneaky or as a shortcut for writing, the assignment makes students confront and then reflect upon the unexpected difficulties, ethical dimensions, and collaborative possibilities of computationally-assisted writing. It can use any web-based text-generating platform, be adapted to various courses, and does not require significant technical knowledge.

3. Visual Learners

- Visual learners prefer diagrams, flowcharts, timelines, pictures, films, and demonstrations.

4. Tactile/Kinesthetic Learners

- Tactile/kinesthetic senses can be engaged in the learning process are role play, dramatization, cooperative games, simulations, creative movement and dance, multi-sensory activities, manipulatives and hands-on projects.

February 19, 2023
Do 4a. Generate images and have students draft stories
DALL-E: An “Intelligent” Illustrator for your Language Classroom
https://fltmag.com/dall-e/

- Ask DALL-E to generate culturally-specific images and then have students research and explain why the image does or does not fit the reality in the context of the target culture.
- Ask DALL-E to generate images based on idioms or proverbs as part of a lesson on them.
- Have students give prompts to DALL-E and then revise the prompts, analyzing why one prompt may have worked better than another or given a different result.
Poll #4. Closing questions...

4. How many ideas did you get from this session for using ChatGPT or other Generative AI tools in your teaching, training, or tutoring?  
   a. None  
   b. 1 or 2  
   c. 3 to 5  
   d. 6 to 10  
   e. More than 10

Poll #5. Closing questions...

5. How many ideas did you get from this session for using ChatGPT or other Generative AI tools in your formal and informal learning?  
   a. None  
   b. 1 or 2  
   c. 3 to 5  
   d. 6 to 10  
   e. More than 10

Remember…

“I cannot do this alone.”
   “I cannot do this alone.”
   “I cannot do this alone.”

Any Questions or Comments?  
Slides at: TrainingShare.com (go to “Archived Talks)  
Papers: PublicationShare.com  
Free book: http://tec-variety.com/  
Free Course: https://colcommmons.org/welcome/coursedetails/8  
Curtis J. Bonk, IST Professor, Indiana University  
Email: cjbonk@indiana.edu; http://curtbonk.com/