Curiosity put into practice: Using AI to enhance clarity and engagement in an undergraduate psychology classroom

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I first noticed students using GenAI technology early in spring 2023. This was immediately following the public release of ChatGPT late in 2022. My course design included a weekly assignment with four short-answer essay questions that guided students through challenging course concepts. The assignment directions included specific instructions to "use the textbook and course materials only." Direction also suggested an estimate of the number of sentences it might take to answer the question, for example, "This answer will take you about 4 to 6 sentences." Or "Best answers will be about 6 to 8 sentences." When grading the assignments, I gave plenty of feedback and often recorded a follow-up answer video so that students were sure to have dependable information for exam topics. By the third week of the spring semester, one or two students began turning in assignments with 20 to 40 sentences. The information was generally correct, but only vaguely related to the assignment question and definitely outside what we covered in the course. I was confused. Using GenAI didn't help with focused exam topics and the grading rubric for the assignment assigned much lower scores for answers that didn't clearly use courses materials.

My confusion was compounded when a student came to my office hours very excited to ask, "I put the assignment questions into ChatGPT and copy the answers into the assignment handout, but I know ChatGPT gives me wrong answers sometimes. Would you go over the answers before I submit my assignments and tell me if the information is correct?" The student was surprised when I responded, "What you just said is, my sister did my homework for me, and I want you to check if she got it correct before I turn it in to you." The response was like a mic drop. "Oh, yeah." This exchange led me to a year of GenAI exploration and made me realize that we all need to learn more about how GenAI can be used as a tool to benefit our teaching and student learning.

Curiosity: In fall of 2023, I began by asking students in an Introduction to Psychology course about their ideas about GenAI via an online discussion assignment. This assignment was my first venture into what students knew. I wanted them to feel free to discuss AI honestly, so the directions and the grading rubric emphasized, "Your score will be solely based on whether you participate or not…not on what you say…" To develop what I thought would be a more interesting discussion prompt, I decided to ask ChatGPT, which was the only large language model GenAI I knew, the following question**. "**If you were leading a discussion about how machines think and learn, what would you say about AI?" ChatGPT gave an in-depth answer by introducing the concept of Artificial Intelligence (AI) and its components. It also included key points and suggestions for how machines think and learn, which seemed way beyond their capabilities, for example, reasoning, problem-solving, and decision-making. ChatGPT also emphasized its fundamental goal was to replicate human-like cognition.

Some of the key points ChatGPT suggested were, the four types of AI (Wow! There are four?), a definition and explanation of machine learning, details about neural networks and deep learning, an overview of natural language processing (NLP), some points regarding ethical and societal considerations, and future directions. I was a bit overwhelmed myself but was sure students knew about all of this information. I would soon find out this was not the case. I was very open with students, making sure to include quotation marks and a citation of AI information with the directions. I was also open during class, assuring students that I just wanted their ideas. From the discussion, I learned that most students had no idea that there were different types of AI and very little understanding of neural networks, deep learning, or NLP. They also had very little information about using AI or thought it was unethical to use it at all. It soon became clear that my students and I needed to learn more and that I had to be the one to take the lead and support their journey into AI Awareness.

Stop Worrying About Essays, After taking numerous AI workshops, I began to use GenAI, especially Copilot, in my teaching. I still use short-answer essay question assignments, and students are still encouraged to use the course materials, which most do. If work is completed at home, they receive full participation for completing the work when they bring it to class. I don't worry about the source they used; however, students must hand write their answer since writing out answers supports memory (e.g. Mikulak, 2014) and ensures at least some background on the topic before coming to class. During class, we use completed assignments for in-class individual or group work and discussions. With my guidance, I can make sure students are on track with

course materials, and together, we generate dependable answers on the whiteboard or through online platforms like Padlet, which can be shared and saved.

Enhancing the Interactive Lecture Format. In some classes, I use an interactive lecture format, where I introduce active learning opportunities throughout the lecture to increase student engagement and check for understanding. I have always created my own activities or discussion questions, and these take time to create. I have found both ChatGPT and CoPilot very helpful in cutting the time it takes to create an activity for each of the lecture segments. I enter some lecture notations, and both platforms quickly generate multiple ideas for active student engagement. Once I have a list, I can select and adapt at least one of the ideas for my needs. Let me stress here, that I am specific in what I ask for and I always need to adapt the activity to my needs. I am also very transparent with my students about my use of GenAI, usually by adding an "Adapted from [ChatGPT or Copilot] suggestions" notation to the directions.

Improved Exam Questions. As I become more comfortable with Copilot in particular, I often use it to write exam questions, especially when the publisher materials are limited. Again, I ask AI to provide a number of questions based on notes and materials that I provide. This allows me to add course information I included as supplemental to the textbook. Based on my specific information, Copilot writes the number of questions that I request, and I narrow down from those questions. The questions still need editing since Copilot has a tendency to give the correct answer as "B" and to make the correct answer the longest answer. I have also found that sometimes more than one answer could be correct, which leads me to a new weird type of discussion with Copilot about the two answers that usually ends with me just rewriting one of the answers. Still, generating questions using an AI assistant seems to be better at creating plausible distractors, is good at adjusting the difficulty level up or down, and is significantly faster than creating questions from scratch.

Enriched Grading Rubrics. Just recently, I've also used Copilot to improve clarity in my grading rubrics for individual reflection or essay questions. My questions have always provided detailed assignment descriptions regarding what is expected for a best score. Based on my descriptions and the number of levels I request, Copilot does an excellent job of creating clear, detailed rubrics with multiple performance levels and descriptors. Again, I need to adapt to my criteria and adjust point values since AI values are often small decimal values or lower values for more complex reasoning. Even with editing time, AI generates an initial draft quickly.

Getting Back to Students and Conclusions. I wish I had a definitive conclusion when it comes to GenAI in the educational setting. I have become increasingly open and honest in discussing my AI explorations and use of AI tools with my students. I ask how they are using AI to support their learning, and I try to support them by offering helpful suggestions. We talk about sharing other people's work with AI and other ethical concerns. However, it is still a struggle, and one that students will have to deal with throughout their lives. During our discussions, most students share that they are exploring AI in the same way that I have been exploring it. They share their successful attempts and their frustrations. For example, some students say that AI tools help to reword and explain abstract concepts, while other students say AI practice questions are useless, even after entering my exam study guide into it, the questions are too general and still include questions that either won't be on the exam or with obviously correct answers. In the end, my students have similar conclusions. GenAI can be a valuable tool that can enhance teaching and learning and save time… but only if you have the time to explore and learn the best ways to use it.

References

Mikulak, A. (2014) *Getting it in writing*. APS Observer, Association for Psychological Science. https://www.psychologicalscience.org/observer/getting-it-in-writing