AI as Collaborator:

Redefining Student Engagement and Assessment in IT Education

Kristi Hall

University of Cincinnati

My name is Kristi Hall, and I'm an Associate Professor of Information Technology at the University of Cincinnati Clermont College. I am also the Academic Program Coordinator for our IT program. Over the past few years, I have conducted extensive research into Generative AI and have implemented it into my pedagogy, student engagement, and teaching methods. Generative AI is having a significant impact on the field of information technology, and it is crucial that we prepare our students for a future where Generative AI will play a major role. Besides influencing the field of IT, Generative AI is also heavily impacting teaching and learning. I have been using Generative AI in various ways to create more engaging classes for my students and to streamline the administrative tasks associated with teaching.

I chose to integrate Generative AI into my pedagogy across multiple courses. My goal is to help students understand not just how AI works, but how to work with it effectively and ethically. Generative AI affects all areas of IT through applications such as code generation and testing, process automation, cybersecurity threat detection, and more. Therefore, I have been diligently incorporating practical Generative AI assignments into all my courses so students can experience how they will use these tools in the field.

In IT2040 Fundamentals of Web Development, where students learn HTML and CSS, I began incorporating assignments that simulate real-world troubleshooting. For example, I review submissions to find common coding issues, then intentionally break code in similar ways and show students how to use Microsoft Copilot to diagnose the problem. They learn not just how to fix code, but how to ask better questions and verify AI-generated suggestions. This builds both confidence and critical thinking—skills they'll need in the workforce.

In more advanced courses like IT2090 Open-Source Web Server Development, I added AI as

a collaborative reviewer. Students submit their PHP and MySQL code to Copilot, receive recommendations such as how to optimize efficiency, enhance security, or other suggestions, and then write reflections analyzing the quality of that feedback. Did Copilot make good suggestions? What was useful, and what was off-base? These reflections have given me insight into how students are thinking and learning.

These assignments have changed how I view student work. I'm now less focused on whether the student wrote every line of code themselves, and more focused on how they interact with the code, how they analyze AI output, and how they improve on what the tool provides. I do periodically check to ensure that they understand the code by having them submit video assignments where they walk through their code line by line explaining what it does. This helps me to see that they understand the logic of the code and how it works.

I also talk transparently to students about AI use. We talk openly about AI use, when it's appropriate, when it's not, and how to cite or disclose it. I've found students more willing to engage in discussions about ethics and bias in AI tools when they've had firsthand experience using them.

As a program, we also want to teach our IT program students the basics of using Generative AI, such as prompt engineering, its impact on various career fields, and the ethics of AI use. I have created a discussion assignment in our IT2020 Implications of Information Technology course, on using Generative AI to retrieve information and write papers. The discussion covers the process of using AI for idea generation and resource finding, the ethical use of AI, prompt engineering, and checking the accuracy of AI-generated information. I am currently developing an assignment for IT1051 Fundamentals of Digital Media on generating images with Generative AI and the ethical issues involved.

The feedback we have received from our advisory committee indicates that they see a gap between infrastructure, data practices, workforce skills, and the attempt to implement Generative AI in business. In our last advisory committee meeting, we discussed how companies are trying to adopt AI without having the right data infrastructure. Companies often know how to use AI tools in isolated cases but struggle to apply them to solve real business problems. With this information in mind, I am developing comprehensive real-world projects for my classes that use Generative AI from start to finish, along with critical thinking about the ethics of AI use.

In IT3060 Database Management II, much of this course is dedicated to database design, normalization, and data structuring. I now assign a comprehensive project where students use AI tools from start to finish. They prompt Copilot to design a database schema, write queries to test the schema, refine the schema based on their testing, generate documentation for database users, and then reflect on both the process and the ethical implications. It's the most integrative project I've ever assigned, and students are enjoying the real-world aspect.

The biggest success has been how much deeper students engage when they must "think" with

AI and not just use it as a shortcut. Having them critique and reflect on AI feedback has strengthened their technical communication skills and their ability to think critically about the implications and use of Generative AI. I also didn't expect how excited they'd be to learn about using AI appropriately.

Another win has been on the administrative side. Tools like Google NotebookLM, ChatGPT, and Copilot have helped me generate grading rubrics, and work through the backward design process of course development. Generative AI is a big help in ensuring that module objectives, resources, assignments, and assessments I develop align back to the student learning outcomes of the course. It's made my course planning more efficient and more thoughtful.

Not every experiment worked. Some students will always over rely on AI and fail to understand the importance of using it as a tool and not a crutch. Others struggle to prompt effectively or become frustrated when the tool gives wrong answers. I continue to try to demonstrate to students that AI isn't a shortcut to understanding; it's a tool that should aid their learning and understanding. I continue to tweak assignments as issues arise, by adding more checkpoints, reflections, screenshots of prompts, etc. to see how students are using AI, not just what they submit.

Another challenge is clarity of AI use. Students come in with differing ideas of what's allowed and what's not. This is understandable because Generative AI usage in courses varies from instructor to instructor. I'm now working with the IT program faculty to develop a program-wide AI policy. Our goal is to have a policy that sets expectations but allows for flexibility across assignments. This will aid in guiding the IT program adjuncts with policies that support them, not just enforce rules.

Generative AI is not just impacting IT. It is impacting the career fields that most all of our students will enter. We can't stick our heads in the sand and ignore it. This past year, I led a faculty team through the AAC&U inaugural Institute on AI, Pedagogy, and the Curriculum. For the Institute, we had to develop and implement a Generative AI project. Our team developed a Canvas resource hub on teaching with AI, that includes important topics around Generative AI in education and examples of how to implement it into the curriculum. Additionally, we conducted a Teaching with AI Learning Community at UC Clermont, involving fourteen faculty who completed the learning community and developed their own projects to integrate Generative AI into their teaching and learning.

Generative AI is not going away. As educators, we can either resist it or teach with it. I've chosen the latter, not because it's easier, but because it's what my students need. They need to graduate not just knowing how to code, query, or create media—but knowing how to work with Generative AI, question its output, and communicate their own thinking clearly and ethically.