Redesigning Assessment with Generative AI:

AI-Assisted Peer Review: Facilitating Constructive Feedback and Authentic Learning

CASE SCENARIO 1:

In an entrepreneurship course, students create business proposals. They then peer review the proposals of their classmates with the assistance of an AI tool.

After writing their proposal, students submit it to the chosen AI tool for immediate feedback and suggestions for improvement. The AI may also provide examples of high-quality business proposals, with which the student can use to make their edits.

Next, the student's proposal is sent to two peer reviewers. The AI tool guides the reviewers through the peer review process, suggesting potential comments and guiding questions. The reviewers then provide constructive feedback to help improve the quality of the first student's work.

After making further edits to their proposal based on the feedback received, the final proposal is then submitted for grading by the professor. Overall, the process of writing, receiving feedback, and revising promotes deep learning and develops critical thinking and communication skills.

CASE SCENARIO 2:

In a literature course, students are asked to write analytical essays about specific works of literature. They then use an AI tool to facilitate peer review of these essays.

First, each student submits their essay to the chosen AI tool, which provides them with feedback on different areas, such as the clarity of their arguments and their use of textual evidence.

The essay is then sent to two peer reviewers. The AI tool aids in the review process by prompting reviewers to comment on specific elements of the essay, such as argument structure and literary analysis.

The student revises their essay based on the feedback from their peers and the AI tool. The final essay is then submitted for grading. This iterative process facilitates learning by requiring students to think critically about their work and their peers' work.

INTRODUCTION

Traditional forms of assessment, such as essays or exams, often focus solely on students' individual knowledge.

The AI-Assisted Peer Review approach requires students critically use and review each other's work with the aid of a Generative AI. The AI can provide guidelines and suggestions for feedback, ensuring comprehensive and constructive peer assessments.

With this method, not only can students' understanding of the subject tested, but their critical thinking, constructive feedback, and collaborative (human-with-machine) skills can also be enhanced.
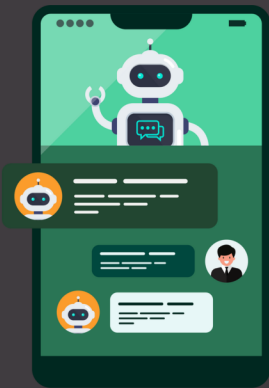
HOW DOES IT WORK?

Students submit their work, which may be an essay, project, or presentation. They then review one or more of their peers' work. GenAI is used to provide initial feedback, as well as a structured framework and examples of effective feedback to help students formulate their reviews for their peer(s).

The whole assessment process creates a feedback loop where students are engaged in the learning process actively and collaboratively. They learn not only from their work, but also from their peers' perspectives and their interaction with the AI assistant, fostering a deeper understanding of the subject matter.

Assessment criteria (for the feedback part only) can include:

- Completeness: The reviewer addresses all sections of the work and provide comprehensive feedback.
- Relevance: The feedback is relevant to the work and focused on improving it.
- Constructiveness: The feedback is constructive, offering both positive feedback and areas for improvement.
- Clarity: The feedback is clear and easily understandable.
- Helpfulness: The feedback helps in improving the work.

BENEFITS & CHALLENGES

Benefits

- Enhances critical thinking skills as students must evaluate and provide feedback on their peers' work.
- Encourages collaborative learning and empathy as students understand and appreciate different viewpoints.
- Adds an additional layer of authenticity to the learning process, as each student's work and review will be unique.
- Develops human-machine collaborative skills.

Challenges

- Requires a robust and fair system to handle cases where a student may be unfairly critical or overly generous in their reviews.
- Needs to ensure students understand how to give and receive feedback effectively.
- The complexity of the process may require additional time and resources compared to traditional assessment methods.
- Technical setup and AI integration might be challenging for some institutions.