GenAI in Learning, Teaching and Assessment

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Why did the instructor use GenAI for learning and teaching?

From a professional perspective within the fashion industry, Kitty and her team have observed a growing trend of fashion companies leveraging Artificial Intelligence (AI) technologies, such as image and speech recognition, language translation, and recommendation systems, to deliver personalised customer experiences. Building on this insight, the team recognises the potential of Generative AI (GenAI) tools, including Stable Diffusion and Midjourney, to transform educational models by providing adaptive, student-centred learning experiences that cater to individual learning styles and preferences. This innovative approach can enhance student engagement and outcomes, particularly in areas where traditional teaching methods may be resource-intensive and costly. Furthermore, the team acknowledges the importance of developing technological skills, including digital literacy and IT proficiency, as these competencies extend beyond mere tool usage to encompass a nuanced understanding of technology's societal and economic implications – essential for driving innovation and sustainable growth in the fashion industry. To this end, the team is keen to integrate GenAI into their subject delivery, with a focus on assessing its impact on student learning and evaluating the extent to which students acquire the knowledge, skills, and attitudes necessary to thrive in an AI-driven fashion design landscape.

How was GenAI used in this scenario?

Kitty and her team incorporated a five-stage framework into the learning, teaching, and assessment of ITC525, comprising:

- Stage 1 **Pre-integration survey**
- Stage 2 **GenAI workshop**
- Stage 3 **GenAI integration in assignment**
- Stage 4 **Student presentation and sharing**
- Stage 5 **Post-integration survey**

A more detailed analysis of Stages 1 and 5 will be presented in the subsequent section, 'What was the impact on student learning?'.

The GenAI workshop (Stage 2) aimed to equip students with foundational knowledge of artificial intelligence, machine learning, and their applications in the fashion industry. Specifically, the workshop focused on GenAI, text-to-image generation, and prompting, as well as AI literacy and the potential of GenAI tools to support student learning. During this stage, students were introduced to various GenAI platforms, including Stable Diffusion XL Playground, Stable Diffusion XL on POE, and the PolyU GenAI Platform, which they were encouraged to trial.

Stages 3 and 4 involved the redesign of assessments, where students were tasked with integrating GenAI into any process of the Apparel Design Framework. Students were required to provide feedback on their experiences using GenAI in the design process, including its advantages and disadvantages. To facilitate this, Kitty's team posed a series of prompt questions, such as:

- Which GenAI tool you use?
- Which step do you use GenAI for?
- How does the GenAI tool help you with your learning in this subject?
- Does it engage you and your group and the design project effectively?
- Do you think using GenAI tools is beneficial to this design project?
- What kind of skills have you learnt by using GenAI?
- What are the concerns when using GenAI tool for design?
- What did you learn about AI literacy?

What was the impact on student learning?

To gauge students' perceptions of AI literacy and GenAI, Kitty's team administered both pre-integration intervention and post-integration intervention surveys, utilising a 5-point Likert scale (1: Strongly disagree; 2: Disagree; 3: Neutral; 4: Agree; and 5: Strongly agree) to assess students' responses to the following statements. The surveys revealed predominantly positive feedback regarding students' learning outcomes and their acquisition of GenAI knowledge, skills, and attitudes after completing the course.

Example statements from the survey included:

- I am generally familiar with GenAI.
- I routinely use GenAI to support my learning.
- I have a clear understanding on how to use GenAI tool.
- I am generally familiar with AI.
- I have a clear understanding of AI literacy in fashion and textile design process.
- I have a clear understanding about how GenAI supports my learning and assessment.

What were the challenges encountered during the implementation and what solutions were used?

Students reported several challenges in utilising GenAI, including the need for constant updating and optimisation of prompts to achieve the desired output, which often proved impossible to meet all design requirements. Additionally, concerns were raised regarding intellectual property, particularly when similar images were generated by different users. In response to these concerns, Kitty's team incorporated flexibility into the redesigned assessments, allowing students to adopt various approaches, such as "AI-assisted idea generation and structuring," "AI task completion with human evaluation," or "full AI." This adaptability enabled students to navigate the limitations of GenAI while still leveraging its potential.

To further address these challenges and facilitate the effective integration of GenAI in this subject and other School of Fashion and Textiles (SFT) subjects, Kitty's team plans to explore the adoption of PolyU's Learning and Teaching Committee's (LTC) new declaration form and the AI assessment scale (Furze et al., 2024) introduced by the Educational Development Centre (EDC). By adapting these frameworks, the team aims to provide students with clearer guidelines and support for utilising GenAI in their learning, while also ensuring the integrity and originality of their work.

AI Assessment Scale (AIAS)

1	**NO AI**	The assessment is completed entirely without AI assistance. This level ensures that students rely solely on their knowledge, understanding, and skills. **AI must not be used at any point during the assessment.**
2	**AI-ASSISTED IDEA GENERATION AND STRUCTURING**	AI can be used in the assessment for brainstorming, creating structures, and generating ideas for improving work. **No AI content is allowed in the final submission.**
3	**AI-ASSISTED EDITING**	AI can be used to make improvements to the clarity or quality of student created work to improve the final output, but no new content can be created using AI. **AI can be used, but your original work with no AI content must be provided in an appendix.**
4	**AI TASK COMPLETION, HUMAN EVALUATION**	AI is used to complete certain elements of the task, with students providing discussion or commentary on the AI-generated content. This level requires critical engagement with AI generated content and evaluating its output. **You will use AI to complete specified tasks in your assessment.** **Any AI created content must be cited.**
5	**FULL AI**	AI should be used as a 'co-pilot' in order to meet the requirements of the assessment, allowing for a collaborative approach with AI and enhancing creativity. **You may use AI throughout your assessment to support your own work and do not have to specify which content is AI generated.**

Reference:
Furze, L., Perkins, M., Roe, J., & MacVaugh, J. (2024). *The AI Assessment Scale (AIAS) in action: A pilot implementation of GenAI supported assessment.* https://doi.org/10.48550/arXiv.2403.14692