

Build Your Own Customised AI-Powered Virtual Scenario-Based Simulations in GPTutor

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Abstract

This workshop will guide participants step-by-step through creating virtual scenario-based simulations to enhance learners' critical thinking and communication skills. The simulations will be developed using the innovative GPTutor platform, an AI-powered tutoring system that provides learners with immediate and personalised feedback. Participants will be instructed on how to customise simulations, design avatars, and adapt assessment rubrics to align with discipline-specific learning outcomes.

Outcomes-based Learning Objectives

1. Participants will build their own customised patient/customer/assistant chatbots for scenario-based teaching.
2. Participants will use AI to develop customised grading rubrics that align with course learning outcomes.

Target Audience

This workshop is designed for professionals in healthcare fields or other academic disciplines where effective communication and interaction with people is a crucial part of the professional role.

Topic Relevance

This workshop aims to train participants on a customisable GenAI tool to enhance discipline-specific teaching, learning, and assessment.

Workshop Design

1. Workshop Format and Activities: Introduction

In this hands-on workshop, participants will be guided through the development of a scenario-based virtual simulation using the GPTutor platform developed at The Hong Kong Polytechnic University. GPTutor is a GenAI-powered virtual environment for personalised and active learning (Lui, 2024; Bai, 2025).

The workshop will focus on the use of GPTutor to enhance specific learning outcomes, such as developing students' professional competence, critical thinking, effective communication, and a self-motivated lifelong learner mentality. The workshop will start with an overview of the platform features. Then, participants will trial the platform in small groups with a pre-built healthcare professional simulation to experience the simulation capabilities from the student perspective. Following this initial introduction, participants will be given a few minutes to discuss potential use cases specific to their discipline within their small groups. Afterward, participants will build their own simulations.

2. Main Content Delivery

While GenAI tools for teaching are widely available nowadays, there are still significant barriers to adoption, including a lack of training for educators, access to resources, gaps between theory and practical applications, and time constraints associated with learning new technology (Huang & Yu, 2025; Taheri et al., 2025). Many teacher professional development (TPD) activities are a one-way flow of information, lacking detail or the necessary software for implementation, and do not result in a change of practice (Haras, 2018; Beer et al., 2016). Conversely, studies on effective teacher professional development programmes show that key characteristics include “collaborative learning environments, hands-on digital training, ongoing mentorship, and institutional support” (Amemasor et al., 2025).

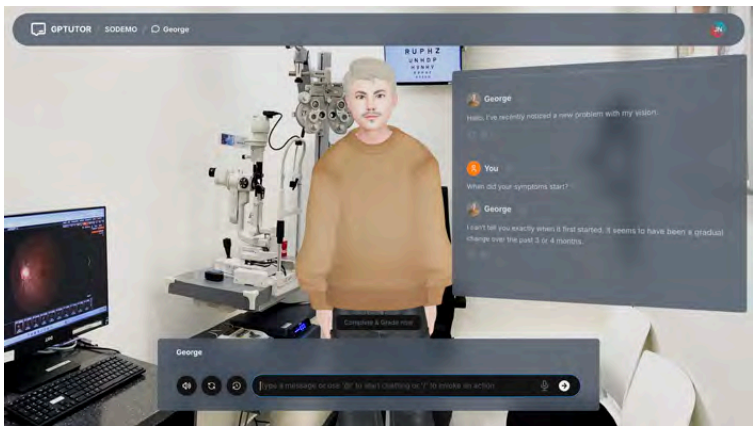
The main instructional method for this workshop will be a hands-on guided training session leading to the development of a customised simulation by the end of the workshop, which participants can deploy in their teaching the very next day. The workshop will utilise the GPTutor platform, which is developed with a simplified interface so that educators do not need any prior knowledge of computing or coding to use it. The workshop will be conducted in a collaborative learning space with round tables to allow participants to interact during the session. For those who join the workshop, ongoing mentorship and technical support will be offered after the in-person session to ensure that the tool can be effectively integrated into teaching.

3. Interactive Activities

For the hands-on guided training session, participants can work individually or collaborate in teams with others from their discipline.

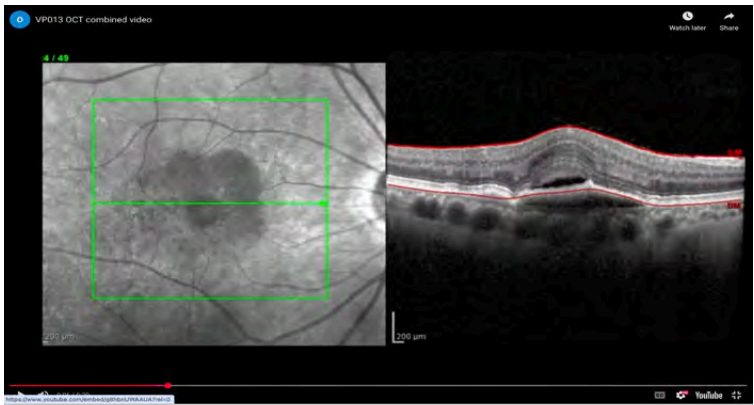
- **Step 1:** We will start by having participants create a profile for the patient/customer/person chatbot. Then, they will customise the chatbot's

avatar appearance and add a background image to set the scene. Afterward, participants will learn how to test the chatbot and further tailor the prompt to suit the scenario.



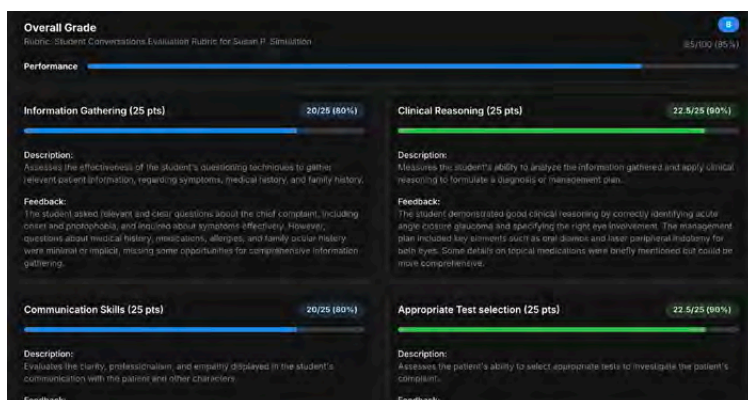
(Fig 1: Example of a virtual patient avatar in an eye examination room scene.)

- **Step 2:** Participants will be guided on how to add tests or tools to the scenarios. These are predefined outputs that can be in text, image, or video format. For example, in a medical use case, these outputs might include test results or clinical data that learners need to analyse in order to make decisions about the virtual patient’s condition.



(Fig 2: Example of a predefined output in video format.)

- **Step 3:** Next, participants will be instructed on how to use GenAI to create a grading rubric for the simulation, including customising the criteria and marking scheme. They will then test the rubric to evaluate the AI-generated personalised feedback and the accuracy of the marking.



(Fig 3: Example of an AI-generated assessment report with personalised feedback.)

4. Discussion and Q&A

The discussion will focus on discipline-specific applications and suggestions for improvement to facilitate wider adoption of the platform and GenAI-powered tutors in general.

1. How could GPTutor virtual scenario-based simulations be incorporated into your teaching or discipline?
2. What suggestions do you have to improve the platform to facilitate its use in your teaching?
3. What barriers do you foresee in implementing virtual simulations into your teaching?

5. Closing Remarks

This workshop will provide hands-on digital training on using GPTutor to create discipline-specific simulations. By the end of the workshop, participants will have a custom-designed scenario-based simulation for their own teaching. Attendees will be encouraged to pilot the simulation with students and explore other features of the platform. Mentorship and technical support will be provided after the workshop to minimise barriers to implementation. A survey will be conducted at the end of the workshop and 2–4 weeks after the workshop to evaluate change in teaching practice and the effectiveness of the workshop format.

Acknowledgments

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Ethical Declaration Statement

The project has been approved by The Hong Kong Polytechnic University Institutional Review Board (“PolyU IRB”) or its delegates. [Reference Number: HSEARS20240530005].

Generative AI Policy

The author(s) used Grok during the preparation of this work to search for relevant references. After utilising the tool/service, the author(s) thoroughly reviewed and edited the content as necessary and assumed full responsibility for the publication’s content.

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