

Designing Classroom Simulations with GenAI

HealthyU Project Webinar Series



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What does this webinar **include**?

- **Simulations in higher education**
 - When to use
 - How to use
 - Benefits & challenges
- **GenAI and simulations**
 - Contribution of GenAI to simulation design
 - Applying generative AI to simulation design
- **Q&A**



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What is **your** classroom simulation experience?



- Have you used a classroom simulation before?
- Have you designed a classroom simulation before?
- Did you participate in classroom simulation as a student?



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Is simulation **experiential learning**?

EXPERIENTIAL LEARNING

- Constructivist learning theory
- 'Learning by doing'
- Learner is an active participant in the educational process
- Learning happens via an ongoing cycle of questioning, reflection, analysis, and synthesis
- "Knowledge is created through the transformation of experience" (Kolb, 1984)



Is simulation **experiential** learning?

SIMULATION

- Structured form of experiential learning
- Designed, rather than real-life experiences
- Students to **experience** actively, rather than read or hear about constraints and motivators of action
- Dramatizes the relative positions of the actors involved and/or the challenges confronting them
- Involves cognition and emotion



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Are **simulations** and **roleplays** the same?

SIMULATIONS

- broad instructional approach that recreates a real-world system or situation so learners can interact with it.
- focus is on realism and decision-making within a modeled and structured environment
- useful in teaching about policy-making, decision-making, processes, and negotiation and bargaining
- not all simulations are roleplay (cf. computer-simulations)

ROLEPLAYS

- a specific technique where participants take on particular roles (e.g., teacher–student, manager–employee) and act out interactions
- focus is on perspective-taking, communication, and social dynamics
- useful in teaching about human interactions
- All roleplays are simulations



What **fields of study** are simulations for?

- Military studies
- Social sciences
- Humanities
- Medical fields
- Legal studies
- Business studies
- Engineering
- Teacher education



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What are the **benefits** of classroom simulations?

- Increase student motivation and engagement
- Enhance acquisition and retention of knowledge
- Bridge the gap between theory and practice
- Creates a complex environment for learning
- Develop soft skills (communication, negotiation, collaboration, critical thinking, problem-solving, argumentation)
- Increase ability to empathize
- Humanize the actors involved



What are the **challenges** of classroom simulations?



- Time-consuming (teacher, student)
- Organizational efforts
- Oversimplification
- Students must get on board (engagement, commitment to role)
- Use for entertainment rather than learning
- Unequal learning among students
- Non-native speaking student may be disadvantaged
- Assessment



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What the **best practices** in classroom simulation design?

- Learning objectives
- Learning content
- Student progression, skills
- Complex but not overwhelming
- Available resources
- Existing structures (room, class length)
- Classroom facilitation
- Debriefing



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How can GenAI help with simulation?

- Maps simulations to learning objectives, skills-level
- Processes and synthesizes large amount of information
- Generates realistic scenarios quickly
- Incorporates reality and complexity
- Supports adaptive/dynamic simulations in real time*
- Creates supporting material (facilitator guide, student instructions)
- Designs debriefing
- Helps with assessment (rubrics)



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What are the drawbacks of using GenAI in simulation design?

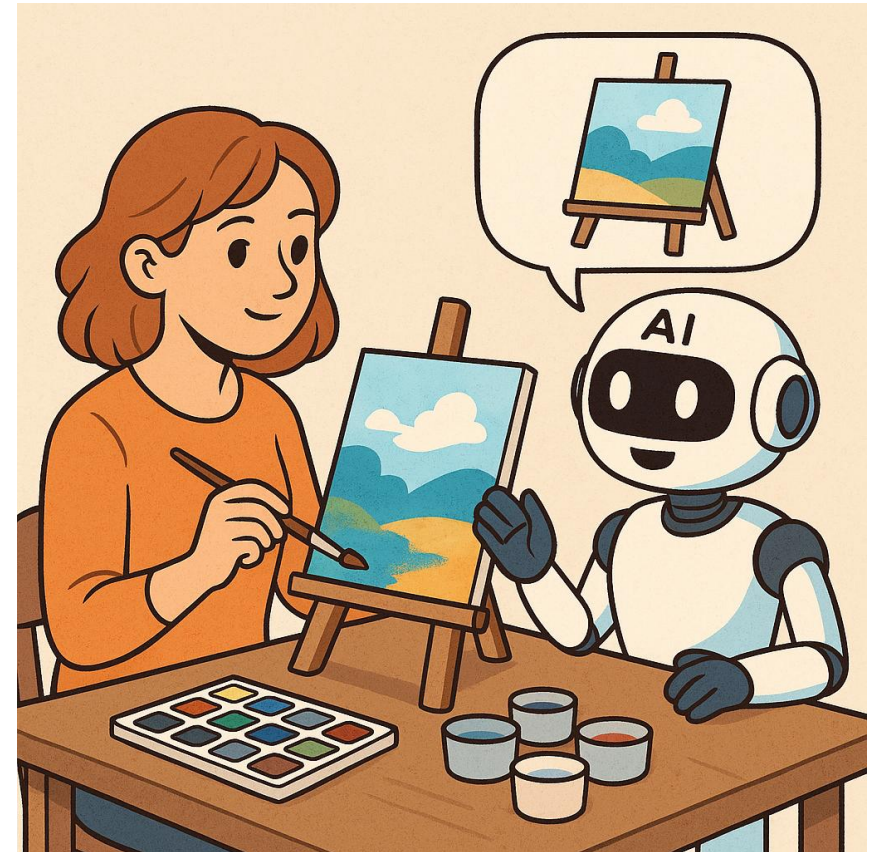


- Factual errors
- Limited contextual understanding
- Unrealistic human behavior
- Reproducing social, cultural, professional biases
- Poor pedagogical alignment
- Inconsistency (same prompt, different output)



How best to use GenAI for simulation design?

- GenAI as assistant
- You as expert
 - Simulate situations you are familiar with
 - Check the output
- Good prompts
 - Revise prompts when GenAI output is subpar or does not meet your needs and purposes.
- Disclose the use of GenAI



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Are you **ready** to work with GenAI?

What GenAI model do you use?

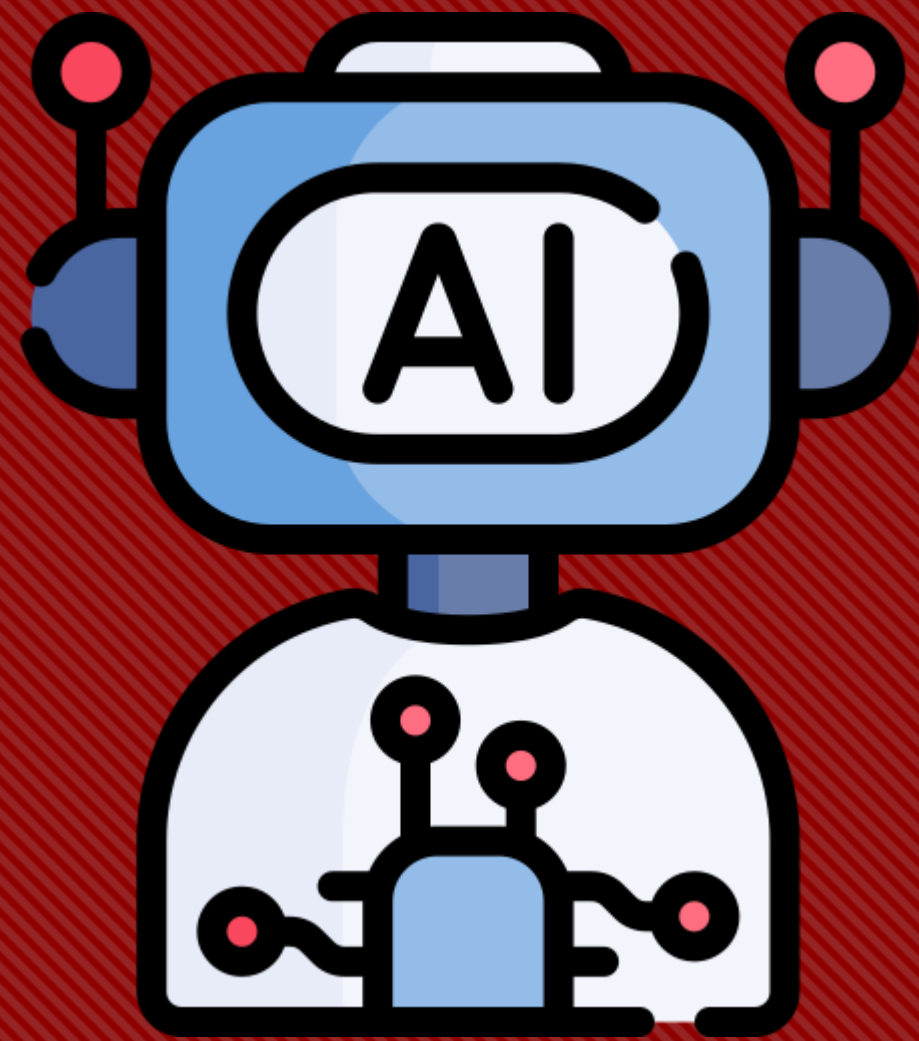
Type your response in the meeting chat

Are you using the free version?

If yes, raise your virtual hand

Are you logged in at the model's website?

If yes, raise your virtual hand



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Where do I start using GenAI?

- Give a relatively vague **prompt**
e.g., "Design a classroom simulation about the Cuban Missile Crisis for 3rd year undergraduate students in a course on Foreign Policy Analysis."
- **Check** the output
 - **Correct** errors
 - **Refine** parameters to your needs (session length, number of students, size of groups, learning objectives, etc.)
- Request **further material** (role cards, events cards, list of preparatory material or one written by GenAI about the simulated event, rubrics, debriefing questions)
 - Start these as brainstorming or starting points and modify to your needs
- If you want GenAI to apply **theoretical models** you can
 - prompt GenAI to feature it (GenAI will use whatever it learned about it from the internet)
 - upload the article about the model to GenAI (particularly useful for new or little-known models, theories)
- Explore the potentials of **various AI models**



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