

X Reality: Blurring the Line Between Digital and Physical Environments

CFE 7TH FACULTY SHOWCASE ON TEACHING

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nXhuman Project

- The goal of the nXhuman virtual patient project is to portray complex encounters by which to train and gauge students' engagement



- nXhuman Project
- Virtual Patient Portrayal
- Low Fidelity Approach
- Character Embodiment
- Virtual Character Usage
- User Embodiment
- Development Guidelines

Virtual Patient Portrayal

□ But...

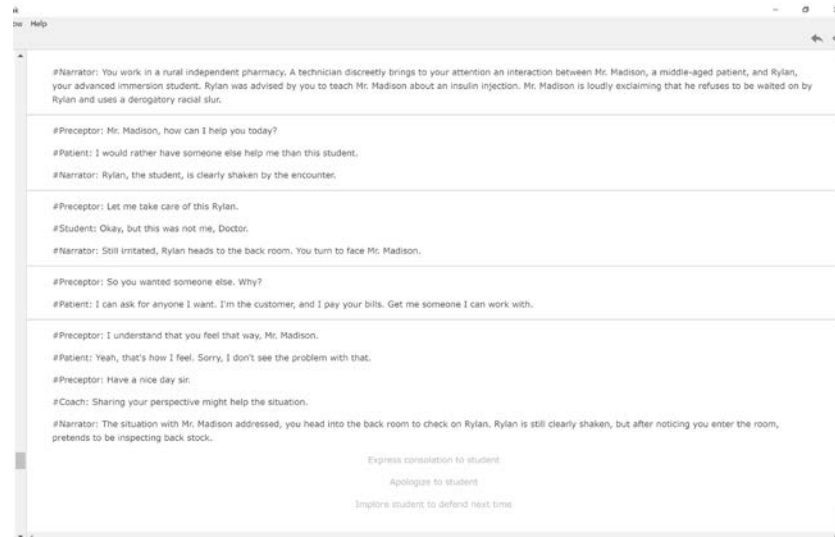
How to represent the virtual patient to the students?

□ The answer depends on what we want the students to demonstrate

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Low Fidelity

- ❑ One approach is just to engage the student in narrative
- ❑ Though simplistic, this approach is advantageous in being scalable, distributable, and usable



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Embodying the Character

- A more complex (for developers and users) approach is to use a game environment
- This approach is helpful for being able to present visual and auditory cues to students
- We have studied engagement with this approach for many years



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Virtual Character Usage

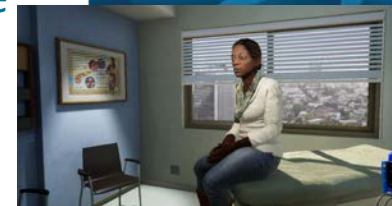
□ Makes more sense

- Pressing issues such as interaction or cultural skills
- Crowd modeling
- Talk therapy
- Simulating variable ages, ethnicities, etc.
- Assessing procedures when otherwise logistically complex, unsafe, unethical, unreliable, costly

□ Makes less sense

- Not involving interactivity
- Involving much physical movement
- Replacing more cost-effective traditional training/assessment
- Demand of high appearance fidelity
- Having adverse influence on (i.e., separate from) daily activities

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Embodied Interaction

- Newer technologies involving augmented or mixed realities allow for having the students immersed in the encounter
- This approach is advantageous in being able to account for physical engagement within a space

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Development Guidelines

□ Questions to ask:

- What is the user's responsibility, what are her/his actions?
- Are the skills meant to be familiarized, practiced, mastered?
- Are the skills procedural, interactive, strategic?
- What level of interactivity is necessary? Is the task dangerous, complex, time-consuming, resource-consuming, expensive, unavailable?
- How easy or hard is it to model behaviors of entities and objects?
- How visually demanding is the task?
- What effort is involved per task for different displays (e.g., textual vs. spatial)?
- How to structure alternative forms of presentation (visual or aural, immediate or delayed, textual or tabular)

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