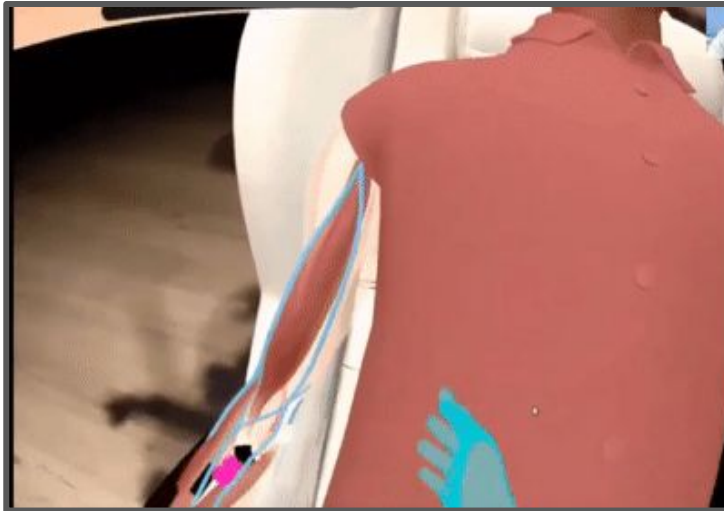# Piloting VR Simulation for Chemotherapy Safety Training

Chloe Evelyn Preble

The Project:

"Under the Skin" is a virtual reality simulation where nurses and pharmacists administering chemotherapy drugs can learn about proper safety protocols in a risk free environment.

Objective:

User test the "Under the Skin" Virtual reality simulation to assess:

- Learning outcomes
- Usability
- Confidence
- Use data found for final iterations before the product ships

Research Question

- What is the effect of presenting informational material in VR on a user?
- What is the perceived workload of an interactive, virtual learning environment?
- How is the confidence of a user's ability to recognize and treat chemotherapy adverse events affected after the VR experience?
- What is the user's overall experience of the simulation?
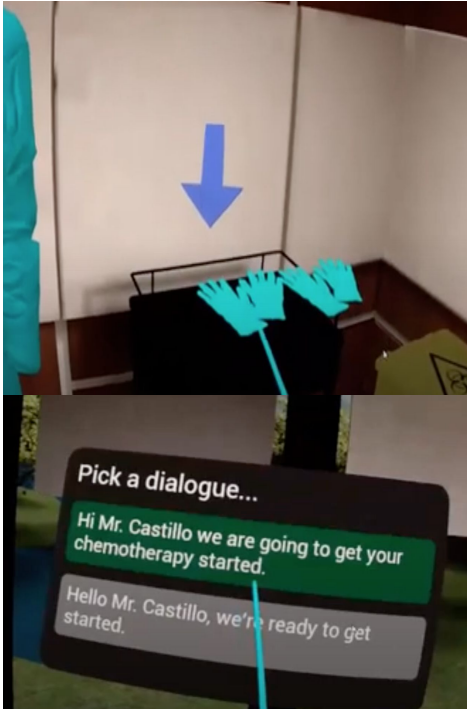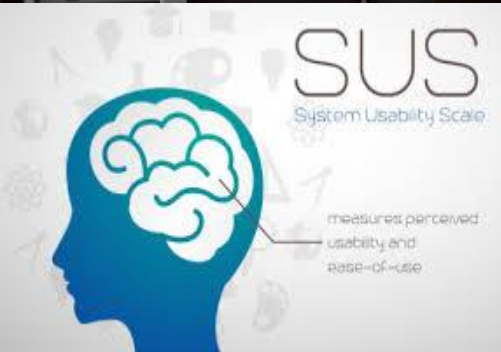
Research Methods

- User interviews with talk aloud sessions
- Pre and post simulation knowledge tests
- System Usability Scale(SUS)
- NASA TLX

Participant Recruitment:

Participants Needed
HUM00207221

WHAT? The University of Michigan School of Nursing and School of Information invites you to participate in "Under the Skin," a Virtual Reality experience aimed at improving nurse and pharmacist education and patient outcomes.

WHO? We are specifically interested in Registerd Nusrses, Pharmacists, and Senior Level Students

HOW? If you are interested please contact Chloe at cpreble@umich.edu or scan the QR code below with your phone camera to be directed to a sign up form
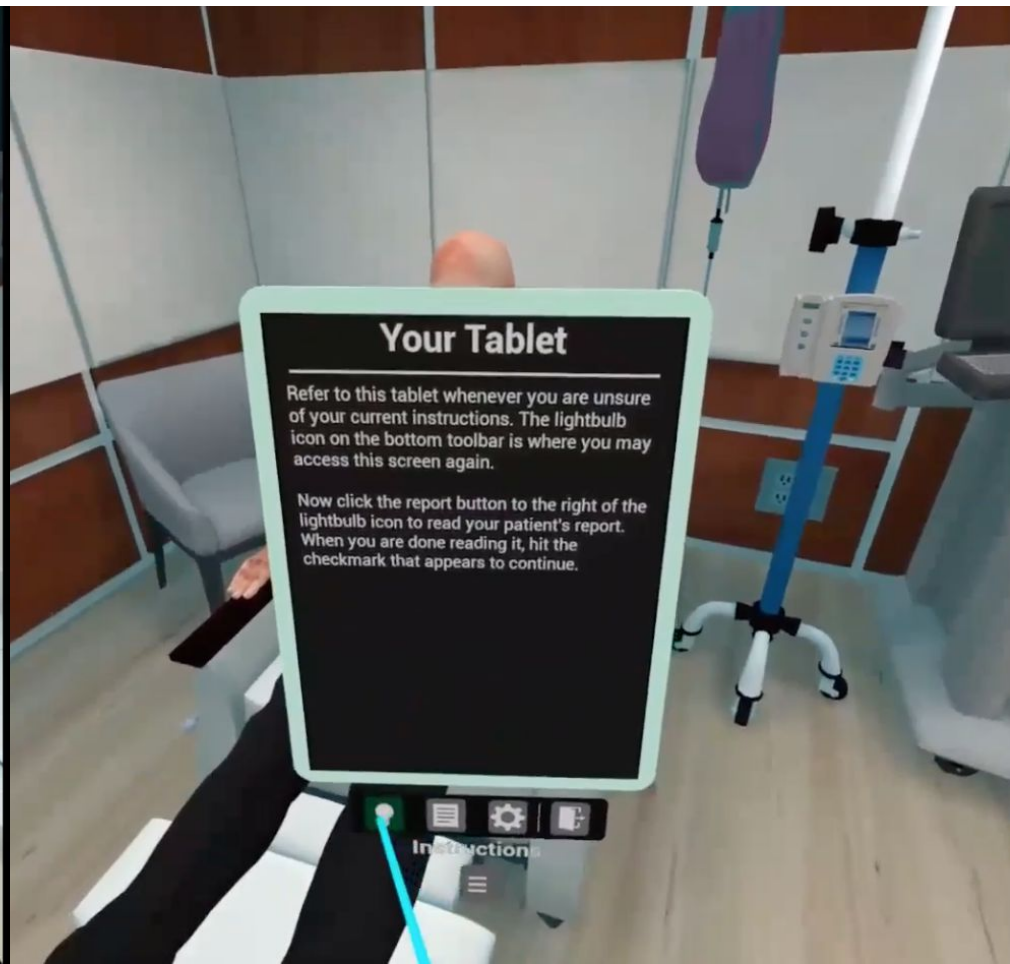
SCAN ME

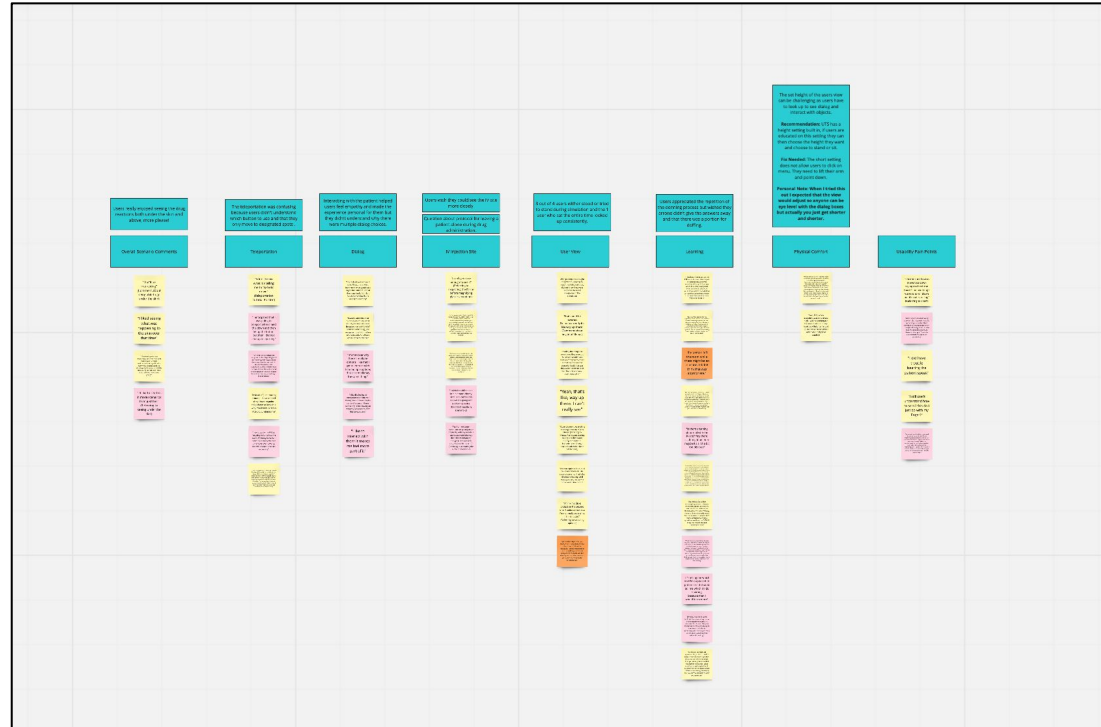**Procedure and Inclusion Criteria:**

- Convenience Sample of nurses, pharmacists, and students
- All Participants needed to have experience with chemotherapy
- Used fliers and emails with QR code linked to a sign up form

The Pilot: During the Session

Your Tablet

Refer to this tablet whenever you are unsure of your current instructions. The lightbulb icon on the bottom toolbar is where you may access this screen again.

Now click the report button to the right of the lightbulb icon to read your patient's report. When you are done reading it, hit the checkmark that appears to continue.

Instructions
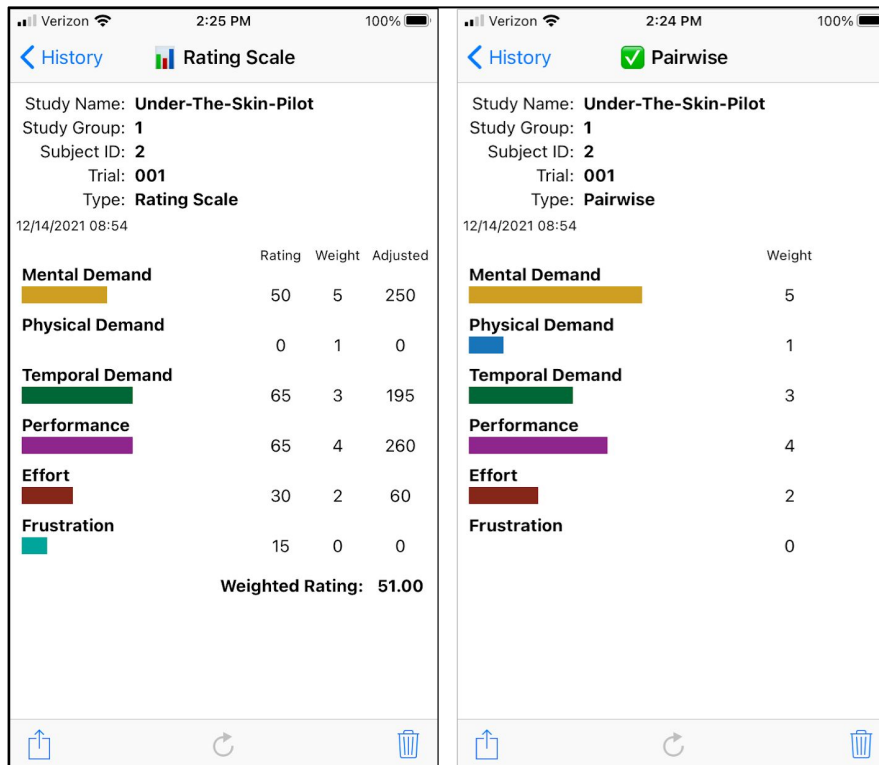
The Pilot: After the Session

Results

- Pre Knowledge Test Average Score: **34.5%**
- Post Knowledge Test Average Score: **58.5%**
- Pre Simulation Confidence Score **1.8 /5**
- Pre Simulation Confidence Score **3.4 /5**
- System Usability Score Average: **56**
- Nasa TLX Score Average: **55.4/100**

Knowledge Test Score
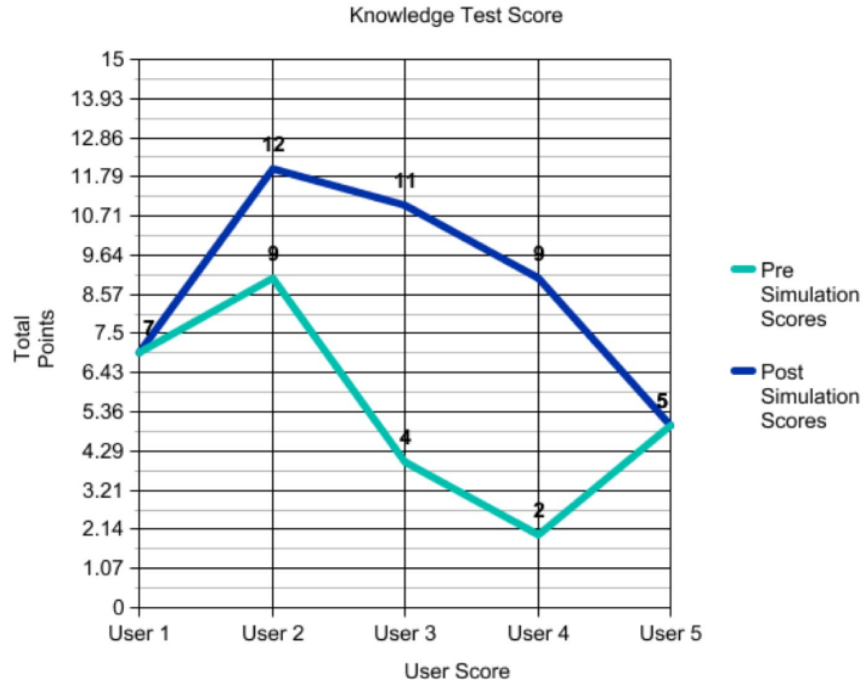
Results

Constraints, Potential Bias, and What Would I Have Done Differently without Constraints?

Potential Constraints and Bias:
- The participants were from a convenience sample recruited through University of Michigan
- They were recruited through a top university
- Limitation on what types of iterations could be made. My personal bias may be directed from my previous experiences working in VR and information architecture

What Would I have Done Differently without Constraints?
- Varied knowledge tests
- More diverse and larger participant sample
- Comparison between learning in person and learning in the simulation
- More time and funding for iterations