VRComm: An Immersive VR-AI Solution To Teaching Research Writing

Iowa State University
VRAC Visualize • Reason • Analyze • Collaborate

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Introduction

- Novice students struggle in research writing due to requiring skills beyond traditional instruction
- Community immersion improves research writing through authentic interactions, deepening understanding of conventions

Goal

Research aims to enhance novice writers' skills using a VR simulated poster session with AI avatars and interactive presenters.

Research Methodology

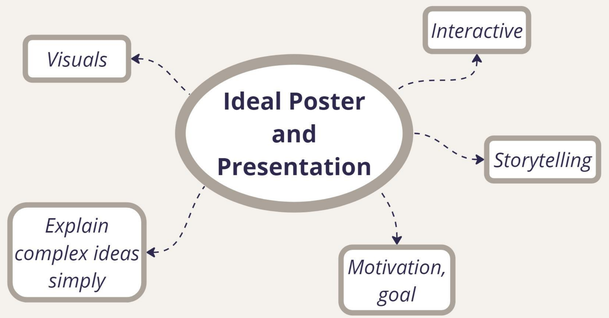
Interviews

Objective:
- Gain insights into realistic NPC behavior and dialogue for academic conferences
- Create "satisfactory" and "unsatisfactory" posters and presentations for evaluation and learning

Methods:
- Semi-structured interview with 10 graduate students ("novices") and 10 professors ("experts")
- Questions asked: conference benefits, valued poster sections, design challenges, presentation preparation

Results:

Top Aspects in Posters and Presentations



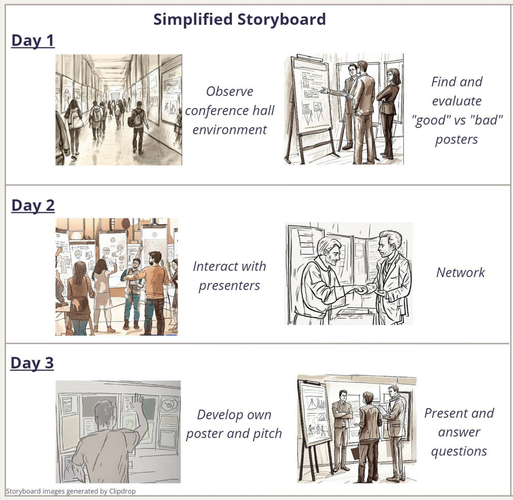
Prototype

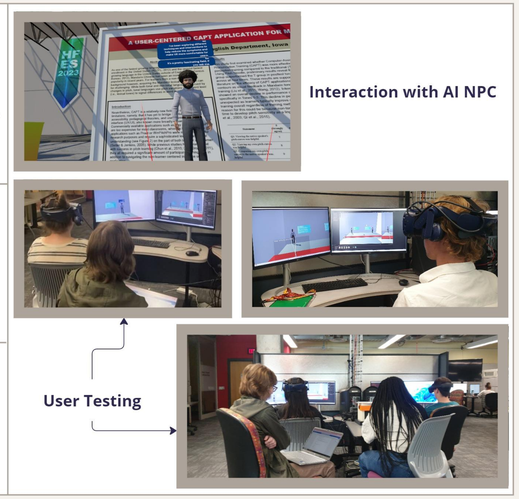
Objective:
- Create an immersive virtual academic conference experience

Methods:

Establish goals & requirements → Design research *e.g. interviews* → Iterative design sessions *e.g. storyboarding* → Rapid prototype testing & revising

Results:
- An immersive virtual reality environment to explore the academic research community
- Stimulating interactions with AI NPCs about research





Chat Interface

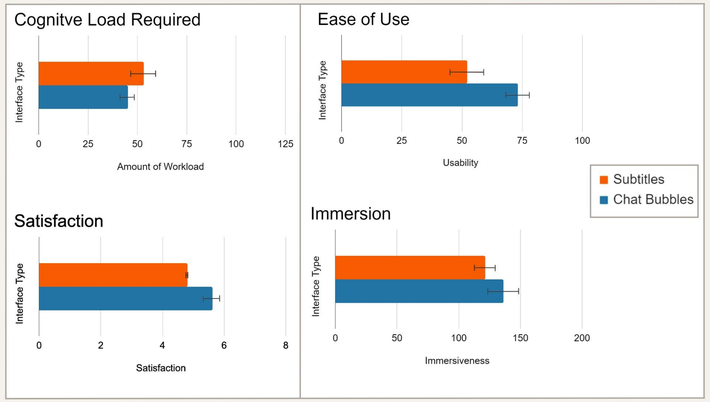
Objective:
- Determine the optimal visual text style used when interacting with NPCs

Methods:
- Tested conditions in sample environment where participants (n=8) engaged in two conversations with an AI NPC: one with subtitles and one with chat bubbles

Results:

Chat Bubbles Preferred 7 to 1

Remarks
- conversation history
- see NPC clearly
- valued readability



Conclusion

- Uncovered academic conference dynamics between skill levels and quality poster and presentation criteria
- Learned how to replicate a real-world context for educational VR
- Discovered ideal VR interface for representing verbal interactions

Future Work:
- **Further development, comparison testing, learning tool for classrooms**