Research Design Project

Traci-Liegh Curran

Department of Workforce Education and Instructional Technology
University of Georgia

EDIT 6900E: Research Methods in Learning, Design, & Technology

Dr. Lloyd Rieber

Link to Presentation: https://youtu.be/ErXwA09_oro?si=I3cFiOOmNHk47YIq

Executive Summary

Research Question: To what extent do immersive XR (Extended Reality) learning experiences impact the acquisition of interpersonal communication skills in novice second language learners compared to traditional learning experiences?

Introduction and Review of Literature

The ACTFL (American Council on the Teaching of Foreign Languages) Performance Descriptors for Language Learners describe how language learners use language across three ranges of performance (Novice, Intermediate, and Advanced), in three modes of communication (interpersonal, interpretive, and presentational), and according to certain language features. This study pertains to novice language learners and their interpersonal communication proficiency level; therefore, clarifying these terms is integral. **Interpersonal communication** is two-way communication that allows for real-time clarification of meaning. Speakers and listeners work together to create and interpret a message. This can be performed in person, through a website, by texting, or by chatting. **Novice** language learners range from learners who can understand and produce isolated words or high-frequency phrases, often with many errors, to learners with limited working proficiency, and their skills may vary depending on the language skill being assessed.

Language acquisition and XR-related technologies have been closely linked in the past two decades (Lee, 2020). Subsequently, XR experiences have been integrated into language learning education for several years (Solak and Erdem, 2015). XR technology has shown promising potential in exposing learners to authentic target language (L2) environments enabling them to perform and engage in real-world learning experiences (Moeller and Catalano, 2015) that support ACTFL proficiency outcomes. This study will investigate to what extent immersive XR learning experiences impact the acquisition of interpersonal communication skills in novice second language learners compared to traditional learning experiences, using ACTFL performance descriptors and proficiency guidelines as primary sources for establishing benchmarks.

Research indicates that XR technology can significantly enhance language acquisition by simulating palpable, real-world interactions and providing instant feedback, which are all crucial components of building language skills (Chen, 2022; Luo, et al., 2021). This study

implements a mixed methods approach of collecting data to quantify the benefits of XR technologies as experiential tools in second language learning, focusing on novice learners and interpersonal communication. By examining how these immersive technologies can facilitate the acquisition of interpersonal communication skills, this research seeks to identify measurable outcomes of language proficiency in novice learners. As previous studies have demonstrated that the capability of XR technologies to simulate realistic environments, experiences, and social interactions provides a functional advantage for second language learners in acquiring communication skills (Chen et al., 2022; Luo et al., 2021), this proposed study will define the impact of such advantages on the interpersonal communication skills of novice learners.

Research Methodology

Evidence-based guidelines for integrating XR learning experiences into second language instruction could greatly improve how novices process and acquire interpersonal communication. This research will address an existing gap by exploring the specific impacts of XR technologies on second language acquisition, specifically, interpersonal communication, offering research-based recommendations for incorporating extended reality into world language curriculum development. Through examining empirical evidence on the effectiveness of these technologies, this project will improve language teaching strategies, making it a valuable resource for both K-12 and higher education institutions.

Study Approach

1. Research Participants will comprise 150 novice language learners divided into two groups:
    - Group A (randomized): utilizing XR technology
    - Group B (experimental): following traditional learning methods using textbook-based communication activities

2. The tools used for implementation will be:
    - VR headsets and XR applications for the XR group
    - Textbooks and a web-based language lab (DiLL) for the control group

3. Procedures: Both groups will complete pre-assessments to establish baseline interpersonal communication skills and measure knowledge and proficiency before the sessions. The XR group will participate in 30-minute sessions using pre-planned XR

lessons for four weeks. Both groups will then complete post-assessments using the same metrics.

4. Data Analysis: Descriptive statistical analysis will be implemented to assess differences in performance and skills acquisition between the two groups.

5. Assessment Tools:

- Pre- and post-assessments will be crafted using a rubric structured around the ACTFL performance descriptors for novice learners speaking in the interpersonal mode.
- Speaking interactions will be recorded and assessed by language SMEs.

Literature Citations

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