VR IV Insertion Simulation - Project Summary

1

The Problem

Nursing students face challenges in IV insertion due to limited practice, high-pressure situations, inconsistent feedback, and high cognitive load.

2

Our Approach

We developed a VR IV insertion simulation with Unity and Meta Quest, offering step-by-step guidance, realistic hand interactions, error tracking, and Supabase-powered analytics.

3

Usability Testing Results

Tested with 9 nursing students: cognitive load dropped from 12 to 7.2, steps completed rose from 5.4 to 11.2, and the System Usability Score was 80.28 ("Excellent"). Students reported increased confidence and readiness.

4

Key Impact

The simulation improves learning with less stress, offers repeatable training, is easy to deploy, and provides a foundation for future medical VR modules.

Team- MedXperience