ONEBONSAI

CASE STUDY

Virtual Reality Nurse Training Program (VRNTP) for UKB

An immersive, multilingual VR training platform developed for the University Hospital of Bonn (UKB) to safely and efficiently train 1,600 nursing staff and students in critical medical procedures using highly realistic, dynamic patient simulations.

DEEP TECH. REAL IMPACT.

Project overview

An immersive, multilingual VR training platform developed for the University Hospital of Bonn (UKB) to safely and efficiently train 1,600 nursing staff and students in critical medical procedures using highly realistic, dynamic patient simulations.

About the project

The University Hospital of Bonn (Uniklinikum Bonn / UKB) is a leading healthcare and educational institution.

Challenge

The Challenge

The University Hospital of Bonn needed a highly scalable and effective way to train a massive influx of medical personnel, specifically targeting 1,000 newly hired nursing staff and 600 current nursing students.

The training needed to cross language barriers to accommodate both domestic and international students, including those from partner institutions in Mexico.

Standard classroom training lacked the immersion required for complex medical decision-making, while real-world practice carries inherent patient risks.

Solution

The Solution

OneBonsai developed the Virtual Reality Nurse Training Program (VRNTP), an immersive platform compatible with Meta Quest 3 and Pico 4 Enterprise headsets.

The training modules were built on the 4C/ID instructional design framework, breaking down complex learning tasks into manageable components like procedural information and partial skills exercises.

To solve the language barrier, the system utilized AI to support multilingual training in both German and English.

The platform included a Virtual Instructor Platform (VIP), allowing remote trainers to monitor students live, jump in to help, and dynamically adjust patient parameters - such as vital signs, skin color, and breathing states - before a session.

Key Training Modules in Action

The VR modules immerse students in a highly accurate digital twin of a UKB patient room, requiring them to perform strict hygienic prep (like hand disinfection and gloving) before engaging in core tasks:

Patient Observation (Module 1): Students measure blood pressure, pulse, temperature, and oxygen saturation, logging all findings accurately into a virtual patient documentation tablet.

Infusion Preparation (Module 3): Trainees practice medication calculations and infusion setups under sterile conditions, reacting to dynamic UI prompts to evaluate the infusion solution and troubleshoot clogged catheters.

Pain Recording (Module 4): Students interact with an avatar that exhibits realistic verbal pain reactions and reflexes, requiring the trainee to inspect pain sites and document findings.

Chronic Wounds (Module 5): Trainees perform visual inspections and dressing changes on highly realistic graphical representations of chronic wounds, answering complex diagnostic questions via floating UI panels.

Outcome

Impact

UKB can now deliver consistent, standardized training to 1,600 staff members without risking patient safety.

The integration with LMS (Learning Management Systems) allows hospital administration to capture training data and track aggregated student results over time.

By practicing in a responsive environment where avatars display changing medical conditions, nurses build vital muscle memory and cross-cultural competency before ever stepping onto the ward.

Discuss a similar project

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