



Using 360° Virtual Reality to Boost Small Employers' Safety Practices

Using 360-VR Narrative Communication to Boost Small Employers' Safety Practices

Jing Wen. CPWR Small Study, 2025.

Overview

Workers at small contractors suffer a disproportionate share of construction-related fatalities: while firms with fewer than 20 workers employ over one-third of the workforce, they account for more than two-thirds of fatal incidents. Although safety resources are widely available, small contractors often lack awareness of them and suffer from misconceptions that keep them from using these tools. Current outreach strategies have not fully leveraged technological innovations, and the researchers addressed this gap through the creation of a 360-degree virtual reality technology, VR-Employer4Safety. They interviewed 14 small contractors to develop the platform and tested it with a middle-aged population of 19 people. The platform offers an immersive, narrative video aimed at educating and motivating small employers so they adopt improved safety practices. It also provides direct access to essential, free resources, including OSHA compliance assistance, the Safety Climate Assessment Tool (S-CAT) from CPWR, and NIOSH construction safety programs.

Key Findings

- The study demonstrated the effectiveness of virtual reality narratives in fostering safety culture among small contractors.
- The VR-Employer4Safety intervention reduced amotivation (-0.15) and slightly increased identified (+0.10) and intrinsic safety motivations (+0.05), indicating small contractors had a stronger commitment to jobsite safety.
- Participants who watched the narrative reported greater awareness of free safety resources, which played a critical role in strengthening their safety motivation.
- The VR-Employer4Safety video achieved 406 views, with a retention rate exceeding 28% for most of the content, significantly above standard retention rates, demonstrating its ability to motivate and engage the target audience.
- Interviews with study participants showed that the main challenge keeping small contractors and subcontractors from greater safety implementation is limited financial resources to invest in safety programs, equipment, and training.

For more information, contact:

Jin Wen: jing.wen@design.gatech.edu

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