Augmented Reality for Safety: Reality Check on Tech Implementation Stats and Facts

FACTS

- **AR Overlays Virtual Information on Real Hazards:** AR tools project digital safety warnings onto a worker's view of the real environment — but if the system does not recognize a hazard, it provides no warning at all.
- **Technology Does Not Replace Hazard Assessment:** AR can enhance training and awareness but cannot substitute for a pre-task hazard assessment. A worker wearing an AR headset still needs to recognize, evaluate, and control hazards independently.
- **Implementation Gaps Create False Confidence:** Deploying AR without proper training, calibration, and maintenance can give workers the impression the technology is protecting them when it is not. Overreliance on a malfunctioning tool is a recognized safety risk.
- **Distraction Is a Real Concern:** AR interfaces divide attention between the digital overlay and the physical environment. A lag, glitch, or information overload at the wrong moment can distract a worker when full focus is most critical.
- **Hardware Failure Is a Hazard:** AR devices can fail due to battery depletion, connectivity loss, or software error. A worker who depends on AR for critical safety information and experiences device failure is more vulnerable than one trained to work without it.

STATS

- Two independent systematic literature reviews published in Safety Science in October 2023 concluded that AR and VR

solutions are more effective than traditional safety training methods for hazard recognition and knowledge retention.

- A 2024 systematic literature review published in ScienceDirect found that AR-based safety training significantly improves worker engagement and hazard recognition — while noting hardware reliability and calibration remain significant barriers to implementation.
- The global AR and VR market for workplace safety training is projected to grow to $250 billion by 2028, reflecting rapid adoption across construction, manufacturing, oil and gas, and healthcare.
- Research published in Frontiers in Virtual Reality in 2025 found significant challenges remain in hardware reliability, user interface design, and the gap between simulated AR training environments and real-world conditions.
- In Canada, construction accounted for 21 percent of workplace fatalities in 2020 — one of the primary sectors where AR safety training adoption is being actively promoted, according to Canada Safety Training research.