Digital Simulation of Provincially Licensed Meat Plant Food Safety Training

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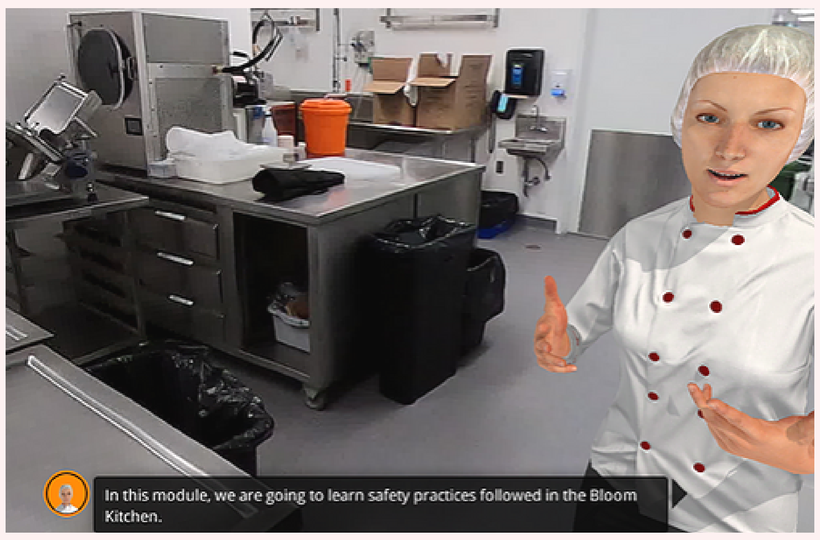
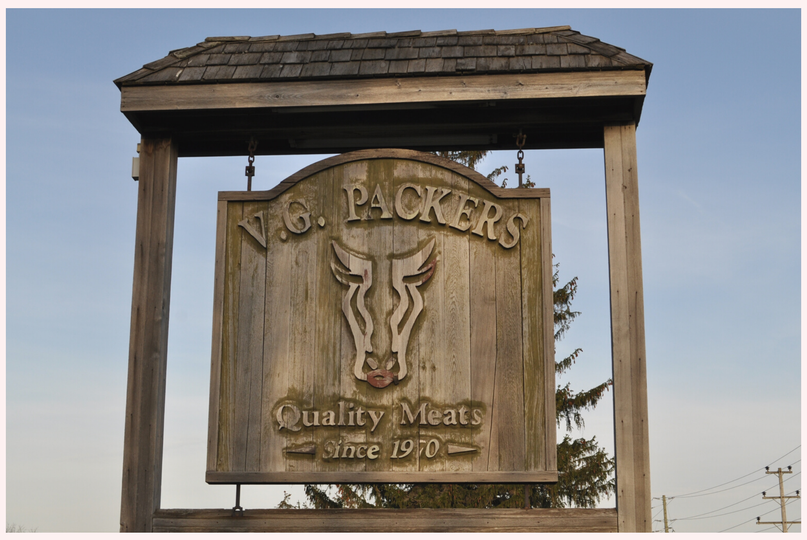
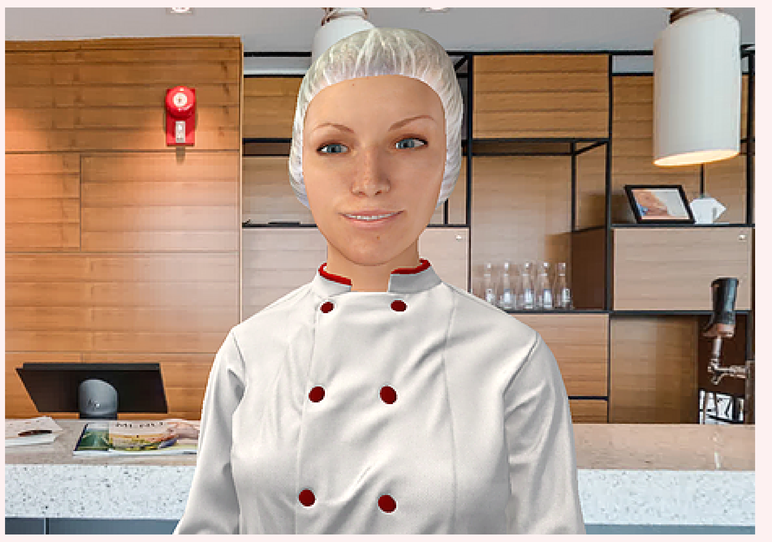
VG MEATS







BACKGROUND

Good Manufacturing Practices (GMP) are the operational and environmental conditions required to produce safe foods. They ensure the environment of food production promotes food safety and that all ingredients and packaging materials are handled safely. GMPs cover materials and products, premises, people, procedures, and processes. Effective training of workers to support compliance with GMP to ensure food safety is critical. Worker training and competency can vary between federally regulated meat processing facilities and the provincially regulated facilities (Fong et al. 2017). The federal government and the government of Ontario have identified this as a priority, investing $900,000 to support recruitment, retention, and innovative training initiatives in Ontario meat processing plants (Government of Canada 2021).

PROBLEM STATEMENT

Traditional, instructor-led, employee food safety training sessions at meat processing plants have been criticized for overall ineffectiveness at promoting and reinforcing the attitudes and behaviors necessary to ensure best practices for safe processing. As a result, employers may face significant compliance risks. Digital learning simulations, such as extended Reality (XR), represent interactive and intuitive ways to learn complex procedures. These solutions meet the challenges above by allowing trainees to progressively explore, learn, and rehearse the vital processes that support safe practices. The training modules developed through this project are accessible, detailed, and self-explanatory. Recent research suggests both actual and perceived learning increases in safety-critical industry training when immersive VR is incorporated as part of the training (Andaluz et al. 2017, Doolanie et al. 2020, Pendram et al. 2020)

DEVELOPMENT

Both VR and 2D video-based training techniques provide similar and considerable higher retention of training after 7 days compared to traditional training methods.

Reduction of training time, making adoption of the technology cost effective.

Activities within VR training provide an opportunity to explore hazard recognition and risk assessment identification.

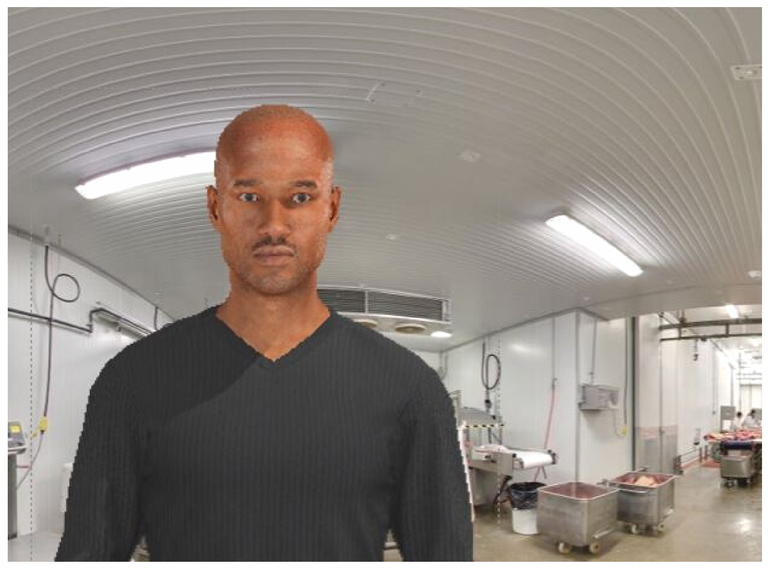
Knowledge retention increased compared to the outcomes of the 10–30-hour standard OSHA in-person training.

ANTICIPATED OUTCOMES

Through adoption of these digital learning modules, it is anticipated that employees will gain a more in-depth understanding of the concepts behind the target behaviors they are being asked to perform. This would result in facilities having an improvement in behavioral compliance and therefore mitigate the risk to food safety (Nichols, 2019).

OBJECTIVES

- Augment traditional instructor-led employee training sessions in meat processing operations, with digital learning methods that are cost-effective to develop and deploy.
- Document the compliance rates to target behaviours, before and after deployment of the digital training modules, to verify the effectiveness of the training solution.
- Provide a digital environment for trainees to interactively explore, learn, and rehearse the vital activities that support safe practices, while leveraging the experience of subject matter experts during development and deployment.
- Create training modules that are accessible and effective for second language learners, resulting in employee knowledge retention, increased safety, and diminished food contamination.
- Ensure maximum business value for the developed training modules by undertaking close collaboration with industry partners and using pedagogical best practices



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