



Future Skills Centre

Centre des **Compétences futures**

Project Insights Report

Virtual, Immersive Learning and Career Labs: The New Normal for Food and Beverage Manufacturers



PARTNERS

Food Processing Skills Canada



LOCATIONS

Alberta
British Columbia
Manitoba
Ontario
Saskatchewan



INVESTMENT

\$1,797,446



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☰ Executive Summary

The Canadian food and beverage processing industry has been slow to adopt virtual, immersive-learning (VIL) technology, partly due to high development costs, particularly for the many small and medium-sized enterprises (SMEs) within the sector. To address this, Food Processing Skills Canada (FPSC) launched the iFood360° pilot project to explore how SMEs with limited resources could use VIL technology to foster growth and enhance workforce skills.

Between 2021 and 2023, the FPSC team developed and implemented virtual reality (VR) content and engaged 115 workers to test it, 98% of whom reported being satisfied or very satisfied with the offering. The virtual reality was well-received by participants, with 82% recommending it and 98% reporting increased engagement during the virtual reality experience. Younger participants, Canadian citizens and those with previous experience with virtual reality technology also reported higher engagement levels with VR compared to other learning settings.

A key learning from the process is that developing sector-specific virtual reality training solutions from scratch is resource intensive, given that VR's use in education and training purposes is still emerging. Another learning is that symptoms like headaches and nausea affected over 37% of participants, with women, older participants, and those with no previous virtual reality experience reporting these symptoms more frequently.

Overall, FPSC demonstrated that tailored VR solutions can enhance learning engagement and upskilling in the food and beverage processing industry while potentially fostering greater inclusion for diverse workers.

KEY INSIGHTS

- 1** All employer respondents reported being satisfied with the program and found that the training was useful.
- 2** Of the participants with no prior experience with virtual reality, 79% would recommend the training to colleagues.
- 3** Ninety-eight percent of participants reported increased engagement during the virtual reality experience. The highest levels of engagement were among women, younger participants, Canadian citizens and those with previous virtual reality experience.

The Issue

The Canadian food and beverage processing industry's development and integration of VIL technology has been slow, despite showing promise. Development costs for this technology are a key barrier for the industry, which is mostly made up of SMEs.

VIL technology holds promise for addressing a number of training challenges for the sector, including helping to overcome language barriers and reconcile diverse educational backgrounds among the newcomers who make up a large part of the workforce. VIL emphasizes hands-on learning over traditional methods of reading and listening. VIL scenarios can also support the development of soft skills or social-emotional skills, which employers identify as a widespread need.



What We Investigated

Building their expertise in this area, Food Processing Skills Canada (FPSC) developed the iFood360° pilot to explore how food and beverage processing SMEs with limited resources could adopt and leverage VIL technology to foster growth, enhance workforce skills and enhance retention and recruitment of workers from groups who are currently underrepresented, like women and newcomers.

The objectives of the project were as follows:

1. provide safe, engaging learning environments that lower barriers for underrepresented groups by developing and integrating highly tailored, immersive virtual learning experiences with online training approaches for the food and beverage processing industry workforce;
2. enhance the training capacity of SME employers in the food and beverage processing industry by developing and disseminating employer technology training resources;
3. increase the awareness of career opportunities available in the food and beverage processing industry among underrepresented groups by developing and implementing engaging, immersive career exploration tools for job seekers and students. The project aimed to use virtual reality to enhance career exploration for job seekers, moving beyond traditional career-awareness materials and providing a more engaged understanding of the industry and the opportunities and career paths available.

The project developed VR training on food safety, technical skills and social-emotional learning. The training was offered in a blend of online and in-person formats. The project focused on key food processing hubs, like Moncton, St. John's, southwest Nova Scotia, and Halifax, targeting clusters of industry employers to address local workforce needs.

✔ **What We're Learning**

Between 2021 and 2023, the project engaged 115 workers from the food and beverage manufacturing sector.

Workers and employers were satisfied with the training

Ninety-eight percent of participants that responded to a survey reported being satisfied with the offering, with 56% in the "very satisfied" range. This high level of satisfaction is especially notable when factoring in the diverse experiences, responsibilities and makeup of the participant group. The VR component of the programming was specifically well received, with 82% of participants who responded reporting they would recommend this component to others. Interestingly, 79% of participants with no prior VR experience reported that they would recommend the VR component to their colleagues. All employer respondents reported being satisfied with the program and found that the training was useful.

Virtual reality and the training held broad appeal

Project leads were satisfied with the diversity of the participant group. Participants included new entrants like students, youth, recent graduates and current job seekers exploring different career paths, which highlights the VR experience's reception among a varied population and provides valuable insights into its effectiveness. Nearly all participants (98%) reported increased engagement during the VR experience, with 62% indicating "more" engagement and 36% reporting "a bit" more engagement compared to other learning settings. Women (64%) showed slightly higher levels of engagement than men (58%). Younger participants, Canadian citizens and those with previous VR experience also reported higher engagement levels during VR experiences compared to other learning settings.

Not everyone loves virtual reality

A significant number of participants experienced headaches, dizziness and/or nausea during the virtual reality sessions. Over 37% of participants reported some symptoms and 9% completed less than half of the VR component due to their symptoms. Within this group, women, older participants and those with no previous VR experience reported these symptoms more often. Other projects using virtual reality in training and skills development also reported that some participants experienced unpleasant symptoms.

Innovation can be time consuming

A key learning from this process is that designing sector-specific training solutions can be resource intensive. FPSC had to design and develop all VR components from scratch. This is primarily because VR technology for industry-specific education and training is still an emerging solution in comparison to its other applications (such as gaming or marketing). FPSC worked with industry experts to ensure industry requirements were met and that the VR experience aligned with workplace functions and competencies.

★ **Why It Matters**

VR is increasingly seen as a promising tool for innovative skills development, but the ecosystem needs more sector-specific case studies demonstrating its practical application. FPSC provides such an example, showcasing how a tailored development and implementation process for VR solutions can enhance learning engagement and upskilling for workers in the food and beverage processing industry and beyond. This approach holds further potential for fostering greater inclusion for diverse workers.



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► What's Next

Food Processing Skills Canada continues to offer [iFood360°](#) to workers and employers in the food and beverage manufacturing industry. They continue to expand content to include other food safety, workplace safety, and social-emotional learning that is aligned with the industry's Learning and Recognition Framework. They're also expanding their career pathways content to include more industry production facilities.

Employers who participated in the pilot have adopted the iFood360° components into their company-wide training programs. The content has also been integrated with other FPSC training programs, current and planned.

Have questions about our work? Do you need access to a report in English or French? Please contact communications@fsc-ccf.ca.

How to Cite This Report

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