Emerging Technologies

The use of Gamification, XR, and Artificial Intelligence in workplace learning

Prepared by

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INTRODUCTION

We have been exploring the possibilities that Emerging Technologies including Gamification, Extended Reality, and Artificial Intelligence might create for learning and development within the Food and Fibre Sector.

Taryn Eparaima

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A bit more about me…

Born and raised in Hawke's Bay – Waimarama and Flaxmere.

Lived in Wellington for 23 years. Moved back to Hawke's Bay in 2022.

I live with my sister, her three kids, two dogs and two cats.

I have spent my whole career in education in a mixture of government education agencies (ERO, MoE and TEC) and ITOs before joining Skills Consulting in 2022.

I'm having fun learning all the cool things AI can do…

A THREE PHASED PROJECT

Situational Analysis

A situational analysis looking at best practice and examples from here and around the world.
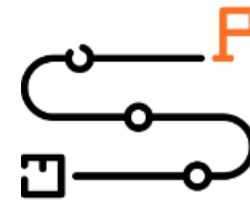
Case Studies

Case studies exploring real life examples of these technologies being applied – with a focus on the food & fibre sector and work-based education where possible.

Pilot Programmes

Two pilot programmes based on the findings and potentials of these emerging technologies. One with Dairy NZ and one with another partner.

DEFINITIONS

Gamification (GAM)

Gamification is the act of introducing game-like elements to non-game environments; game-based learning is the use of an existing 'game', one intended for entertainment or other purposes, for learning (Bolstad & McDowall, 2019).

Extended Reality (XR)

Extended reality is the umbrella term for all digital simulations, whether these are presented in the physical (real) environment or within a digital environment. You may know them as Virtual Reality, Augmented Reality, or Mixed Reality.

Artificial Intelligence (AI)

Artificial intelligence is, in its simplest form, any software which simulates human intelligence: the ability to acquire new information, to manipulate that information, and make reasoned judgements using that information.

# Findings from the Situational Analysis

Gamification

Benefits

- Potential for increased **motivation** of learners

- Potential for increased **engagement** of learners

- Potential for increased **performance** of learners

Challenges

- Learning experiences can differ due to the quality of their design or implementation.

- More evidence is needed to show that Gamification leads to improved educational outcomes.

Findings from the Situational Analysis
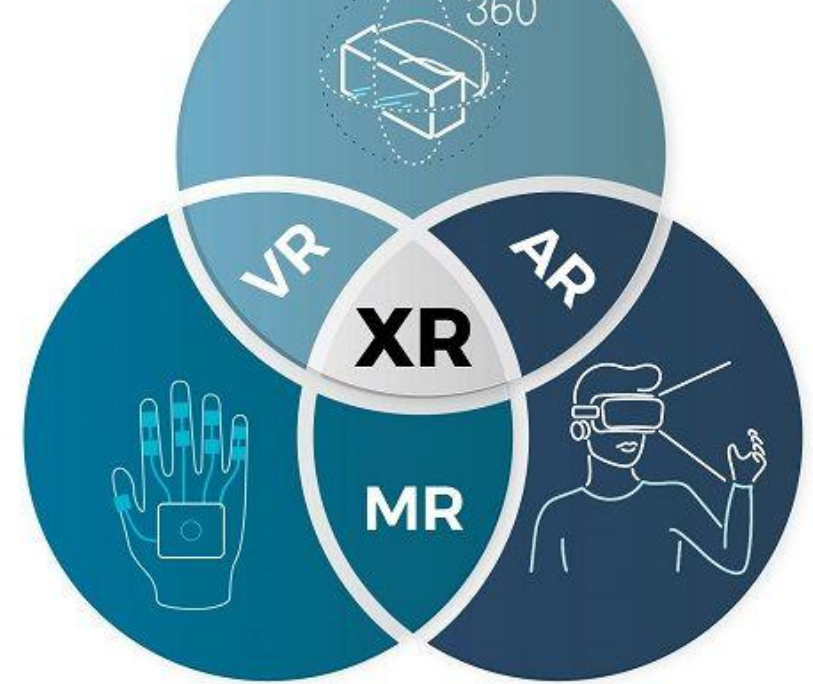
Extended Reality

Benefits

- Increased engagement
- Greater flexibility for diverse learning needs
- Enhanced knowledge acquisition in some contexts
- Improved safety in training
- Reduced resource waste and costs
- Improved compliance

Challenges

- Relatively high development and implementation costs
- Specialised programme design
- Digital simulations cannot replace the real world… yet
- Accessibility
- Health and Safety

Findings from the Situational Analysis
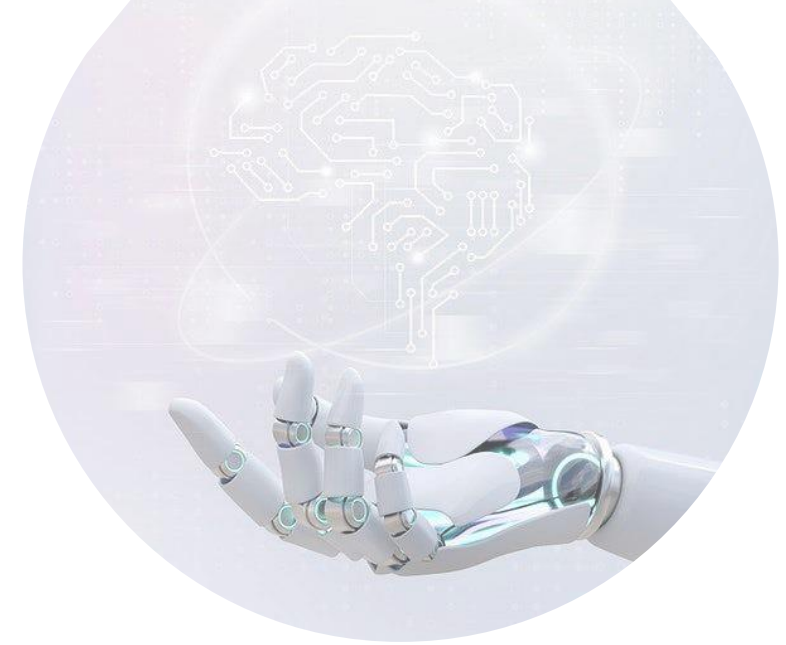
Artificial Intelligence

Benefits

- Adaptive design and delivery
- Idea generation
- Scenario Creation
- Teaching strategies
- Feedback
- Supporting research and innovation

Challenges

- Educator overreliance
- Ethical issues – data use and privacy
- Intellectual property
- Hallucinations and false accounts
- Resistance to change

Considerations for the NZ Food & Fibre Sector

Addressing Workforce Shortages

Risk and Fear

Legislation and Policy Decisions

Ethical Considerations

Case Study: PAN PAC

We are currently undertaking a case study of Pan Pac Forest products in Hawke's Bay.

PanPac is using 360* Virtual Reality to improve safety

Overview

PanPac is a global paper, pulp, packaging and forestry enterprise, with operations throughout Asia, North and South America, Europe and Oceania.

They have an established site at Whirinaki, 20km north of Napier and have cutting rights to over 33,000 hectares of plantation forests throughout Hawke's Bay.

PanPac identified that they needed to take Health and Safety more seriously.

After exploring several options, they settled on 360*VR as the most suitable vehicle to train and engage employees.

"

"Ultimately, we managed to reduce a boring 60 minute+ PowerPoint presentation down to a 13-minute dynamic 360* VR asset that captures and maintains the employee's attention from start to finish."

Approach

Their goal was to:

- Improve health and safety practices

- Induct new employees in an engaging and meaningful way.

- Attract new employees to the company

- Support visual learners and learners who are better at doing rather than reading and writing.

Hired Indelible to film and produce the footage

Filming was done over a 6-month period capturing aspects of their health and safety training.

Results so far…

Pan Pac has reported that the benefits so far include:

- Increased engagement in the training from their employees
- Better retainment of information from their employees
- No safety incidents
- Interest from other companies and organisations in the technology

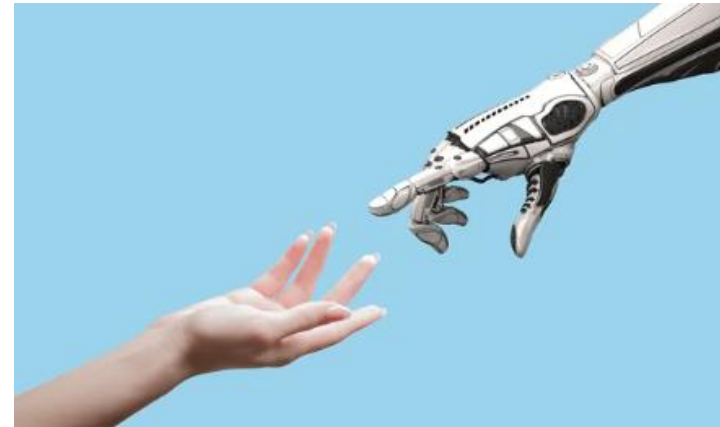**There have been some challenges however:**

- Limited number of Headsets
- Initial uptake was slow but has increased over time.
- Needed a robust IT system to support the data and systems.
- Need to update the content every couple of years.

Pan Pac Cartage Induction Video

Pan Pac Cartage Induction v19 (youtube.com)

What's Next?

FINAL THOUGHTS

The future is promising, however, to remain competitive, we must embrace these emerging technologies in a way that adds value to people and industry.

Thank you!

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