Challenging the norm – active learning using immersive tech to address the future of work in large classrooms

Abstract:

Active learning techniques have been proven to enhance students' long-term knowledge acquisition, retention and application. The course discussed in this session utilises an active learning approach for a large undergraduate core course with up to 900 students per semester and one particular experience from this class will be presented and facilitated. Topics covered in the course include global grand challenges (climate change, the future of work, and competing globally) and skills that are developed include project management, team collaboration, ethical decision-making and interpreting and presenting business information. The activity, and associated assessment, presented in this session is non-traditional using emergent/emerging/immersive technology and could be replicated for various courses (undergraduate, postgraduate, small / large classes, etc.).

Teaching topics relevant to this session:

Team collaboration and management, project management, agile, immersive / emergent / emerging technologies, the future of work

Key words:

Future of work, active leaning, Virtual Reality, Generative Artificial Intelligence (GAI), project management

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Introduction

It has long been established that teacher-led learning is not as effective in students' long-term knowledge acquisition, retention and application even though it may be perceived as "easier" for large classes by faculty. The course discussed in this session utilises an active learning approach for a large undergraduate core course with up to 900 students per semester and one particular experience from this class will be presented and facilitated. Topics covered in the course include climate change, the future of work, and competing globally and skills that are developed include project management, team collaboration, ethical decision-making and interpreting and presenting business information. The activity could be replicated for similar-sized undergraduate courses, but also adapted for smaller undergraduate or postgraduate courses. In addition, the assessment associated with the in-class experience is non-traditional using emergent/emerging/immersive technology and again could be replicated for various courses.

Theoretical Foundations / Background

Many tertiary institutions offer large undergraduate courses that are compulsory for students to take at some stage during their tertiary education journey. Traditional teacher-centred lecturing often remains the norm when it comes to teaching approaches for large classes, however, this has been proven to be less effective than student-centred (and student-led) approaches. Active learning means students take ownership of their learning journey, while the teachers become facilitators of student learning, which in turn enhances student

motivation and fosters an inclusive classroom (Ambrose et al., 2010; Tanner 2013; McGuire, 2015). Inclusive teaching and learning in the context of the course discussed for this session means, amongst other things, providing opportunities to experience technology that students otherwise would not have access to, therefore widening participation in the learning process for all students (Hockings, 2010). Designing interactive learning experiences and alternative, or non-traditional, and authentic assessments were top-of-mind when designing this course to achieve better learning outcomes for all students (Baepler et al., 2016; Sokhanvar, Salehi, & Sokhanvar, 2021). When students are actively engaged in their learning, their motivation and knowledge comprehension and application increase drastically (Delauriers et al., 2011; Mulryan-Kyne, 2010).

In this study, we present findings from a case study of a large undergraduate compulsory class that offers active learning opportunities in plenary lectures and workshops and uses eleven different technologies to complete six assessments. The activity for this session will recreate one of the class experiences of using immersive technologies to manage a collaborative team project.

Business 202 – Business Consulting

Utilising a relational teaching and learning approach (Aspelin, 2020), a new course called Business Consulting was designed at a leading University in New Zealand which has been delivered to Stage 2 students since the beginning of 2022. The course is a compulsory course for all Faculty of Business and Economics students which sees an enrolment of between 650-900 students per semester. In this session, experiences of almost 2,000 students in the course are discussed and shared.

Business Consulting (or Business 202) is structured around three global grand challenges that are of utmost contemporary relevance to society, namely climate change,

competing globally, and the future of work. Each global grand challenge is delivered as a module by a designated module team consisting of academic experts in the relevant field. Each semester the course is delivered, students are placed into three smaller cohorts to foster community building amongst students and teachers and to allow for a more inclusive and active learning environment. Each cohort studies one module at a time for four weeks and completes the module-specific non-traditional assessments before moving on to the next module. This design provides students an opportunity to focus on one global grand challenge at a time, whilst also offering them the opportunity to learn from and work with experts in a particular area. The below image illustrates the overall course structure.

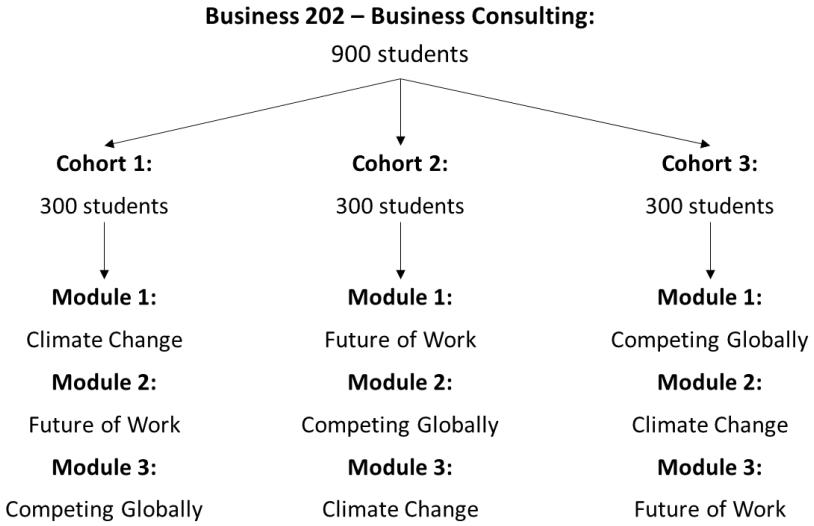

Image 1: Business 202 Course Structure Overview

Business 202 does not deliver any new knowledge, but rather focusses on fostering key skills employers are looking for, such as working and collaborating in teams, project management, ethical decision making, and interpreting and presenting business information. This large undergraduate compulsory class offers active learning opportunities in plenary lectures and workshops and uses eleven different technologies to complete six assessments.

The activity for this session will recreate one of the class experiences of using immersive technologies to manage a collaborative team project.

The Future of Work Module

Business 202 offers a different learning experience for students. In particular, the future of work (FoW) module is designed to initiate discussions on the evolving work dynamics of the future. The course introduces various existing and emerging technologies and discusses their impact on individuals. As the work environment has been drastically changing and project management is evolving due to hybrid collaborative teams, businesses are seeking dynamic and sustainable upskilling from their workforce. In this course, these topics are introduced, explained, and discussed whilst also providing an opportunity for students to experience the implications of emerging technologies for businesses. Students work in teams to implement different aspects of project management, such as a move to more agile approaches, by using different frameworks and technologies.

Students are exposed to existing and emerging technologies that will shape the future of their work. The future of work module discusses this in detail: Students explore concepts around the future of work opportunities and challenges posed by emerging technologies, and they discuss the social, managerial, and personal implications on the future of work.

For their non-traditional authentic assessments, students manage (hypothetical) business consulting projects for different New Zealand firms using VR (Virtual Reality) platform Spatial.io and through the design of promotional products using generative Artificial Intelligence (AI). Spatial.io, launched in 2017, is one of the widely available metaverse platforms. It offers a range of social features like multiplayer access, an entire avatar and movement system, voice, video, and text chat, immersive spatial audio, and a Discoverability Engine. Our students are introduced to VR and its implications during the plenary lecture.

Subsequently, students gain hands-on experience with VR within their teacher's Spatial.io-based VR Office during two-hour workshops. For this course, we conduct ten workshops (with 30 students each) per course cohort in the University's Maker Space and the Business School's Technology Hub – in total, we run 30 workshops per semester, which allow all 900 students per semester to experience the technology. The students are divided into groups of five to start collaborating in the immersive world. With the help of two technology assistants and one Business 202 teaching team member, we use 34 Oculus headsets to help students have 50-60 minutes of immersive experience within the teacher's VR office and their respective team's VR rooms. Students are advised to explore the VR rooms, add objects, create sticky notes and to open a portal to their teacher's VR office. These workshops serve as a crucial foundation for students as they embarked on their group assignment, which they continue to work on over the course of the following three weeks.

Image 2: Virtual Reality Workshops

The Group Assignment - "The Future of Working in Teams - Evaluating Virtual Collaboration"

The groups assignment consists of three research and creative aspects of business consultation: creating a VR space, creating promotional product designs with AI, and project management components. So far, students have explored VR and AI implication opportunities and challenges for various companies from industries including agriculture, retail, construction, transportation, health care, financial services, and cultural heritage. Students are required to use an agile project management approach to complete their assignment. They record at least five iterations of creating a VR space and generative AI for promotional product designs. Collectively, this assignment helps students explore the use of VR and AI for different industries and enhance their project management skills.

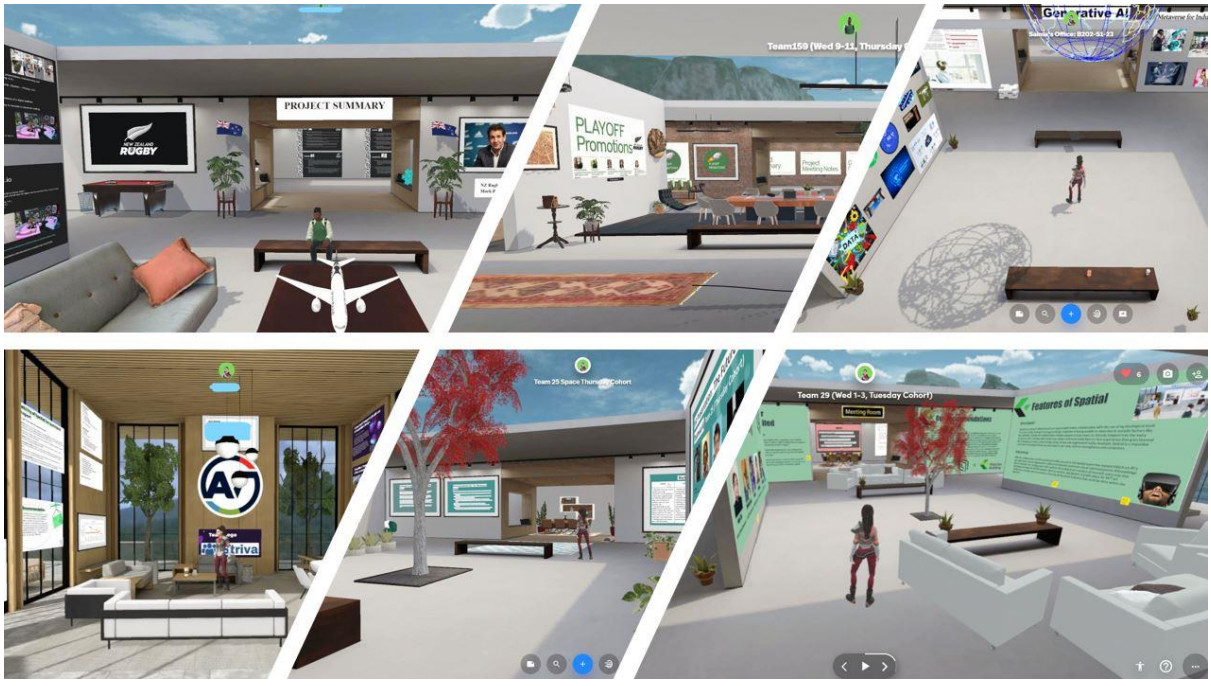

Image 3: Virtual Reality Spaces for the Business Consultation

Learning Objectives for this Activity/Exercise

The learning objectives for this activity are as follows:

LO1: To gain an understanding of how a seamless immersive experience can be applied for a large class through group management and individual engagement.

LO2: To explore the use of emerging/emergent/immersive tech in workshops and as part of related assessments to prepare students for their future of work.

LO3: To show how students can learn skills suitable for project management, e.g. team collaboration (in person, hybrid, online), agile project management, etc..

LO4: To demonstrate how this approach to active learning contributes to the effective teaching and learning in the field of management.

Activity/Exercise Overview

In this workshop, we aim to discuss and show how active learning techniques, and particularly the use of emerging / immersive technology, in course delivery and assessments in large classes not only enhances knowledge comprehension, retention and application, but also prepares students for an (uncertain) future of work. The goal of this session is to present findings from the course, but also get session attendees engaged in the immersive tech experience that our students go through by using the technology during the session and working on small group tasks. We will then conclude with student and industry responses to this course and the impact of the active learning techniques on student learning.

Session Description

In this session, we will recreate some aspects of the workshops that our students experience. We will cast a Spatial.io room with a Meta Quest-2 Oculus headset (which we

will bring along) using a projector (provided the conference organisers). Meanwhile, the participants will join the VR room from their own devices (laptops or mobile). Participants will explore the VR space and will discuss the experience. The detailed overview of the workshop is as follows:

0-5: Welcome and introduction to the course (Business 202) and the Future of Work module.

5-10: Demonstration of the technology used in class.

10-20: Visit to a VR room and technology immersion experience. Live casting on the projector with Oculus headset while participants will join the VR room from their devices.

20-40: The participants will add discussion points and objects in the VR room. Reflections, advice, questions.

40-50: Open forum discussion on the key challenges and opportunities of using immersive technologies for active learning in large classes.

50-55: Thank you and closing.

Prerequisites

- Attendees of this session should bring their own device to connect with Spatial.io.
- It would be helpful if attendees create a (free!) account on Spatial.io prior to attending the session. Attendees will receive a small video on how to create Sptial.io account and an invite to the VR room (for future personal and professional use).
- A stable internet connection would be required to successfully and smoothly run the activity.

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