



DOI: <https://doi.org/10.57125/FED.2025.09.25.04>

How to cite: MacKenzie, A. (2025). From lecture hall to learning hub: A case study of online course redesign in management principles. *Futurity Education*, 5(3), 56–103. <https://doi.org/10.57125/FED.2025.09.25.04>

From Lecture Hall to Learning Hub: A Case Study of Online Course Redesign in Management Principles

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Received: April 24, 2025 | **Accepted:** August 17, 2025 | **Available online:** September 6, 2025

Abstract: The study describes the redesign of a junior-level Management Principles course in a Canadian engineering technology program, prompted by the pedagogical challenges of shifting from traditional face-to-face to virtual teaching during the COVID-19 pandemic. The course was transformed into a customised virtual-hybrid delivery model created by the author, which exceeds typical online or hybrid formats by combining curated asynchronous multimedia content, biweekly small-group synchronous sessions, and immersive experiential learning tools. Unlike standard methods that replicate virtual lecturing, this model intentionally reconfigures the learning experience around practical problem-solving, self-directed learning, and regular instructor-led discussions in close-knit peer group environments. Research questions guided the case study, focused on student engagement, the pedagogical effectiveness of asynchronous and simulation-based components, the role of structured synchronous learning, and the instructional implications of course redesign. A mixed-methods approach was employed, combining quantitative survey data (n = 86; 34.4% response rate) with qualitative analysis of university course evaluation responses. Findings revealed notable improvements in student outcomes and

satisfaction. Ninety-one per cent of respondents reported a better understanding of course concepts related to decision-making, leadership, and change management skills through simulations. The three LinkedIn Learning modules integrated into the course received an average rating of 90% from students for enhancing their communication and management skills. Final course grades increased by 8–10% compared to previous face-to-face cohorts. Students highlighted the clarity and independence of asynchronous resources, the relevance of experiential assessments, and the quality of interaction in synchronous learning groups as crucial to their learning experience. Challenges included increased faculty workload and more complex coordination. This study presents a new, reproducible model for teaching management in online environments. It demonstrates how a redesigned course layout, which includes curated media, practical simulations, and instructor-led synchronous peer learning, can enhance engagement, independence, and deep understanding among undergraduate students in applied disciplines.

Keywords: Virtual-hybrid course design, experiential management education, simulation-based pedagogy, asynchronous-synchronous integration, innovative instructional design, undergraduate engagement strategies, online learning case study.

Introduction

The global disruption caused by the COVID-19 pandemic prompted a rapid shift to online and hybrid learning across higher education institutions. This transition revealed fundamental gaps in course design, particularly in applied fields such as management education, where collaboration, contextualization, and experiential learning are crucial to student success. As universities transitioned to virtual instruction, the need for pedagogically sound and adaptable models that engage students and support learning outcomes became crucial (Bozkurt et al., 2020).

The paper presents a case study of a junior-level Management Principles course that was redesigned to address emerging challenges. Offered within a Canadian engineering technology program, the course underwent a significant overhaul, shifting from a face-to-face format to a unique virtual-hybrid model. Instead of simply moving in-person lectures online, the new approach focused on asynchronous multimedia learning, experiential simulations, and structured small-group synchronous sessions.

Guided by experiential learning theory (Kolb, 1984) and social constructivism (Vygotsky, 1978), the redesign objective was to foster deeper engagement, learner autonomy, and the development of practical skills. This study evaluates the pedagogical effectiveness of that transformation and explores the broader implications for course design in digitally mediated environments.

The following sections further clarify the research problem and focus, the study's aim and guiding questions, and provide context for the original face-to-face framework that laid the foundation of the course before its redesign.

Research Problem

The COVID-19 pandemic highlighted the shortcomings of traditional teaching methods, particularly in practical fields such as engineering management education. As universities rapidly moved to online

formats, the weaknesses of mainly lecture-based teaching, particularly for junior undergraduate students, became more apparent. Courses that require interaction, real-time collaboration, and hands-on experience faced significant difficulties when shifted to virtual delivery, creating an urgent need to rethink teaching and learning strategies in higher education.

Management Principles, as a core course in engineering management, illustrates this broader issue. Although it can be somewhat abstract for students with limited work experience, the course demands a connection to real-world situations through contextual understanding, active participation, and reflection. Such learning conditions are often hard to replicate in typical online settings. For second-year students, who generally have limited work experience and professional exposure, these pedagogical challenges become more pronounced, which can affect motivation, comprehension, and skill development.

Research is essential as institutions continue to adopt and expand online and hybrid learning models well beyond the pandemic response. It must focus on a vital societal goal: preparing students not only for academic achievement but also to thrive as versatile professionals in technology-driven, remote, and interdisciplinary work settings. By analysing the design and implementation of a virtual-hybrid management education course, this study promotes learner-centred, scalable teaching approaches that remain relevant now and as online education continues to evolve.

Furthermore, the inquiry advances the pedagogical field by applying theoretical frameworks such as experiential learning (Kolb, 1984) and social constructivism (Vygotsky, 1978) in an applied digital learning context. It uncovers new insights into student agency, engagement, and knowledge retention, while also highlighting the need for small-group interaction to improve digital simulation learning. These contributions are especially relevant as educators seek models of high-impact learning in online settings.

Research Focus and Aims

The study examines how pedagogical innovation in an engineering management course, rooted in active learning, multimedia integration, and reflective practice, can address the specific learning needs of early-stage undergraduate students in a virtual-hybrid environment.

The course redesign focused on enhancing student engagement, offering flexible learning options, and applying theoretical content through asynchronous multimedia materials, Harvard Business School simulations, and curated LinkedIn Learning tutorials. These initiatives were supported by biweekly synchronous small-group meetings with the instructor and students, encouraging discussion, reflection, and personalised feedback.

The scholarly focus is on understanding how these design elements interact to influence student experiences and outcomes. Of particular interest is how the combination of asynchronous and synchronous modalities impacts engagement, comprehension, and the development of transferable management skills. The research also examines the role of instructor presence, peer collaboration, and structured learning artefacts in supporting student success in virtual-hybrid learning environments.

Research Questions

The following research questions guided the investigation of the course redesign case study:

1. How does a virtual-hybrid redesign impact student engagement and participation in a second-year undergraduate management course?
2. What is the perceived pedagogical benefit of incorporating asynchronous multimedia resources and experiential simulations into the course structure?
3. How does structured small-group synchronous learning influence students' understanding and application of key management concepts?
4. What instructional challenges and opportunities emerge when developing and delivering a virtual-hybrid management course within resource and time constraints?

By addressing these questions, the study aims to inform future instructional design practices in management and applied education, presenting a model that strikes a balance between flexibility, engagement, and academic rigour in digitally mediated learning environments.

Original Face-to-Face Course Framework

The Management Principles course examines the core aspects of management within technology organisations, with an emphasis on planning, organising, leading, and controlling. It underlines the understanding and application of management models and best practices related to managerial roles, enterprise planning, organisational culture, human capital strategies, team building, employee motivation, organisational structure and control, decision-making, leadership, and change management. While developing the course topics and content, the author ensured alignment with the leadership and organisational management themes mandated by the Canadian Engineering Qualifications Board (CEQB) of Engineers Canada. This ensures that W Booth School Bachelor of Technology graduates possess the essential foundational knowledge in engineering management requirements when applying for their Professional Engineering (P.Eng.) licence.

One of the unique challenges in designing and teaching the Management Principles course to second-year students is that they often require a deeper contextual understanding and organisational insight to grasp many of the concepts being taught, mainly because they have limited professional experience to draw from, due to their age, maturity, and minimal active work experience. Even students who have some work involvement, whether as full-time or part-time employees, usually have limited exposure or interaction with their managers beyond their immediate tasks or projects. In general, this is not uncommon, as most employees need help understanding the broader perspective or context in which their managers operate.

This challenge provided a valuable educational opportunity to positively influence students' perspectives and deepen their understanding of best management practices. To support this educational transition, the author incorporated active and experiential learning activities into the course to improve knowledge transfer and retention. Collaborative and immersive experiences help reduce the abstraction often associated with business and management concepts, fostering a deeper appreciation of the course material. Chickering and Gamson (1987) emphasised in their influential work that students must do more than passively listen; they should actively read, write, discuss, and participate in problem-solving. Active learning, defined as "any instructional method that engages students in the learning process" (Prince, 2004, p. 1), has been increasingly adopted in higher education as an effective means of supporting student learning (Bonwell & Eison, 1991).

The face-to-face (F2F) class was held weekly, consisting of one-hour and two-hour blocks. The one-hour session primarily consisted of lectures, during which the instructor introduced key concepts and terminology to help students become familiar with the course material. The two-hour session focused on "active learning" activities or exercises designed to reinforce and contextualise the material covered earlier, thereby enhancing students' understanding and ability to apply the course content.

Active learning activities were designed to enhance the course's engagement and increase students' involvement and control over their learning. By working in triads or small groups, students benefited from "social constructivism," a learning approach where social interactions with peers and instructors promote a deeper understanding. This approach aligns with constructivist theories, which suggest that learners build on their existing knowledge to achieve a more profound comprehension (Vygotsky, 1978), supporting the development of higher-order skills such as analysing, evaluating, and synthesising, as outlined in Bloom's Taxonomy (1956), which is expected of engineering management students. This face-to-face delivery method assessed course learning objectives through a combination of weekly online quizzes based on assigned textbook chapters, an applied midterm exam, various active learning exercises with post-activity individual reflection reports, and a comprehensive final exam.

Redesigned Online Course Framework

Online Course Design Criterion

The Management Principles course underwent a significant redesign in the fall of 2020 due to the COVID-19 pandemic, which necessitated a transition to online delivery. The primary challenge was to create a flexible and engaging learning environment that fostered effective knowledge transfer and skill development, similar to the previous face-to-face (F2F) course structure. The solution involved a thoughtfully crafted approach that combined scheduled, small-group synchronous sessions between instructors and students with self-directed asynchronous learning resources, including curated educational videos, topic notes, third-party management simulations, the university's LinkedIn Learning platform, and two open educational e-textbooks.

Four key design criteria guided the transition from F2F to virtual delivery. The first criterion centred on the traditional structure of a weekly three-hour course, typically divided into two- and one-hour sessions, often involving synchronous virtual lectures to satisfy the university's three-credit-hour requirement. However, a review of the origins of the three-credit-hour system revealed its weak connection to effective student learning outcomes. The three-credit-hour model, developed by Andrew Carnegie's Foundation for the Advancement of Teaching in the early 1900s, was originally designed to standardise faculty teaching loads rather than enhance learning. Despite its limitations, this model has become the standard across Canadian higher education (Laitinen, 2012; Usher, 2020).

Recognising that credit hours are not necessarily indicative of achieving learning outcomes enabled the reimagining of course delivery. The redesign transitioned from fulfilling credit-hour requirements through virtual lectures to fostering competency development through a combination of synchronous and asynchronous learning approaches, emphasising engagement and flexibility over passive lecture consumption.

The second criterion was based on extensive industry experience and the understanding that virtual meeting platforms, such as Zoom and Microsoft Teams, are not ideally suited for engaging large groups. Research from Stanford University and the University of Nottingham supports this, showing that small online meetings (2-4 participants) are most effective in engaging participants. Conversely, larger virtual gatherings often lead to disengagement and "Zoom fatigue" (Sutton, 2014). As a result, the redesign limited class-wide synchronous sessions to the first two weeks, focusing on course orientation and establishing clear expectations for student learning groups. For the rest of the semester, class time was used for biweekly synchronous instructor-student learning group meetings, where each group (up to five students) met with the instructor for at least 30 minutes. Active participation and dialogue were promoted by requiring all team members to have their webcams and audio on.

The third design criterion emphasised the integration of high-quality instructional videos as a core element of the course redesign. Empirical research indicates that students consistently prefer studio-produced videos over virtual lecture recordings, citing greater engagement and ease of understanding as the primary benefits (Sadik, 2016). Furthermore, pedagogical studies have reliably demonstrated that short, scripted micro-lessons are more effective than longer lecture formats in promoting knowledge retention and transfer (Tan & Towndrow, 2009). Asynchronous video-based learning also enhances learner autonomy, allowing students to access materials at their convenience and engage with content at a self-directed pace, thereby supporting personalised learning pathways (Fernandez et al., 2014).

Recognising that the success of the asynchronous learning environment partly depended on incorporating high-quality multimedia materials, the course redesign focused especially on including effective instructional videos. However, due to the short timeframe between the end of the fall 2020 term and the start of winter 2021 delivery, creating original video content was not feasible. This marked a departure from previous course redesigns by the author at the W Booth School of Engineering Practice and Technology, especially in upper-level courses such as Strategic Management and Entrepreneurial Thinking and Innovation, where the author had successfully created customised, studio-quality video materials to support the course (MacKenzie, 2025a, 2025b).

Given these time constraints, the instructional design approach shifted from content creation to content curation. Drawing on subject-matter expertise, the author identified and selected high-quality multimedia resources produced by reputable scholars and industry professionals. Permissions for use were obtained, and the curated videos were reformatted and uploaded to the university's institutional video platform, ensuring broad accessibility. In line with Universal Design for Learning (UDL) principles, all videos were enhanced with inclusive features such as closed captioning and playback controls, thereby supporting diverse learner needs and promoting equitable access to content.

The final design criterion was to ensure that the course continued to deliver research-informed insights into managing people within technology-driven organisations, while also providing exceptional opportunities for active learning and engagement. These opportunities were designed to support the practical application of core management theories, including team development, decision-making, leadership, motivation, and contextual factors such as how organisational culture affects enterprise performance. To accomplish this, the course incorporated virtual immersive, experiential learning activities. Specifically, three new management simulations from Harvard Business School were integrated,

along with a scene analysis exercise of a feature film, enabling students to engage with complex managerial scenarios in dynamic, applied contexts.

In summary, the Management Principles virtual-hybrid course redesign featured a diverse and intentionally structured set of deliverables and assessment methods grounded in active, reflective, and research-informed pedagogical practices. Central to the design were asynchronous learning modules, supported by curated instructional videos, lecture notes, two open educational e-textbooks from OpenStax, and targeted supplemental readings. These materials were scaffolded across modules addressing individual, group, and organisational-level management concepts. Experiential learning was emphasised through three management simulations and a film scene analysis exercise, each accompanied by pre- and post-assignment reflections to enhance conceptual understanding.

Assessment strategies included bi-weekly low-stakes online quizzes aligned with the e-textbook, three LinkedIn Learning video tutorial assignments, and a comprehensive, applied online final exam. These were supported by synchronous small-group sessions with the instructor, offering collaborative debriefing and personalised assistance. Overall, this framework aimed to foster higher-order thinking, adaptability, and reflective skills, all essential competencies for managing the complexities of practice in dynamic organisational settings.

Online Course Learning Artefacts

To promote student agency and deeper learning within the virtual-hybrid delivery model, a series of intentionally designed course learning artefacts was created and implemented. These artefacts were thoughtfully developed to enhance the online learning experience, encourage meaningful peer interaction, and include both reflective and practical learning components. Additionally, they aimed to develop transferable professional skills essential for success in modern organisational contexts. Based on evidence-based pedagogical practices, each artefact contributed to a cohesive instructional strategy that aligned course objectives to offer student-centred learning experiences.

Course Learning Plan Blueprint

With the shift to a virtual-hybrid delivery, students were expected to feel more disconnected than in traditional classroom settings and to face the challenge of self-directed learning. A comprehensive learning plan was developed to address potential issues related to student agency. This document offers an overview of all topics and details weekly responsibilities, visually aligning course learning objectives with modules that include instructional videos, critical simulation deadlines, e-textbook readings, assignments, quizzes, and other learning materials. The Learning Plan Blueprint, Course Syllabus, and Learning Group Meeting Schedule provide a clear pathway for students to navigate the course and achieve the intended learning outcomes.

Learning Group Charter

Given the additional stresses associated with navigating online learning, especially for second-year students, a structured approach was introduced to promote deeper engagement with course material. This method emphasised peer learning and small-group social support as vital means to enhance understanding and knowledge acquisition. Research indicates that students benefit greatly from sharing their ideas with

others and participating in peer-to-peer learning activities. These experiences aid in developing essential skills, including organisation, collaboration, feedback exchange, and self-evaluation (Boud, Cohen, & Sampson, 2014).

Students were randomly assigned to Learning Groups of four to five members using the group enrolment algorithm available in the course learning management system (LMS). Each group was tasked with creating a Group Profile and developing a unique Group Learning Charter using a provided template. Peer learning groups are more effective when members share an understanding of group objectives and behavioural norms (Hunsaker, Pavett, & Hunsaker, 2011).

The initial synchronous student-instructor Learning Group meeting, held early in the semester, offered formative feedback on each group's draft charter. This process helped improve group goals and set shared expectations, a type of psychological contract that supports effective collaboration and decreases the likelihood of conflict or misunderstanding during the term.

LinkedIn Learning Video Tutorial Reports

Three video tutorial assignments were incorporated into the course through McMaster University's LinkedIn Learning (LiL) enterprise platform. The purpose of these assignments was to enhance students' understanding of effective teamwork, collaboration, giving constructive feedback, and essential skills for first-time supervisors. In addition to developing professional skills, the content also enhanced the reflective part of personal learning by encouraging students to think about their growth and development based on what they had learned from the LiL video tutorials.

As part of the instructional design, students were required to complete three curated LiL courses independently throughout the academic term. Each LiL digital video course was followed by a two-part written Video Tutorial (VT) Report. Part A involved summarising the key ideas and concepts presented in the tutorial. Part B required students to engage in reflective analysis, drawing connections between the tutorial content and their previous coursework, lived experiences, professional contexts, and future goals.

Survey data showed that most students found the LiL tutorials valuable for improving their knowledge and skills in the subject. Respondents also demonstrated growth in reflective ability and shifted towards self-directed learning behaviours during the course. These results indicate a positive movement toward developing lifelong learning skills, which are essential for graduates navigating today's rapidly changing, technology-driven work environments.

Online Management Simulations

In management education, simulations are widely recognised as one of the most effective tools for actively motivating and engaging students in the learning process (Vos & Brennan, 2010). Simulations offer a valuable alternative to traditional teaching methods by creating a direct connection between abstract theoretical concepts and real-world business challenges. Additionally, they enhance the relevance of learning by providing students with opportunities to practice decision-making and interact with the time-sensitive, process-driven dynamics typical of real-world environments (Buil, Catalán, & Martínez, 2019).

The pedagogical value of management simulations is well-supported in the literature, which positions simulation learning within four major conceptual frameworks. First, simulations are rooted in the constructivist education paradigm, which suggests that learners build meaning and understanding through direct experience (Boulos, Maramba, & Wheeler, 2006). In this framework, simulations allow learners to interact with dynamic artefacts, analyse complex data, make informed decisions, and iteratively test and refine their ideas (Lainema & Makkonen, 2003). Second, simulations correspond with the principles of problem-based learning, a pedagogical approach that begins with presenting a complex problem, requiring students to apply relevant concepts and prior knowledge to find a solution (Anderson & Lawton, 2009). Third, simulation learning supports the experiential learning paradigm described in Kolb's (1984) four-stage model, which involves a continuous cycle of concrete experience, reflective observation, abstract conceptualisation, and active experimentation. Ultimately, the concept of authentic learning in online environments enhances the design of simulation-based pedagogy. According to Herrington, Reeves, and Oliver (2009), simulations can effectively replicate real-world contexts, creating meaningful and authentic learning experiences that align learner needs with pedagogical and assessment strategies.

To strengthen and deepen the learning gained from simulations, synchronous debriefing sessions were conducted between the instructor and each student learning group after every simulation exercise. These sessions fostered reflection and meaning-making, which are essential for experiential learning. Simulation experiences alone are not sufficient for true learning; students also need to integrate these experiences into their existing cognitive frameworks. Hughes and Scholtz (2015) highlight that internalising experience and transforming it into knowledge through critical reflection is fundamental to the learning process. To support this reflective process, students had to complete individual post-simulation assignments. These tasks prompted students to express the value of the simulation, identify key learning outcomes, and reflect on how the activity improved their understanding of course concepts. In doing so, students were encouraged to connect the simulation experience with their prior learning, future academic or professional goals, and personal or work-related experiences.

Online Final Examination

The COVID-19 pandemic offered a timely and relevant context for linking the Management Principles course content to real-world organisational challenges. In response, the online final exam was deliberately designed to encourage the application of management concepts to actual pandemic-related business scenarios. This method included both analytical and reflective components, requiring students not only to apply theoretical knowledge but also to reflect on their struggles and successes during the course. These reflections were intended to cultivate the development of key personal qualities, including self-awareness, perseverance, and critical thinking. To reduce exam-related anxiety and promote thoughtful preparation, all case scenarios and reflective questions were released one week before the scheduled online exam, following a take-home exam format. Research supports the educational benefits of such formats, highlighting their ability to promote deep learning, enhance higher-order thinking, reduce student stress, and shift the focus from grades to meaningful learning outcomes (López et al., 2011; Bengtsson, 2019).

The exam consisted of two parts. In Part A, students answered one of four reflection questions, prompting them to consider how the course material influenced their learning. Part B involved selecting and analysing two of four real-world scenarios, each linked to three specific course concepts. Although the

themes were provided beforehand to aid studying, students still had to respond to specific, context-dependent questions during the exam, demonstrating clear connections between the course content and scenario applications. Responses were submitted via the course LMS using standardised templates and checked with Turnitin for academic integrity. Interestingly, the quality of student submissions was notably higher than in previous face-to-face exams, with responses exhibiting more depth, clarity, and analytical skill. These results suggest that the new assessment design not only increased student engagement but also enhanced critical thinking and understanding of key concepts.

Student Perceptions of Course Redesign

Student perceptions of the course redesign were examined using a mixed-methods approach, combining both quantitative survey data and a qualitative thematic analysis of anonymous open-ended comments collected through the university's end-of-term course evaluations. After the winter 2021 semester, students enrolled in the redesigned online Management Principles course were invited to complete a voluntary, anonymous survey. The survey evaluated students' perceptions of the Video Tutorial Report assignments linked to the LinkedIn Learning (LiL) platform, as well as their satisfaction with the integration of Harvard Management Simulations as a tool for active learning and skill development.

The course was conducted across four sections, all led by the same instructor, with a total enrolment of 250 students. Of these, 86(n) students completed the survey, resulting in a participation rate of 34.4%. The survey consisted of eight closed-ended questions. The first two questions were dichotomous and investigated students' engagement with the LiL platform for academic credit and their views on its usability. The third question assessed perceived improvement in knowledge and skills related to each of the three assigned LiL video tutorials. This item used a five-point Likert scale, from "strongly agree" to "strongly disagree," with an additional "not applicable" option. Questions four and five explored students' likelihood of using the LiL platform in the future and their intention to share their digital certificates of achievement on social media. Questions six through eight evaluated students' perceptions of the educational value of each Harvard Management Simulation in supporting skill development, also using a five-point Likert scale.

Student Satisfaction with LinkedIn Learning Video Tutorials

The student feedback highlighted a strong appreciation for the LiL coursework, with many students reporting perceived improvements in subject-specific knowledge and transferable skills. Ninety-one percent of the respondents indicated this was their first time using LiL as part of a graded university assignment. Most students (95%) found the LiL platform accessible and navigable, facilitating positive engagement with the asynchronous learning resources.

Figure 1 illustrates the four items that address the educational value of the LiL Video Tutorials (VT) in the course. The students viewed the grading criteria favourably for the VT Report assignments. Most surveyed students indicated that all three LiL VTs provided educational value. For the VT on "Being an Effective Team Member," 88% agreed or strongly agreed that the LiL course enhanced their knowledge and skills in the subject matter. Just over 89% found the "Giving and Receiving Feedback" session valuable, and the third LiL VT, "Management Foundations," had just shy of 92% agreeing or strongly agreeing that it improved their knowledge and skills in the subject matter.

Figure 1

Educational Value of the LiL Video Tutorials

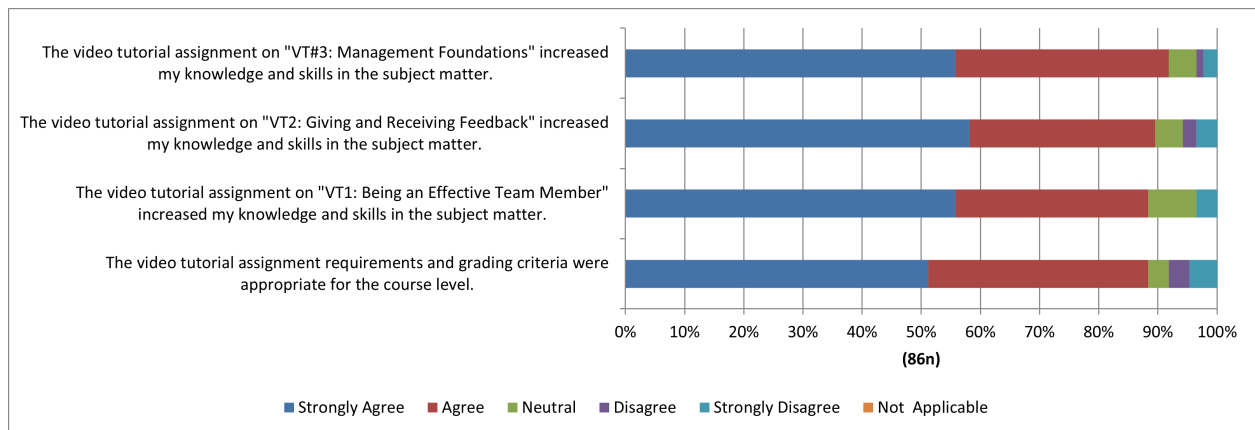


Table 1 presents the results of the fourth survey item, which examined students' intention to continue using the LinkedIn Learning (LiL) platform independently, serving as an indicator of emerging lifelong learning tendencies. A combined 47.7% of respondents reported being either extremely likely or very likely to engage with the platform beyond the course requirements. This finding suggests a positive shift toward self-directed learning behaviour, reflecting the potential of the course redesign to foster autonomous, lifelong learning practices, at least in the immediate term.

Table 1

Future Use of the LinkedIn Learning Platform

Likelihood of Future Use	% of Respondents
Extremely Likely	18.6%
Very Likely	29.1%
Moderately Likely	34.9%
Slightly Likely	12.7%
Not at all Likely	4.7%

The Video Tutorial Report assignment deliverables indicated that students would receive a digital certificate of achievement after completing each LinkedIn Learning (LiL) course. These certificates could be added to students' LinkedIn professional profiles, providing a way to showcase their learning to potential employers and other career influencers.

Table 2 displays survey results concerning students' willingness to share these digital credentials publicly. A total of 54.6% of respondents stated that they were extremely likely or very likely to display their digital certificates. Since the students were in their second year of study, this outcome may reflect a strategic effort to strengthen their professional profiles in anticipation of securing future paid internships, which are an academic requirement for all undergraduate students in the W. Booth School of Engineering Practice and Technology.

Table 2*Displaying LinkedIn Learning Digital Badge*

Likelihood of Display	% of Respondents
Extremely Likely	24.4%
Very Likely	30.2%
Moderately Likely	29.1%
Slightly Likely	7.0%
Not at all Likely	7.0%
Unaware of Certificate	2.3%

Student Satisfaction with Management Simulations

The survey results for questions 6, 7, and 8 offer insights into students' perceptions of the online simulations used in the course: Judgement in a Crisis, Team Leadership Everest, and Change Management. Each simulation was designed to immerse students in real-world management scenarios, requiring them to apply course concepts to complex situations. The survey responses suggest that these simulations are effective in boosting student engagement and learning outcomes.

SIM 1: Judgment in a Crisis

In the Judgment in a Crisis simulation, students were tasked with individually assuming the role of a product manager at a medical device company, responsible for addressing a post-launch quality issue with a new blood glucose monitor. As the scenario progresses, students must identify the root cause, manage stakeholder communication, and make time-sensitive decisions under pressure. The simulation emphasizes core decision-making principles while highlighting common cognitive biases that can impair managerial judgment. Its main learning objectives are twofold: (1) to raise awareness of key cognitive biases that affect decision quality, and (2) to offer practical experience in managing a product-related safety crisis with professional responsibility.

Figure 2 provides an illustrative summary of student feedback on the effectiveness of the simulation. The data shows that most students found the simulation to be a helpful and engaging learning tool. Specifically, 87% of respondents either agreed or strongly agreed that the knowledge and skills gained during the exercise would benefit them in their future careers, highlighting its perceived usefulness in real-world situations.

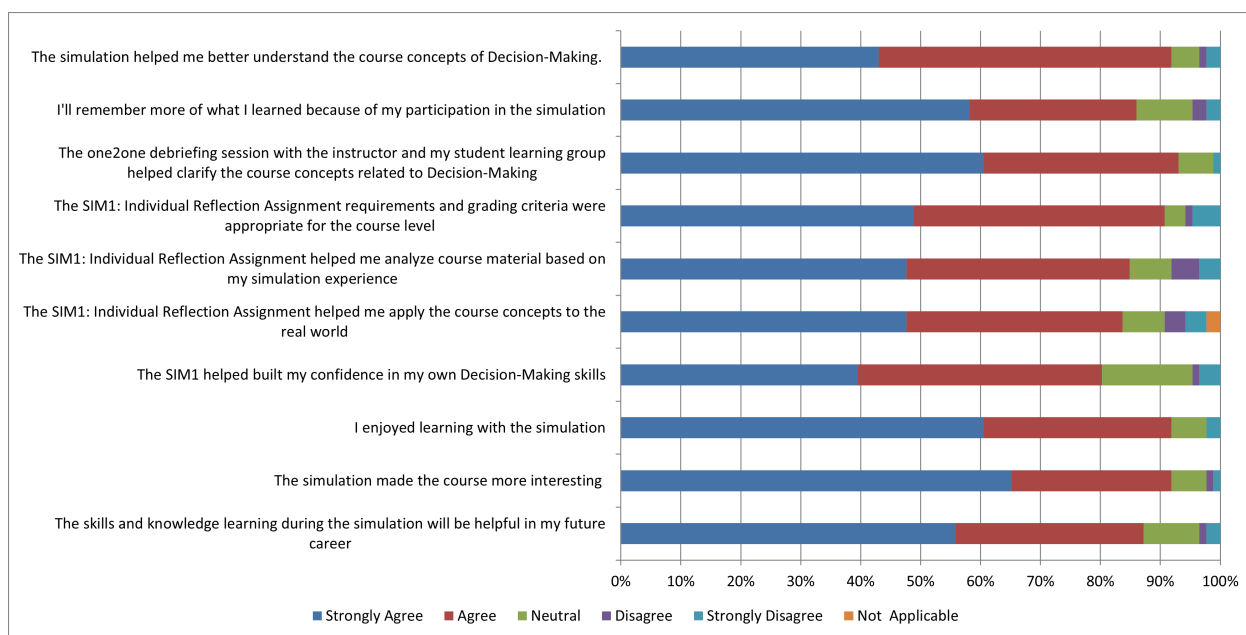
Furthermore, the simulation seems to have had a notably positive effect on engagement. Ninety-two percent of students agreed that the course became more interesting, and an equal proportion stated that they enjoyed the experience. These results align with earlier studies, indicating that simulations can significantly enhance both enjoyment and immersion in learning settings (Vos & Brennan, 2010).

The figure also demonstrates the effectiveness of the supportive pedagogical framework. The reflective assignment, linked to simulation-based grading criteria, allowed students to delve more deeply into their experience and apply course concepts to real-world situations. Reported improvements in

knowledge retention (86%) and understanding of decision-making processes (92%) further emphasize the simulation's cognitive impact. Importantly, 93% of students agreed or strongly agreed that the synchronous debriefing session, conducted with the instructor and their peers in their learning group, helped clarify course concepts related to judgment and decision-making.

Figure 2

Student Feedback on Effectiveness of Simulation 1



SIM 2: Team Leadership Everest

The Team Leadership simulation offers students a dynamic, multi-user scenario that requires coordinated teamwork and high-stakes decision-making. Set as a Mount Everest expedition, students are assigned to one of five distinct roles within a climbing team. Each participant receives different information and resources, and together, teams must plan and execute their ascent to the summit, navigating logistical challenges, making informed timing decisions, and managing interpersonal dynamics. The simulation addresses three key learning objectives: (1) to build, participate in, and lead effective teams, (2) to improve collaborative decision-making when members have varied information and interests, and (3) to balance short-term task success with long-term team cohesion and effectiveness.

Figure 3 summarizes students' perceptions of the educational impact of the simulation. Overall, the results show that the simulation was highly effective in reinforcing key concepts related to team leadership and collaborative problem-solving. A strong majority of students (91%) agreed or strongly agreed that the knowledge and skills gained during the simulation would benefit their future careers.

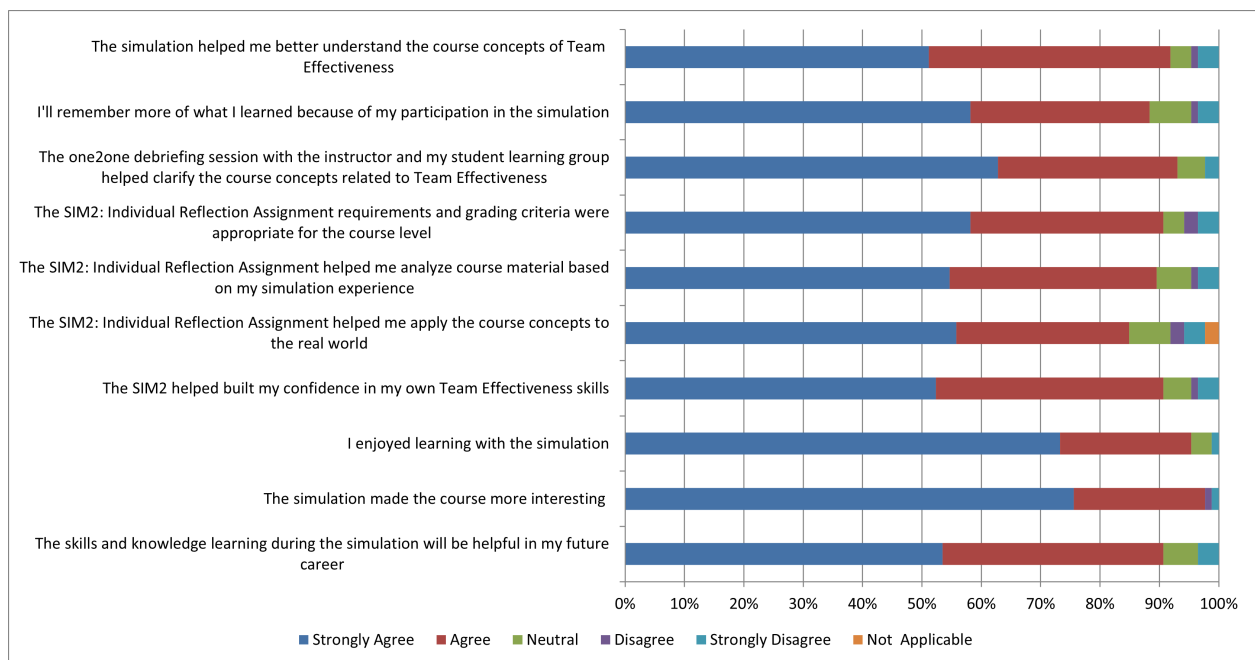
Engagement levels were very high, with 98% of respondents indicating that the simulation increased their interest in the course. This further supports research suggesting that well-designed simulations can

enhance student motivation and involvement (Faria et al., 2009). Additionally, 95% of students reported enjoying the experience, reinforcing the idea that simulations foster immersive and collaborative environments for exploring complex management challenges (Anderson & Lawton, 2009).

Students also reported significant improvements in personal development, with 91% saying that the simulation boosted their confidence in working effectively within teams. The related reflective assignment, aligned with the simulation, again showed a deeper level of analysis and application of course concepts to real-world leadership situations. As shown in the figure, students reported high levels of knowledge retention (88%) and a better understanding of team effectiveness (92%). Consistent with the results from the previous simulation, 93% of students found the synchronous debriefing session with the instructor and their learning group to be particularly valuable in reinforcing their understanding of key course concepts related to teamwork and leadership.

Figure 3

Student Feedback on Effectiveness of Simulation 2



SIM 3: Change Management

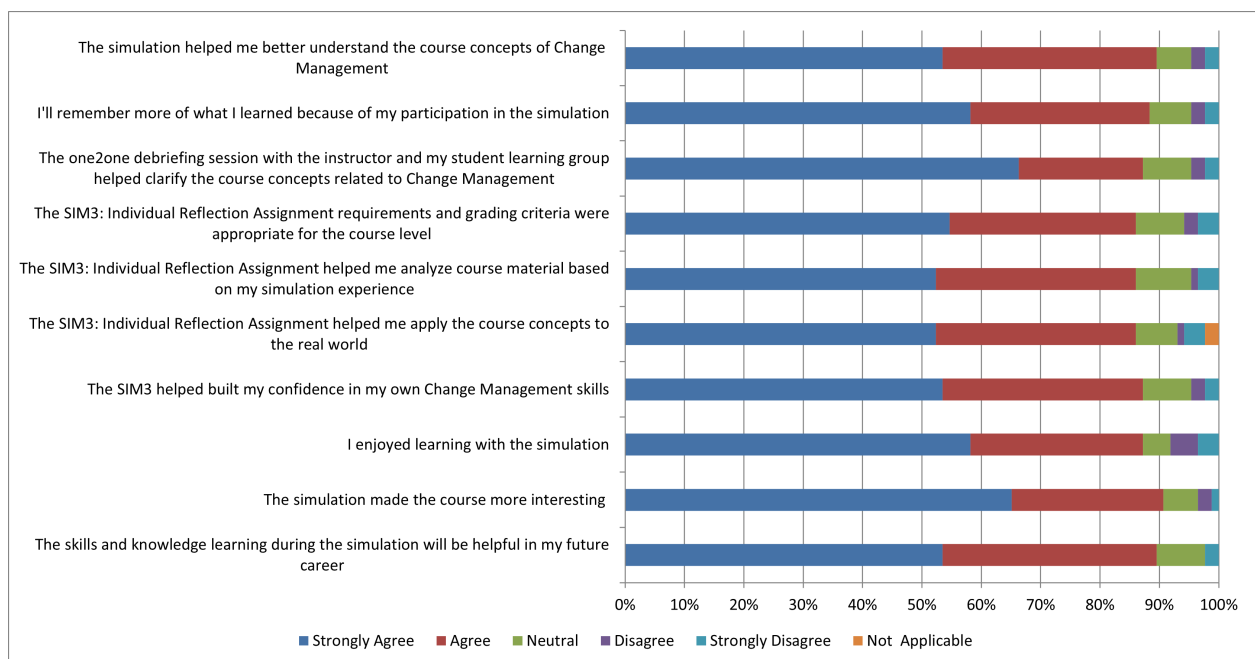
The simulation provides students with a highly relevant opportunity to practice leading organizational change. In this scenario, students act as change agents within a company responsible for implementing a sustainability initiative. The simulation challenges students to manage organizational resistance, assess social dynamics, and adjust their strategies in response to new insights and information. Major learning objectives include: (1) understanding the roots of individual and group resistance to change and how to address it using influence and network analysis; (2) learning to select and sequence appropriate change strategies based on contextual factors; and (3) identifying and avoiding common mistakes made by change agents.

Figure 4 illustrates students' perspectives on how the simulation influenced their learning. Overall, 90% of students agreed or strongly agreed that the skills and insights gained would benefit their future careers. Engagement with change management was also notably high. Ninety-one percent reported that the simulation increased their interest in the course content, which is encouraging because change management is often viewed as an abstract or challenging concept to teach students (Kotter, 1995). Additionally, 87% of students indicated that they enjoyed the simulation, supporting the idea that experiential learning methods can provide more engaging and realistic educational experiences than traditional teaching (Herrington, Reeves, & Oliver, 2009).

The simulation significantly boosted students' confidence and skills in leading change, with 87% indicating a perceived increase in competence in change management. The related reflective assignment, linked to the simulation-based assessment, was equally effective, with 86% of participants reporting improved retention of knowledge and a deeper understanding of concepts. Lastly, the synchronous debriefing session, led by the instructor in collaboration with peer learning groups, was considered valuable by 87% of students for reinforcing key insights and deepening their grasp of change principles.

Figure 4

Student Feedback on Effectiveness of Simulation 3



University Term-End Course Evaluation Results

After each term, students are encouraged to participate in an optional and anonymous university-wide course evaluation survey. For the winter 2021 term, the participation rate in the end-of-term course evaluation across the four sections of the course was 28.8%, with 72 out of 250 students completing the survey. The survey includes open-ended prompts that ask students to identify aspects of the course they found valuable and suggest areas for improvement.

A thematic analysis was conducted on the students' comments to identify, analyze, and report patterns (themes) within the qualitative data. Following the steps outlined by Braun and Clarke (2006), the analysis involved data familiarization, generating initial codes, searching for themes, reviewing the themes, and defining and naming them. Several key themes emerged from the data, including course design and organization, engagement and interaction, learning and comprehension, supportive environment, and student autonomy and flexibility.

Theme 1: Course Design and Organization

A key theme in student feedback was the positive reception of the course design and structure. Many comments praised the course's "well-planned" and "organized" nature, indicating that the careful design contributed to an effective learning experience. One student called it "the most prepared/well-planned course I have ever taken," applauding the detailed layout and structure. Aligning with Garrison and Kanuka's (2004) findings, which suggest that well-organized course design in online learning has a significant impact on student satisfaction and success. The "learning plan blueprint outlining weekly accountabilities," the "detailed course notes," and the "course framework on the LMS" were noted as helpful features, highlighting how their clear organization helped students navigate the course material and stay on track.

Theme 2: Engagement and Interaction

Engagement and interaction, both with peers and the instructor, were vital to the students' positive experiences. The biweekly small learning group meetings were often highlighted as an important part, offering students the opportunity to engage in "actual talk" and participate in "in-depth conversations" with the professor and peers. This direct interaction is crucial in online education, where students can often feel isolated (Kuh et al., 2007). Students valued the opportunity for real-time engagement, with one mentioning that it "felt like a time we could actually talk, and the prof was so nice, so nothing felt stressful." Another noted how these interactions helped build a learning community, saying that the learning groups were "the most valuable for sure" and that "studying remotely doesn't allow me to meet my peers and make friends easily." This theme of interaction aligns with Keegan's (2005) theory of transactional distance, which emphasizes the importance of dialogue in reducing the psychological distance between students and instructors in online learning environments.

Theme 3: Learning and Comprehension

Students frequently mentioned how effective the course components were in enhancing their understanding and learning of the material. Many emphasized the simulations as crucial for deepening their grasp of management concepts. For example, one student said, "The simulations he had us complete really solidified our understanding of the course content." At the same time, another noted that "simulations were very cool and unique to anything we have seen." These types of comments are supported in the research, which indicates that simulations offer experiential learning opportunities, allowing students to connect theory with practice (Anderson & Lawton, 2009). Additionally, the curated topic videos were also deemed helpful for explaining complex topics, as students mentioned that "videos were great for clearing up any misconceptions of the course notes and chapter readings." Aligning with Boud, Cohen, and Sampson (2014), who endorse the use of diverse learning resources to strengthen understanding.

Theme 4: Supportive Environment

The creation of a supportive and welcoming environment emerged as a key theme. Many students praised Professor MacKenzie, the instructor, for his "approachable" and "welcoming" demeanour, which helped foster a learning atmosphere where students felt comfortable communicating openly. One student described the course as an "open and welcoming environment where students could communicate freely." The importance of such an environment is well-documented in the online education literature, where instructor presence and support are crucial for student success (Garrison, Anderson, & Archer, 1999). Students felt that the professor was "very nice" and "cared about his students," which contributed to a positive learning experience and helped reduce the anxiety often associated with online learning. The instructor's flexibility and understanding were also recognised, with comments highlighting his willingness to adapt to students' needs, such as changing group meeting times to suit student schedules.

Theme 5: Student Autonomy and Flexibility

Another prominent theme was the course's configuration, which encouraged student autonomy and flexibility in learning. Several students appreciated the asynchronous nature of the course, which allowed them to "choose their own learning schedule." The course design offered flexibility for students to engage with the material at their own pace, an important aspect of online learning that has been shown to meet diverse student needs (Hrastinski, 2008). This flexibility was viewed positively, as it helped students balance coursework with other responsibilities. However, there was also recognition of the challenges linked to this autonomy. One student said, "I have absolutely no self-government, so I found it hard to keep up," indicating that while flexibility is generally advantageous, it may require a higher degree of self-discipline and time management skills. Highlighting the importance of providing enough structure and support within flexible online learning environments to guide student learning.

Critical Feedback and Areas for Improvement

While overall student feedback on the course was overwhelmingly positive, a small minority, roughly 2%, voiced criticism. For example, one student described the LinkedIn Learning video tutorial assignments as "a waste of time," citing concerns about the quality and organisation of the content and preferring to read articles over watching videos. Although such critiques were rare, they highlight the importance of perceived instructional value from the learner's perspective. This feedback demonstrates that even professionally developed materials, such as those provided by LinkedIn Learning, must meet students' expectations, learning preferences, and the course's pedagogical objectives. As Mayer (2020) emphasises in his cognitive theory of multimedia learning, instructional materials should be carefully designed to minimise extraneous cognitive load and support meaningful learning.

Thematic Analysis Summary

In summary, the thematic analysis of student feedback highlights several key areas that contributed to the course's effectiveness: a well-organised structure, engaging interaction opportunities, effective learning tools, a supportive environment, and the flexibility offered to students. These themes reflect best practices in online education, indicating that integrating simulations, structured and facilitated synchronous group interactions, and diverse learning materials can create a rich, student-centred online learning experience. While the overall feedback was positive, the analysis also identifies areas for

improvement, underscoring the need for ongoing refinement of course components to enhance learning outcomes.

Course Redesign Outcomes and Observations

The survey results and the positive feedback from the term-end course evaluations strongly suggest that transitioning from face-to-face (F2F) to the virtual-hybrid delivery of the Management Principles course had a significant impact on student learning and satisfaction.

Before delivering the course, the author was concerned about adapting his virtual-hybrid model, initially designed for upper-year engineering management students, for a second-year cohort. Given the students' generally lower levels of academic maturity and experience, it was expected that they might show less engagement and lack the learner agency needed to navigate the course and achieve the intended learning outcomes effectively. However, these concerns proved to be largely unfounded. Most students responded well to the course structure, and feedback indicated that the course materials, assignments, and active learning components, as well as the blend of asynchronous and synchronous elements, were seen as valuable and supportive of their overall learning experience.

One of the most notable outcomes of the course redesign was that the overall final grade averages increased by 8% to 10% with the online course format compared to previous cohorts in the face-to-face course. Students often reported that rewatching topic videos and actively participating in and reflecting on the management simulation outcomes helped them better understand and apply the course material effectively, which possibly contributed to this improved performance.

Restructuring the three-hour weekly class into bi-weekly one-on-one synchronous learning group sessions allowed students to focus more effectively on their coursework. This change gave students greater control over their time, reducing the stress often associated with a busy semester. Many students reported that this arrangement helped them work more efficiently, spend less time on evenings and weekends, and avoid rushing to complete their course material.

From the instructor's perspective, these one-on-one learning group meetings demanded a high level of preparation and attentiveness. Unlike traditional online lectures, these meetings required the instructor to manage content and process simultaneously, taking on multiple roles such as planner, moderator, and guide. The instructor needed to be prepared to seize "teachable moments" that arose during these discussions, helping students apply the course material in real-world contexts.

Interestingly, the transition to virtual-hybrid delivery strengthened the connection between the instructor and students. The setup of small learning group meetings created a more participatory learning environment, contrary to the disengagement often reported in online classes. Students who were usually too shy to speak up in larger classes were more willing to engage, sharing personal experiences and learning challenges they faced, including those related to the pandemic.

Despite the overall positive reception of the course, several challenges and limitations became apparent during implementation. One of the main challenges was integrating three new online management simulations. Since this was the instructor's first time facilitating these specific simulations, considerable preparatory work was necessary. This included learning to navigate the simulation platforms

effectively to troubleshoot student inquiries, as well as adapting the accompanying teaching notes to facilitate meaningful debriefing sessions that provided experiential context and supported deeper student learning.

However, the most time-consuming part was the administrative workload involved in managing the simulations. The student registration process was particularly demanding, necessitating frequent reminder emails and follow-up communications to ensure that students registered correctly and completed their registration on time for each simulation launch. The Everest (SIM 2) team leadership simulation was particularly burdensome from an administrative perspective. A total of 250 students had to be pre-registered, divided into teams across multiple sections, and assigned specific roles within each team before the simulation began. In hindsight, providing administrative support would have been beneficial, allowing instructional efforts to focus more on enhancing student learning outcomes rather than on managing logistical and clerical tasks across multiple simulation cycles.

The case study also has limitations, including the small sample size, which may limit the generalizability of the findings to other courses or programs. Additionally, the potential for social desirability bias in student responses could affect the reliability of the survey data. More robust studies are needed to evaluate the effectiveness of virtual-hybrid delivery methods across different disciplines.

It is also important to recognise that the virtual-hybrid delivery model might not suit all academic programs, especially those that focus heavily on practical hands-on learning or are subject to specific accreditation standards. Furthermore, not all instructors may have the time, resources, budget, or motivation to invest in this type of course design and delivery.

In this case, the author found the limited timeframe to develop the Management Principles course for online delivery particularly challenging. Significant effort was required to select appropriate instructional videos and identify management simulations that aligned with the course's learning objectives. Additionally, creating a comprehensive set of instructional materials, including the learning plan blueprint, simulation instructions, LinkedIn Video Tutorial assignments, active learning exercise worksheets, post-simulation reflection assignments, and assessment rubrics, within such a short timeframe was a major undertaking.

In summary, the positive reception of the course structure and innovative teaching approach was evident in both the high student ratings and the constructive feedback received. The pedagogical redesign enhanced knowledge transfer while fostering a flexible and engaging learning environment. Despite initial concerns about their level of academic experience, junior-level students successfully navigated the course. Furthermore, the large number of positive comments in the end-of-term course evaluations indicates that the instructional effort had a meaningful and favourable impact from the students' perspective.

Conclusion

This case study explored the pedagogical redesign of a junior-level Management Principles course in response to the instructional disruptions and opportunities caused by the COVID-19 pandemic. Transitioning from a classroom-based model to a virtual-hybrid approach, the course included curated asynchronous learning materials, Harvard Business School simulations, LinkedIn Learning tutorials, and small-group synchronous activities. The redesign was rooted in experiential learning theory and social

constructivism to promote deeper engagement, learner autonomy, and skill development relevant to applied management education.

An evaluation of the redesign was conducted using a mixed-methods approach, which included student surveys, thematic analysis of qualitative feedback, and a comparison of grade performance, revealing improvements in student engagement, knowledge retention, and satisfaction. Students particularly appreciated the course's structure, flexibility, and relevance to real-world contexts, indicating that even second-year undergraduates with limited professional experience can succeed in thoughtfully designed virtual and hybrid learning environments. However, the implementation also revealed instructional challenges such as increased faculty workload and administrative complexity, especially in managing simulation logistics and supporting group-based synchronous interactions.

Research Questions Revisited

The study was guided by four key research questions, each focusing on an important aspect of pedagogical effectiveness in digitally mediated environments. The findings provide valuable insights into each area.

First, the virtual-hybrid redesign was found to improve student engagement and participation. Students reported increased interest and involvement in course activities due to the use of interactive simulations, flexible pacing, and supportive synchronous sessions. Notably, course performance also improved, with final grade averages rising by 8% to 10% compared to previous face-to-face cohorts.

Second, the integration of asynchronous multimedia content and experiential simulations demonstrated clear educational advantages. Curated video materials and simulation-based assessments enhanced self-guided learning, skill development, and the practical application of management concepts. These tools were regarded not only as engaging but also as essential for developing transferable skills relevant to professional practice, as reported by the students.

Third, structured small-group synchronous learning played a key role in students' comprehension and application of course material. These instructor-led sessions encouraged reflection, dialogue, and real-time feedback, helping students strengthen their understanding and fostering a sense of connection in an otherwise remote environment. Students described these sessions as one of the most valuable parts of the course.

Finally, the study identified several instructional challenges, including the significant time and effort needed to manage simulations and learning groups. These findings underscore the importance of institutional support, particularly in terms of administrative assistance and instructional design resources, in ensuring the sustainability of such teaching models.

These findings affirm the educational benefits of virtual-hybrid delivery as a distinctive method for online management education, especially when course design adheres to evidence-based pedagogical practices and learner-centred principles.

Suggestions for Future Research

While this case study offers promising evidence of the educational benefits of virtual-hybrid redesign in undergraduate management programs, several areas require further exploration. Future research should focus on evaluating the long-term effects of virtual-hybrid course models on students' learning paths, especially beyond the immediate context of course delivery. For instance, examining how students apply managerial skills during internships, co-op placements, or capstone projects would offer valuable insights into the transfer and retention of skills gained through simulation-based and asynchronous learning environments.

Additionally, further research is needed to understand how virtual-hybrid learning affects different student groups. Factors such as previous academic performance, access to technology, learning styles, and cultural background may significantly influence the success of this teaching method. Employing mixed-methods or multi-institutional comparative studies could reveal how these factors influence student engagement, satisfaction, and outcomes across various educational contexts.

As the adoption of AI-enhanced learning tools (e.g., adaptive content delivery, automated feedback systems) accelerates, future studies could also examine how such technologies integrate with curated video resources and experiential simulations to personalise and scale management education. Understanding the synergies and limitations of AI-supported virtual-hybrid learning in developing complex managerial skills, such as decision-making under uncertainty, ethical reasoning, and team leadership, offers a compelling direction for interdisciplinary research.

Furthermore, the instructor's role in virtual-hybrid delivery environments remains an underexplored area. This study briefly addressed the increased workload and cognitive demands involved in facilitating small-group interactions and simulations. Nevertheless, more empirical data are necessary to inform professional development, workload planning, and institutional support structures for faculty navigating these models.

Finally, although this study focused on a single course within an engineering technology program, replicating and adapting the instructional framework across other applied fields, such as healthcare management, commerce, or public administration, would help assess the model's broader relevance. Such research could establish a wider pedagogical framework for virtual-hybrid learning in professional education, guided by both disciplinary specifics and universal instructional principles.

In summary, as higher education continues to adapt to digital innovation and student needs, ongoing research into virtual-hybrid course design will be essential for creating equitable, scalable, and impactful learning environments for the future of online management education.

Acknowledgements

None.

Conflict of Interest

None.

Funding

The author received no funding for this research.

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