ASCILITE 2025

Future-Focused:

Educating in an Era of Continuous Change

Driving scalable innovation in digital learning environments: The RMIT Digital Learning Environments Innovation Engine (DLEIE)

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This paper presents RMIT University's Digital Learning Environments Innovation Engine (DLEIE) a strategic, experiment-driven framework for continuous and scalable innovation in digital learning. Conceived as a post-COVID initiative to create a vibrant Digital Campus, the DLEIE evolved from RMIT's earlier Digital Campus conceptualisation. It addresses systemic challenges in digital learning experiences faced by large, multi-campus institutions with diverse learners, siloed governance, and complex technological ecosystems which affect these organisations to respond in agility.
The DLEIE emphasises low-risk experimentation, institutional ownership, and rapid, user-informed iteration cycles. In 2024, five targeted experiments addressed student engagement, wellbeing, personalisation, and usability within Canvas LMS. These interventions including academic calendar overlays, wellbeing nudges, course navigation redesign, digital identity tools, and micro-feedback mechanisms tackled longstanding gaps in digital learning design. The 2025 strategy expands through cross-disciplinary focus groups, qualitative interviews, and co-design hackathons involving students, staff, and industry partners. We examine early outcomes, lessons learned, and cultural and structural enablers necessary to embed agile innovation in higher education. The DLEIE offers a replicable model for universities seeking to move beyond vendor-led digital change toward more responsive, inclusive, and effective digital learning environments.

Keywords: digital learning environments, innovation framework, experimentation, learning management systems, user-centered design, higher education transformation, case study

1. Introduction

Large, complex universities face unique challenges in implementing agile and human-centred digital learning environments. RMIT University, with multiple campuses, global contexts, and diverse disciplines, has historically struggled with slow innovation cycles, vendor-driven digital solutions, and a lack of clear institutional ownership for continuous platform improvement. To address these challenges, RMIT developed the Digital Learning Environments Innovation Engine (DLEIE) a structured framework adapted from the entrepreneurial Lean Startup model (Ries, 2011) to rapidly prototype, validate, and scale targeted digital learning innovations, centring the needs of students and educators (Peters et al., 2018; Anderson et al., 2020). This approach represents a distinctive proposition: drawing on agile, entrepreneurial methods from industry, such as Lean Startup, and applying them within higher education as a deliberate, internally disruptive model of practice. It also aligns with broader trends in Australian higher education, where institutions are adopting holistic ICT strategies to drive innovation and enhance student experiences (CAUDIT, 2024).

2. Background and Rationale

Digital learning transformation in higher education faces organisational inertia hindering rapid experimentation (Bali & Liu, 2018), vendor dependence prioritising global roadmaps over institutional needs (Selwyn, 2016), and fragmented course-level innovations with limited scalability (Gibbs & Simpson, 2014). The DLEIE offers a low-risk, institution-led alternative by embedding innovation within core learning platforms, fostering rapid experimentation cycles, and engaging stakeholders through co-design (Fawns et al., 2020). Building on RMIT's earlier Digital Campus insights around scaling innovation and sustaining transformation appetite, the DLEIE institutionalises an agile innovation culture addressing these gaps increasingly vital as Australian universities navigate accelerated digital disruption catalysed by COVID-19 (Innosight, 2020).

ASCILITE 2025

Future-Focused:

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3. Methodology: Experiments and Engagement

DLEIE at RMIT University adapts Eric Ries's (2011) Lean Startup methodology, overlaying it with Human Centered Design (HCD) principles to ensure user voices are embedded throughout co-design, prioritisation and testing processes. As Newton, Mutton, & Doherty (2024) highlight, HCD addresses the persistent marginalisation of students in institutional change processes by fostering cultures where students become active contributors rather than passive recipients of digital learning environments.

This integrated approach combines strategic priorities, environmental analyses, and primary research through co-design with staff and students to identify and prioritise challenges within a dynamic innovation backlog. Each item is assessed based on alignment with enhancing flexibility in digital learning across personalisation, sense of identity, connection, and wellbeing pillars as shown in figure 1.

Experiments are swiftly developed, tested, and refined using small, randomly selected test and control groups within live learning environments. Real-time feedback enables evidence-informed iteration and scaling as shown in figure 2. This methodology aligns with broader higher education trends employing agile and lean approaches to drive innovation and responsiveness (Lichtenthaler, 2020; Silva et al., 2020), exemplifying a shift towards more adaptive and student-centred digital learning environments.

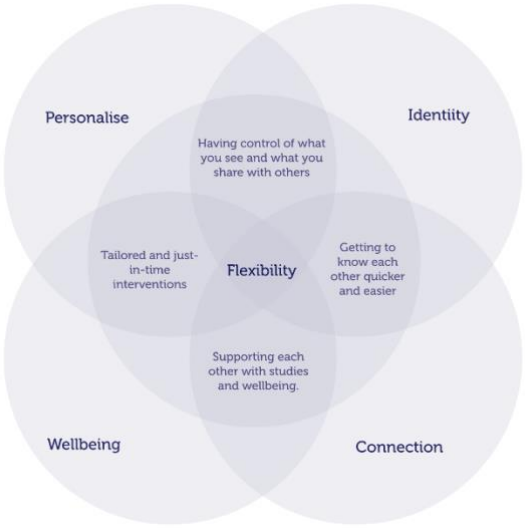


Figure 1. Experiential Pillars

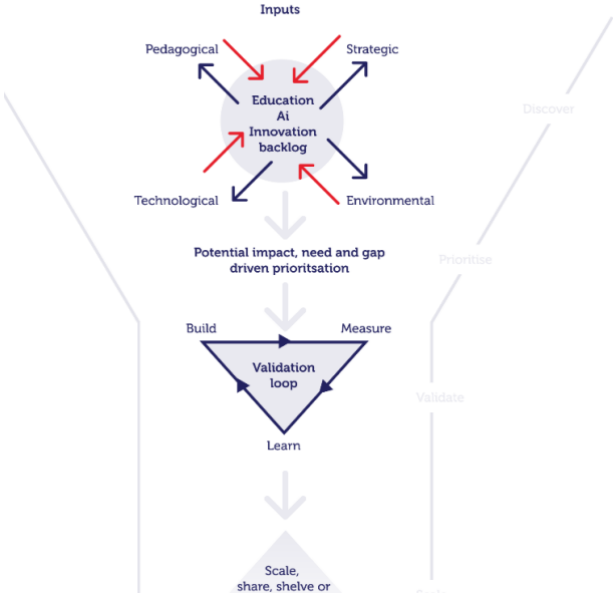


Figure 2. Innovation Funnel

4. Ethics Considerations

While the initial stages of this work were not structured as formal research, ethics has since been embedded as the DLEIE matured into ongoing practice. Engagement with students through feedback, focus groups, and co-design now operates under RMIT human ethics approval (submitted 2025). Participants provide informed consent, data is anonymised and aggregated, and no identifiable details are shared. Feedback loops are closed by communicating outcomes, ensuring transparency in how student input informs improvements to the learning environment.

5. The Experiments, Results and Impact

From Semester 2, 2024, five core experiments were deployed within RMIT's LMS, Canvas. Each experiment followed a design-test-learn cycle, with mixed-method data collection including user surveys, focus groups, and behavioural analytics (Ries, 2011). This iterative approach aligns with best practices in digital transformation, emphasising the importance of continuous feedback and agile development (OES, 2023).

ASCILITE 2025

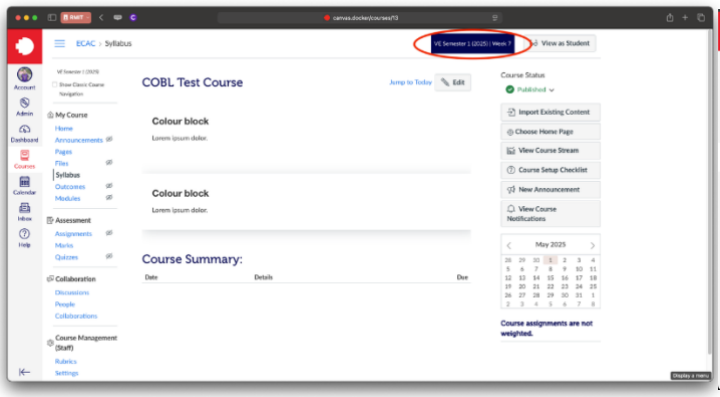
Future-Focused:

Educating in an Era of Continuous Change

Table 1

Experiment Findings

Experiment	Problem we're solving	Measurable Impact	Supporting Evidence
Academic Calendar Integration: Embedding academic week info directly in Canvas to improve navigation ease	Personalisation: How might we make academic week-based module structures for students more meaningful without disrupting student flow?	Significant ease of navigation (+78.79 n=33 ease score (nps calc of promoters) vs 37.5 n=16 control); positive feedback on timeline clarity.	Krause & Coates (2008) – Course organisation improves satisfaction.
Course Navigation Customisation: Reducing cognitive load by standardising and theming course menus (Sweller, 2011).	Flexibility: How might we reduce the cognitive load on students when familiarising themselves with the various structures and quantity of menu items within Canvas Courses?	Modest ease score improvement (+0.2). 4.2 avg ease score (with feature) and 3.9 (without feature) n=614 over 3,200 users interacted with the new menu survey; long-term adoption under evaluation.	
Personalised Well-being Interventions: Behaviourally triggered prompts linking students to targeted wellbeing resources during academic stress periods (Keyes et al., 2012; Sander et al., 2019).	Wellbeing | Personalise: How might we help students feel less overwhelmed about where to start with RMIT's abundant wellbeing resources?	Over 2,744 accesses to tailored wellbeing resources; engagement aligned with key academic pressure points. With 8% of target users looking at a prompted wellbeing resource.	Keyes et al. (2012) – Timely digital interventions aid mental health.
Avatar and Profile Pictures: Encouraging students to personalise their digital identity to foster connection (Whittle et al., 2018).	Identity | Connection: How might avatars give students the ability to better control their personality and represent their identity inside and outside of university in a safe way?	Launch pending (Semester 2, 2025); expected to improve student identification and connection through avatars and targeted interventions.	Whittle et al. (2018) – Digital identity enhances engagement.
Individual Page and Activity Feedback: Collecting micro-feedback on individual Canvas pages and assignments to improve content and engagement (Nicol, 2010).	Personalisation | Flexibility: How might we provide educators with more just-in-time information to improve their agility to respond to needs of students?	10% student response rate in pilot courses enabled real-time improvements and informed course redesign, especially in COBL.	Nicol (2010) – Continuous feedback supports learning.



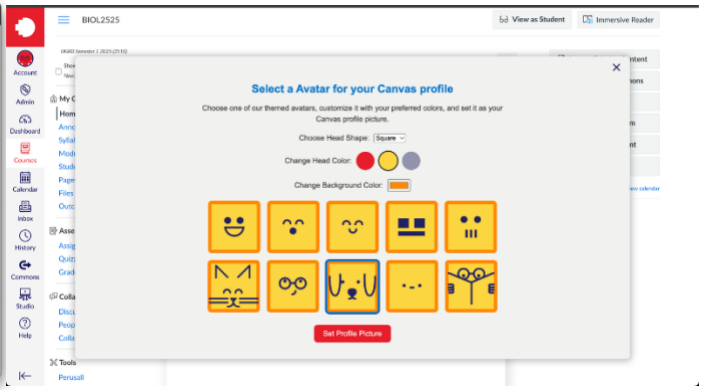


Figure 1. Academic Calendar Integration *Figure 2. Avatar Pictures*

These findings underscore the importance of integrating digital tools that enhance student engagement and well-being, aligning with national strategies to improve teaching quality across Australia's higher education system (Arkoudis et al., 2023).

5.2 Stakeholder Engagement and Future Directions

A cyclical engagement and research framework for 2025 systematically embeds human-centred design methodologies into standard EdTech operational protocols. This iterative approach creates continuous feedback loops where experimental learnings inform new ideas, successful innovations scale institutionally, while unsuccessful initiatives pivot or fail fast to redirect resources.

Core Engagement Activities: Student and staff focus groups conducted as design sprints (Knapp, Zeratsky, & Kowitz, 2016), one-on-one interviews exploring LMS use and AI integration perceptions (Kvale & Brinkmann, 2015), and a mid-year cross-sectoral innovation hackathon bringing together students, staff, and industry experts to co-create digital experiences enhancing connection, identity, wellbeing, and personalisation.

Strategic Implementation: The framework leverages 'Walk the Interaction' initiatives, incentivised participation, and diverse representation. Explicit approval mechanisms for organisational scaling operate through existing governance architectures, with established timelines ensuring accountability and momentum throughout 2025.

Objectives and Outcomes: This empathy-first approach prioritises student needs over institutional compliance structures to refine LMS pain point insights and AI integration opportunities (Kvale & Brinkmann, 2015), co-design next generation learning tools with multi-disciplinary teams (Briscoe & Mulligan, 2014) and foster shared ownership cultures of continuous digital learning improvement (Peters et al., 2018).
Following Norman's (2013) principle that designers must make devices work intuitively rather than users figuring them out, this collaborative approach fosters shared ownership and continuous improvement in digital learning environments (ACODE, 2024), aligning with emerging Australian higher education practices developing comprehensive digital strategies (South Australia Department for Education, 2023).

5.3 Institutional Impact

The experiments underscored the value of embedding innovation within existing platforms and directly involving students and educators in feedback loops. The data informed broader ITS-led portal redesign efforts and contributed to cross-unit collaboration (Fawns et al., 2020). This aligns with the broader trend of Australian universities adopting digital strategies to enhance educational delivery and student outcomes (UNSW, 2024).
The project has served as an internal model for more experimental, agile ways of working, demonstrating the value of rapid prototyping and iterative validation. Building on this approach, RMIT is now actively exploring a similar framework to pre-validate the growing volume of AI-specific use cases emerging across the institution.

6. Discussion

The DLEIE framework addresses key institutional challenges by facilitating rapid, low-risk experimentation within a supportive governance structure (Brown, 2009), shifting innovation control from vendors to institutional stakeholders to allow tailored solutions (Selwyn, 2016), and creating pathways for scaling successful course-level innovations to institutional platforms (Gibbs & Simpson, 2014). Early results suggest improvements in user experience, engagement, and wellbeing support, though ongoing challenges remain around sustaining engagement, aligning cross-unit priorities, and balancing rapid iteration with institutional compliance (Bali & Liu, 2018). These challenges reflect the broader digital transformation journey in Australian higher education, where institutions must balance innovation with quality assurance and equity considerations (Eri et al., 2021).

7. Conclusion

RMIT's Digital Learning Environments Innovation Engine exemplifies an effective approach to overcoming systemic barriers in higher education digital transformation. By embedding agile, human-centered design methodologies within core learning platforms and fostering institution-wide collaboration, the DLEIE drives scalable improvements in student and educator digital experiences. This framework operationalises established design thinking principles and user experience research theories, demonstrating how participatory design approaches can be systematically integrated into institutional digital transformation processes. The model offers empirical evidence for other large institutions seeking to implement theoretically grounded, sustainable digital learning innovation strategies. As Australian higher education continues to evolve in response to technological advancements and changing student needs, research-informed frameworks like the DLEIE engrained in human-centered design theory and validated through iterative stakeholder engagement will be instrumental in shaping evidence-based approaches to future digital learning experiences.

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