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Implementing micro-credentials and digital badges for flexible learning: A reflective institutional design study in Australian higher education

Xiaoxia Wang[1], Scott Richardson[2], Ian Rouse[3]

[1] RMIT University, Melbourne, Australia

[2] Abu Dhabi Hospitality Academy Les Roches, Abu Dhabi, United Arab Emirates

[3] University of Puthisastra, Phnom Penh, Cambodia

Correspondence:
Xiaoxia Wang | e-mail: spicehb@hotmail.com

Abstract

The COVID-19 pandemic has amplified the demand for flexible learning solutions in higher education, with micro-credentials and digital badges emerging as strategic responses. This paper presents a reflective institutional design study that documents the development and early-stage implementation of micro-credentials and digital badges at a private Australian higher education provider. It outlines the strategic rationale, instructional design decisions, and digital credentialing strategies used to enhance learner engagement and support modular learning pathways. The paper also introduces a proposed micro-credential design framework aligned with credit point pathways. This paper offers practical insights and lessons relevant to other institutions aiming to align flexible learning offerings with industry needs. Examples of developed micro-credential courses and digital badge pilots are provided to illustrate the institutional strategy model. Key challenges related to quality assurance, scalability, and the recognition of alternative credentials are also discussed.

Keywords

Microcredentials, digital badges, flexible learning, instructional design, private higher education, credential implementation

1 Introduction

Recent trends in the rising cost of higher education, debates about how modern learners learn and their expectations, industry concerns about graduate skills, and students' challenges connecting with job opportunities have prompted education providers to rethink creative ways to provide knowledge transformation and learning experiences (McGreal & Olcott, 2022; Selvaratnam & Sankey, 2020; Oliver, 2019). The landscape in higher education is evolving with a growing demand for short courses to upskill and shareable credentials that help build social and professional identity (Fitzgerald et al., 2022; Varadarajan et al., 2023). On the other hand, COVID-19 has changed the education sector, highlighting the need for flexible approaches like micro-credentials and digital badges to enhance graduate employability (Ahmat et al., 2021; Brown et al., 2023).

Micro-credentials and digital badges represent discrete academic achievements or valued skills (Alt, 2021; Cheng et al., 2020). They can also recognise learning and skill building that, while not part of a formal degree program, enhances, or complements it. As such, short courses with badges or micro-credentials are becoming an increasingly popular way for universities to fully document the breadth of student learning to show achievements and signal skill development. These small achievements signify incremental learning and progress toward more significant educational goals (Cheng et al., 2020; Morris et al., 2019). Research shows that implementing micro-credentials and digital badges promotes additional educational value, such as promoting lifelong learning concepts by helping learners acquire industry-specific and practical skills, which can lead to further learning and employment opportunities (Oliver, 2019; Brown et al., 2023; Varadarajan et al., 2023, 2025). These evolving demands underscore the need for educational models that can accommodate the current academic and professional landscapes and are resilient enough to adapt to future challenges, as reflected in the early-stage design and piloting of micro-credentials and digital badges (Brown et al., 2023; McGreal & Olcott, 2022).

This paper presents a reflective institutional design study on flexible learning in higher education. It provides a strategic account of the early-stage piloting and design of micro-credentials and digital badges at the Higher Education Leadership Institute (HELI), a private higher education provider under the Education Centre of Australia (ECA), based in Melbourne. HELI primarily offers Master's and Graduate Certificate programs in digital education, higher education practice, and research. Drawing on institutional documentation and practitioner insight, this paper outlines the rationale, design logic, and implementation pathways for credentialing short, modular, and flexible learning experiences, while also aiming to strengthen academic partnerships in higher education (Chukowry et al., 2021; Fung, 2017). This paper presents a micro-credential implementation framework, providing a practical guide for institutions to adopt or enhance similar initiatives, thereby contributing to ongoing discussions about this field. The micro-credential courses reported in this paper were unbundled from award courses to ensure sound pedagogy and quality assurance, and were specifically designed to support the distance education modality (Cliff et al., 2022).

In light of these considerations, the following Section 2 delineates the study's objectives within the prevailing context, setting the stage for a comprehensive exploration of micro-credentialing initiatives. Section 3 introduces the digital badges design. Section 4 provides details on the conceptual framework and the design of online micro-credentials. Section 5 presents examples of

digital badges and micro-credentials pilot. Section 6 discusses the contribution of this paper, its limitations, and future work in the field of micro-credential course offerings in higher education.

2 Context and strategic framing

2.1 Design and approach

This paper adopts a reflective design study approach (Laurillard, 2013) to illuminate the strategic considerations necessary for integrating micro-credentials and digital badges into higher education curricula. It focuses on institutional intentions, design processes, and the motivations behind adopting micro-credentialing strategies (Gregg et al., 2022; Varadarajan et al., 2023). Specifically, it shares the institutional rationale, design approach, and pilot implementation process for a suite of micro-credentials and digital badge offerings developed at the Higher Education Leadership Institute. While empirical evaluation of outcomes is beyond the scope of this paper, illustrative examples are used to reflect on learner-facing design decisions and their alignment with broader institutional goals. This design study approach reflects the growing interest in short-form, stackable learning across the sector, but also reveals a need for more defined internal processes, a challenge noted by Brown and Duart (2024), who found that even established institutions lack transparent micro-credential governance and learner information systems.

2.2 Strategic foundations and institutional context

The initiative was implemented in a private higher education institution located within a major education centre in Australia. HELI primarily offers postgraduate-level programs, including a Master of eLearning and a Graduate Certificate in Higher Education Academic Practices, alongside other colleges delivering higher education qualifications in fields such as business, information technology, and healthcare. The institution primarily serves working professionals seeking flexible, practice-oriented study options, including both domestic and international students.

The strategic decision to develop and implement micro-credentials and digital badges was influenced by the growing demand for short, stackable learning opportunities, the need for more visible recognition of both assessed and unassessed achievements, and policy signals at national and global levels encouraging lifelong learning (Ahmat et al., 2021; Brown et al., 2023; Oliver, 2019; Fitzgerald et al., 2022; Varadarajan et al., 2023). In addition, HELI was seeking new pathways to expand its learner base and strengthen its competitive positioning. Hence, at an institutional level, micro-credentials were viewed as a mechanism to extend flexible learning options without disrupting the existing award course structures accredited by the Tertiary Education Quality and Standards Agency (TEQSA). At the same time, the initiative aimed to create structured pathways for lifelong learning and professional upskilling through recognised, shareable credentials (Ahmat et al., 2021; Brown et al., 2023; Oliver, 2019). The ability to personalise learning through modular design and digital platforms supports flexible learning opportunities. Recent simulation research using GenAI demonstrated how learners could dynamically construct micro-credential pathways by selecting subjects of interest within a broad curriculum pool, advancing the notion of flexible curriculum design in open and distance learning (Öncü, 2024).

2.3 Conceptual foundations

The conceptual framework for this paper is situated at the intersection of flexible and lifelong learning, continuous education in higher education, and the development of micro-credentialing systems. By integrating micro-credentials and digital badges into the educational framework, HELI addresses the need for personalised and industry-relevant learning pathways. Micro-credentials recognise incremental learning achievements, supporting a modular and accessible approach to education (Australian National Micro-credentials Framework, 2021; Cheng et al., 2020; Oliver, 2019).

There has been no standard definition of digital badges and micro-credentials (Varadarajan et al., 2023, 2025). For this paper, micro-credentials refer to short, standalone courses that are assessed, quality-assured, and aligned to specific learning outcomes. These were developed either by disaggregating components of existing award courses or designing new content to address emerging industry and learner needs. In this institutional context, the two terms were clearly differentiated in both design and function as shown in the Table 1 below:

Table 1: Institutional Distinction Between Micro-credentials and Digital Badges

Credential Type	Definition	Purpose	Assessment	Platform
Micro-credentials	Short, standalone courses aligned to defined learning outcomes, often disaggregated from award courses or newly developed.	Formal recognition of specific skills or knowledge areas.	Yes – quality-assured and aligned with national frameworks.	Open course delivery platform or institute internal Canvas
Digital badges	Digital badges are awarded for participation, completion, or small milestones.	Motivational artefacts to promote engagement and visualise progress.	No – ungraded or formative.	Institute internal Canvas

Digital badges were used in this case to recognise unassessed learning achievements such as participation or completion. They served as motivational artefacts within the institute's learning management system (Canvas), either independently or as part of micro-credential courses. These badges marked learner progress and engagement but did not constitute formal qualifications. Although digital badge technologies can, in some contexts, involve blockchain for verification (Choi et al., 2019), the Canvas Credentials system used in this initiative did not incorporate blockchain infrastructure. Accordingly, this paper does not engage with the technical infrastructure of credentialing systems, but instead focuses on their pedagogical and strategic use.

The institute's approach to micro-credential design was informed by the following principles outlined in the Australian National Microcredentials Framework (ANMF) (Australian Government, Department of Education, Skills and Employment, 2021):

- Outcome-based
- Responsive to industry needs
- Tailored to support lifelong learning
- Transparent and accessible

Micro-credentials were delivered via the institute's learning management system or third-party platforms such as OpenLearning. Each course included structured information on learning outcomes, delivery mode, assessment methods, start dates, duration, and quality assurance processes, consistent with national guidelines.

The following sections describe the strategic considerations, design decisions, and lessons learned from these pilot efforts, grounded in institutional documentation and reflective practitioner insight.

3 Student digital badge design

As part of the broader micro-credentialing strategy, HELI implemented digital badges to scaffold learner engagement and recognise participation milestones. As outlined in Section 2.3, digital badges were issued via Canvas Credentials (formerly Badgr), embedded into the LMS to support learner motivation and progress tracking (Gregg et al., 2022; Varadarajan et al., 2023; Venaruzzo & Diaz, 2025). The design of these badges was informed by principles of motivation, progression, and visibility of learning.

Digital badges were conceptualised as visual markers of achievement tied to specific activities or learning behaviours, such as completing a module, participating in a discussion forum, or submitting a formative task. These were not linked to formal assessment outcomes but instead aimed to:

- Reinforce learner progress across modular content;
- Recognise sustained participation and engagement;
- Support learner motivation through visible milestones;
- Create a foundation for potential use in co-curricular and staff development contexts.

The initial implementation focused on five subjects within the Master of eLearning program. Badges were issued at milestone points—typically mid-semester and upon completion of designated tasks. Learners were required to engage with course elements in a linear sequence, with badges unlocked only after prior tasks (e.g., reading content, quizzes, forum participation) were completed (see Figure 1).

Figure 1: Digital badge examples

HELI adopted a staged process to guide development, including strategy planning, platform testing, badge prototyping, and iterative refinement based on user feedback, as shown in Figure 2 below.

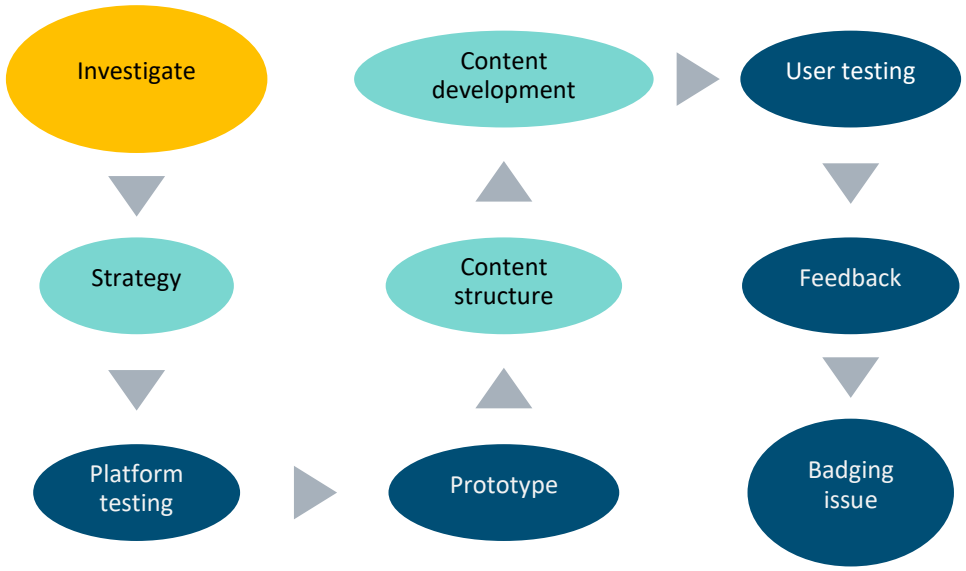

Figure 2: Digital badge implementation procedures

Educators monitored badge claims and student progression through Canvas reporting tools. End-of-semester unit evaluations indicated that learners viewed badges as meaningful indicators of progress and motivation. Several students noted that earning badges—particularly in asynchronous or self-paced modules—contributed to a sense of achievement. These responses support previous research on gamification and learner motivation in online learning (Delello et al., 2018; Stefaniak & Carey, 2019). While the badges were not credit-bearing, their consistent design and visibility within the LMS contributed to pacing and engagement. This suggests that,

when aligned with thoughtful instructional design, digital badges can enhance learner interaction and motivation in flexible course environments (Gregg et al., 2022; Varadarajan et al., 2023).

The integration of digital badges into courses also informed the broader development of micro-credential offerings, particularly in shaping learner engagement strategies and modular course structures. While digital badges served as motivational artefacts within both assessed and non-assessed contexts, the design of micro-credentials required more formal alignment with learning outcomes, assessment criteria, and quality assurance standards. The following section outlines the institutional framework for micro-credential course design, highlighting how modularity, credit alignment, and platform selection were addressed to support both learner needs and institutional goals.

4 Micro-credential courses design

Successful implementation of micro-credentials programs requires a clear program vision, support, and buy-in from various stakeholders within the institute (Stefaniak & Carey, 2019). The institution's transition to micro-credential courses and digital badges was motivated by a multifaceted rationale. The institution's transition to micro-credential courses and digital badges was motivated by multiple factors, including rising tuition costs, evolving learner expectations for flexible, skills-based education, and growing industry demand for specialised graduate capabilities (McGreal & Olcott, 2022; Oliver, 2019; Selvaratnam & Sankey, 2020). In response to these shifting conditions, it became imperative to introduce innovative, modular approaches to educational delivery. Micro-credentials and digital badges represent not just a shift in delivery but a philosophical alignment towards more granular, skill-specific learning that complements and enhances traditional degree pathways. This strategic pivot aimed to respond to the immediate challenges posed by the COVID-19 pandemic and lay the groundwork for a more resilient and adaptable educational model at the institute, and offer an example for other private higher education providers.

4.1 Framework for micro-credential design and implementation

The framework illustrated in Figure 3 was informed by recent international and national efforts to formalise implementation frameworks for micro-credentials. The Institutional Readiness and Maturity Index framework proposed by Varadarajan et al. (2025) highlights the importance of institutional preparedness, governance, and cross-functional coordination. Similarly, Charles Sturt University's micro-credential framework reported by Wheat (2022) provides a sector-specific example of aligning credential purpose, assessment, and Australian Qualification Framework credit pathways (Australian Government Department of Education, 2019). Kennesaw State University's micro-credential initiative in the United States, reported by Lokey-Vega et al. (2024), demonstrates the value of a campus-wide governance model, including transparent approval processes, platform integration, and taxonomy development to support long-term scalability and quality assurance.

Drawing on these models, the institute's framework categorises micro-credentials and digital badge offerings by course type, intended audience, delivery platform, and learning purpose. It distinguishes between three main types: non-stackable micro-credentials, stackable (credit-bearing) micro-credentials, and staff professional learning credentials. Figure 3 illustrates this institutional implementation framework, which was designed to support professional, modular, and stackable learning aligned with strategic priorities for flexible delivery and industry relevance. This approach responds to international calls for quality-assured, fit-for-purpose

micro-credentials that bridge the gap between traditional qualifications and the evolving demands of the workforce (Lokey-Vega et al., 2024; Varadarajan et al., 2025).

In the framework, non-stackable micro-credentials include (1) free, non-assessed courses designed for access and engagement, and (2) fee-based, assessed courses designed to support recognition of prior learning (Iniesto et al., 2022; Venaruzzo & Diaz, 2025) into formal qualifications.

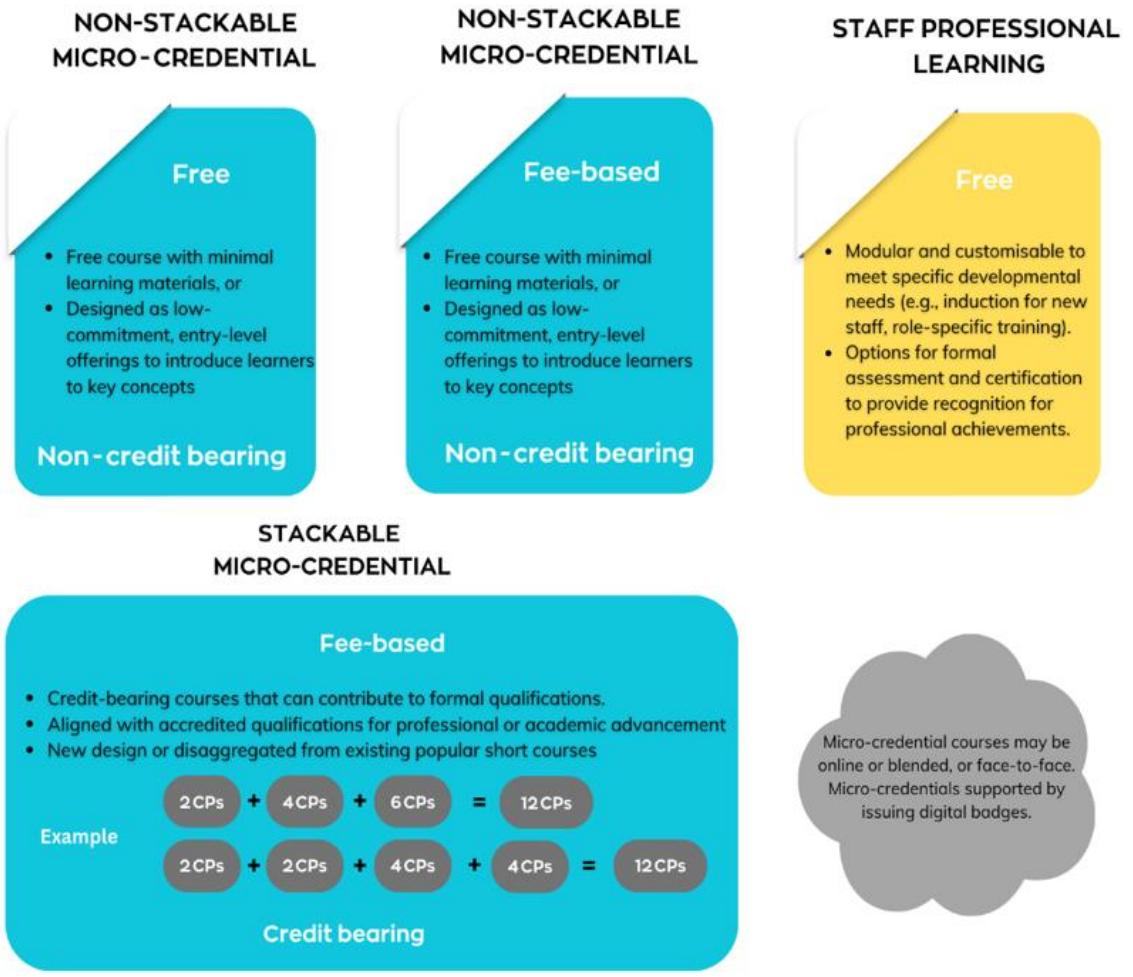

Figure 3: Institutional Micro-credential Implementation Framework

This framework guided instructional design decisions, including the integration of asynchronous and synchronous activities, interactive learning tools, and modular content design (Brown et al., 2023; Peters & Romero, 2022). These considerations included aligning course offerings with industry needs, ensuring quality assurance through rigorous assessment methods, and leveraging technology to provide a flexible and accessible learning experience. The framework above shows credit point systems aligned and mapped to the Australian Qualifications Framework (AQF) learning outcomes (Australian Government Department of Education, 2019). This alignment addresses the challenge raised by Brown and Duart (2024), who highlight a need for clear credit pathways, assessment design, and recognition of prior learning (RPL) integration in the institutional quality assurance processes for micro-credentials.

Before implementing the micro-credentialing and digital badging strategy, all of the institute's subjects (as part of a Graduate Certificate of Higher Education Academic Practice program and a Master of eLearning program) were already offered in Canvas with a modular design approach. This approach facilitated the unbundling of existing courses into stackable components, each with a smaller volume of learning. Stackable micro-credentials can contribute towards a broader graduate certificate qualification, offering benefits for upskilling, employability, and professional development (Sargent et al., 2023).

The institute's suite of micro-credential courses is hosted on an online learning platform called Open Learning. This strategic intent is to allow a digital platform to expand access to education and meet modern learners' needs (Huda, 2024; Liu et al., 2020; Brown et al., 2021). These courses range from non-stackable short courses, providing a brief introduction to a subject, to stackable courses that potentially lead to professional qualifications or academic credits. The institute's design and internal approval processes for micro-credentials were aligned with international quality assurance expectations on implementing micro-credentials. This proactive step responds to the quality gaps and institutional immaturity noted in recent sector reviews (Brown & Duart, 2024), which identified the need for internal frameworks and leadership-driven systems to mature micro-credential ecosystems. The following sections detail how this framework could operate through three categories of micro-credential offerings: non-stackable, stackable, and professional learning modules.

4.2 Non-stackable micro-credential course

Non-stackable micro-credential courses were developed as entry-level, low-commitment offerings designed to expand access, test market interest, and build engagement with potential learners. These were delivered via an external open course platform to support discovery and flexible participation. Two distinct types of non-stackable micro-credentials were offered:

- Free micro-credentials: — e.g., a two-week course on technology-enhanced learning with embedded quizzes or discussion tasks. Completion led to the awarding of a digital badge or certificate.
- Fee-based micro-credentials: These courses included structured assessment tasks aligned with defined learning outcomes. Successful completion enabled the award of a certificate that could be considered for recognition of prior learning toward credit-bearing courses within the institute (Iniesto et al., 2022; Venaruzzo & Diaz, 2025). The fee structure supported sustainability and positioned these credentials as bridges to formal qualifications.

This distinction between non-assessed (free) and assessed (fee-based) non-stackable micro-credentials reflects the institute's dual intention to promote both open access and structured progression options. The "pay to certify" model refers specifically to the assessed fee-based version, where learners have options to pay to complete a formal assessment and receive a credential that can articulate into future study.

To ensure broad accessibility and engagement, non-stackable courses were intentionally designed with:

- Low volume of learning to maintain participant momentum and avoid overload.
- Minimal staff engagement, supporting scalability and reducing delivery costs.
- Strategic content aligned with the institute's award programs to build familiarity and trust in the learning experience.

While free courses prioritised reach and awareness-building, fee-based offerings created structured pathways and recognition options, thereby extending the role of non-stackable micro-credentials beyond awareness and toward recognised achievement.

4.3 Stackable short courses

Stackable micro-credential courses were developed to contribute credit towards formal qualifications and support academic or professional advancement. These were delivered via online platforms such as OpenLearning or Canvas, with full alignment to AQF and internal credit approval processes.

Each stackable micro-credential was:

- Mapped to award course learning outcomes;
- Assessed through formal tasks;
- Designed to meet a defined volume of learning (e.g., 2–4 credit points per module);
- Validated through a credit recognition or prior learning framework.

This approach follows the high level of micro-credentials principles suggested by the Australian Government Department of Education, Skills and Employment (2021):

- The micro-credentials have been built based on the module blocks within the existing courses (or called subjects or units in some higher education institutes for a unit of study). This approach also aims to build a rapport with the institute's brand and academics.
- Academics engaged in managing the micro-credentials are responsible for nurturing participants through the next stage of their decision process throughout the course and towards the end of the micro-credentials.

Academics involved in these courses were encouraged to:

- Support learner decision-making throughout the course;
- Clarify pathways to further study (e.g., into a Graduate Certificate or Master's program);
- Reinforce the learning experience as a representative of the quality and standards of TEQSA-accredited programs.

Given the nature of the learner cohort—many of whom balance work and family responsibilities—each course was designed with flexible pacing in mind, allowing learners to progress at a manageable rate while meeting the intended learning outcomes. Ongoing engagement and post-completion promotion of related award programs were also built into the delivery model.

4.4 Micro-credentials in staff professional learning

Although not yet implemented, the staff professional learning model was prototyped through cross-college consultations and co-design workshops (see Table 2). This model proposed offering micro-credentials with optional formal assessment for participants seeking verification or credit. There are several benefits to this approach (Brown et al., 2023; Jones et al., 2018; Young et al., 2019):

- Reduces barriers to commencement/fear of overcommitting
- Enhances motivation and social identity/recognition
- Reduces training costs
- Enables a start-anytime model and the ability to allocate resources for marking as needed.
- Tracking outcomes is more realistic (i.e. nurturing learners who only want the upskilling versus supporting those who intend to complete the assessments/credit offering).

Courses would be hosted in the LMS and include outcomes such as participation in discussion forums, activity completion, and applied learning. Assessment and verification could involve employers, peers, or professional associations, depending on context.

To encourage the scalability and feasibility of the process, a professional development co-design process was followed, allowing the customisation of the program so that staff in different courses (colleges) could drive the change themselves. The process empowers stakeholders to identify the

developmental needs of their specific cohort. This means that the design of modules for professional development allows the institute to take a nuanced and customised approach to reflect the differences in teaching and learning skills in each college course. These micro-credential courses can be developed and delivered in Canvas as LMS and use digital badge tools like Badgr and Credly to issue certificates or awards.

Table 2: Prototyping the professional development scenarios

Scenario	Description	Micro-credential course
Induction for new academic staff	2- 4 modules may be selected to identify the most relevant capabilities for new teaching staff.	• Understanding learners and teaching context • Designing and implementing diverse, authentic learning
Inductions for new roles	2-4 modules may be selected to identify the most relevant for each role, e.g. promotion to a Program Coordinator.	• Designing for Diversity & Industry • Designing lesson plans • Embedding future employment skills in learning
Teaching Excellence Application	2-4 modules may be selected, providing a recommended pathway for the Teaching Excellence application.	• Obtaining 80% of the modules for professional development
Course specific programs	2-4 modules may be selected as a baseline for teaching within a specific College.	• Engaging & networking with Industry • Creating a portfolio for professional practice • Research and Publishing in teaching-related areas.

The following section reflects on the implementation progress to date, with a focus on the development stage of micro-credentials and lessons learned during the institutional preparation for delivery.

5 Pilot of micro-credentials and digital badges

5.1 The implementation of digital badges

The initial purpose of using digital badges was to encourage learner engagement and provide recognition for specific achievements or milestones (Delello et al., 2018). Digital badges were integrated into both micro-credentials (via the OpenLearning platform) and traditional courses (via Canvas). Both were planned to be used as an award to enhance learner engagement and motivation (Varadarajan et al., 2023; Gregg et al., 2022). The design included gamification

elements such as leaderboards, progress tracking, and automatic badge issuance upon completion of key learning activities.

Badges were embedded at mid-term (e.g., Week 5) and end-of-term (e.g., Week 9), triggered by students completing modular learning tasks such as viewing content pages, attempting non-graded quizzes, and participating in discussion forums. Course content followed a linear sequence, with badges unlocked only after preceding tasks were completed. Figure 4 shows how badges were embedded in the Canvas LMS modules.

The figure below shows how the badges were embedded in the modules in Canvas.

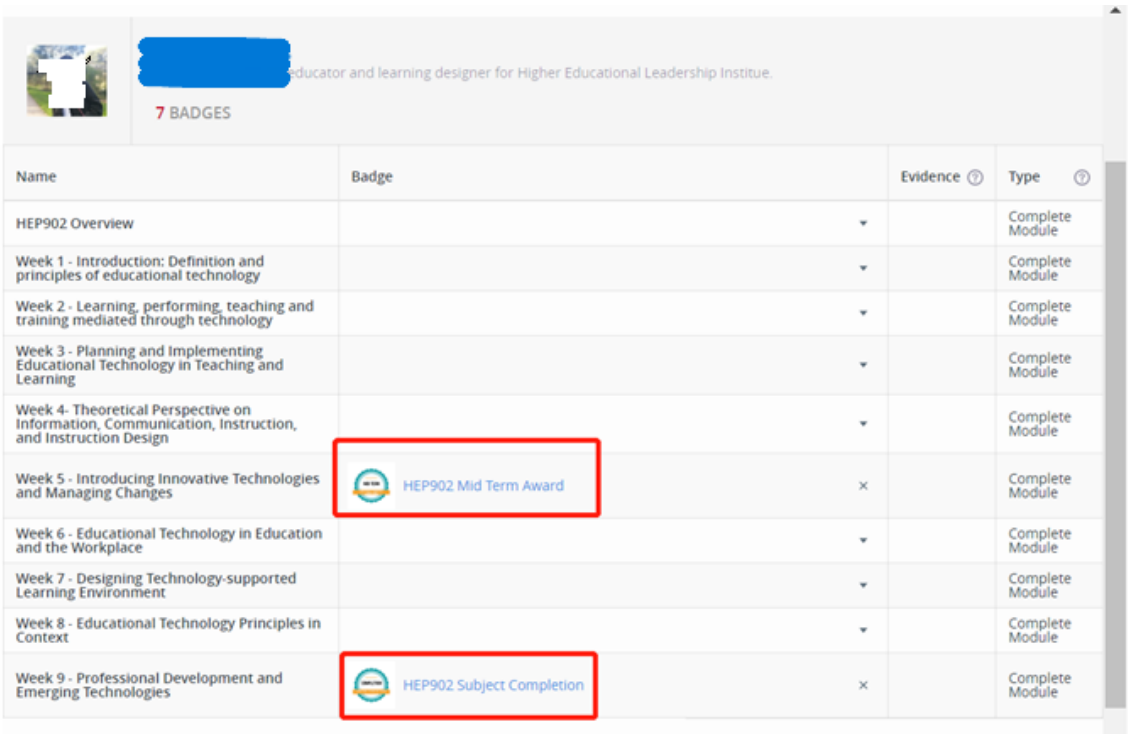

Figure 4: Digital badges embedded in the learning modules in Canvas

Educators were able to track learners' badge progression using LMS reporting tools. This visibility supported engagement by enabling feedback and recognition throughout the course. Learners were invited to reflect on their experience through end-of-semester surveys.

Figure 5 illustrates the badge leaderboard available to instructors, providing a visual summary of learner progress. Educators could check learners' progress in claiming the badges. This aligns with the argument that the gamification aspects of digital badges, such as leaderboards and level-up opportunities, encourage continuous learning and improvement by allowing learners to set goals for completion (Delello et al., 2018). Learner comments about motivation and progress tracking suggest alignment with motivation theories such as self-determination theory and gamified learning frameworks (Gregg et al., 2022), even though these were not explicitly used in the design phase.

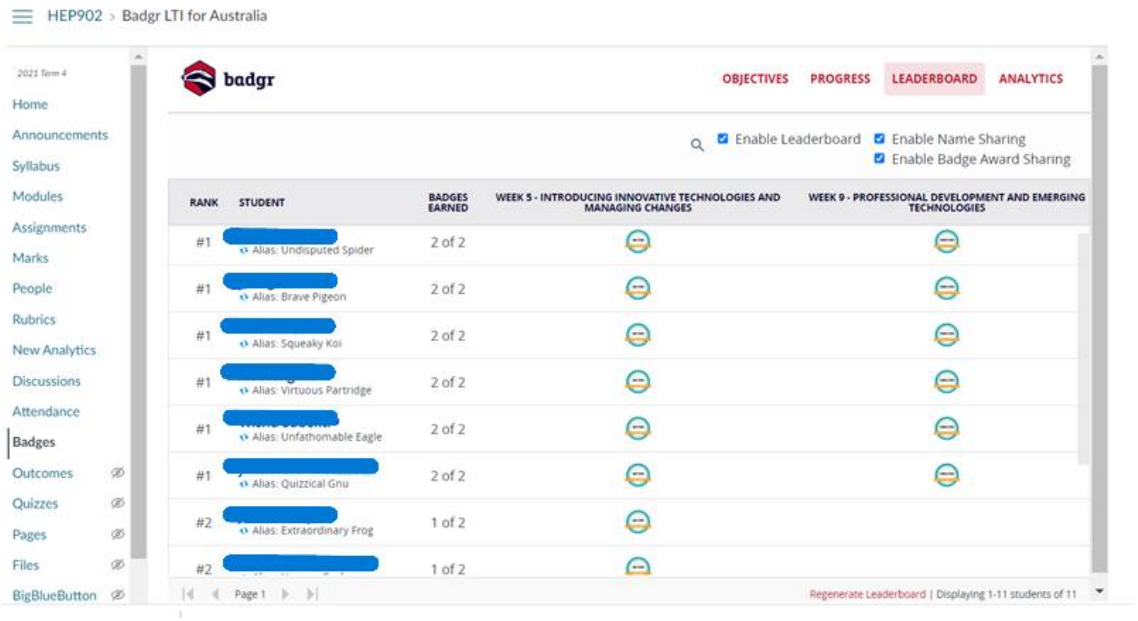

Figure 5: Digital badge leaderboard

Figure 6 below shows a sample learner badge profile, highlighting the gamification elements embedded in the design.

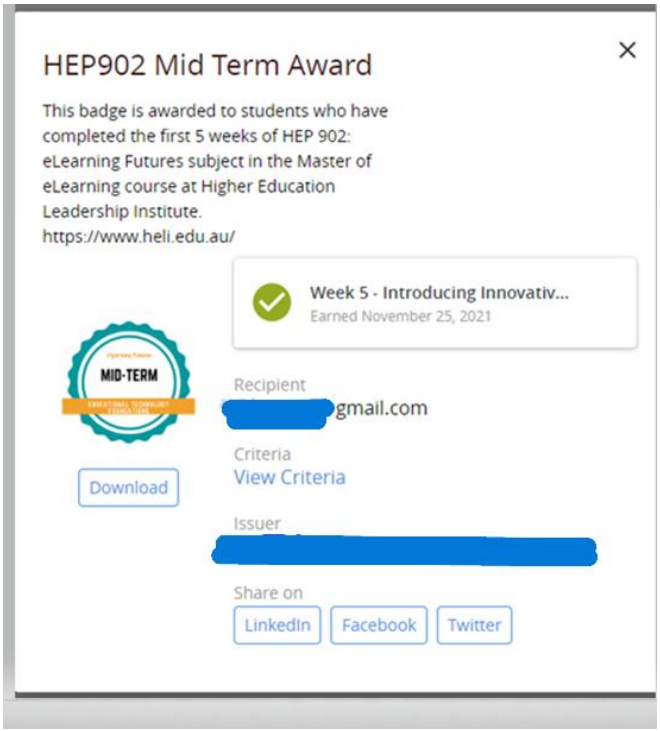

Figure 6: Digital badge award profile

The implementation of digital badges has been anecdotally influential in enhancing student motivation in the process of learning in the subject (Stefaniak & Carey, 2019； Gregg et al., 2022). Anecdotal feedback gathered from end-of-semester course evaluations, learner reflections on assessment tasks, and online discussion posts suggested that digital badges contributed to student motivation and perceived progress. Students reported that the visible milestones embedded in the LMS encouraged them to complete learning tasks and provided a sense of accomplishment—particularly in asynchronous and self-paced environments. These observations, while not formally evaluated, reinforce the value of integrating gamification and visual recognition mechanisms in flexible learning designs (Gregg et al., 2022; Stefaniak & Carey, 2019). Informal feedback also emerged through learner reflections and comments in pilot course discussions, indicating that the modular structure of the micro-credentials helped reduce cognitive load and improved clarity. These insights, while not captured through formal data collection, offer useful directions for future course refinement and evaluation planning. This feedback underscores the badges' role in fostering a sense of achievement and progress, encouraging students to engage more deeply with the course material and adhere to timelines.

5.2 Pilot of micro-credential courses

The implementation of micro-credential courses occurred in two primary streams: non-stackable courses designed for broad public engagement and stackable credit- aligned courses developed within accredited program structures. Both streams were supported by the institutional design framework outlined in Section 4.

For non-stackable micro-credential courses, the focus was on low-barrier, low-commitment offerings. A pilot set of courses was uploaded to the OpenLearning platform. These courses included introductory topics such as technology-enhanced learning and online facilitation, and were designed with minimal staff intervention to test scalability and learner interest. This approach reflects broader trends in online learning platforms and flexible education models (Brown et al., 2023; Liu et al., 2020). While formal enrolments had not commenced at the time of writing, these pilot courses served as test beds for platform configuration, content modularisation, and interface usability. Hosting pilot courses on supported platform scalability and modular design, reflecting broader efforts in the sector to develop infrastructure for flexible micro-credential offerings. Brown and Duart (2024) similarly emphasise the need for institutions to ensure platform readiness, transparent learner expectations, and robust post-enrolment support mechanisms when implementing flexible micro-credential offerings.

In the credit-bearing stream, stackable micro-credentials were developed by disaggregating components from the Master of eLearning and the Graduate Certificate of Higher Education Academic Practice. The process involved curriculum mapping to ensure alignment with AQF standards and the institute's internal policies for credit recognition. Assessment tasks and learning outcomes were embedded into modular units, and course structures were published within both OpenLearning and Canvas to support different delivery models. This aligns with ANMF (2021), which recommends outcome-based, industry-responsive, and quality-assured course design.

Although student enrolment and formal delivery had not yet occurred at scale, these preparatory efforts represented a foundational phase of implementation readiness. Documentation, governance approvals, and academic oversight structures were established to ensure quality assurance (Brown & Duart, 2024), and internal briefings were conducted to build awareness across academic and administrative teams. Lessons learned from this phase highlighted the value of institutional alignment across marketing, academic, and technology teams. Early challenges included establishing clarity between promotional and credit pathways, selecting appropriate

credential metadata, and configuring LMS badge integrations. These were iteratively addressed through internal workshops and feedback from early testers and academic developers.

While staff-focused micro-credentials were still in the planning phase at the time of this report, the design principles were developed using the same conceptual and delivery framework applied to student micro-credentials. This foundational work provides a clear and adaptable pathway for the future implementation of scalable, modular professional learning opportunities for internal staff. Depending on the uptake and outcomes of the broader micro-credential and digital badge initiative, this model can be extended to support staff development programs that include optional formal assessment components for those seeking recognition or credit for advanced professional capabilities. These early stages of implementation revealed key strategic insights, including the importance of cross-functional governance, the motivational potential of digital badges when embedded in formative activities, and the need to plan for discoverability and learner transition pathways from micro-credentials into award programs. While this paper does not present empirical findings, the practice-based reflections contribute to the growing discourse on micro-credential adoption in higher education contexts.

5.3 Key challenges and lessons learned

A major challenge during the early stages of implementation was the limited shared understanding across the institution regarding key concepts such as micro-credentials, credit point mapping, and stackable learning pathways. Similar to the institution-wide governance model reported by Lokey-Vega et al. (2024), a systems approach that integrates curriculum design, administrative oversight, and centralised digital credentialing is critical for long-term viability. At the time the micro-credential strategy was initiated, conceptual clarity was largely confined to the academic team—particularly the first author, who led course development, badge design, and platform configuration. While the pilot courses were successfully developed on an open course platform (rather than the institute's learning management system), broader institutional alignment was initially lacking. Key non-academic areas—including marketing, student services, and recruitment—were not engaged early in the process, leading to gaps in internal communication, learner support, and promotional readiness. These delays reflect early implementation challenges also identified by Lokey-Vega et al. (2024) and Varadarajan et al. (2023), reinforcing the need for collaborations among cross-functional stakeholders and pre-defined governance structures. Without a coherent framework, early-stage efforts risk fragmentation, unclear learner pathways, and inconsistent quality assurance—issues observed across multiple institutions (Brown & Duart, 2024; Lokey-Vega et al., 2024). The development and use of a visualised micro-credential framework, as outlined in Section 4, proved critical in communicating the strategy across departments and building shared understanding.

Given the small size of the institution and the fact that micro-credentials were initially developed by a small group of academic staff, maintaining consistency in design and delivery across courses was challenging. This raises questions around scalability, especially when subject-matter experts are not consistently available or when institutional quality assurance processes are not yet fully equipped to support short-form learning. These challenges echo recent findings by Brown and Duart (2024), who observed significant gaps in institutional-level quality assurance systems for micro-credentials globally. Retrospectively, earlier collaboration with professional and support teams, clearer role delineation, and institution-wide capability building would have contributed to a smoother rollout. Documenting this reflective process—and the supporting micro-credential design framework—is intended to support other institutions navigating similar implementation challenges.

6 Discussion, conclusion, and future work

Building on the implementation insights and institutional lessons outlined in Section 5.3, this final section discusses the broader implications of the initiative and its contribution to the field. This paper presents a reflective institutional design study examining the strategic development and early-stage implementation of micro-credentials and digital badges within a private higher education institution. This paper highlights how digital badges and micro-credentials can be deployed to support learner motivation, enable modular and flexible course delivery, and strengthen alignment between educational offerings and emerging industry needs (Alt, 2021; Gregg et al., 2022; Liu et al., 2020; Sargent et al., 2023; Varadarajan et al., 2023).

While the insights are drawn from the specific context of one institution, the design, approaches and micro-credential framework design outlined in Section 4 and implementation strategies outlined may be instructive for other higher education providers, particularly in the private sector, considering similar models (Brown et al., 2023). This study contributes to the growing literature by offering a practical, context-specific framework for implementing micro-credentials and digital badges that are customisable and adaptable to varying institutional goals. As Brown and Duart (2024) note, institutional practices around micro-credentials remain underdeveloped, with limited visibility of quality assurance and learner support processes. This paper addresses that gap by providing a design-focused account of early implementation, rather than reporting empirical outcomes.

While formal evaluation was not conducted, anecdotal feedback from educators and early student interactions indicated promising signs of learner interest and engagement. However, to substantiate these initial impressions, systematic empirical research is needed to assess the educational impact of micro-credentials and digital badges on learner outcomes. The strategic use of micro-credentials and digital badges shows promise in complementing traditional degree programs while supporting ongoing professional development in various fields (Chukowry et al., 2021). The framework developed includes integrating digital platforms for course delivery and implementing strategies to engage both learners and industry partners, offering a blueprint for enhancing learner engagement and motivation (Alt, 2021; Cheng et al., 2020; Oliver, 2019).

There are important limitations to note. As a single-institution design study, the generalisability of the findings is limited. Future research should prioritise empirical evaluation of micro-credentials' impact on learner outcomes, with attention to long-term effects on learner experiences, learning progression, and institutional uptake. Comparative studies across diverse higher education contexts would further illuminate enablers and barriers to successful adoption (Brown et al., 2023; Varadarajan et al., 2023, 2025). Additionally, exploring the long-term effects of micro-credentials and digital badges on student outcomes and institutional growth will be critical in understanding their broader impact (Brown et al., 2023; Sargent et al., 2023). A continuous improvement model—training issuers and iterating standards, as reported by Lokey-Vega et al. (2024) could enhance institutional readiness and ensure fidelity to credential standards over time. By addressing these limitations and building on the findings, institutions can better understand how to implement micro-credentials and digital badges effectively, contributing to more responsive and flexible higher education environments.

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Data Availability

This paper is a reflective institutional design study. It does not rely on formally collected empirical data but instead draws upon the authors' professional experiences, reflective practices, institutional documentation, and teaching-related observations. Therefore, no additional data sets or supplementary empirical data are available.

Competing Interests

The authors have no competing interests to declare.

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