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Navigating the Terrain:

Emerging Frontiers in Learning Spaces, Pedagogies, and Technologies

What does the Ideal Postgraduate Micro-Credential Look Like? A Student Perspective

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Micro-credentials have been widely adopted in tertiary education to provide a means of recognising new types of study, typically focusing on specialist topics with an applied focus. Although they are primarily designed as standalone certifications, they are increasingly playing a role within larger programmes of study, either as additional learning opportunities or integrated through the stacking of credits. In postgraduate study, micro-credentials can support specialisation and differentiation within higher degrees such as master's programmes. However, the design of these micro-credentials varies widely in terms of focus areas, stacking options, number of credits, and time taken to complete. This article reports on an interview study of postgraduate students at a New Zealand institution who have completed at least one micro-credential as part of their learning journey in order to identify the ideal characteristics of a postgraduate micro-credential from the students' perspectives. The results suggest that the legitimacy of accreditation is valued, as is stackability, and the length should be between ten and twelve weeks for a 15 credit micro-credential. However, equally important is the way the learning is designed, with flexibility of learning, opportunities for collaboration, and a high level of critical thinking valued by the interviewees.

Keywords: micro-credential, postgraduate, student, interview, qualitative

Introduction – micro-credentials in tertiary education

In recent years, micro-credentials have emerged as an additional pathway for students to gain accreditation for tertiary study outside the traditional large-scale qualifications such as certificates, diplomas and degrees. Micro-credentials can offer more flexible and accessible pathways to education, career development, and recognised qualifications, providing a faster and more targeted alternative to traditional programmes (NZQA, 2022). They provide evidence of specific skills or competencies, rather than a broad, generalised qualification. Learners can focus on specific areas of expertise relevant to their academic or professional goals, which can be particularly valuable in a dynamic job market, where being able to upskill quickly in emerging fields of practice can help with progression and new opportunities, as well as enhancing employability (Bridgstock & Jackson, 2019; Harmea et al. 2024). That said, there is some evidence that students have reservations about whether micro-credentials may be perceived as highly by employers as other qualifications (Yilik, 2021) though where micro-credentials are aimed at professional development in a specific industry, their value can be well-recognised (Young et al., 2019). From a less positive perspective, micro-credentials can be seen as reducing the scope of higher learning to skills and competencies with a workforce focus, at the expense of a broader education (Ralston, 2021).

Relationships between micro-credentials and larger, traditional qualifications

Although micro-credentials are individual certifications, they can also complement more traditional postgraduate programmes. This can be as a separate additional study, where learners augment their learning with the specialised content of micro-credentials that might not otherwise be addressed in their main programme, or micro-credentials can be integrated into larger programmes through the process of stacking,

where credits gained from micro-credentials can count toward larger qualifications. Many learners find comprehensive pathways from micro-credentials to macro-credentials to be valuable in constructing their learning (Varadarajan et al., 2023). One approach to stacking is unbundling, whereby existing programmes are broken down into components that become separate micro-credentials. However, this is not an ideal strategy, since the 'value-added' of micro-credentials in terms of additional opportunities is lost (Ralston, 2021; Padmasheela et al., 2022). An interesting perspective is offered by Sargent et al. (2023), who describe the experience of delivering a postgraduate certificate comprising four stacked micro-credentials. Although the applied nature of the micro-credentials was seen as valuable by the learners, the structure of the overall learning process was much the same as going through a set of courses, with all the usual challenges of completing a larger qualification that involves intense study over many weeks to achieve the necessary credits.

Both approaches (unbundling, and constructing a programme from a given set of micro-credentials) raise the question, what is the difference between a micro-credential and a course? One answer is that micro-credentials are often much smaller than courses in terms of credits earned. However, this makes it much harder to gain a meaningful number of credits for stacking, so some kind of balance needs to be found. Another challenge of stacking micro-credentials that are not from a given set is to ensure that a personally customised programme does not make it impossible to provide a coherent and progressive learning journey (Bridgstock & Jackson, 2019).

Affordances of Micro-Credentials in Postgraduate Education

Hanafy (2020) identified four affordances of micro-credentials for higher education: building brand awareness, stackability of achievements, recognition and portability of skills, and increasing the efficiency of issuing credentials. The first and the last of these are mainly important for the institution, not the students, but brand awareness also relates to students being able to share their achievements on digital platforms, which is a frequent link between micro-credentials and digital badging. The recognition and portability of skills relate to the accreditation of micro-credentials, but portability also suggests the importance of it being easy to identify the skills developed in a given micro-credential.

Mischewski and Christie (2018) identified a wide range of approaches and delivery models for micro-credentials but noted that one affordance recognised by stakeholders was being able to link professional development with a recognised system of accreditation. Stackable micro-credentials have the additional affordance of allowing learners to construct a personalized portfolio of skills and achievements that can be leveraged in academic or professional contexts (Young et al., 2019).

What makes a good postgraduate micro-credential?

Given the various factors discussed above, it is useful for providers of postgraduate micro-credentials to have insights into what design and implementation factors are important to students. This issue has motivated this study, which sought to investigate what makes a good postgraduate micro-credential from the perspectives and experiences of students who have completed them, particularly those who also have experience of other forms of postgraduate study.

Background to the Study

In 2019, the New Zealand Qualifications Authority (NZQA) formally acknowledged and integrated micro-credentials into their qualification framework. Since then, many institutions have had micro-credentials accredited by NZQA (455 at the time of writing), but the majority of these have been below tertiary level, and postgraduate micro-credentials are few and far between, despite the potential of postgraduate micro-credentials to be 'low hanging fruit' for Australasian institutions (Selvaratnam & Sankey, 2021). Figure 1 shows the distribution of micro-credentials across the 8 levels of the NZQA Qualifications Framework. Only 24 of

these are at the postgraduate level (level 8), and these are delivered by a total of only five providers. The authors' institution, discussed in this research, is one of these.

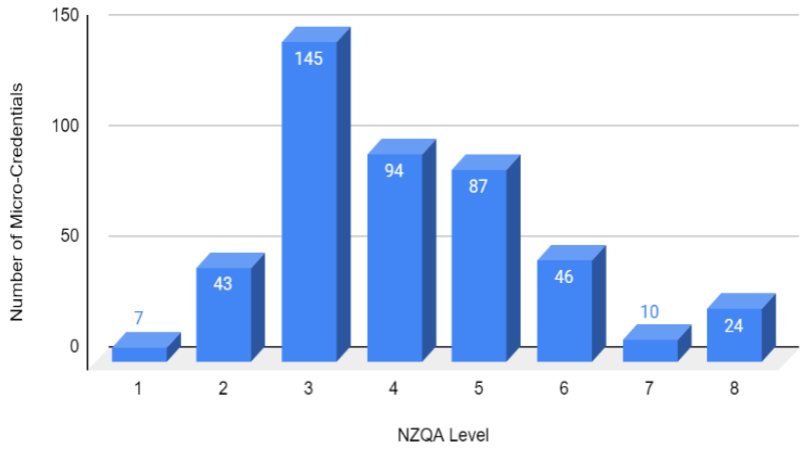

Figure 1. The number of micro-credentials at each level of the New Zealand qualifications framework (as of July 2024)

Looking at the credit values of the 24 micro-credentials offered across the five providers, there is a wide range from five to 40 credits. This raises interesting questions about why there is such a variation, what the impact on students might be, and what other factors may be important to the design of postgraduate micro-credentials. There has historically been a wide variation in the length and time commitments of micro-credentials, with timescales ranging from 1 to 15 months and time commitments ranging from just 1 hour per week to 40 hours (Pickard et al., 2018) but the postgraduate context would be expected to constrain these variations somewhat, if only because the number of offerings is relatively small.

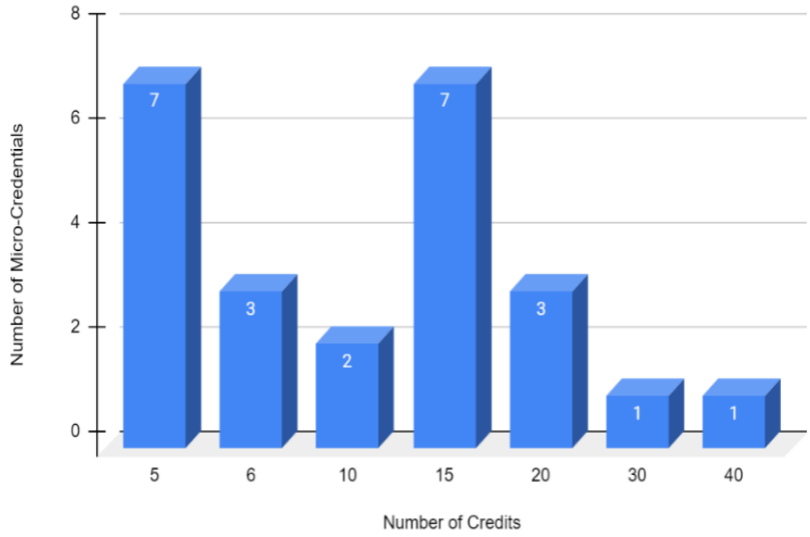

Figure 2. The range of credits awarded for postgraduate micro-credentials approved by the New Zealand Qualifications Authority

Based on the key characteristics of micro-credentials outlined in the literature, this research project therefore set out to answer the question: What is the ideal design of a postgraduate micro-credential from the learner's perspective?

Methodology

This study employed qualitative interviews to gain deep insights into students' perspectives on postgraduate micro-credentials. Interviews were chosen as the primary data collection method due to their ability to facilitate in-depth exploration of individual perspectives and experiences. This approach allowed us to capture rich and contextualised information. Interview participants were recruited from a database of students who had been enrolled in at least one micro-credential at the researchers' institution and had also enrolled in further study at the same institution. Ten invited participants volunteered to take part in an interview and had engaged in micro-credentials on a range of topics including digital skills, disruptive technologies, the Internet of Things, sustainability, and organisational psychology. Table 1 shows their learning journeys, including where micro-credentials were included chronologically in relation to other programmes. Nine of the interviewees had enrolled in either a postgraduate certificate or a master's degree before, after, or during their micro-credential study.

Table 1
The learning journeys of the 10 interviewees

Student	Learning Journey
1	Master's including 4 concurrent micro-credentials
2	PG Cert followed by 4 micro-credentials
3	2 micro-credentials followed by master's
4	PG Cert followed by 1 micro-credential
5	2 micro-credentials followed by master's
6	1 micro-credentials followed by PG Cert
7	3 micro-credentials
8	1 micro-credential followed by PG Cert
9	1 micro-credential followed by PG Cert followed by another micro-credential
10	1 micro-credential followed by PG Cert followed by master's

Questions and Interviews

Key questions discussed with the students were:

- How important to you was the accreditation of your micro-credential(s)?
- How important to you was the qualification level of your micro-credential(s) (e.g., postgraduate)?
- From your experience, what do you think is the ideal length of a micro-credential?
- How would you describe the ideal micro-credential?

Each member of the project team conducted several interviews, using the questions as a guide to ensure consistency across interviews with different students. The interviews were audio-recorded and transcribed verbatim. The data analysis followed the Applied Thematic Analysis approach (Guest et al., 2012), which uses techniques commonly associated with grounded theory. Following grounded theory terminology used in Auerbach and Silverstein (2003), we refer to repeating ideas identified in the responses to code important topics, grouped into themes to show the emerging categories. Although the data was partially structured by the interview questions derived from the literature, the analysis was explanatory (content-driven) rather than confirmatory (hypothesis-driven) since there were no pre-existing analytical categories. Repeated ideas were identified inductively from the data to suggest common themes across multiple questions, linked to the raw data.

Results

The results of the interviews are stated here based on the key questions relating to specific features of micro-credentials and how respondents interpreted these features. The responses are anonymously numbered 1 – 10 to indicate which interviewee made each statement.

How important is credentialling?

Credentialing by a recognised qualification awarding body is an important aspect of micro-credentials at the postgraduate level, based on the various aspects discussed in the literature. While not all respondents saw value in the accreditation of the micro-credentials they had completed, others felt that accreditation by a recognised awarding body adds credibility and validation to their courses of study.

> "I think especially if you're gonna do a postgraduate certificate or like a master's the fact that it is… accredited, like I think it gives it some credit, like more credibility, right?" (5)

> "that legitimacy whenever you're kind of showing people like the qualification of credential you're like this is proven" (8)

The ability to stack credentials towards higher qualifications, which requires that micro-credentials are suitably accredited, is also considered helpful.

> "If I'm intending to stack it then I'd want to know that it could be" (3)

Although accreditation was sometimes seen as less important than the learning, one respondent, discussing an experience of non-accredited micro-credential at another institution indicated that

> "the learning content is really good, it's just no one sees value in it" (1)

Overall, the responses suggest that credentialling can be a useful component of micro-credentials. Generally it enhances the credibility and potential stackability of micro-credentials, especially from an accredited institution, but its importance varies depending on the individual goals and circumstances of students. For example, those who plan to further their study would find credentialling valuable.

Our findings indicated several expectations from a postgraduate learning journey perspective, specifically that at a postgraduate level, the majority of interviewees felt strongly about micro-credentials being recognised by an official qualification awarding body. This expectation was to uphold trustworthiness of the qualification they were receiving to ensure employer confidence that the credential could be recognised to increase their value in the job market. Legitimacy is a high expectation at postgraduate level where students usually hold previous graduate level qualifications. Also, if a student intends to continue education at a higher level such as a master's degree and use the credential as a stackable or cross credited entry pathway, it is necessary that the credential be recognised. Previous research has considered complementary perspectives from governments serving as regulatory bodies and having incentives to ensure micro-credentials are available and recognised (Varadarajan, 2023). Knowing students also value having certified micro-credentials based on these results further communicates to all groups involved in their design to ensure their micro-credentials meet this criterion to best serve the interests of all stakeholders.

How important is the qualification level?

The respondents generally did not pay much attention to the level of their qualifications, being more focused on the learning process. This may have been because of an assumption that all of the micro-credentials were at the same level (postgraduate)

> "I haven't thought about the levels okay so just that it's approved so you know that it's an official qualification but the level of like is this closer to like a master's degree level" (10)

In practice, two of the micro-credentials offered were at graduate level. For some respondents, this was not an issue.

> "I probably forgot they were postgrad to be honest but only because you get invested in the learning" (9)

However, some respondents did recognise the significance of the level in that it related to possible further study.

> "it did add value in terms of that it opened up a pathway to the further study and made me aware" (7)

Overall, while qualification level might not always be top of mind for students focused on immediate learning , given the importance of the qualification level of micro-credential to any stacking opportunities, it is important to make students more aware than our respondents were of the level of study they were undertaking and what that might mean for their learning journey to support informed decision-making.

The qualification level of credentials mattered less to respondents than the overall learning process. Potential reasons could include lack of awareness of levels and assuming all micro-credentials offered by the institution are at the same level. Previous studies have also mentioned that although micro-credentials are recognised by employers the impact on employment outcomes are not strong. Therefore, qualification level may not be of concern if the student does not intend to leverage the qualification to obtain a new role (Moodie, 2022). Rather, respondents have indicated that often postgraduate micro-credentials can be an initial step into higher level education therefore the level is less important than giving students confidence that they can succeed in this learning environment.

What is the ideal length of a micro-credential?

The ideal length for a micro-credential in the opinion of our respondents varied depending on the topic and context. It is important to note that all the micro-credentials offered by the institution are 15 credits (150 hours of learning), so the respondents were effectively comparing course lengths that varied in intensity. Seven weeks for a 15 credit micro-credential, for example, is much more intense than 15 weeks for the same number of credits. The majority preferred offerings to be around 10-12 weeks, as they are easier to fit into their lives

> "that's why I signed up for that one in the first place was because it was just so short term it was quite easy to fit in with life" (3)

> "seriously bite sized" (8)

It was also felt that this length of time was long enough to explore the content in sufficient depth.

> "to get some connection and also explore topics deeply enough to come out of it with an actionable thought" (7)

Students who had experienced shorter or longer micro-credentials expressed some dissatisfaction.

> "I kind of felt like [15 weeks] was probably a bit too long" (5)

At the other end of the scale, seven weeks was thought too short.

> "that's intensive so yeah ten was fine I mean because there's two assessments in it, I think ten was yeah you wouldn't want to go too fewer" (9)

Of course, the ideal length of a micro-credential to an individual also depends on the workload, the number of assessments, and their other commitments, particularly if they are studying in their spare time.

> "working full-time, it's hard" (10)

To try to generalise from these responses, it appears that one week per credit would be suitable for the majority of part-time students, balancing educational depth with practical constraints.

What does the ideal micro-credential look like?

As well as asking specific questions about the design of the micro-credentials that the respondents had experienced, we also asked them to describe the ideal micro-credential. Relating to some of the questions already discussed above, it was believed that micro-credentials should work as standalone modules but also be stackable.

> "so if you could do two birds with one stone that would be easier, so an ideal micro-credential would be one that's within a large range of options, and I think with the stackability - standalone, but also if you wanted to carry on as part of that community right?" (9)

Linking back to the issues discussed above about timing and intensity, the respondents suggested that it should be flexible enough to fit around work commitments. One suggestion was based on varying the number of classes depending on how much of the content was to be self-directed project work, and possibly include some on-campus sessions.

> "one that isn't too long but it's flexible enough to fit in with working full-time … we could have two sessions a week, one cohort day, and scale to one session a week while you're working on your final project" (10)

Some of the suggestions placed less emphasis on the overall design and structure but focused more on the nature of the teaching and learning experience.

> "the group-based assessments, working together, presented together, massive learning…. rather than just doing your own research, in a little bubble, definitely." (7)

> "A platform and a learning ecosystem that's really easy to engage with and save your stuff and get feedback and you know, all that sort of stuff around co-creating." (6)

An important concept from the literature is that micro-credentials are often seen as being focused on real-world application and impact. This was also reflected in the interviews;

> "I like the idea of more of the group or peer-based assignments because you have to work with other people so that's practice for how you would apply it in the real world afterwards" (7)

Despite the common focus of micro-credentials of applied skills, another suggestion was that the ideal micro-credential would focus on critical thinking

> "the takeaway that I found useful was actually teaching people how to change their perspective and how to look at things differently. I think in the changing world, with things like the amount of misinformation, and just information, that's out there, I think actually teaching people to look at the information that's presented to them with some kind of rigour or questioning is actually a skill" (8)

It is hard to find a clear set of conclusions from this question, but it is worth noting that opportunities for collaborative learning, supported by a high-quality ecosystem, and an adaptive approach to course delivery, would be attractive to many students.

Previous studies have highlighted learners are typically working professionals studying on a part-time basis, and their learning needs are not always considered with regards to their overall learning experience (Salmon, 2023). Important aspects of our interviewee's experiences were the value of engagement and collaboration in the forms of group-based assessments and breakout activities, working with peers from different industries and roles, which also helps with exposure to new career possibilities and planning for the future (Zou et al, 2024). These insights advance our understanding of micro-credentials beyond the vocational standpoint that much research in this space focuses on, exploring the broader value of micro-credentials for individual development.

Summary and Conclusions

This study aimed to address the question: What is the ideal design of a postgraduate micro-credential from the learner's perspective? An interview study was carried out with ten students who had completed at least one micro-credential as part of a larger postgraduate learning journey. The key themes that stand out from the responses are postgraduate micro-credentials should be stackable toward larger qualifications, as well as provide coherent and useful stand-alone courses, and need to be designed with flexibility, relevance and application, and opportunities for collaboration. That said, features like credit stacking vary in importance depending on the individual goals and circumstances of students. It is also possible that students' perceptions are limited by the information given to them. It was evident in some cases that students were not fully aware of what level micro-credentials were on the qualifications framework, and whether or not they were stackable. Although they may not have regarded these as important at the time, institutions need to make students aware of the opportunities that micro-credentials may or may not offer in a given study pathway. Some other findings include responses that suggested that the ideal length of a micro-credential should be around one week per credit for part-time study. It is also necessary to consider being adaptive in the structure and delivery of postgraduate micro-credentials to support the time commitments and learning goals of the types of mature, professional students who are the frequent audience for this style of learning.

It is important to note although micro-credentials must be flexible to fit a student's life, as mentioned by Sargent et al. (2023) they are still challenging and structured similarly to courses. This is necessary for students to use micro-credentials as a taster for postgraduate study to gain confidence if they choose to enrol in further higher education. This relates our respondents using these micro-credentials as stepping stones to bridge undergraduate and postgraduate education while focusing on gaining specific skills relevant to their professional interests. We also found that students place importance on their study provider having a good reputation to signal their own commitment to being an innovative and forward-thinking lifelong learner. They also want employers know they have a recognised micro-credential from a reputable qualification authority that can verify the authenticity and value of their achievement. These insights give us a clearer picture on how to develop postgraduate micro-credentials that meet learners' expectations and shed light on the value that can be obtained in both personal growth and vocational advancement.

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