

Received: 02 April 2024 | Revised: 11 May 2024 | Accepted: 11 May 2024

# Exploring gaps in the quality assurance of micro-credentials: a global mapping review of current practices

Mark Brown<sup>1</sup> , Josep M. Duarte<sup>2</sup> 

<sup>1</sup> Dublin City University, Ireland

<sup>2</sup> Universitat Oberta de Catalunya, Spain

Correspondence:

Mark Brown | e-mail: [mark.brown@dcu.ie](mailto:mark.brown@dcu.ie)

---

## Abstract

Quality assurance (QA) is one of the top barriers to the broader adoption of micro-credentials at scale. This paper reports the findings of an analysis of international quality standards, practices and supports for the QA of micro-credentials. There are three parts to the study: i) a global review of the external QA of micro-credentials; ii) a focus on the internal QA of micro-credentials at the institutional level; and iii) an effort to identify some of the supports available for the development of high-quality micro-credentials. The research, undertaken in the first quarter of 2023 involved desk research, follow-up interviews and informant conversations with critical actors in QA agencies and early adopter institutions to answer three main questions: i) how are national QA agencies in OECD member countries externally assuring the quality of micro-credentials?; ii) what internal QA practices have early adopter institutions developed to implement micro-credentials?; and (iii) what institutional supports, resources, and infrastructures are available to create high-quality micro-credentials? The findings reveal a mixed picture. Most national QA agencies have yet to intentionally respond to micro-credentials, although some indicate they plan to do so in the future. QA agencies in a handful of countries have deliberately adopted common frameworks and standards for micro-credentials, with only three countries having developed specific standards or QA processes. The institutional response to the internal QA of micro-credentials is relatively immature and largely invisible based on publicly available information. The findings provide a valuable benchmark to monitor progress in responding to future fit-for-purpose QA of micro-credentials.

---

## Keywords

Micro-credentials, quality assurance, quality assurance agencies, online learning



## 1 Introduction

This paper presents an analysis of how quality assurance (QA) agencies and a purposively selected sample of higher education institutions (HEIs) across OECD member countries and the European Higher Education Area (EHEA) are assuring the quality of micro-credentials. The focus on quality assurance is timely, as a recent US survey of over 500 employers found that while they value micro-credentials, they need to learn how to assess their quality (Collegis Education, 2023). While there has been progress in the development of frameworks, regulations and funding support over the last few years, the institutional adoption of micro-credentials remains in developmental stages (HolonIQ, 2023). It is generally accepted that realising the full potential of micro-credentials will require significant changes to quality assurance and academic recognition policies (Kato et al., 2023). Robust quality assurance can establish a foundation of trust among employers and HEIs that supports the academic recognition of micro-credentials.

While one of the challenges is the lack of a commonly accepted global definition of a micro-credential (Oliver, 2022), this research is framed by the following definition adopted last year in the European Commission's Council Recommendation on a European approach to micro-credentials for lifelong learning and employability (European Commission, 2022).

Micro-credential means the record of the learning outcomes that a learner has acquired following a small volume of learning. These learning outcomes will have been assessed against transparent and clearly defined criteria. Learning experiences leading to micro-credentials are designed to provide the learner with specific knowledge, skills and competences that respond to societal, personal, cultural or labour market needs. Micro-credentials are owned by the learner, can be shared and are portable. They may be stand-alone or combined into larger credentials. They are underpinned by quality assurance following agreed standards in the relevant sector or area of activity (European Commission, 2022, p. 13).

The above definition provides the basis for a European approach to micro-credentials. It has already been adopted by many higher education institutions in Europe and beyond to support their strategies and developments in the area.

## 2 Background

In late 2020, as part of the EU-funded Microbol initiative, a two-year project, co-funded by Erasmus+ KA3 Support to Policy Reform, a survey was sent to the members of the Bologna Follow-up Group (BFUG) as well as the nominated representatives in the MICROBOL working groups to gain a picture on the state of play of micro-credentials in the targeted European countries (Microbol, 2021). The findings, representing 35 European countries, indicate the extent to which micro-credentials are included in national quality assurance systems. While the findings reveal that only two countries explicitly mention micro-credentials, the majority (15) reported that "even if they are not explicitly mentioned in the QA system at national level, they implicitly fall under it" (Microbol, 2021, p. 33).

A survey of 53 different QA agencies and organisations in 2022 conducted by ENQA reported that fewer than half currently quality assure micro-credentials (Huertas & García, 2022). Another 28% of the respondents report that an approach is being developed or they intend to develop one. A similar proportion of respondents report they do not intend to develop a strategy or do not know. Around 25% of the respondents indicate that they plan to start QA of micro-credentials in the next one to four years. A similar number do not know when they plan to start the QA of micro-credentials. When asked about the significant challenges to externally quality assuring

micro-credentials in the contexts in which they operate, respondents report that a gap or lack of supporting national legislation is the greatest challenge. This is followed by a lack of understanding of micro-credentials by the sector and a lack of clear definitions/descriptors to allow for relevant QA requirements to be captured.

A comprehensive mixed methods study on micro-credentials for labour market education and training with a strong VET focus involving 30 European countries found that various mainly internal QA processes are used (Cedefop, 2022). The study also reports that not all micro-credentials are quality-assured based on nationally established quality standards. Notably, the research argues that micro-credentials offered within formal education and training should not create additional administrative burdens for institutions offering them and follow the same standards as existing qualifications. Therefore, the report says that it is important not to view micro-credentials as a separate type of offering with a separate QA process but to integrate them into existing systems.

Similarly, a recent international survey of educators by HolonIQ (2023) found that constraints in the recognition and QA of micro-credentials were the main barriers to their adoption at scale. While these barriers have been reduced from the previous survey conducted in 2021, respondents noted “in particular the importance of regulatory and quality assurance support for micro-credentials, driven by governments and accreditation bodies” (HolonIQ, 2023). In the words of one respondent:

Beyond universities, accreditation bodies should lead the way in establishing a process that enables universities to build AMC [academic micro-credentials] into the learning journey. As much as universities can be progressive, if the accreditation body does not embrace AMC, universities might risk their accreditation – which they won't do (HolonIQ, 2023).

In summary, the growth of micro-credentials raises essential questions about regulations and QA, with European policymakers and educators needing to consider the following:

- Should there be external QA of micro-credentials?
- What is the balance between Ex-ante and Ex-post QA for micro-credentials?
- Should only trusted universities or all education providers be responsible for their QA?
- What additional QA indicators, processes and practices need to be considered in developing micro-credentials?
- Are European Standards and Guidelines (ESG) fit to address the range of quality considerations related to micro-credentials?
- Is the framework for European Quality Assurance for Vocational Education and Training (EQAVET) fit to address the range of quality considerations related to micro-credentials?
- What role should learners play in the QA and continuous quality enhancement of micro-credentials?
- Who should be responsible for the QA of micro-credentials when they are co-designed with industry partners or community bodies?
- What QA issues arise when micro-credentials are offered fully online and attract learners from outside the country?
- How often should institutions and other education providers be expected to review their micro-credentials formally and should reports be public?

### 3 Background

This section of the paper describes the methodological approach to researching both the external and internal quality assurance of micro-credentials. It outlines the desk research undertaken on publicly available information from national QA agencies and how data were collected using a purposive sample of higher education institutions likely to have more mature micro-credential implementation strategies. Efforts to triangulate the findings and gather further information are also described through follow-up conversations with key stakeholders.

#### 3.1 Research questions

The research was undertaken from the start of February to the end of March 2023 to answer the following research questions:

- RQ1: What research has already been undertaken on how external QA agencies are responding to micro-credentials?
- RQ2: How are external QA agencies currently assuring the quality of micro-credentials?
- RQ3: What institutional practices have been adopted for the development and quality assurance of micro-credentials?
- RQ4: What institutional supports are available for the development of high-quality micro-credentials?

#### 3.2 Sample selection

Initially, to answer RQ1 and RQ2, a sample of external QA agencies and relevant contact details were obtained using the publicly available membership database on the International Network for Quality Assurance Agencies in Higher Education (INQAAHE) website. This sample consisted of 35 QA agencies and related professional bodies worldwide.

To answer RQ3, a multi-pronged sample recruitment strategy was adopted to locate institutions most likely to be more mature in their development and implementation of micro-credentials. First, two recently launched micro-credential portals were interrogated to identify institutions fitting this description in Australia (MicroCred Seeker) and Ontario, Canada (Micro-Credential Portal). The institutional websites of institutions offering micro-credentials through these two portals were searched to locate relevant QA information. Second, the websites of the seven Irish universities participating in the MicroCreds project led by the Irish Universities Association (IUA) were searched along with the 32 institutions participating in the significant micro-credentials pilot in The Netherlands. Third, the websites of major European University Alliances and selected member institutions playing a leading role in developing micro-credentials were searched. Lastly, the websites of several institutions known internationally as early pioneers in micro-credential development were searched to locate information on their approaches to quality assurance (e.g., Athabasca University, Deakin University, RIMT University & SUNY State University of New York).

RQ 4 was primarily investigated using data gathered from both the sample of QA agencies and the purposively selected sample of around 50 higher education institutions. As an important caveat, the sample is dominated by universities, which is a weakness of the research. As previously identified, there remains both in the research literature and practice a significant divide between the VET and higher education sectors in the development of micro-credentials. The research would be enhanced by the inclusion of a more significant number of institutions and stakeholders from the VET sector to compare and contrast the different approaches to QA. This separation needs to be more helpful in terms of understanding QA requirements across the

broader credential ecology and diversity of education providers. The short timeframe of the study influenced the decision to limit the sample to primarily higher education institutions.

### 3.3 Approach to follow-up research

Given this tight timeframe, follow-up research was the primary source of data collection to locate relevant information. A systematic approach was adopted to investigate each website using a Google search of key terms such as 'quality', 'quality assurance' and 'micro-credentials'. After following up on relevant links, the search function on the homepage of each agency, organisation or institution was used to locate any additional material or publications pertinent to the quality assurance of micro-credentials. This search strategy was limited mainly to English versions of respective quality agency websites, which is a limitation of the study. The researchers recorded Notes of each search, with screenshots capturing where useful information was located. Data collection through the desk research process tended to simultaneously identify information relevant to all four research questions as micro-credential portals and QA agency and institutional websites often contained links to other sources. In the European context, valuable information was gathered from participating countries involved in the ENQA working group on micro-credentials, with country updates available in several meeting reports (ENQA, 2023).

The original intention was to conduct follow-up interviews with a purposive sample of a minimum of 12 national QA agency managers worldwide responsible for overseeing and monitoring micro-credential developments. However, we must mention that a limitation of this research is that the formal interviews proved challenging to complete due to the tight timeframe of the study and the busy schedules of those approached to participate. Additionally, the follow-up research indicated little to be gained from talking with QA agencies that have yet to respond to micro-credential growth. For the above reasons, a less formal strategy was adopted to elicit applicable follow up information and verify the desk research findings. Existing personal contacts in QA agencies were used to source further information to fill gaps and clarify key interpretations. An International Peer Learning Day on Micro-credential Policy Implementation hosted on the 2nd of March by the OECD was particularly valuable in bringing together many key stakeholders with useful country case studies. The most valuable follow-up conversations were conducted during the International Micro-credential Summit, held in Castelldefels, Barcelona, 20-24 March 2023. Indeed, this weeklong event provided a unique opportunity to talk in person with many key stakeholders involved in micro-credentials. This could compensate for the initial intention of the 12 planned interviews.

It was also possible to hear first-hand from several people involved in leading major national micro-credential initiatives and those within European University Alliances. Also, the issue of QA was a dedicated topic during the first meeting of the Micro-credentials Squad as part of the European Digital Education Hub. In total, over 200 educators with diverse backgrounds were available to share their knowledge and experience of the QA of micro-credentials in their own jurisdictions. Therefore, the opportunity to talk with many of these educators in Barcelona and separately during March, to talk with representatives from several professional bodies with a strong interest in micro-credentials helped to triangulate the findings of the desk research and provide a richer picture of the current state of the QA of micro-credentials.

## 4 Results

The first section of this paper describes how QA agencies across the OECD respond to micro-credential growth. The following section discusses how institutions are responding to and developing their own QA practices and processes in response to micro-credentials. More

specifically, it presents findings from Australia, Canada, and Ireland based on a systematic search of major micro-credential portals and institutional websites.

#### 4.1 Response of QA agencies

Based on the analysis of regional and national QA agencies' websites, related pilot initiatives and working group reports, and follow-up conversations with many key stakeholders involved in QA across OECD jurisdictions, there are three main ways in which countries are approaching the external QA of micro-credentials. Figure 1 provides a helicopter overview of the current situation across OECD jurisdictions. The most common status found in 25+ countries is that there are no specific QA standards for micro-credentials. However, the current situation is quite fluid, with many of the QA agencies in these countries indicating they plan initiatives in the next one to three years.

In six countries involving nine QA agencies or accrediting bodies, an intentional decision has been made to apply existing common standards and processes to ensure the quality of micro-credentials. Only in three countries, New Zealand, Malaysia, and Ireland, have there been initiatives to develop specific standards and QA requirements related to micro-credentials. In the case of Ireland, this initiative is part of a more comprehensive project by Quality and Qualifications Ireland (QQI) to develop new statutory QA guidelines for programmes supported by digital education.

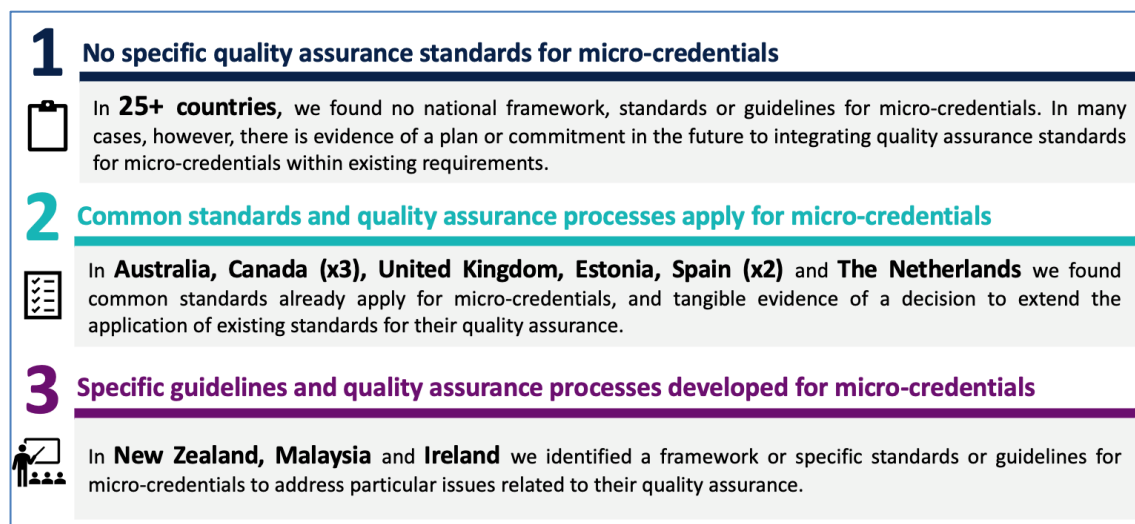


Figure 1: External QA of micro-credentials by national or regional QA agencies

A more detailed analysis of the status of the QA for micro-credentials across OECD jurisdictions is possible by adopting a taxonomy developed by Ossiannilsson et al. (2015), which was also recently applied to an analysis of quality assurance for digital higher education by Staring et al. (2022). This work is relevant as the desk research found that a high proportion of micro-credentials offered by HEIs and other types of providers are offered partially or fully online. Thus, either directly or indirectly, quality assurance initiatives in countries that have developed specific guidelines for digital higher education also apply or have relevance to micro-credentials, even though they may not be explicitly referenced. Table 1 below presents the taxonomy consisting of three distinct categories with several subgroups.



Table 1: Taxonomy of approaches for the external quality assurance of micro-credentials

Approach	Jurisdictions		Number
Common standards	No or limited evidence of quality assurance considerations for micro-credentials (24)  Austria, Belgium, Czech Republic, Chile, Colombia, Costa Rica, Denmark, France, Greece, Iceland, Italy, Kazakhstan, Korea, Latvia, Lithuania, Luxembourg, Malta, Mexico, Norway, Poland, Slovakia, South Africa, Switzerland, Turkey	Intentional application of common standards for the quality assurance of micro-credentials (9)  Australia, Canada (Alberta, British Columbia, Ontario), Estonia, The Netherlands, Spain (x2), The United Kingdom	25+
Optional standards	Guidelines for ensuring quality of micro-credentials (3)  Canada (Ontario), Spain, United Kingdom	Voluntary accreditation of micro-credentials (1)  United Kingdom	4
Mandatory standards	Standards applicable to all higher education providers (1)  Malaysia	Standards that are not legally enforceable for universities (2)  Ireland, New Zealand	3

Two subgroups fall within this category. In the first group of tertiary education systems (25+ in total), no separate or additional standards or procedures for the external QA of micro-credentials could be found. In these systems, QA agencies appear to apply common standards and processes for the evaluation of education providers and programmes, regardless of delivery mode or type of programme. In all these systems no explicit reference is made to micro-credentials and there is no specific quality assurance requirement. However, there is evidence in many cases of countries and respective QA agencies indicating they plan to pilot or address quality considerations in the future, with a preference towards an integrated approach to quality assurance.

In the second group of tertiary education systems (nine in total in six countries), existing common standards are already being planned to be applied for micro-credentials. Their application is an intentional decision in these jurisdictions to adopt an integrated approach to assuring the quality of micro-credentials using existing standards and processes, with HEIs and other types of providers responsible for their own internal quality assurance. This decision is evidenced by the Micro-credential Framework for British Columbia, Canada, as shown in Figure 2. The extent to which tertiary education providers are transparent about how they apply these common standards is reported further below in this paper.

A second category of tertiary education system reflects an effort in two jurisdictions (Ontario, Canada, and the United Kingdom) to develop optional guidelines for the QA of micro-credentials. The United Kingdom is particularly interesting as there is also a separate initiative by the British Accreditation Council to develop a voluntary inspection scheme for micro-credentials. Currently, it is unclear how many institutions are actively engaging in this pilot scheme.

A third category of higher education systems (3 in total in 3 countries) has developed separate or additional standards and procedures for the external QA of micro-credentials. Additionally,

Germany in a report published at the end of March 2023, following a special MODUS working group established in November 2022, recommended that while micro-credentials should be included in internal QA in accordance with ESG, clear and uniform regulations need to be created for external QA (HRK MODUS, 2023). Germany has previously been critical of micro-credentials fearing they may devalue existing macro-credentials, and this latest report makes a series of recommendations for universities to support QA and strategy development.

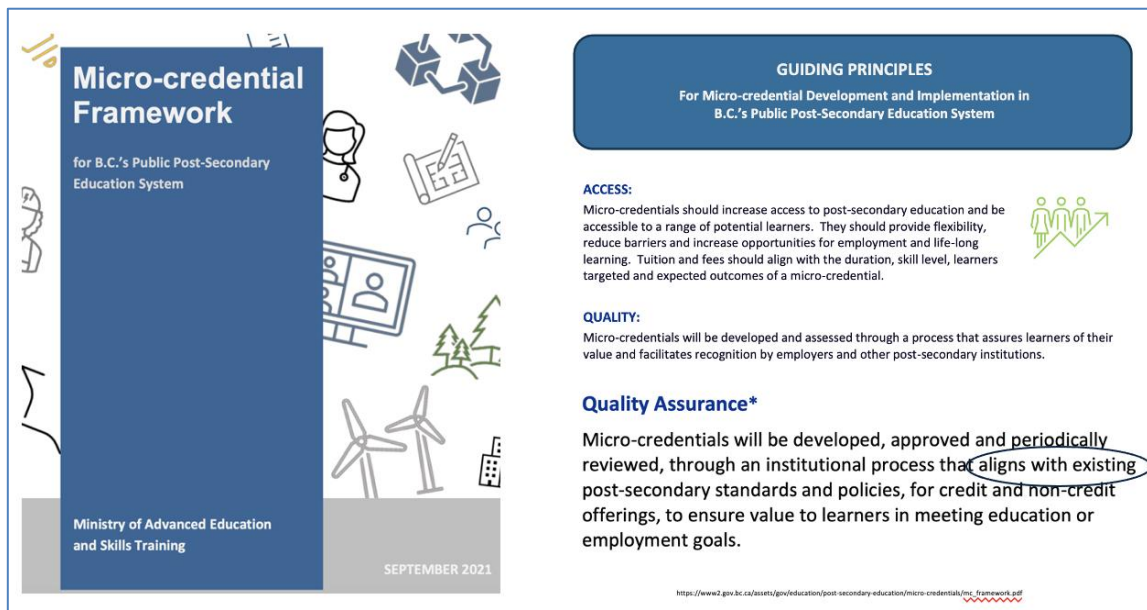


Figure 2: Example of QA requirements for micro-credentials in British Columbia<sup>1</sup>

As previously shown in Figure 1, New Zealand, Malaysia, and Ireland have developed mandatory or statutory QA requirements that apply over and above core standards or as specific topic specific quality guidelines. Importantly, these initiatives are integrated within the overarching QA systems for each country, although in Ireland and New Zealand universities have more autonomy in the way they interpret and apply the requirements. While the focus of current efforts is on the QA of micro-credentials offered by traditional education and training providers, Malaysia is moving forward with integrating short courses offered by non-traditional providers into its national QA system (Kato et al., 2023). The national QA agency has recently announced plans to extend the scope of their micro-credential QA guidelines to non-traditional providers, including industries. All short courses in Malaysia that assess learning outcomes and are credit-bearing fall under this new system and will be able to apply for the quality review and for their offerings to be listed on the national register.

In the case of Ireland, micro-credentials are referenced throughout the draft National Statutory Quality Assurance Guidelines for Providers of Programmes Supported by Digital Education. These guidelines have three contexts: organisation, programme, and the learner experience. The National Guidelines place a strong focus on the learner and, like the British Accreditation Council, indicate the importance of equivalency of learning support for learners completing micro-credentials. Moreover, they identify learner readiness to study through digital modes and

<sup>1</sup> [https://www2.gov.bc.ca/assets/gov/education/post-secondary-education/micro-credentials/mc\\_framework.pdf](https://www2.gov.bc.ca/assets/gov/education/post-secondary-education/micro-credentials/mc_framework.pdf)



the importance of fully informing or disclosing to prospective students all key information about the nature of the micro-credential, including the required workload and the types of digital tools and Internet access they will require to be successful.

In summary, the research suggests that the external QA for micro-credentials does not exist or is immature in most countries in OECD jurisdictions. Where QA considerations have been considered, there is usually a high level of autonomy given to institutions, with an important distinction between private and public providers and universities. An integrated approach to QA is the most common intentional response by QA agencies using existing core standards and guidelines. In the next section, the paper shifts attention to how institutions are addressing QA as they look to develop micro-credentials.

#### 4.2 Response of QA agencies

In Ontario, the Ontario Universities Council on Quality Assurance states that for the introduction or modification of a micro-credential, institutions do not require reference to the Quality Council unless they are part of a new programme. This directive means that individual higher education institutions are responsible for assuring the quality of their own micro-credentials. To determine how universities in Ontario are applying their own quality assurance processes to the development of micro-credentials, the Ontario Micro-credential portal was used to identify early adopters and institutions most likely to be mature in responding to the micro-credentialing movement.

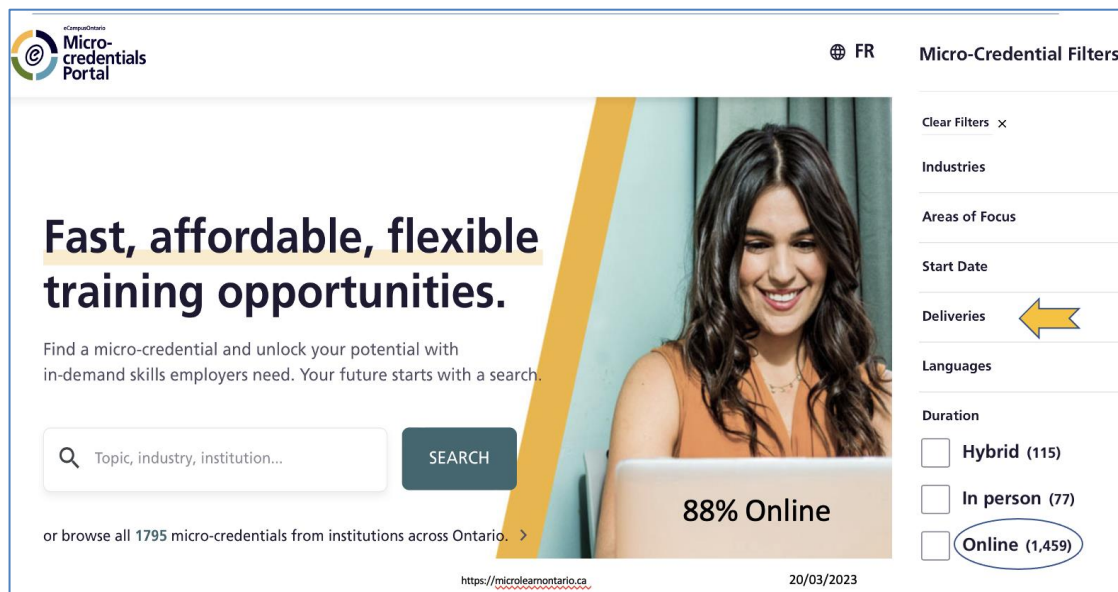


Figure 3: Example of Ontario micro-credential portal<sup>2</sup>

As of the 20<sup>th</sup> of March 2023, 1,795 micro-credentials were listed on this portal offered by 36 training and education providers, as illustrated in Figure 3. Notably, 1,459 (88%) of these micro-credentials are available online. Two search strategies were used to local information on the internal institutional QA of micro-credential offerings. Firstly, a search was conducted using the

<sup>2</sup> <https://microlearnontario.ca>

terms 'quality', 'quality assurance' and 'micro-credentials' (with and without a hyphen) using the search function on each institutional website. Secondly, a Google search was undertaken using the institution's name and a combination of the above search terms. It is noteworthy that not a single search revealed any publicly available policy or information and the QA of micro-credentials amongst the sample of institutions. This suggests an important gap in the public accountability dimension of QA, especially as responsibility in Ontario for assuring the quality of micro-credentials is devolved to institutions. Moreover, there is no information provided on the portal itself about the QA of the offerings and unlike most Massive Open Online Course (MOOC) platforms, learners have no opportunity to publicly rate or comment on the quality of each course.

Australia launched its national micro-credential portal known as MicroCred Seeker in December 2022. On the 20<sup>th</sup> of March 2023, 366 micro-credential offerings were listed on this portal. Notably, 343 (93%) of them were available through an online study mode, as shown in Figure 4 below. A similar search strategy was repeated using the Australian portal based on the assumption that the sample of 55 institutions promoting offerings are more likely to be mature in the development of their micro-credential offering and related QA processes. This assumption was validated to some extent as evidence was found to show that several institutions (around 20%) had publicly available policies for micro-credentials and related information on how they were internally assuring their quality.

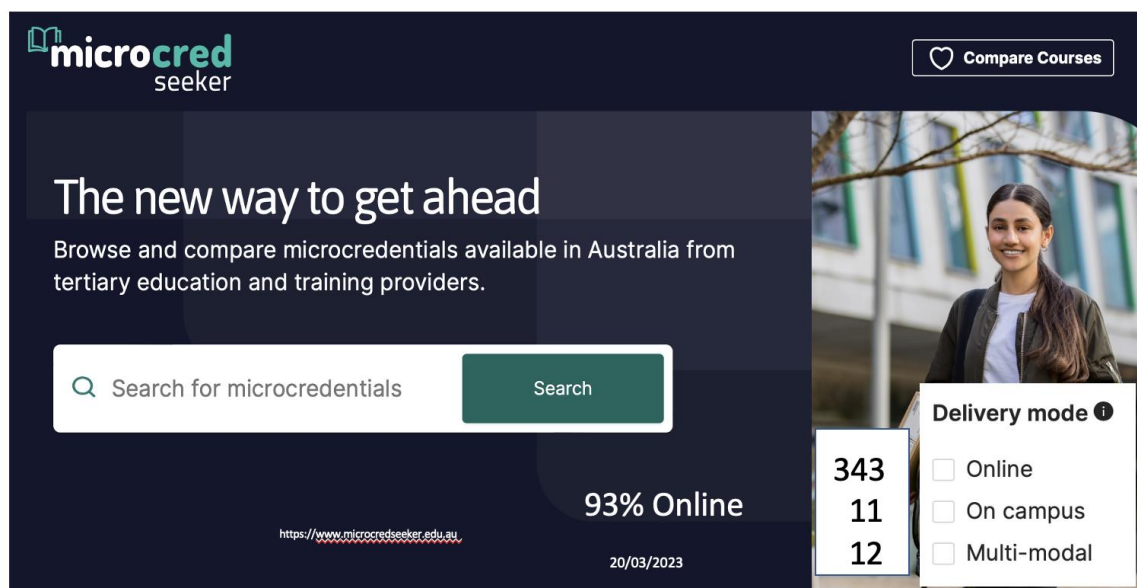


Figure 4: Example of Australian micro-credential portal<sup>3</sup>

However, it is noteworthy that QA is not one of the standard elements or information blocks as part of the MicroCred Seeker template describing the level and nature of each micro-credential. No student satisfaction or completion rate data could be found for institutional micro-credentials when interrogating institutional websites and employment outcomes are largely a data desert. If the idea behind the micro-credential portal is to inform learners of the offerings available through

<sup>3</sup> <https://www.microcredseeker.edu.au>

Australian education providers, this is the type of information they may find beneficial in making choices. Additionally, there is no explicit embedding of career advice or services, which would appear an obvious gap in helping prospective learners to make good choices that set them on the road to student success.

Returning to institutional specific responses to the issue of internal quality assurance, Charles Sturt University has a *Micro-credentials and Short Courses Framework* published in November 2022, which provides a taxonomy of different types of micro-credential offerings. The framework is one of the more mature examples and aims to provide an end-to-end process for micro-credentials and short courses, as well as an operating model to support their design, delivery, and review. The framework stipulates that “Governance of credit equivalence and quality assurance of micro-credentials will be overseen by the Faculty Courses Committee and University Courses Committee” (Charles Sturt University, 2022, p. 6). Additionally, there is a stated requirement they should be reviewed each time they are offered, with some form of student evaluation to inform quality improvements. It is also clearly stated that micro-credentials are required to be consistent with TEQSA (national QA agency) obligations. Another notable feature of Charles Sturt University’s response to micro-credentials is a detailed ‘playbook’ for staff that clearly defines the roles and expectations of different stakeholders and related workflows in micro-credential development.

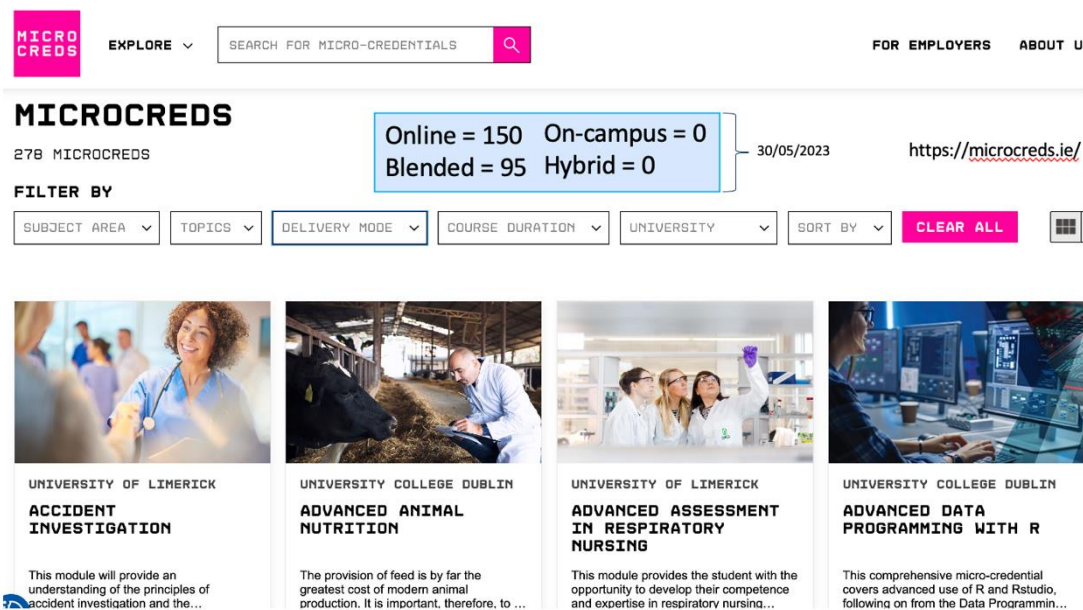


Figure 5. Example of Irish micro-credential portal<sup>4</sup>

A similar methodology used for previous analysis was deployed to identify the QA processes the seven Irish universities have adopted for micro-credentials as part of the IUA-led MicroCreds project. As the national discovery portal had yet to be launched at the time of the research, each university website was searched, and a separate Google search was undertaken, to locate information on QA processes specific to micro-credentials. Only one university had anything

<sup>4</sup> <https://microcreds.ie>

publicly available on its website, with clearly defined approval processes for micro-credentials that aligns with its normal approval and QA processes. A follow-up analysis conducted in May 2023, following the launch of the MicroCreds portal, illustrated in Figure 5, found no further information on QA and highlighted a lack of information on learner support, career development, and quality outputs such as course evaluation and employability data.

Two further research strategies were deployed to locate additional information on institutional QA practices for micro-credentials. Firstly, the websites of many European University Alliances known to have micro-credentials as a key deliverable were reviewed to locate relevant information. Nothing of substance was found using this strategy. In other words, the European University Alliances, at least based on publicly available information, were largely silent regarding their approaches to QA, although adoption of ESGs did feature without evidence or further explanation. There was a sense from the 'marketing type' information about currently available and forthcoming micro-credentials that ESGs were a type of metaphorical cloak that addressed all manner of potential QA considerations.

The second search strategy involved reviewing a handful of institutions known internationally for their early adoption of micro-credentials. Two mature examples provided additional insights into quality considerations for the development of micro-credentials at scale. The first case was The Open University of Catalonia (UOC) established as a fully online institution in 1995. The second case study is the implementation of micro-credentials at SUNY The State University of New York. SUNY is one of the largest universities in the United States, with a total headcount of over 350,000 students spread across multiple campuses throughout the state. As of the 20<sup>th</sup> of March 2023, SUNY offered 521 micro-credentials, with less than half (41%) available fully online. It first adopted a Micro-credential Policy in January 2018, following the recommendations of a Micro-credentialing Task Force. Notably, the first Guiding Principle of the policy states that "Academic quality is paramount". In many respects, the SUNY example stands out not for the detail or depth of its policy, but for the consultative process that the university adopted and continues to follow in the development and implementation of micro-credentials.

#### 4.3 Institutional supports and resources for micro-credential development

This final section briefly shifts attention to ways of supporting the development of micro-credentials. The research sought to identify the types of supports, resources and infrastructure that can help to mature how institutions develop and assure the quality of their micro-credential offerings. In brief, several toolkits, guides and handbooks for micro-credential development were identified to support education providers to develop micro-credential policies and practices. A detailed description of these resources is beyond the scope of this paper, but the study found several valuable initiatives have taken place over the past two-years and more developments are in the pipeline. However, it will be important to connect more strongly some of these activities in the future, especially to address the divide between universities and the training and vocational sectors. Given that short course offerings are not new, universities developing their micro-credential implementation strategies may potentially benefit from closer engagement with other providers. Professional bodies and transnational agencies could play a useful role in this regard in strengthening these connections.

#### 4.4 Additional institutional QA considerations for micro-credentials

The above examples and the findings of this research give rise to the question: What additional QA considerations, if any, are required for micro-credentials? This question applies even more specifically to those micro-credentials available through an online study mode. Table 2 presented

below identifies some of the additional QA considerations that this research has helped to reveal using the framework that Staring et al. (2022) adopted in their report on digital higher education.

Table 2: Additional QA considerations for micro-credentials, adapted from Staring et al. (2022)

Plan and Adjust	Implement	Monitor
<b>Strategy, Quality Culture and Infrastructure</b>	<b>Quality Assurance Processes and Supports</b>	<b>Feedback and Performance Reporting</b>
Institutional leadership	Internal approval processes Education	Learning analytics data on student engagement
Organisational structure	Appropriate workload models	Retention, progression and completion data
Business models and resource allocation	Professional learning and support for MC development	Student experience data
Policies, regulations and pathways, including global IT systems and platforms:	Peer review of learning design	Employer satisfaction data
- flexible enrolment	Appropriate assessment and	Meets professional accreditation
- virtual learning environment	learner feedback strategies	requirements
- digital badging/certificate	Study disclosure and learner readiness for success	Graduate employment data
	Availability of learning support and library resources	Cyclic institutional review of micro-credential offerings

Under 'Plan and Adjust', the SUNY and Charles Sturt University examples underscore the importance of institutional leadership and appropriate organisational structures for micro-credentials. Similarly, the Charles Sturt University Framework for Micro-credentials and Short Courses illustrate the need for explicit consideration of business and resource allocation models. It should be noted that Brown, Peters and McGreal (2023) identify at least eight different types of business models for micro-credentials. The need for appropriate policies and regulations is self-evident but there are also considerations concerning learning pathways, including Recognition of Prior Learning (RPL) and what account will be taken of obligations and restrictions when learners study micro-credentials from other country jurisdictions. The implications for IT systems cannot be ignored, especially if micro-credentials are intended to provide for flexible learning opportunities.

Under the 'Implement' category, the Australian institutional examples highlight the importance of institutions developing appropriate internal approval processes. However, existing workload models also need to be considered if those teaching micro-credentials are expected to adopt more flexible approaches to the way they teach and support micro-credentials. In the case of fully online micro-credentials, there needs to be evidence those teaching and supporting their delivery have some experience and professional development in how to design and harness the potential of active and highly engaging forms of digital education. Appropriate assessment strategies that challenge learners and provide feedback to students are crucial to a successful micro-credential learning experience. The principles of Assessment OF/FOR/AS learning should be evident in the design of micro-credentials. As previously mentioned, disclosure of information when prospective learners are thinking about their readiness to learn online are also important considerations. Learning how to learn online is not something that should be left to osmosis.



Other crucial considerations include the amount of time a student needs to allocate for study to be successful and the type of learning support and development opportunities that are available to learners who undertake micro-credentials. The level of access to electronic library resources and other digital content also needs to be clear.

Under 'Monitor', the research revealed a significant gap in outputs data that should inform QA and the continuous improvement of micro-credentials. The use of learning analytics should be a feature of monitoring student engagement and evidence of retention, progression and completion should inform the evaluation of micro-credentials on a cyclical basis. It follows that students should have opportunities to provide feedback on the quality of their learning experience and employer satisfaction data are also another important source of evidence for quality assurance and improvement. In a similar vein, graduate employment data and the alignment of the learning outcomes with professional accreditation requirements are further quality indicators. Cyclical review of each offering and perhaps a formal review of the institution's full range of offerings on a five-yearly basis should be part of the QA plan for micro-credentials. There is nothing to suggest that these additional quality considerations cannot be integrated within an institution's existing approach to QA, but they do challenge the fact that this research found minimal evidence of such practices amongst a sample of so-called early micro-credential adopters.

In summary, this research attempted to systematically analyse current institutional practices in the development and QA of micro-credentials. It found a mixed and largely immature state of institutional practices based on publicly available information. The research also identified gaps and opportunities to provide learners with better and richer information when they are considering whether a micro-credential is right for them and to assess the potential benefits they may gain from this type of professional learning. While most educational commentators and professionals working in the field of QA understand the institution must ultimately drive and take responsibility for quality, there is considerable work that still needs to be done, especially if learners, employers, and other community stakeholders are to trust and give currency to the micro-credential as a new and rapidly evolving part of the credential ecology.

## 5 Conclusions

This research embarked with the objective to investigate external and internal QA of micro-credentials looking at regional and national QA agencies and institutional practices in OECD member countries. It also sought to understand the types of institutional supports available for the development of high-quality micro-credentials. Four research questions helped to frame the study and we briefly reflect on the answers to these questions.

First, in terms of RQ1, the report provides a synthesis of previous research on how external QA agencies are responding to micro-credentials. It shows a mixed picture in terms of what is already known about the response to the micro-credentialing movement by external QA agencies, with most agencies in OECD jurisdictions yet to intentionally address QA considerations. There are a few notable exceptions.

Second, in terms of RQ2, the research was able to show that QA agencies in six countries have made an intentional decision to adopt common QA frameworks and standards for micro-credentials. Most countries included in the sample for this research have yet to consider how best to apply QA to micro-credentials, although there is evidence in Europe that this matter has become a priority and there is a strong predisposition towards an integrated approach. Only three countries have developed specific QA standards or requirements for micro-credentials. Despite limited opportunity to speak directly with many representatives in QA agencies, the research was



successful in helping to shed further light on the current situation regarding the external QA of micro-credentials.

Third, in terms of RQ3, the research adopted a systematic sample recruitment and search strategy looking at early pioneers and those institutions most likely to be more mature in their micro-credential development strategies. The results were mixed, with relatively few publicly available examples of well-developed policies and QA processes for micro-credentials. In this respect, the research has contributed to new knowledge and shown that local institutional autonomy for QA and the processes put in place should not be hidden from the public and learners in particular. Moreover, prospective students would benefit from greater disclosure of information when making choices about whether to undertake a micro-credential. National micro-credential portals are deficient in addressing this gap, with lack of career support and evaluation and output data. There is also considerable ambiguity over what types of student support and development services are available to learners when completing a micro-credential. Overall, the research establishes a useful baseline of current institutional practice which should help to assess progress over the next few years.

Finally, in terms of RQ4, the research found several useful resources playing a valuable role in helping to mature the micro-credential ecosystem locally, nationally, and internationally. While this aspect of the study is not reported in detail, the value of collaboration, strategic partnerships and building strong communities of practice stand out from this line of research along with the valuable role that professional bodies, governments and transnational agencies can play.

In conclusion, QA is essential if micro-credentials are to become a trusted form of award that is valued by learners, employers, and society at large. The challenge is to find a balance between flexibility, fostering enabling institutional cultures of continuous improvement and robust QA processes that ensure public accountability. In striking this balance, wider consideration also needs to be given to the convergence between the growth of online learning, the entangled change forces underlying the unbundling movement in education and micro-credentials. The key point is that micro-credentials and efforts to perform quality assurance on them are part of a wider social practice, and this underscores the need for developments to be aligned with and driven by thinking about the type of better society in which we want the training and education system to serve.

## References

- Brown, M., Peters, M., & McGreal, R. (2023). A strategic institutional response to micro-credentials: Key questions for educational leaders. *Journal of Interactive Media in Education*, 1(7), 1–17. <https://doi.org/10.5334/jime.801>
- Casadesus, M., Huertas, E., & Edo, C. (2022). A European perspective on accrediting short learning programs: First experiences are out. *Industry and Higher Education*, 37(3) 1–10. <https://doi.org/10.1177/0950422221132129>
- Cedefop. (2022). *Microcredentials for labour market education and training: first look at mapping microcredentials in European labour-market-related education, training and learning: take-up, characteristics and functions*. Cedefop research paper, No 87. Luxembourg: Publications Office. <http://data.europa.eu/doi/10.2801/351271>
- Charles Stuart University. (2022). *Micro-credentials and short courses framework*. [https://cdn.csu.edu.au/\\_\\_data/assets/pdf\\_file/0003/4137924/Micro-Credential-Framework.pdf](https://cdn.csu.edu.au/__data/assets/pdf_file/0003/4137924/Micro-Credential-Framework.pdf)

- Collegis Education. (2023). *The effect of employer understanding and engagement on non-degree credentials*. <https://collegiseducation.com/resources/effect-of-employer-understanding-and-engagement-non-degree-credentials/>
- ENQA Working Group on Quality Assurance of Micro-credentials. (2023). *Quality Assurance of Micro-credentials: Expectations within the Context of Standards and Guidelines for Quality Assurance in the European Higher Education Area*. <https://www.enqa.eu/wp-content/uploads/ENQA-micro-credentials-report.pdf>
- European Commission. (2022). *Council recommendation of 16 June 2022 on a European approach to micro-credentials for lifelong learning and employability*. Brussels. [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C\\_.2022.243.01.0010.01.ENG](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C_.2022.243.01.0010.01.ENG)
- HolonIQ. (2023). *Micro-credentials survey: 2023 trends and insights*. <https://www.holoniq.com/notes/micro-credentials-survey-2023-insights>
- HRK MODUS. (2023). *Microcredentials an Hochschulen – strategische Entwicklung und Qualitätssicherung. Ergebnisse der Zukunftswerkstatt Microcredentials*. <https://www.hrk-modus.de/themen/microcredentials/>
- Huertas, E., & García, E. (2022). *Mapping external QA practices for MC across the EHEA: Results of ENQA survey*, European Association for Quality Assurance in Higher Education (ENQA), Brussels. [https://www.enqa.eu/wp-content/uploads/2.-Survey-results\\_ENQA\\_MC\\_20220922\\_Final.pdf](https://www.enqa.eu/wp-content/uploads/2.-Survey-results_ENQA_MC_20220922_Final.pdf)
- Kato, S., Gyorfi, R., & Weko, T. (2023). *Micro-credentials for lifelong learning and employability: Uses and possibilities*. OECD. <https://doi.org/10.1787/5cc2d673-en>
- Microbol. (2021). *Micro-credentials and Bologna key commitments: State of play in the European Higher Education Area*. [https://microcredentials.eu/wp-content/uploads/sites/20/2021/02/Microbol\\_State-of-play-of-MCs-in-the-EHEA.pdf](https://microcredentials.eu/wp-content/uploads/sites/20/2021/02/Microbol_State-of-play-of-MCs-in-the-EHEA.pdf)
- Oliver, B. (2022). *Towards a common definition of micro-credentials*. UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000381668>
- Ossiannilsson, E., Williams, K., Camilleri, A. F. & Brown, M. (2015). *Quality models in online and open education around the globe: State of the art and recommendations*. International Council for Open and Distance Education (ICDE), Oslo. <https://www.icde.org/wp-content/uploads/2023/01/icdequalitymodels22.pdf>
- Staring, F., Brown, M., Bacsich, P., & Ifenthaler, D. (2022). *Digital higher education: Emerging quality standards, practices and supports*. OECD Education Working Papers, No. 281, OECD Publishing, Paris. <https://doi.org/10.1787/f622f257-en>.