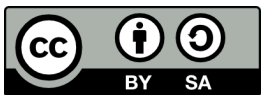
JURISDICTIONAL OVERVIEW OF COMPETENCY-BASED APPROACHES TO MICRO-CREDENTIAL DEVELOPMENT, ASSESSMENT, AND WORKFORCE ALIGNMENT

A HIGH-LEVEL SCAN OF PRACTICE

Contents



Executive Summary

This report prepared for BCcampus provides an overview of competency-based approaches to micro-credential development, assessment, and workforce alignment. It examines the evolving landscape of micro-credentials in Canada and internationally, noting current policies, frameworks, and innovative practices. It emphasizes the growing importance of micro-credentials as tools for upskilling and reskilling, driven by the increasing demand for modular learning and the need for verifiable skills in a digital age.

Aligning micro-credentials with workforce needs is seen as a critical need. The World Economic Forum's Future of Jobs Report 2025 (World Economic Forum, 2025a), emphasizes the ongoing need for upskilling and reskilling across key economic sectors, as does the BC Labour Market Outlook (2024) which underscores the demand for post-secondary training to meet the needs of the BC workforce over the coming 10 years.

The report highlights key features of micro-credentials, including their narrow scope and short completion time, and emphasizes the quality markers for post-secondary micro-credential programs: relevance, accreditation, standardization, assessment, flexibility, and stackability.

The report is a 2025 “snapshot” that examines micro-credential frameworks and guidelines from various jurisdictions, including Canadian provinces and internationally from the European Union, Singapore, and Australia. It identifies key actions to ensure micro-credentials meet the needs of both learners and employers, such as linking them to skills frameworks and engaging employers in their design. The report further discusses the alignment of micro-credentials with human resource systems, emphasizing the importance of matching industry competency frameworks with institutional programs and expertise.

This scan also describes diverse approaches to micro-credential development across Canada, with a focus on standards and specifications, employer alignment, and competency-based assessment. Provinces like BC, Alberta, and Ontario are actively involved in micro-credential initiatives, with government support and institutional engagement. Internationally, countries like Ireland, Australia, New Zealand, and Singapore have established national frameworks for micro-credentials, emphasizing quality assurance and alignment with lifelong learning and employability.

The report concludes by identifiying several implementation and policy considerations for British Columbia, including the importance of industry and employer recognition, the role of government policy, and the need to address challenges related to standardization and alignment with skills frameworks.

Key recommendations for British Columbia:

- Establish a centralized coordinating body for micro-credentials and recognition of prior learning
- Explicitly link micro-credentials to established qualifications or skills frameworks
- Actively foster industry collaboration with micro-credentials for key employment sectors
- Align with provincial workforce priorities as noted in the BC Labour Market Outlook (2024)
- Require competency-based assessment for micro-credentials
- Encourage digital badge adoption as an extension of micro-credential recognition and RPL

The report concludes by emphasizing the need for upgraded policies, frameworks, and partnerships to enhance micro-credential adoption and ensure alignment with the evolving needs of learners, employers, and the workforce.

Introduction

In an article titled, "A strategic reset: micro-credentials for higher education leaders," McGreal and Olcott (2022) provided a comprehensive overview of the rapidly evolving landscape of micro-credentials and their implications for universities and higher education. The authors defined micro-credentials as certified attestations of specific skills or competencies acquired through short, focused educational experiences, often outside traditional degree frameworks. They detailed the types, characteristics, and validation processes of micro-credentials, noting both their potential to enhance employability and their flexibility in delivery and assessment. The article also highlighted the global proliferation of micro-credential initiatives, with particular attention to developments in North America, Europe, Australia, and New Zealand, and examined the challenges of standardization, credit transfer, and institutional alignment.

McGreal and Olcott (2022) also emphasized that higher education institutions must critically assess whether micro-credentials are aligned with their institution's mission and capacity before investing in this market. They identified both affordances, such as increased flexibility, workforce alignment, and opportunities for personalized learning, as well as barriers, including lack of clear market data, limited faculty incentives, and the complexity of integrating micro-credentials with existing credit systems. The article concluded by urging higher education leaders to consider micro-credentials as part of a broader strategic reset, potentially leveraging them alongside other digital and open education initiatives. The authors argued that successful adoption required careful planning, resource allocation, and collaboration, and that micro-credentials should be viewed as only one tool among many for institutional innovation and workforce development.

A more recent RBC Thought Leadership article titled, *"Capitalizing on a Highly Educated Workforce: How Postsecondary Education Can Help Fix Our Productivity Crisis,"* (RBC, 2025) extended the line of thinking by examining Canada's workforce productivity challenges. Despite the country having a well-educated population, the article highlighted the underutilization of immigrant skills, misalignment between education and labour market needs, and a lack of innovation in PSIs as key barriers. The article called for new solutions such as expanding work-integrated learning (WIL), fostering partnerships between businesses and educational institutions, and leveraging micro-credentials to address skills gaps and improve workforce adaptability.

These articles and their recommendations closely reflect ongoing strategic initiatives in British Columbia, as showcased at the recent Vancouver Community College (VCC) event, CredX (Porter, 2025a; VCC, 2025), where presenters discussed the workforce development potential of micro-credentials and related learning recognition methods such as Prior Learning Assessment and Recognition (PLAR), as well as a broader deployment of open recognition principles (Porter, 2025b). By emphasizing micro-credentials and flexible educational pathways, the RBC article reinforced CredX's focus on recognizing both informal and non-traditional learning. Systematically integrating micro-credentials, PLAR frameworks, and open badging concepts into workforce development strategies could strategically position British Columbia and Canada to optimize its workforce, lower employment barriers, and boost productivity through targeted skills recognition.

This report provides a scan of micro-credential programs and practices on a national and global level, examining policies, frameworks, and novel approaches that benefit workforce development through innovative use of competency frameworks and micro-credentials for enhancing skill development and workforce regeneration. Many of the references come from organization or institution websites which are subject to change. Reference citations from websites are marked as undated, "n.d." to indicate the current link to information, with the caveat that updates or new developments might occur, or programmatic directions might change.

Background

With the emergence of micro-credentials (MC) as a new form of learning and skill recognition, post-secondary institutions across Canada and in British Columbia (BC) have begun to develop and offer short-duration programs and courses aimed at individuals seeking up-skilling or re-skilling to enhance employment opportunities or respond to workforce needs. As these micro-credential programs become more commonplace, the question arises about how they relate to existing skill and competency frameworks and the explicit needs of learners and employers for demonstrable skills and competencies.

DP+Associates was retained by BCcampus to assist with an environmental scan of micro-credential and competency frameworks that might guide MC development and assessment to better align with workforce needs. The scope of the project is outlined in the section that follows.

EXPLORATORY SCOPE OF THE PROJECT

Geographic Scan

- Review how provinces have structured competency-based micro-credentials.
- National Level (International Comparisons): Examine national frameworks (e.g., Canada's OASIS, Australia, Ireland, Singapore) to identify best practices.
- Institutional Level: Examine select Canadian post-secondary institutions offering micro-credentials to understand their competency frameworks, assessment methods, and recognition processes.

Competency Frameworks for Micro-credentials

- Definitions and Models: How are competencies structured (e.g., knowledge, skills, attitudes, proficiency)?
- Alignment with Existing Qualification Frameworks: How do they map to provincial or national qualification frameworks?
- Stackability and Pathways: Can competencies be combined into larger credentials or recognized across institutions?
- Assessment and Validation: How are competencies assessed?

Implementation and Policy Considerations

- Industry and Employer Recognition: How are competency-based micro-credentials validated and accepted in the workforce?
- Government policy: How does government policy hinder or help the implementation of micro-credentials?

Proven Practices and Challenges

- Innovative Models: Examples of jurisdictions effectively implementing competency-based micro-credentials.
- Challenges: Barriers to implementation, including funding, standardization, and industry buy-in.

Recommendations for British Columbia

- How existing models can be adapted to align with BC's post-secondary priorities, industry needs, and government policies.
- Suggested policies, frameworks, and partnerships to enhance micro-credential adoption in BC

Deepening our understanding of the need for micro-credentials

In British Columbia as well as globally, changes are taking place in workplaces that require us to adapt or innovate educational practices that benefit learners and employers.

- **Modular learning is gaining in popularity**. Learners and employers are increasingly seeking and valuing short-duration modules of learning. This is not just "micro-learning," but longer engagements of multiple hours or more, which can be awarded micro-credentials and be potentially stacked in pathways. The popularity of LinkedIn Learning, Google Career Certificates, and Coursera provide useful examples of short-duration, targeted learning models that fit the needs of many early or mid-career professionals.
- **Employers are increasingly sourcing talent digitally**. Employers are increasingly seeking candidates by scanning targeted employment profiles on social sites such as LinkedIn. Other systems, such as Indeed.com, which list available jobs in multiple workplaces, use digital screening techniques to help employers identify and short-list candidates. Micro-credentials can add credibility to an individual's profile by providing digitally verifiable records of learning in addition to other kinds of evidence about skills and competencies.

Traditionally, degrees and diplomas are the high-level documents representing learning accomplishments that are validated by transcripts. Transcripts are most often static documents and were designed in an era predating the connective and communicative benefits of the Internet. These documents and records are usually shared in limited ways that are not always learner- or employment-centric and do not always reflect the entirety of the knowledge, skills, and capabilities a learner has achieved inside and outside the classroom (Matkin, 2018).

Consequently, many institutions are currently undertaking digital transformation processes focused on re-designing of learning and teaching practices as well as in the management of curriculum, credentials, and records. Some Australian educational technology vendors are at the forefront of this movement (Edalex n.d.; CourseLoop, 2022). Digitization is becoming pervasive. It will continue to push the re-design process for learning and training, including a focus on short duration learning and training with micro-credential awards.

KEY TERMS FOR DESCRIBING THE ATTRIBUTES OF MICRO-CREDENTIALS

Micro-credentials

Oliver (2022) led a UNESCO initiative to better define the attributes of micro-credentials and their relationship to existing credential or qualification frameworks. The UNESCO report offered some **specificity on micro-credential attributes** through a short, yet targeted definition. The UNESCO report defined a micro-credential as:

- a record of focused learning achievement verifying what the learner knows, understands or can do;
- includes assessment based on clearly defined standards and is awarded by a trusted provider;
- has stand-alone value and may also contribute to or complement other micro-credentials or macro-credentials, including through recognition of prior learning; and
- meets the standards required by relevant quality assurance.

Digital Credentials

Digital credentials are the equivalent of paper-based credentials. A digital credential is proof of qualification or competence that is attached to a person's academic record (Chartrand et al., 2020; Matkin, 2018). Digital

credentials may be signed, standalone, or shared using online platforms. Digital badges and micro-credentials are forms of digital credentials that indicate an accomplishment, skill, or qualification.

Critical Information Summaries (CIS): Metadata

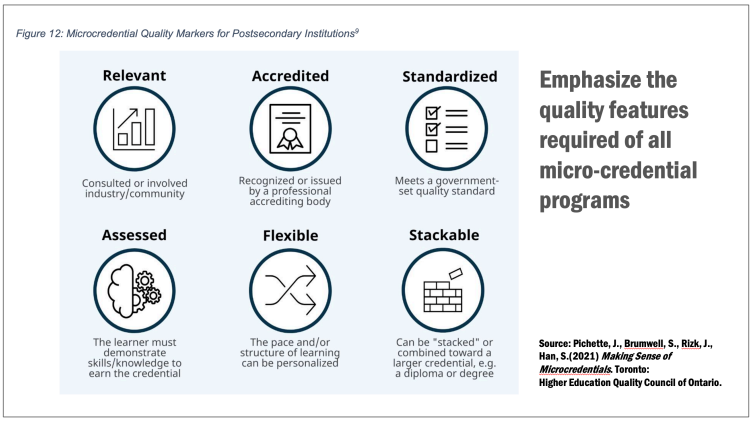
Critical information summaries (Australian Government, 2021) provide enhanced verification of skills within a digital badge or micro-credential system. Typically, critical information summaries list verifiable information including the title of the micro-credential award, its duration, dates of issue and expiry, issuer authority, learning outcomes, assessments undertaken, relationship to other credentials and verification of award earner identity.

The CIS might also include endorsements from employers and supplementary information from learning providers about the award's potential for "stacking" with other awards or laddering towards a larger credential.

EMPHASIZING THE DEFINING FEATURES AND QUALITY MARKERS FOR MICRO-CREDENTIALS

The Higher Education Quality Council of Ontario (HEQCO) report, *Making Sense of Micro-credentials* (Pichette, Brumwell, Rizk, & Han, 2021) provided guidance on the **defining features** that micro-credentials should exhibit, primarily narrow scope and short completion time.

The report also cited six **quality features** required of all post-secondary micro-credential programs. The cited quality features relate directly to the ability to "stack and ladder" with other awards within credentialing systems.



Aligning micro-credentials with workforce needs

Guidance from governments and employers provide supporting data and priorities for approaches to micro-credential development. Frameworks from governments exist globally, nationally, and in local jurisdictions.

ALIGNING MICRO-CREDENTIALS WITH GLOBAL WORKFORCE DEVELOPMENT REQUIREMENTS

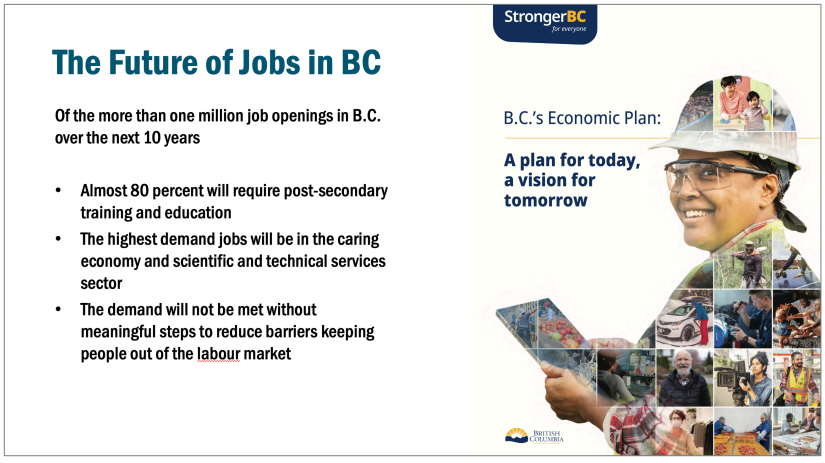
The World Economic Forum's *Future of Jobs Report 2025* (WEF, 2025) made recommendations for upskilling and reskilling needs in important areas of skill development that will be in demand in 2025 and beyond. Key skill areas identified included the following list and others cited within the document:

- AI and big data
- Networks and cybersecurity
- Technological literacy
- Creative thinking
- Resilience, flexibility and agility
- Curiosity and lifelong learning
- Leadership and social influence
- Talent management
- Analytical thinking
- Systems thinking

Micro-credentials have been proposed as an agile and responsive strategy to enable ongoing development of knowledge and skills across the workforce. Ensuring that micro-credentials match with workforce needs is a key step in developing relevant programs that are informed by employer engagement and local workforce trends.

ALIGNING MICRO-CREDENTIALS WITH WORKFORCE DEVELOPMENT REQUIREMENTS IN BC

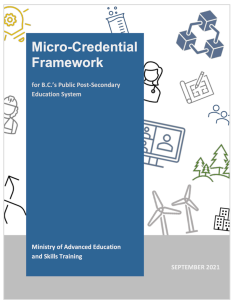
BC's Economic Plan (2022) provided additional data for BC post-secondary institutions seeking to develop relevant micro-credentials to meet emergent needs of learners seeking employment in growing fields.



ALIGNMENT WITH GOVERNMENT OR SYSTEM-LEVEL MICRO-CREDENTIAL FRAMEWORKS

It is also essential that micro-credentials with the province's micro-credential framework (Government of British Columbia, 2024; 2021) to ensure compliance with provincial expectations, as well as aspirations for BC post-secondary programs and credential pathways to support economic development. The BC framework provides initial, high-level guidance for program developers and is being updated to meet emergent priorities and policy directions. The pilot project on micro-credential assessment is an extension of the BC framework.

Other educational organizations in Canada and the United States (US) have also created micro-credential frameworks, guidelines, reports, and recommendations for post-secondary institutions within their jurisdictional scope. These include government agencies in Ontario (eCampusOntario, 2021, 2022) and Saskatchewan (Government of Saskatchewan, 2021), and the State University of New York (SUNY, 2022). SUNY is a recognized leader in the recognition of prior learning in the US and is a proponent of the *Credential-as-You-Go* concept which seeks to implement a nationally recognized incremental credential model (Credentialasyougo.org, 2022).



Assure that all micro-credential programs explicitly align with the key tenets of the British Columbia Micro-Credential Framework

Access
Quality
Relevance
Collaboration and coordination
Employer and industry engagement
Clarity and transparency

ALIGNMENT WITH EMPLOYER AND LEARNER EXPECTATIONS

A report produced by Contact North (2021) provided guidance for program developers, highlighting 10 "key actions" that it recommends making micro-credential programs relevant for learners and employers. Four of the recommendations are highlighted in the image below. The first recommendation, dealing with qualifications frameworks, is primarily applicable in the five Canadian provinces where such framework exist.

Micro-credentials should also align with recommended employer and learner requirements

- **Make a clear connection between learning modules, the credentials offered and skills or qualifications frameworks**
- **Link micro-credentials to the in-demand (or soon to be in-demand) skills and competencies employers are actually seeking**
- **Engage employer organizations or professional bodies in the design of micro-credentials at the earliest possible stage**
- **Identify those micro-credentials that can be laddered into undergraduate and graduate programs and ensure they are portable**

ALIGNMENT WITH STRONG VALUE PROPOSITIONS FOR LEARNERS AND EMPLOYERS

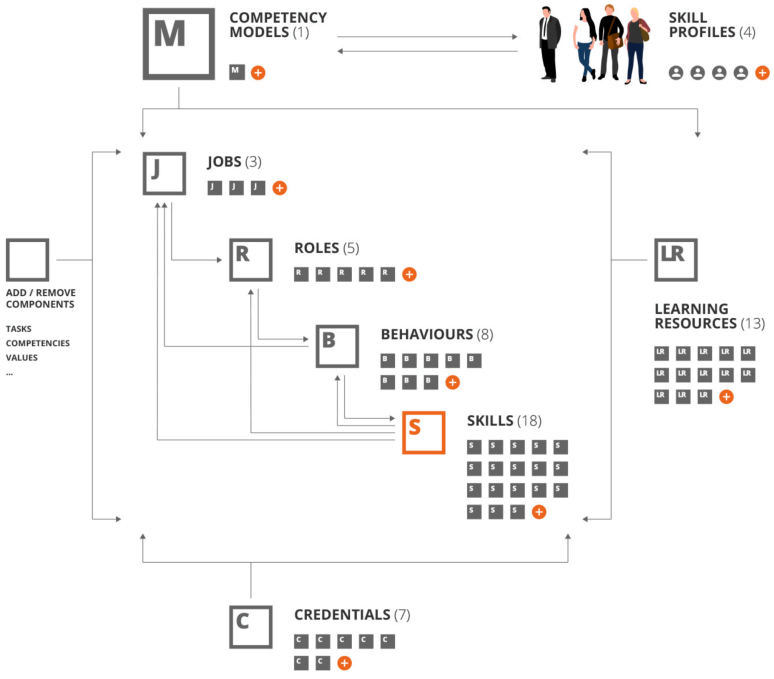
The National Skills Coalition (2023) is a US-based non-profit advocacy organization working to advance policies and partnerships to increase the education and skills of the American workforce. On the Coalition's website, Duke-Benfield (2019) noted that "a quality credential provides individuals with the means to achieve their informed employment and educational goals. Individuals cannot achieve their employment goals without meeting the needs of employers."

The NSC website noted criteria that should be considered for a credential to be identified as a quality credential. It recommended the first three criteria (below) be required and the fourth—stackability—be strongly preferred:

- There must be evidence of substantial job opportunities associated with the credential. Evidence must include quantitative data and direct communication with employers.
- There must be transparent evidence of the competencies mastered by credential holders; competencies that align with expected job opportunities. A definition of a quality credential need not include any standard regarding length of time.
- There must be evidence of the employment and earnings outcomes of individuals after obtaining the credential.
- Strongly Preferred Criterion: The credential would ideally stack to additional education or training. The gold standard is that credentials stack to additional education or training, but there is not a universal pathway to reach this standard so States agreed it should not be an overarching required criterion in defining a quality credential. (National Skills Coalition, 2023; Duke-Benfield, 2019)

FUTURE-FOCUSED ALIGNMENT OF MICRO-CREDENTIALS WITH HUMAN RESOURCE SYSTEMS

One of the proven ways of designing relevant micro-credential programming and aligning it with workforce needs is to match available competency frameworks with the programs and expertise within an institution's academic and professional departments.



This illustration provided by Ibbaka.com, a local Vancouver human resources (HR) software company, describes the relationship between skills, competencies, and job roles that normally exist in the workforce (Forth, 2020).

Upskilling and reskilling for individuals and groups can be achieved using learning resources (courses) with (micro)credential awards that relate to required new skills and competencies, and especially those competencies that directly impact jobs and emergent organizational roles.

Mapping competencies for use with HR systems could become an emergent requirement for programs from institutions and learning providers.

Geographic Scan of Micro-Credential Practices: Canada

INTRODUCTION

Micro-credentials, the short, focused educational offerings that certify specific skills or competencies-are gaining traction across Canada as tools for rapid upskilling and reskilling in response to evolving labour market needs. Competency-based micro-credentials, in particular, emphasize demonstrable skills validated through assessment. This report provides an overview of policy approaches, guiding frameworks, research findings, and institutional examples of micro-credentials in the Canadian and international post-secondary landscape, drawing on government documents, system agency reports, websites, and sectoral analyses from system-level agencies.

NATIONAL OVERVIEW

Nationally, the micro-credential landscape in Canada is characterized by a push for standardization, employer alignment, and robust assessment of competencies. The Information and Communications Technology Council (ICTC) in its reports titled, "Micro-Credentials Are Poised to Become a Mainstream Rapid Education and Training Solution," emphasized the need for a nationally recognized framework to ensure credibility, job readiness, and employment mobility for micro-credential holders (ICTC, 2024). Key practices were identified as baseline requirements for standardization, assessment, and trust by employers. They included:

- Standardized definitions and proof of competencies
- Flexible program delivery with robust assessment
- Alignment with labour market needs
- Continuous evaluation and stakeholder feedback

There have been frequent calls for clearer standards and consistency with respect to the development and offering of micro-credentials across Canada. However, the reality for standardization in Canada differs from other nations. Canada is a confederation of provinces and territories, with education being deemed a provincial responsibility. As such, no common national qualifications framework exists in Canada, as they do in Europe, Australia, New Zealand and in other countries globally.

Common skills frameworks do exist for regulated professions, and the Occupational and Skills Information System (OaSIS) (Government of Canada, n.d.), provides a comprehensive framework of the skills, abilities, personal attributes, knowledge, and interests that are usually required to work in over 900 different Canadian occupations. OaSIS also provides context for the work environment in which these occupations are performed. However, there is very little evidence that competencies listed by OaSIS are used in the design and assessment of micro-credentials.

PROVINCIAL OVERVIEWS

Each province has taken its own unique approach to micro-credential development, delivery and assessment, in keeping with the practices of provincial and institutional autonomy that is a hallmark of the Canadian higher education context. This report identifies at a high level some examples of the practices, policies, and principles being employed in Canada and globally for the development of micro-credentials aimed at workforce development. In most cases the information reported come from publicly available websites, reports, or papers, and in some cases the language used on the websites is aspirational rather than documenting accomplishments.

Alberta

Policy and Research:

The landscape of competency-based micro-credentials in Alberta is marked by a significant level of activity across its post-secondary institutions. This widespread engagement signals a proactive response from the province's education sector to the evolving demands of the labour market. A majority of Alberta's institutions are actively involved in offering micro-credentials, indicating broad recognition of the value and potential of micro-credentials across different types of post-secondary education providers.

The Government of Alberta has demonstrated a commitment to fostering the growth of micro-credentials as a strategic tool for skills development, actively collaborating with both industry and post-secondary institutions to this end (Government of Alberta, n.d.). The Alberta government has further demonstrated its commitment by allocating funding to support micro-credential programs across 21 post-secondary institutions. These programs are strategically targeted towards developing job-ready skills in innovative industries, aligning with the priority sectors outlined in Alberta's Recovery Plan (Folio, 2022).

Institutional Examples

Lethbridge Polytechnic

Lethbridge Polytechnic has adopted a structured approach by utilizing competency-based digital badges that serve as building blocks for micro-credentials (Lethbridge Polytechnic, n.d.). This methodology allows for a granular recognition of specific skills and competencies. Their micro-credentials are intentionally designed to be flexible, catering to diverse learner needs; tangible, providing immediately applicable skills; relevant, addressing current industry demands; and engaging, ensuring an effective learning experience (Lethbridge Polytechnic, n.d.).

Mount Royal University

Mount Royal University, through its Faculty of Continuing Education, emphasizes the importance of industry relevance by developing and delivering micro-credentials in close consultation with industry experts and university faculty (Mount Royal University, n.d.). The university awards digital badges via the MyCreds platform, enhancing the portability and verifiability of these credentials. Furthermore, these micro-credentials can be stacked to contribute towards Continuing Education extension certificates, offering learners a pathway to more comprehensive qualifications (Mount Royal University, n.d.).

NAIT

NAIT defines micro-credentials as certifications that acknowledge specific skills, learning outcomes, or competencies that are highly valued by employers (NAIT, n.d.). Similar to Mount Royal University, NAIT also employs digital badges, distributed through MyCreds, for recognition. They also support the stacking of individual micro-credentials towards the attainment of larger credentials such as certificates or diplomas, providing learners with clear educational progression routes (NAIT, n.d.).

University of Alberta

The University of Alberta's approach to non-credit micro-credentials focuses on the development and rigorous assessment of specific competencies, skills, and knowledge, often in partnership with external organizations (University of Alberta, 2024). Successful completion leads to the awarding of digital credentials that serve as validation of the acquired learning, with metadata embedded for verification purposes (University of Alberta, 2024).

The prevalence of institutions offering micro-credentials, coupled with active government involvement through funding and policy support, indicates a mature and strategic approach to micro-credentials in Alberta. The consistent emphasis on industry collaboration and the use of digital badges for recognition and portability underscore a commitment to ensuring the relevance and value of these credentials in the workforce. The focus on stackability also suggests an understanding of the importance of providing pathways for learners to build upon their skills and achieve longer-term educational and career goals.

Alberta's approach is evolving, with increasing emphasis on micro-credentials to address skills gaps and support workforce needs. The Labour Education Applied Research North (LEARN) project highlights the importance of industry-aligned, competency-based micro-credentials, especially for upskilling and reskilling in northern and rural communities (LEARN, 2021). Recommendations from the Alberta Colleges Economic Recovery Task Force include direct funding for industry-partnered micro-credential development.

The Government of Alberta has demonstrated a clear commitment to fostering the growth of micro-credentials as a strategic tool for skills development, actively collaborating with both industry and post-secondary institutions to this end. This governmental support likely plays a crucial role in facilitating the creation, recognition, and adoption of micro-credentials within the province.

Implementation Considerations:
Key issues include accessibility for rural and Indigenous learners, digital verification and storage of credentials, and private or third-party hosting to expand offerings.

British Columbia

Policy and Frameworks:
British Columbia has developed a Micro-Credential Framework to foster a coordinated and consistent approach to micro-credentials across its public post-secondary system (BCcampus, n.d.a; Government of British Columbia, 2021, 2024,). The framework defined micro-credentials as short, stand-alone, competency-based learning experiences aligned with labour market or community needs and assessed for employment or further learning (Government of British Columbia, 2021).

Micro-credentials may be credit-bearing or non-credit-bearing, and assessment is mandatory to ensure achievement of competencies. The framework encourages stacking and transferability within the broader credential ecosystem. Key guiding principles included:

- Relevance: Engagement with employers, industry, and Indigenous partners
- Access: Flexible, affordable offerings for diverse learners
- Quality: Institutional quality assurance processes
- Clarity and Transparency: Clear information on competencies, assessment, and pathways

The province has also provided funding to support the development and delivery of micro-credentials at various institutions (Government of British Columbia, 2023, 2024; University Affairs, 2021). BCcampus has further supported this effort by creating a Micro-Credential Toolkit specifically for the BC context (BCcampus, n.d.b).

Institutional examples

University of British Columbia (UBC)

UBC offers a range of micro-credentials through both its Vancouver and Okanagan campuses. These micro-credentials are short, stand-alone, and competency-based, with a strong focus on industry alignment and assessment for employment or further learning. For example, UBC Vancouver's "Blockchain Innovation and Implementation" micro-certificate consists of two four-week courses combining asynchronous study, group discussions, and instructor-led classes. The program culminates in a capstone design challenge, where students apply their knowledge to real-world problems and present their solutions to industry stakeholders. Assessment is mandatory and competency-based, ensuring learners demonstrate mastery of targeted skills (UBC Centre for Teaching, Learning and Technology, n.d.).

UBC Okanagan's micro-credentials, such as "Critical Skills for Communication in the Technical Sector," are also structured as Letters of Proficiency, requiring learners to complete a series of courses and demonstrate competency in technical communication, a skill highly valued by employers in science and engineering sectors. These programs are stackable and may be recognized for credit through prior learning assessment (PLAR) pathways (UBC School of Engineering, n.d.).

Royal Roads University (RRU) – Professional and Continuing Studies

Royal Roads University's Professional and Continuing Studies division offers micro-credentials designed to be accessible, flexible, and industry aligned. These programs are developed in consultation with employers and professional bodies to ensure relevance. For instance, micro-credentials in areas like "Climate Adaptation Fundamentals" and "Infrastructure and Climate Resilience Planning" target professionals seeking to upskill in sustainability and climate adaptation. The programs are modular, mapped to competency frameworks, and require learners to demonstrate applied knowledge through practical assessments (Porter et al., 2023). Many of these micro-credentials can be stacked or laddered into further credentials, supporting career progression and lifelong learning (Royal Roads University, n.d.).

Thompson Rivers University (TRU) – Micro-Credential Assessment and PLAR

TRU is a provincial leader in recognizing micro-credentials for academic credit using Prior Learning Assessment and Recognition (PLAR). In 2025, TRU received funding to assess up to 50 micro-credentials-both provincially funded and independently developed-for possible academic credit. This initiative is part of a multi-phase project to create a repeatable, scalable process for recognizing micro-credential learning within formal credit programs. The assessment results are shared through the BC Transfer Credit System, supporting transferability and stacking across institutions. This approach enables learners to leverage micro-credentials for both employment and further education, expanding their career opportunities and supporting lifelong learning (Thompson Rivers University, n.d.).

Vancouver Community College (VCC) – Community Outreach

VCC has developed micro-credentials with a focus on community outreach, particularly for marginalized and underrepresented groups. For example, the "Addiction Counselling Skills" micro-credential is designed in collaboration with industry experts and those with lived experience, targeting practitioners in social services and related fields. The program is evidence-based and emphasizes trauma-informed practice, cultural competency, and advocacy. Delivered in a blended format, it provides practical training for professionals and recent graduates, supporting their ability to serve diverse and vulnerable populations. This approach aligns with VCC's commitment to accessibility and responsiveness to community needs (Vancouver Community College, n.d.).

Sectoral Support:

The BC Chamber of Commerce has advocated for micro-credentials as tools for workforce development, with significant government investment in program development and delivery (BC Chamber of Commerce, 2022).

Ontario

Policy and Frameworks:

Ontario is a national leader in micro-credential policy, with substantial government investment and a robust framework developed by eCampusOntario. The province defines micro-credentials as short, competency-based programs, typically under 12 weeks, that are assessed and employer-relevant (eCampusOntario, 2022). The Micro-credential Principles and Framework guide program development, emphasizing:

- Employer/industry validation
- Assessment of specific competencies
- Stackability and transferability
- Alignment with labour market needs

Ontario stands out as a leader in the development and promotion of micro-credentials in Canada, largely due to the efforts of eCampusOntario, which has been instrumental in this field since 2017 (eCampusOntario, n.d.a, n.d.b, n.d.c). eCampusOntario has fostered a common framework and a collaborative community of practice, facilitating the growth and coherence of micro-credential initiatives across the province (eCampusOntario, n.d.a).

The Ontario government launched a comprehensive Micro-credentials Strategy in 2020, backed by significant financial investment (Ontario Ministry of Colleges and Universities, 2020). A key aspect of this strategy was the expansion of the Ontario Student Assistance Program (OSAP) in the same year to include a wide range of micro-credential programs (eCampusOntario, n.d.a; Ontario Ministry of Colleges and Universities, 2020, 2021a, 2021b, 2023; Ontario Student Assistance Program, n.d.). This policy decision significantly enhanced the accessibility of micro-credentials by providing financial support to eligible learners.

eCampusOntario, in collaboration with a diverse group of stakeholders including employers, colleges, universities, and public agencies, developed a Micro-credential Framework (eCampusOntario, 2019, 2020, n.d.a, n.d.b). This framework prioritizes workforce relevance and emphasizes the importance of rigorous assessment standards to ensure the quality and credibility of micro-credentials (eCampusOntario, 2019, n.d.a). The framework also promotes the use of harmonized skills and competency language, aligning with common frameworks such as ESCO (eCampusOntario, 2020, n.d.); European Commission, n.d.a).

To further enhance the accessibility and discoverability of micro-credentials, the Ontario Micro-credentials Portal was launched in 2021 (eCampusOntario, n.d.a; Ontario Ministry of Colleges and Universities, 2020, 2021a; Ontario Micro-credentials Portal, n.d.). This centralized platform allows users to search for upskilling and reskilling opportunities based on various criteria, drawing from the offerings of colleges, Indigenous institutes, and universities across Ontario.

eCampusOntario also developed a Micro-credential Toolkit to provide practical guidance and resources to institutions in the province seeking to develop and implement micro-credential programs (eCampusOntario, 2022, n.d.a; Ontario Ministry of Colleges and Universities, 2020). This toolkit supports institutions in navigating the various stages of micro-credential development, from ideation to evaluation.

Since 2019, eCampusOntario has initiated numerous pilot projects, often in partnership with industry, to test the principles of their framework and explore innovative approaches to micro-credential design and delivery (eCampusOntario, n.d.a, n.d.b). These pilot projects have been crucial in ensuring the practical applicability and effectiveness of the framework in diverse fields.

Ontario's approach to competency-based micro-credentials is characterized by strong provincial leadership, substantial and sustained government funding, a comprehensive and collaboratively developed framework, and a clear focus on enhancing accessibility and aligning with labour market demands. eCampusOntario's central role in coordination and the development of resources has been pivotal in establishing a robust and evolving micro-credential ecosystem within the province.

Institutional Examples

University of Toronto

The University of Toronto, through its School of Continuing Studies (SCS), offers micro courses that are designed around practical, skills-focused learning, with a clear emphasis on developing in-demand competencies and skills quickly (University of Toronto School of Continuing Studies, n.d.a). The competency frameworks are embedded within the curriculum of each micro course, targeting specific learning outcomes relevant to professional development and career advancement. Assessment methods in these micro courses prioritize authentic assessments that closely mirror real-world workplace tasks, allowing learners to directly apply their newly acquired knowledge and skills (University of Toronto School of Continuing Studies, n.d.a). Upon successful completion, learners are recognized with tamper-proof, verifiable, blockchain-based digital micro-credentials issued via BCDiploma (n.d.), a platform also supported by eCampusOntario (University of Toronto School of Continuing Studies, n.d.a). A key feature of the University of Toronto's model is the stackability of these micro courses, which can be combined to be equivalent to a full-length course and may contribute towards fulfilling the requirements for an SCS certificate, providing learners with clear pathways for educational progression (University of Toronto School of Continuing Studies, n.d.a).

Toronto Metropolitan University

In an article "Implementing a competency-based assessment approach to micro-credentials," Patterson and Hepburn (2025) examined the development and implementation of a competency-based, assessment-first model for micro-credentials at Toronto Metropolitan University’s School of Continuing Education. The authors detailed how the institution amended academic policy to formally define micro-credentials as short, non-credit offerings centered on the assessment of a single, workplace-relevant competency. This process involved extensive community consultation and the adoption of a backward design model, where assessment and rubric creation preceded the development of learning materials. Subject matter experts played a pivotal role in ensuring that assessments were authentic and aligned with industry needs, while the program emphasized transparency, flexibility, and learner agency throughout its design and delivery.

Patterson and Hepburn (2025) also described the operational aspects required for this model, including the creation of dedicated roles such as program director and assessment designers, and the establishment of a distinct brand identity. Learners were provided with curated resources and asynchronous support, with successful completion of the assessment as the sole requirement for earning a micro-credential. While the approach offered notable benefits in terms of employability and responsiveness to labor market demands, the authors acknowledged that the self-directed nature of the program might necessitate additional supports to ensure equitable access for all learners. Overall, the case provided a replicable framework for institutions aiming to align educational offerings with workforce requirements and improve employment outcomes for adult learners.

Humber College:
Humber College offers a range of competency-based micro-credentials designed to provide targeted skills for the evolving job market. These initiatives focus on shorter, flexible learning experiences that culminate in a shareable digital badge upon successful completion, validating specific competencies. For instance, within the Faculty of Health Sciences & Wellness, micro-credentials such as "12-Lead Analysis" are aligned with the 2023 Canadian Council of Cardiovascular Nurses (CCCN) and the Canadian Association of Critical Care Nurses (CACCN) competency standards, indicating a direct link to professional frameworks. Humber PRO, another initiative, offers workplace essential micro-credentials aimed at bridging skill gaps for both individuals and organizations, focusing on competencies essential for today's landscape. These micro-credentials can be customized to meet specific organizational needs, demonstrating a connection to employer requirements. (Humber College. n.d.)

Seneca College:
Seneca College's micro-credential initiatives are built upon a framework that ensures each micro-credential is industry-endorsed and provides opportunities for learners to demonstrate and reflect on their skills and competencies. Developed in collaboration with industry partners, these micro-credentials reflect the skills and competencies that employers value. Seneca issues these credentials as open digital badges, adhering to Mozilla's Open Badge standards, which contain metadata about the issuing institution and the competencies achieved. Examples include micro-credentials in areas like "Salesforce Administrator," "Avid Microcredentials" for media production, and "Cybersecurity Analyst," often stackable to show a broader or deeper set of skills. The "Accessible Podcasting" micro-credential, developed with the CNIB Foundation and the Canadian Hard of Hearing Association, highlights a focus on accessibility competencies and responds to industry needs in creating inclusive content. (Seneca College, n.d.)

Mohawk College:
Mohawk College's approach to competency-based micro-credentials emphasizes the development of flexible and granular learning opportunities aligned with employer and industry needs. These micro-credentials, typically delivered in 11 weeks or less, require collaboration between the college and employers or industry sectors. They are designed to map to chosen external competency frameworks, clearly linking demonstrated knowledge, skills, and attitudes to credentialed assessment performance. Upon completion, learners earn digital badges that can be shared on platforms like LinkedIn. The college offers a wide selection of micro-credentials across various sectors, including healthcare, technology, and business. For example, the "Certified Practitioner of Multi-Sensory Environments" micro-certification involves both theoretical and experiential learning, with a focus on practical application and a capstone project. Mohawk also offers the "Future Ready Premium Program," a series of free modules for current students and recent alumni focused on employability skills and professional competencies, indicating a direct effort to prepare learners for the workforce. (Mohawk College, n.d.)

Research and Evaluation in Ontario:
The Higher Education Quality Council of Ontario (HEQCO) has been instrumental in conducting micro-credential research in Ontario, including a notable paper, “Making Sens of Micro-credentials,” by Pichette, Brumwell, Rizk and Han (2021).

HEQCO has also reviewed micro-credential outcomes, finding they are most effective for upskilling rather than as pathways into traditional post-secondary education (HEQCO, 2024). Recommendations included improved data collection on supply, demand, and outcomes, and a focus on transparent upskilling strategies.

Saskatchewan

Policy and Frameworks

Saskatchewan has also made significant strides in structuring competency-based micro-credentials, with the Government of Saskatchewan releasing the Guide to Micro-credentials in 2021 (Government of Saskatchewan, 2021a, 2021b). This guide serves as a foundational document for understanding and implementing micro-credentials across the province's post-secondary education system.

In Saskatchewan, micro-credentials are defined as short, focused programs designed to teach specific knowledge, skills, and competencies that directly address identified needs within the province's labour market (Government of Saskatchewan, 2021a, 2021b). This clear definition underscores the strategic importance of micro-credentials in supporting workforce development and aligning education with employment opportunities.

The structure of competency-based micro-credentials in Saskatchewan is guided by a clear government strategy that emphasizes their role in meeting the needs of the labour market. The active involvement of various post-secondary institutions, coupled with a focus on quality assessment and strong connections with industry and community partners, indicates a coordinated effort to establish a valuable and effective micro-credential ecosystem within the province.

Institutional Examples

University of Saskatchewan

The University of Saskatchewan offers micro-credentials that are strategically focused on developing skills that are currently in high demand within the local labour market, aiming to help individuals advance in their careers (University of Saskatchewan, n.d.a, n.d.b). The competency frameworks for these micro-credentials are designed to support the acquisition and validation of specific, industry-relevant skills. Assessment methods emphasize practical learning and involve real-world scenarios, with expert feedback provided to enhance learner competence. Successful validation of the acquired skills and competencies leads to the awarding of an official university-level digital credential. These digital credentials can be readily shared on professional networking platforms like LinkedIn, included on resumes, or shared directly with employers, providing verifiable evidence of the learner's skills. The University of Saskatchewan's approach places a strong emphasis on micro-credentials that are skills-based, specific in their focus, relevant to industry needs, and authentically assessed to ensure their value and credibility (University of Saskatchewan, n.d.a).

Saskatchewan Polytechnic

Saskatchewan Polytechnic offers "Surge" micro-credentials, which are specifically designed to provide accelerated training for rapid upskilling and reskilling of the workforce (Government of Saskatchewan, 2021a; Saskatchewan Polytechnic, n.d.a, n.d.b). This initiative highlights a focus on quickly addressing evolving labour market demands through short, targeted programs.

North West College

North West College focuses its micro-credential offerings on enhancing the employability of learners and providing a means to verify existing skillsets, catering to individuals looking to advance their careers or transition into new roles (North West College, n.d.).

Manitoba

Policy and Sectoral Activity

Manitoba's post-secondary institutions are increasingly offering micro-credentials as flexible, industry-driven, competency-focused training. The emphasis is on measuring learner competency in specialized areas rather than time spent learning (Campus Manitoba, 2025). Micro-credentials are positioned as complementary to formal qualifications and are designed to meet evolving labour market demands.

Manitoba's University of Manitoba has integrated micro-credentials into its certificate and diploma framework, suggesting a strategic move to embed these smaller credentials within more traditional academic structures and provide pathways for further learning (University Affairs, 2021).

The existence of qualifications frameworks in ***New Brunswick*** and ***Prince Edward Island***, while not explicitly detailing their approach to micro-credentials in the provided snippets, suggests a potential foundation for future integration and alignment of micro-credentials within their respective post-secondary education systems.41

The widespread activity across the majority of Canadian provinces indicates a national trend towards recognizing the potential of competency-based micro-credentials in addressing skills gaps and promoting lifelong learning. The development of provincial frameworks and the involvement of diverse post-secondary institutions highlight a collective effort to structure and implement these innovative credentials across the country.

Nova Scotia

Policy and Frameworks

Nova Scotia has established a provincial micro-credentials framework that applies across post-secondary education, training providers, and industry (Government of Nova Scotia, n.d.). The framework includes:

- A shared definition
- Guiding principles
- Core and recommended elements (including employer alignment, assessment, and quality assurance)

The goal is to ensure consistency and employer relevance across the micro-credential ecosystem.

Nova Scotia implemented a micro-credential framework in 2023, aiming to align offerings across apprenticeships, colleges, universities, industry organizations, and the government, indicating a province-wide commitment to this model of learning (Government of Nova Scotia, n.d.; Future Skills Centre, 2023).

Quebec

Policy Direction:

Quebec has publicly supported micro-credentials, with statements indicating an intention to expand their use in the post-secondary system (eCampusOntario, 2022). However, detailed provincial frameworks or policies are less publicly documented compared to other provinces.

In Quebec, while the Fédération des cégeps piloted a digital badge program in 2016-17, demonstrating early exploration of alternative credentials (Future Skills Centre, 2023), McGill University currently offers micro-credentials focused on providing industry-relevant competencies and awards digital badges upon completion, showcasing a growing adoption within the province (McGill University, n.d.).

Newfoundland and Labrador

Policy and Projects:
The province is advancing micro-credential development through targeted projects in partnership with post-secondary institutions and industry. The focus is on addressing labour market gaps, with micro-credentials designed to be flexible and stackable, allowing participants to combine them with full-credit courses (Government of Newfoundland and Labrador, 2024). The approach emphasizes employer engagement and targeting under-represented groups.

Other Provinces

The existence of qualifications frameworks in New Brunswick and Prince Edward Island, while not explicitly detailing their approach to micro-credentials in the high-level research from government websites, suggests a potential foundation for future integration and alignment of micro-credentials within their respective post-secondary education systems (Council of Atlantic Ministers of Education and Training, n.d.).

Insight

The widespread activity across the majority of Canadian provinces indicates a national trend towards recognizing the potential of competency-based micro-credentials in addressing skills gaps and promoting lifelong learning. The development of provincial frameworks and the involvement of diverse post-secondary institutions highlight a collective effort to structure and implement these innovative credentials across the country.

A common thread across these Canadian provinces and post-secondary institutions is the emphasis on developing competency frameworks for micro-credentials that are closely aligned with the needs of industry and employers. Assessment methods are increasingly incorporating practical, real-world applications to validate the acquisition of specific skills. Furthermore, many institutions are strategically designing their micro-credential offerings to be stackable, providing learners with pathways to build towards larger academic credentials and supporting lifelong learning goals. The specific competency frameworks and assessment techniques employed may vary depending on the institution and the nature of the skills being taught and assessed, but the overarching principles of relevance, validation, and recognition are consistently applied.

Micro-credentials, especially those that are competency-based, are increasingly embedded in Canadian post-secondary policy and practice. While each province has developed its own frameworks and strategies, common themes include employer alignment, robust assessment, and a focus on upskilling for labour market needs. Ongoing research and policy development, particularly around quality assurance and data collection, will be critical to realizing the full potential of micro-credentials across Canada

Pan-Canadian and Sector Agency Initiatives

Universities Canada and Colleges and Institutes Canada (CICan):
Both agencies support the development and recognition of micro-credentials as part of a broader skills agenda, advocating for employer alignment, quality assurance, and transferability across institutions (ICTC, 2024).

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Geographic Scan: International Comparators

NATIONAL LEVEL

Canada

Initiatives undertaken by Colleges and Institutes Canada (CICan) offer valuable insights into national-level approaches to micro-credentials. CICan has established a national framework that provides a standard definition of a micro-credential as a certification of assessed competencies that is additional, alternate, complementary, or a component of a formal qualification (Colleges and Institutes Canada, n.d.a). The guiding principles emphasize quality assurance, industry relevance, the potential for pathways and stackability, competency-based assessment, security, portability, and the need for institutional approval processes (Colleges and Institutes Canada, n.d.a).

There is also a growing movement in Canada to establish a national competency framework for the skilled trades. This approach emphasizes credentialing workers based on demonstrated skills and competencies, rather than the traditional model focused on hours of training. Such a framework aims to improve workforce mobility, accelerate pathways into trades, and ensure workers have the right skills for modern industry needs. Calls for reform include shifting the Red Seal licensing system to a competency-based, modular structure (including micro-credentials). This would allow workers-such as skilled immigrants or those looking to change trades-to have their existing skills recognized more efficiently, reducing unnecessary retraining and making entry into trades faster and more accessible.

Note

The development of national frameworks, even by non-governmental organizations, offers a crucial foundation for ensuring a degree of quality and consistency in micro-credential offerings across a country, facilitating greater understanding and potential for recognition.

Australia

Australia has implemented a comprehensive National Micro-credentials Framework with the primary goal of enhancing clarity and understanding regarding the value and recognition of micro-credentials within the tertiary education sector and among learners (Australian Government Department of Education, Skills and Employment, 2021a, 2021b, 2022; Department of Education, Skills and Employment, 2021; MicroCred Seeker, n.d.).

This framework provides a national definition of a micro-credential as a certification of assessed learning or competency with a minimum volume of learning, and it is designed to be enabling, and flexible while being linked to the Australian Qualifications Framework (AQF). The framework outlines unifying principles and critical information requirements, emphasizing learning outcomes, assessment methods, the volume of learning in hours, industry recognition where relevant, and recognition by education providers for credit or advanced standing into AQF awards (Australian Government Department of Education, Skills and Employment, 2021a, 2022).

Note

A government-backed national framework that explicitly links micro-credentials to the existing national qualifications framework significantly enhances their credibility, transferability, and overall value within the education and employment ecosystem, providing a clear and consistent standard for both providers and consumers.

Ireland

Ireland has established a National Framework for Micro-credentials through the MicroCreds project, a significant five-year initiative led by the Irish Universities Association (IUA) in partnership with several universities (Irish Universities Association, n.d.a, n.d.b; Learn & Work Ecosystem Library, 2025; MicroCreds, n.d.a, n.d.b; Ramsey, 2021).

This framework aligns with the European Council Recommendation for a European Approach to Micro-Credentials for Lifelong Learning and Employability, defining micro-credentials as small, accredited courses with learning outcomes assessed against transparent standards (Irish Universities Association, n.d.a; MicroCreds, n.d.a; Ramsey, 2021).

Micro-credentials within this framework typically range from 1 to 30 ECTS credits and are placed at levels 6 to 9 of the Irish National Framework of Qualifications (NFQ) (Irish Universities Association, n.d.a; MicroCreds, n.d.; Ramsey, 2021). A key aspect of the MicroCreds project is the fostering of collaboration between universities and enterprise through initiatives like MicroCreds Innovate, and the creation of a national platform, microcreds.ie, to showcase offerings (Irish Universities Association, n.d.a, n.d.b).

Notable Practice

A national project driven by the higher education sector, with strong government funding and a focus on embedding enterprise-informed development, establishing a quality-assured framework aligned with national and European standards, and creating a central discovery platform, can effectively promote the development and uptake of micro-credentials for lifelong learning and employability.

Singapore

Singapore's approach to micro-credentials is closely tied to its national SkillsFuture movement, which aims to cultivate a culture of lifelong learning and skills mastery (Civil Service College Singapore, n.d.; SkillsFuture Singapore, n.d.).

The Singapore Institute of Technology (SIT) has pioneered a Competency-based Stackable Micro-credential (CSM) pathway, demonstrating an innovative model that focuses on recognizing specific industry-relevant competencies and allowing learners to stack these micro-credentials towards a full degree (Singapore Institute of Technology, 2022). This competency-based approach also facilitates the recognition of prior learning (Singapore Institute of Technology, 2022). Furthermore, Singapore has established a national micro-credential policy to support and improve the education, training, lifelong learning, and employability ecosystems, outlining principles for the design, delivery, and quality assurance of credit-bearing micro-credentials applicable to higher education and TVET institutions (Civil Service College Singapore, n.d.; SkillsFuture Singapore, n.d.).

Notable Practice

A strong national government strategy that promotes lifelong learning and actively supports the development of competency-based and stackable micro-credentials, coupled with institutional innovation in creating pathways for learners, can effectively address evolving workforce needs and foster a culture of continuous upskilling and reskilling.

Competency Frameworks for Micro-credentials

DEFINITIONS AND MODELS

A competency framework serves as a structured model that identifies and defines the specific skills, knowledge, and attributes necessary for successful performance in a particular job role, function, or organizational context (Learn & Work Ecosystem Library, 2025; Training Industry, n.d.). These frameworks provide a common language and understanding of what constitutes effective performance and are often used to guide various human resource functions, including training and development, hiring decisions, and performance management (Learn & Work Ecosystem Library, 2025; Training Industry, n.d.). Competencies are typically structured around key elements such as knowledge, representing the theoretical understanding required; skills, referring to the practical abilities to perform tasks; and attitudes, encompassing the mindsets and approaches to work that influence behaviour and performance (Learn & Work Ecosystem Library, 2025; Peoplebox.ai, n.d.). Some models also include values or behaviours as critical components that define how competencies are demonstrated in the workplace (Learn & Work Ecosystem Library, 2025; Peoplebox.ai, n.d.).

Many competency frameworks incorporate proficiency levels to indicate the degree of expertise or mastery an individual has achieved in a particular competency (Deel, n.d.; Learn & Work Ecosystem Library, 2025; Peoplebox.ai, n.d.). These levels often follow a progressive scale, such as basic, intermediate, advanced, and expert, or foundational, capable, inspirational, and transformational, allowing for a clear articulation of the different stages of skill development and performance expectations (Deel, n.d.; Learn & Work Ecosystem Library, 2025; Peoplebox.ai, n.d.). The use of proficiency levels enables organizations and individuals to identify areas for growth and development and to recognize varying levels of expertise.

Different types of competency models exist to serve various purposes within an organization. These include organizational core competency models, which define the fundamental skills and behaviours expected of all employees; functional competency models, which identify the skills needed for positive performance within a specific department or function; job competency models, which break down the specific knowledge, skills, abilities, and other characteristics required for optimal performance in a particular job role; leadership competency models, which focus on the skills and attributes necessary for effective leadership; and custom competency models, which are tailored to the unique needs of a specific organization or role (Learn & Work Ecosystem Library, 2025; Peoplebox.ai, n.d.).

The Education Design Lab's micro-credential framework presents an innovative model by focusing on nine durable skills that are considered essential for success in the future job market (Education Design Lab, n.d.). Each of these skills (e.g., self-directed learning, empathy, critical thinking) is further unbundled into four core sub-competencies, allowing for a more detailed and precise assessment of specific abilities within each broader skill area (Education Design Lab, n.d.).

The National Association for Healthcare Quality (NAHQ) utilizes the Healthcare Quality Competency Framework, which structures competencies within eight distinct domains that define the key areas of healthcare quality (NAHQ, n.d.a). Their micro-credentials are designed to provide focused training and recognition within specific domains of this comprehensive framework (NAHQ, n.d.b).

eCampusOntario's micro-credential framework emphasizes the importance of aligning with existing competency frameworks, such as ESCO (European Commission, n.d.), suggesting a move towards the use of standardized competency language and structures to enhance interoperability and recognition (eCampusOntario, 2020, n.d.b). Their framework also recognizes that performance competencies are explicitly aligned with underlying

knowledge, attitudes, and skills, reinforcing the multi-dimensional nature of competence (eCampusOntario, 2020).

Insights: Competency frameworks for micro-credentials are typically structured around the core components of knowledge, skills, and attitudes, often incorporating defined proficiency levels to indicate varying degrees of mastery. A range of models exist, catering to different organizational needs and focusing on various types of competencies, from broad organizational skills to specific job-related abilities and durable human capabilities. The trend towards aligning with external competency frameworks suggests a growing recognition of the need for standardization and interoperability in the micro-credential landscape.

INTERNATIONAL APPROACHES TO CREDENTIALING SYSTEMS ALIGNMENT

There are several different approaches to micro-credential design and assessment coming from government agencies in New Zealand, Australia, Singapore, the USA, and from the European Union through its multi-country initiatives.

Non-governmental organizations such as The World Economic Forum (WEF), has as its mission to improve the state of the world by engaging leaders from business, politics, academia, and civil society to shape global, regional, and industry agendas. It publishes the *Future of Jobs Report* annually and has recently published its *Skills Taxonomy Adoption Toolkit* (World Economic Forum, 2025b) in an effort at signal the global need to adopt a skills-first approach in education, to better align learning and training outcomes with emergent workforce needs.

World Economic Forum Skills Taxonomy Adoption Toolkit

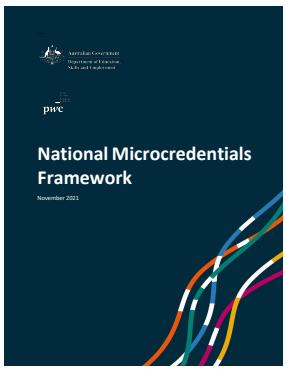
The "Global Skills Taxonomy Adoption Toolkit" by the World Economic Forum (2025) addresses the urgent need for a common skills language to tackle global talent shortages and workforce transformation. The report emphasizes that relying solely on traditional credentials and experience limits access to talent and perpetuates inequities, while a skills-first approach-focused on demonstrated competencies-broadens talent pools and accelerates hiring. By adopting a universal skills taxonomy, organizations, governments, and educators can align workforce planning, recruitment, and education more closely with actual market needs, fostering greater economic resilience and inclusion.

A key feature of the Toolkit is its practical roadmap for implementing a skills taxonomy, which involves identifying strategic priorities, assessing critical skills for future readiness, and establishing governance mechanisms for sustainability. The document highlights the importance of integrating technology, such as AI and data analytics, to enhance skills mapping and workforce planning while ensuring responsible use to avoid bias. The taxonomy is designed to be interoperable with other major frameworks, making it adaptable for various national and organizational contexts.

The report draws direct connections to micro-credentials, noting that a shared skills language enables more precise mapping of learning outcomes and competencies to labor market demands. Micro-credentials-short, targeted certifications that validate specific skills-can be more effectively recognized and valued when underpinned by a common taxonomy. This alignment supports skills-based hiring, personalized learning pathways, and internal mobility, allowing individuals to showcase verifiable skills regardless of their educational background. The WEF Toolkit advocates for a collaborative, data-driven, and skills-first approach to workforce development, with micro-credentials playing a pivotal role in validating and signaling competencies within a standardized framework.

Australia

The Australian Government published its National Micro-credentials Framework in 2021 with the expressed purpose of addressing workforce needs as well providing clarity for learners, employers, and institutions about the nature of micro-credentials and the principles, standards and information that would be required for their deployment (Australian Government, 2021, p.2). Australia stated the purpose of the national framework:



The education landscape is changing with growing demand for shorter-form courses that enable workers to rapidly upskill and encourage lifelong learning…This framework seeks to respond to stakeholder inputs, and in doing so:

- sets a national definition for micro-credentials.
- agrees on unifying principles for micro-credentials
- establishes critical information requirements
- outlines a minimum standard for micro-credentials that will sit on the *Micro-credentials Marketplace*.

The target output of the Australian National Micro-credential Framework was a ***Micro-credentials Marketplace*** that would be available to learners via the Internet, as a "user-friendly, nationally consistent platform that allows learners, employers and providers to compare short courses." (Australian Government, 2021, p.3)

A key contribution of the Australian national framework was the establishment of a **critical information summary (CIS)**, as described within the framework document, with highlighted requirements noted below:

- Learning outcomes must be clearly stated.
- When describing foundation or general capabilities, providers will consider the descriptors contained within the Australian Core Skills Framework. Note that additional capability taxonomies will be considered in a future version of this framework.
- Micro-credentials require assessment/s. This assessment/s must assess the attainment of learning outcomes. For transparency reasons, the type of assessment/ assessment method must be clearly stated.
- Micro-credentials are required to stipulate volume of learning and to have a minimum of one hour volume of learning and less than that of an Australian Qualifications Framework (AQF) award qualification.
- Micro-credentials will consider signifying the mastery achieved by a micro-credential, where the primary purpose of a micro-credential is not credit-bearing. This can be a best-fit or estimate.
- Where applicable, micro-credentials will clearly stipulate industry-recognition, where the micro-credential is recognized by a professional body, satisfies or aligns to an industry standard or professional development requirement, or constitutes recognition towards an industry or vendor certification.
- Where applicable, micro-credentials will clearly stipulate credit-recognition, where the micro-credential is recognized by an education institution for the provision of specified or unspecified credit or advanced standing. This stipulation will outline the nature of the credit and the AQF level/s of the qualifications that the micro-credential leads to (rather than mapping to the AQF level outcomes). Where the micro-credential is recognized for credit only when "stacked" with other micro-credentials, this should be clearly stipulated.
- Where an issuing authority has not applied a regulated standard (i.e., the standards and academic integrity processes applied to award courses or components within a training package) to a micro-credential, they

must provide a statement of assurance of quality - e.g., a profile of the provider/ institution, a description of the quality assurance processes undertaken, and the process for review/ updating the micro-credential.

New Zealand

New Zealand's approach to micro-credentials is managed by its Qualifications Authority, NZQA. From 2017 to 2018, the government piloted a set of micro-credentials, followed by the publication, *Micro-credentials in New Zealand's education and training system: a consultation paper* (New Zealand Qualifications Authority, 2018).

According to the NZQA website, "In New Zealand a micro-credential is an award that is not a qualification. (New Zealand Qualifications Authority, 2023). Micro-credentials are part of New Zealand's regulated education and training system." The website notes that NZQA quality assured micro-credentials…

- are listed on the Qualifications and Credentials Framework
- are delivered by registered tertiary education providers
- can be up to 40 credits in size and at any level of the framework
- have learning outcomes
- have evidence of need from employers, industry, workforce development councils, iwi, and/or communities, as appropriate.

Presently, there are over 200 micro-credentials that are recognized by the NZQA (Register of NZQA-approved Micro-credentials), and the NZQA provides a guideline document for institutions seeking approval to offer a micro-credential. Any NZQA-approved micro-credential includes the name of the awarding institution, level, and credits awarded. More information can be found about credit recognition in the NZQA document, *Recognizing learning for credit: Guidelines for the recognition and award of credit for learning* (NZQA, 2017).

New Zealand recently published its Theory of Change on micro-credentials (New Zealand Qualifications Authority, 2022), which is presented as a three-pillar approach.

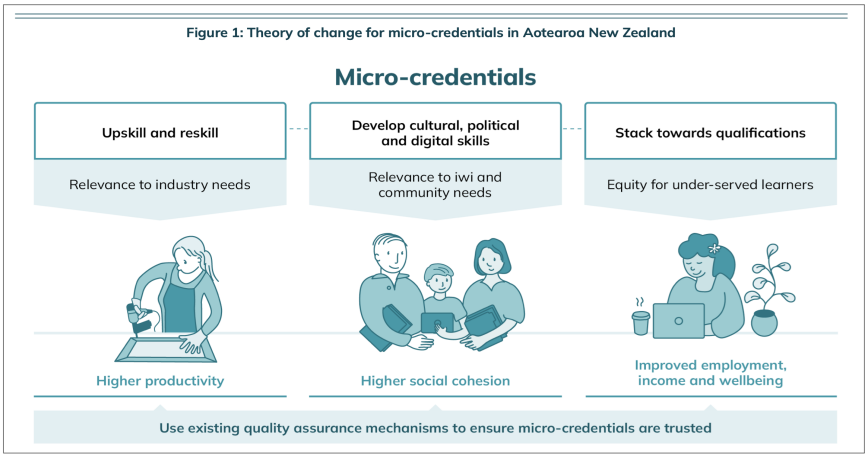


Figure 1: Theory of change for micro-credentials in Aotearoa New Zealand

As a national strategy, the New Zealand government has linked micro-credentials to workforce development, benchmarked against industry needs. In New Zealand, NZQA's specifications and regulatory authority have enabled the opportunity for these short duration learning pathways to stack or ladder into accredited qualifications. Institutions are permitted to pursue the development of micro-credentials in a variety of skill areas provided they meet the specified requirements that are outlined in the NZQA application process. Quality assurance is also regularized with yearly reviews and a public register of recognized qualifications.

European Union

The European Skills, Competences, Qualifications and Occupations (ESCO) Framework

ESCO is a multilingual classification system developed by the European Commission (n.d.a) to identify and categorize professional occupations and skills relevant to the EU labor market, as well as education and training. It functions as a dictionary, enabling electronic systems to match jobseekers with jobs based on their skills and suggest training for reskilling or upskilling. ESCO aims to support job mobility across Europe by providing a common language for occupations and skills. The system describes 3,039 occupations and 13,939 skills linked to these occupations, translated into 28 languages.

ESCO plays a crucial role in the design and implementation of micro-credentials. Micro-credentials, defined as records of learning outcomes from a small volume of learning, are assessed against transparent and clearly defined criteria. ESCO provides a harmonized skills and competency language that is aligned with micro-credentials. This alignment ensures that micro-credentials recognize performance competencies explicitly linked to underlying knowledge, attitudes, and skills. The framework facilitates the design and delivery of micro-credentials that are competency-based and address specific skill gaps.

ESCO is used in curriculum development and assessment by education and training institutions. The framework helps in describing qualifications in terms of knowledge, skills, and competences. It facilitates the dialogue between the labor market and the education/training sector by providing a standard terminology for occupations, skills, competences, and qualifications. This standardization aids in better identifying and managing the availability of required skills, competences, and qualifications.

European Common Micro-Credential Framework

Other frameworks relating micro-credentials to credential pathways and qualifications frameworks include the *European Common Micro-Credential Framework* (CMF) (European MOOC Consortium, 2019). It was designed as a voluntary specification to be administered by the European Association of Distance Teaching Universities (EADTU) on behalf of their online learning platforms. In many ways the EU CMF is consistent with recommendations from Australia and New Zealand, including clear micro-credential aims, quality assurance features, requirements for employer engagement, and verifiable data records – outlined in the CMF document.

The Common Micro-Credential Framework (CMF) was created to address three aims:

- Create a new higher education and training level qualification to address the needs of employers and learners looking for small units of study that meet their goals and/or develop higher education-level skills.
- Enable courses under the CMF to be recognized towards formal qualifications (EQF).
- Enable courses adhering to the CMF to be stackable between higher education institutions to support personalization of learning.

Courses adhering to the CMF will have the following specifications:

- Have a total study time of no less than 100 hours and no more than 150 hours (4-6 ECTS), including the completion of the summative assessment.

- Be levelled at Level 6 - 8 in the European Qualification Framework (EQF) or the equivalent levels in the university's national qualification framework (bachelor, master and third cycle level). Eventually, with options for levels 4/5 (in combination with ECTS).
- Provides a rigourous summative assessment that enables the award of academic credit, either directly following successful completion of the course or via recognition of prior learning upon enrolment as a student on the university's course of study.
- Operates a reliable method of ID verification at the point of assessment that complies with the university's policies and/or is widely adopted across the Platforms.
- Provides a transcript (certificate supplement) that sets out the course content, learning outcomes, total study hours, EQF level and number of credit points (ECTS) earned.

Additional Recommendations

- Courses should be designed so that the number of hours of study per week are suited to learners who will need to fit study around full-time work and/or familial responsibilities.
- Course content aimed at employees should combine a mix of theory and practice to ensure they have direct relevance to the workplace.
- A credible industry backer for a micro-credential might give additional endorsement of its work relevance. This may not be needed in all instances, especially if the university's brand/reputation or course subject itself would not benefit from a non-university endorsement. (European MOCC Consortium, 2019, p.3-4)

EU Skills Passport

The EU Skills Passport (European Commission (n.d.b), facilitated by the Europass platform, is designed to help individuals showcase their skills and qualifications in a standardized format recognized across Europe. It allows job seekers to clearly present their experiences, training, and competencies to potential employers, thereby facilitating skill comparison across different countries. The Skills Passport complements traditional CVs by providing a structured method to record and present skills gained through education, training, and work experience.

The EU Skills Passport is linked to the broader European approach to micro-credentials, which aims to standardize and promote the use of micro-credentials across the EU. Micro-credentials, which certify the learning outcomes of short-term learning experiences, are seen as a flexible way to help people develop specific skills. The Skills Passport can serve as a tool to document and present these micro-credentials, enhancing their portability and recognition. Furthermore, the EU Skills Passport works in conjunction with ESCO (European Skills, Competences, Qualifications and Occupations). ESCO provides a common language for skills and occupations, which helps to ensure that the skills documented in the Skills Passport are well-understood and recognized across different sectors and countries. The passport may also align with the European Qualification Framework (EQF), as well as the Common Micro-credential Framework (CMF), to enhance the transparency and cross-border recognition of qualifications.

Note

It is important to that note is that New Zealand, Australia, and the EU systems are all in some way related to a country-specific or regional method for aligning qualifications to academic programs using a system of qualification levels. The qualifications are administered (or governed) through specified organizations, or using national frameworks such as the NZQA, AQF, or EQF.

Singapore

Singapore's national qualifications framework is anchored by the Singapore Workforce Skills Qualifications (WSQ) system, a competency-based credentialing framework administered by SkillsFuture Singapore (SSG). The WSQ system is designed to train, develop, assess, and certify skills and competencies relevant to the workforce, supporting Singapore's broader SkillsFuture movement for lifelong learning and skills mastery (SkillsFuture Singapore, 2023). The WSQ framework comprises six qualification levels, ranging from WSQ Certificate to WSQ Graduate Diploma, and is structured to align with the Skills Frameworks for various industry sectors. These frameworks, developed in consultation with employers, unions, and professional bodies, specify the job roles, skills, and competencies required for current and emerging occupations (Ministry of Education, 2022; SkillsFuture Singapore, 2023).

A distinctive feature of the WSQ system is its integration with Singapore's formal education pathways, including the Institute of Technical Education (ITE), Polytechnics, and Universities. While ITE provides foundational vocational education within the formal system, the WSQ operates as a parallel national credentialing system focused on continuing education and training (CET) for working adults (The HEAD Foundation, 2020). The WSQ's open-access approach-requiring no academic prerequisites and recognizing prior learning-enables individuals from diverse backgrounds to upskill or reskill. Furthermore, the framework supports articulation and progression, allowing learners to stack modular Statements of Attainment (SOAs) toward full WSQ qualifications, which may facilitate transitions between vocational and academic pathways (SkillsFuture Singapore, 2023; Ministry of Education, 2022).

The WSQ and SkillsFuture frameworks play a pivotal role in promoting lifelong learning and skills upgrading for Singapore's workforce. Initiatives such as SkillsFuture Credit, the SkillsFuture Series, and the SkillsFuture Level-Up Programme provide financial incentives, targeted training, and modular learning opportunities for individuals at all career stages, with special support for mid-career workers (SkillsFuture Singapore, 2025; SkillsFuture Singapore, 2024). These programs are underpinned by the Skills Frameworks, which guide individuals in identifying relevant skills, planning career transitions, and selecting appropriate training to close skills gaps (SkillsFuture Singapore, 2018). The emphasis on both technical and critical core skills ensures that the workforce remains agile and adaptable to economic transformation and technological change.

Competency-based learning and micro-credentials are integral to the WSQ and SkillsFuture ecosystem. Micro-credentials-such as those offered through the SkillsFuture Series or the Competency-based Stackable Micro-credential (CSM) pathway at the Singapore Institute of Technology-are designed as short, industry-aligned modules that certify mastery of specific competencies (Asia-Pacific Economic Cooperation, 2024; Singapore Institute of Technology, 2022). These micro-credentials can be stacked toward higher qualifications, supporting flexible, just-in-time learning for working adults. The WSQ framework formally recognizes these modular certifications, awarding Statements of Attainment for each completed module and enabling their accumulation toward full qualifications. This approach not only facilitates skills upgrading and career mobility but also ensures that learning outcomes are directly relevant to industry needs (SkillsFuture Singapore, 2023; Singapore Institute of Technology, 2022).

By aligning training with industry needs and enabling flexible, modular learning pathways, the framework ensures that Singapore's workforce remains competitive, adaptable, and equipped for the future economy.

United States

The United States (US) has no national qualifications framework (NQF) at this time. However, a number of consortia and multi-state, multi-sector organizations have taken an interest is achieving a national qualifications framework and the related systems and tools to better align the academic and training initiatives of learning and training providers and post-secondary institutions, including micro-credentials, with workforce requirements.

In a paper titled *On Outlining the Establishment of a United States Qualification Framework* (Schatzman, 2022), the author outlined a case for building a US framework. Noting that a NQF provided a commonly accepted structure for describing the relationship of educational qualifications within a country, in terms of level, length, and learning outcomes, and that it was imperative that the US join the 100 other countries that had such a framework or were in the process of developing one. She stated in the context of the need for a US NQF:

> *This flexible and expandable model is vital to the landscape of education, as new types of qualifications (e.g., micro-credentials) are introduced and modes of learning (e.g., hybrid and remote) evolve. An NQF provides the structure and regulation needed to ensure consistency and standardized definitions for new educational developments. (Schatzman, 2022, p.3)*

In other sectors across the US, related and complementary activities exist or are underway.

American Council on Education (ACE)

American Council on Education (ACE) evaluates workplace learning and training through its ACE Learning Evaluations service (American Council on Education, n.d.). The evaluation process involves a review of the learning objectives, content, and assessment methods for workplace, military, or post-secondary programs, and is based on ACE's standards for college-level learning. The resulting credit recommendations are accepted by colleges and universities as evidence of prior learning. ACE provides a model that works on a national level.

Credential as You Go (CAYG)

Credential as You Go (CAYG) is a newer educational concept in which students gradually earn credentials as they demonstrate mastery of specific skills or knowledge. The idea is to provide students with a flexible, personalized learning experience that better aligns with the demands of a dynamic workforce. Instead of waiting until the end of a program to receive a degree or certificate, students receive smaller credentials along the way, allowing them to demonstrate their progress and increase their marketability. (Credential as you Go, n.d.)

Credential Engine

Credential Engine is a non-profit organization that aims to improve the transparency and accessibility of credentials, such as degrees, certificates, licenses, and other forms of verification of skills and knowledge. Its goal is to create a common language and framework for the exchange of information about credentials, making it easier for employers, educational institutions, and individuals to understand and compare the value of over one million US credentials. Credential Engine is developing a US Credential Registry (Credential Engine, n.d.)

MIT Digital Credentials Consortium

The MIT Digital Credentials Consortium is a group of universities, companies, and organizations that have come together to support the development and implementation of digital credentials. The consortium aims to promote the use of digital credentials, such as digital certificates and badges, to recognize and verify learning, skills, and achievements in a standardized and secure manner. The goal of the consortium is to help make the transition to a more flexible and accessible system of lifelong learning and to ensure that digital credentials are recognized and valued by employers, educational institutions, and other organizations. (DCC, 2023)

QUALIFICATION FRAMEWORKS: CANADA

The degree to which competency frameworks for micro-credentials align with existing qualification frameworks in Canada varies across provinces and is generally less established compared to some international jurisdictions like Australia and Ireland (Council of Atlantic Ministers of Education and Training, n.d.; Government of British Columbia, 2021; ONCAT, 2023; University Affairs, 2021). While several Canadian provinces have developed their own qualification frameworks, the explicit mapping of micro-credential competencies to these frameworks is not consistently implemented across the country.

In Ontario, despite having a detailed qualifications framework that covers learning well below the degree level, the province's micro-credential policy has been criticized for not fully leveraging this existing structure (Higher Education Strategy Associates, 2021). Instead of requiring institutions to be transparent about the length and level of micro-credentials, the policy focuses on adhering to "harmonized skills and competency language" aligned with frameworks like ESCO (European Commission, n.d.), potentially overlooking opportunities for direct integration with the Ontario Qualifications Framework (Higher Education Strategy Associates, 2021).

Colleges and Institutes Canada (CICan) has taken a proactive step by issuing a national framework for micro-credentials intended for its member institutions (Colleges and Institutes Canada, n.d.a; University Affairs, 2021). This framework aims to provide a common definition and guiding principles, which could indirectly support alignment with broader qualification frameworks by establishing a recognized standard for micro-credentials within the college and institute sector.

British Columbia has developed its own Micro-credential Framework, which provides a definition and guiding principles for micro-credentials within the province's public post-secondary education system (Government of British Columbia, 2021, 2024). While this framework focuses on the characteristics and quality of micro-credentials, it does not represent a comprehensive province-wide qualification framework in the same vein as those in some other provinces. However, it does emphasize the importance of aligning with labour market needs and facilitating learner mobility, which are considerations relevant to broader qualification frameworks.

Saskatchewan's Guide to Micro-credentials encourages post-secondary institutions to develop programming that has clear connections to lifelong learning, suggesting an implicit alignment with broader educational pathways that are often represented in qualification frameworks (Government of Saskatchewan, 2021a). Furthermore, the University of Saskatchewan's initiative to assign credit equivalency to approved micro-credentials demonstrates a direct effort to map these smaller credentials to the university's academic qualification framework, allowing them to contribute towards degree programs.

The absence of a robust and consistently applied national qualifications framework in Canada that extends below the degree level presents a significant challenge for the seamless alignment and portability of micro-credentials across different provinces and institutions (Higher Education Strategy Associates, 2021; University of Saskatchewan, n.d.b). This lack of a unified framework can create complexities in recognizing and transferring learning achieved through micro-credentials within the broader Canadian education landscape.

Insights

The alignment of micro-credential competency frameworks with existing qualification frameworks in Canada is an evolving area with room for improvement. While initiatives at the national and provincial levels are underway, a more explicit and consistent mapping would enhance the clarity, recognition, and transferability of micro-credentials within the Canadian post-secondary education system and the labour market. Drawing lessons from international models that have successfully integrated micro-credentials into their national qualification frameworks could provide valuable guidance for Canada's future efforts in this domain.

STACKABILITY AND PATHWAYS

Stackability is a widely recognized and actively pursued feature within the Canadian micro-credential landscape. Numerous post-secondary institutions are designing their micro-credential programs with the explicit intention of allowing learners to combine multiple micro-credentials to achieve larger credentials, such as certificates, diplomas, and in some cases, even to contribute towards degree requirements (BCcampus, 2023, n.d.a; Colleges and Institutes Canada, n.d.a; eCampusOntario, 2019, n.d.a, n.d.b; Lethbridge Polytechnic, n.d.; McGill University, n.d.; Mount Royal University, n.d.; NAIT, n.d.; Ontario Micro-credentials Portal, n.d.; Saskatchewan Polytechnic, n.d.b; University of Alberta, 2024; University of Saskatchewan, n.d.a, n.d.b; University of Toronto School of Continuing Studies, n.d.a). This approach offers learners the flexibility to build their qualifications incrementally, focusing on specific skills and competencies as needed.

eCampusOntario's framework in Ontario specifically aims to facilitate pathways for learners to progress from micro-credentials into regular post-secondary programming (eCampusOntario, 2019, n.d.a). Their Micro-credential Toolkit also provides guidance to institutions on how to effectively integrate micro-credentials into existing academic programs, suggesting a strategic approach to creating seamless educational pathways (eCampusOntario, 2022).

BCcampus in British Columbia also emphasizes the importance of developing meaningful learner pathways by ensuring that micro-credentials are designed in a way that clearly demonstrates their relationship to other credit and non-credit learning opportunities and their connection to existing larger units of learning (BCcampus, 2023, n.d.a). BCcampus also explores mechanisms such as laddering, where micro-credentials can lead to advanced standing in larger programs, and credit transfer arrangements, which would allow micro-credentials to be recognized across different institutions (BCcampus, 2023, n.d.a).

The national framework developed by Colleges and Institutes Canada (CICan) explicitly states that micro-credentials may provide clear and seamless pathways across various credentials, including both non-credit and credit options, and that they may also be stackable (Colleges and Institutes Canada, n.d.a). This national guidance encourages the development of micro-credentials that can serve as building blocks for more substantial qualifications.

Several Canadian institutions are actively implementing stackability. For example, the University of Saskatchewan assigns credit equivalency to its approved micro-credentials, directly enabling learners to stack them towards undergraduate degree programs (University of Saskatchewan, n.d.a, n.d.b). Similarly, SIT Singapore's Competency-based Stackable Micro-credential (CSM) pathway is specifically designed to allow working adults to accumulate micro-credentials that ultimately contribute to a university degree, showcasing a model for recognizing prior learning and facilitating degree completion through shorter learning experiences (Singapore Institute of Technology, 2022, n.d.).

Despite these efforts, achieving seamless recognition of competencies and micro-credentials across different institutions in Canada remains a significant challenge (ONCAT, 2023; University of Saskatchewan, n.d.b; University Affairs, 2021). The lack of standardized information regarding the learning outcomes, assessment rigour, and transfer value of micro-credentials from different providers creates barriers for learners seeking to combine learning from multiple sources or to gain advanced standing when transferring between institutions. While some individual institutions may have policies in place to assess and recognize micro-credentials from other providers on a case-by-case basis, a comprehensive and widely adopted system for cross-institutional recognition is still needed.

Insights

The potential for stackability and the creation of clear educational pathways are widely recognized as key benefits of micro-credentials in Canada. While many institutions offer stackable options within their own programs, the challenge of achieving consistent recognition of micro-credentials and the competencies they represent across different institutions persists. Addressing this challenge through greater standardization of information, enhanced inter-institutional collaboration, and potentially a more robust national framework will be crucial for maximizing the value and impact of micro-credentials in supporting lifelong learning and learner mobility within the Canadian post-secondary education system.

ASSESSMENT AND VALIDATION

The assessment of competencies within micro-credentials in Canada employs a diverse array of methods, reflecting the focus on evaluating the practical application of skills and knowledge rather than solely relying on traditional, knowledge-based examinations (BCcampus, n.d.a; Colleges and Institutes Canada, n.d.a, n.d.b; eCampusOntario, 2022, n.d.b; Government of Saskatchewan, 2021a; NAIT, n.d.; Saskatchewan Polytechnic, n.d.b; University of Alberta, 2024; University of Saskatchewan, n.d.a; University of Toronto School of Continuing Studies, n.d.a). These methods are often designed to be authentic, mirroring real-world workplace tasks and scenarios, allowing learners to demonstrate their abilities in a contextually relevant manner (BCcampus, n.d.a; eCampusOntario, 2022; University of Saskatchewan, n.d.a; University of Toronto School of Continuing Studies, n.d.a).

Performance-based assessments are a common approach, requiring learners to actively demonstrate their skills and competencies through practical application. This can include completing specific tasks, creating deliverables, or showcasing their abilities in simulated or real-world settings (Education Design Lab, n.d.; eCampusOntario, 2022). Other frequently used methods include project-based assessments, where learners undertake a project to showcase their integrated skills and knowledge; problem-based assessments, challenging learners to apply their competencies to solve realistic problems; and scenario-based assessments, presenting learners with hypothetical situations to evaluate their decision-making processes and skill application (eCampusOntario, 2022).

Learners may also be assessed through video demonstrations of their skills, written assessments that evaluate their understanding and analytical capabilities, and portfolios that compile evidence of their competency development over time (eCampusOntario, 2022). In some cases, workplace observations and dialogue or conversations are utilized to assess skills in real-world contexts and evaluate communication and interpersonal abilities (eCampusOntario, 2022).

The awarding of digital badges often signifies that the learner has successfully demonstrated the required competencies through a defined assessment process, providing a portable and verifiable record of their achievement (BCcampus, n.d.a; Colleges and Institutes Canada, n.d.a, n.d.b; eCampusOntario, 2019, n.d.a, n.d.b; Lethbridge Polytechnic, n.d.; McGill University, n.d.; Mount Royal University, n.d.; NAIT, n.d.; Ontario Micro-credentials Portal, n.d.; Saskatchewan Polytechnic, n.d.b; University of Alberta, 2024; University of Saskatchewan, n.d.a, n.d.b; University of Toronto School of Continuing Studies, n.d.a).

A strong emphasis is placed on the importance of rigourous assessment standards to ensure that micro-credentials are a credible and valuable representation of a learner's capabilities for both educational institutions and prospective employers (BCcampus, n.d.a; eCampusOntario, 2019, n.d.a; Government of Saskatchewan, 2021a; University of Saskatchewan, n.d.a).

Insights

The assessment of competencies in Canadian micro-credentials reflects a broader shift towards evaluating the practical application of skills and knowledge. The utilization of diverse assessment methods, often tailored to the specific competencies being assessed, aims to provide a more holistic and accurate representation of a learner's abilities.

Digital badges often serve as a key mechanism for validating and recognizing these assessed competencies, offering a portable and verifiable credential that can be recognized by employers and other educational institutions. The emphasis on rigourous assessment standards underscores the commitment to ensuring the credibility and value of micro-credentials in the evolving landscape of post-secondary education and workforce development.

Implementation and Policy Considerations

INDUSTRY AND EMPLOYER RECOGNITION

How are competency-based micro-credentials validated and accepted in the workforce?

Validation through Collaboration

A fundamental approach to ensuring the validation and acceptance of competency-based micro-credentials in the workforce is through close collaboration between post-secondary institutions and industry partners in the design, development, and assessment processes (BCcampus, n.d.a; Colleges and Institutes Canada, n.d.a; eCampusOntario, 2019, n.d.a, n.d.b; Government of Alberta, n.d.; Government of British Columbia, 2021; Government of Nova Scotia, n.d.; Government of Saskatchewan, 2021a; Lethbridge Polytechnic, n.d.; McGill University, n.d.; Mount Royal University, n.d.; NAIT, n.d.; Ontario Micro-credentials Portal, n.d.; Saskatchewan Polytechnic, n.d.b; University of Alberta, 2024; University of Saskatchewan, n.d.a). This collaborative approach ensures that the skills and competencies targeted by the micro-credentials are directly relevant to the needs of the workforce and meet current industry standards.

Emphasis on Competency-Based Assessment

Employers are increasingly recognizing the value of micro-credentials that utilize rigourous competency-based assessment methods, focusing on the demonstration of actual skills and abilities rather than just the completion of learning activities (Colleges and Institutes Canada, n.d.a; University of Saskatchewan, n.d.a). Micro-credentials that require learners to apply their knowledge and skills in practical, job-related contexts are viewed as more credible indicators of workforce readiness.

The Role of Digital Badges

Digital badges have emerged as a key tool for validating and showcasing the competencies gained through micro-credentials to employers (BCcampus, n.d.a; Colleges and Institutes Canada, n.d.a, n.d.b; eCampusOntario, 2019, n.d.a, n.d.b; Lethbridge Polytechnic, n.d.; McGill University, n.d.; Mount Royal University, n.d.; NAIT, n.d.; Ontario Micro-credentials Portal, n.d.; Saskatchewan Polytechnic, n.d.b; University of Alberta, 2024; University of Saskatchewan, n.d.a; University of Toronto School of Continuing Studies, n.d.a). These badges often contain metadata that provides detailed information about the specific competencies achieved, the assessment methods used, and the issuing institution, allowing employers to verify the authenticity and relevance of the credential. Platforms like Badgr, CanCred, Credly, and MyCreds facilitate the management and sharing of these digital credentials.

Industry Endorsements and Alignment

Micro-credentials that have the endorsement or formal recognition of specific industry associations or professional organizations tend to be more readily accepted by employers within those sectors (Colleges and Institutes Canada, n.d.a; eCampusOntario, 2020; NAIT, n.d.; University of Saskatchewan, n.d.a). Such endorsements signal that the micro-credential aligns with established industry standards and meets the specific skill requirements of employers in that field.

Addressing Identified Skills Gaps

Many competency-based micro-credentials are strategically developed to address specific skills gaps that have been identified by employers in the workforce (BCcampus, n.d.a; Colleges and Institutes Canada, n.d.a; eCampusOntario, 2019, n.d.a, n.d.b; Government of Alberta, n.d.; Government of British Columbia, 2021, 2024; Government of Nova Scotia, n.d.; Government of Saskatchewan, 2021a; Lethbridge Polytechnic, n.d.; McGill

University, n.d.; Mount Royal University, n.d.; NAIT, n.d.; Olds College, n.d.; Ontario Micro-credentials Portal, n.d.; Saskatchewan Polytechnic, n.d.b; University of Alberta, 2024; University of Saskatchewan, n.d.a). This direct relevance increases their value and acceptance among employers looking for individuals with specific, in-demand skills.

Insights

he validation and acceptance of competency-based micro-credentials in the workforce are primarily driven by their demonstrated relevance to industry needs, the rigour of their competency assessment, the verifiability offered by digital badges, and endorsements from industry bodies. While progress has been made, ongoing efforts to enhance employer awareness and understanding of the specific value proposition of micro-credentials compared to traditional qualifications are essential for their wider adoption and impact on hiring and career advancement.

GOVERNMENT POLICY

How does government policy hinder or help the implementation of micro-credentials?

Helping Implementation

Government policies in Canada have generally played a significant role in facilitating the implementation of micro-credentials. Financial support through direct funding for micro-credential development and delivery in provinces like Ontario, British Columbia, and Alberta has been a crucial catalyst for growth in this area (Folio, 2022; Government of Alberta, n.d.; Government of British Columbia, 2023, 2024, n.d.; Ontario Ministry of Colleges and Universities, 2020, 2021a, 2023; University Affairs, 2021). Furthermore, the inclusion of eligible micro-credential programs in student financial aid schemes, such as the Ontario Student Assistance Program (OSAP), has significantly improved accessibility for learners who may not otherwise be able to afford these training opportunities (Ontario Ministry of Colleges and Universities, 2020, 2021a; Ontario Student Assistance Program, n.d.). The establishment of provincial frameworks, like those developed by eCampusOntario in Ontario and BCcampus in British Columbia, and the issuance of guides, such as Saskatchewan's Guide to Micro-credentials, provide valuable guidance, standards, and infrastructure for post-secondary institutions to develop and deliver quality micro-credential programs (BCcampus, n.d.a, n.d.b; eCampusOntario, 2019, n.d.a, n.d.b; Government of British Columbia, 2021, 2024; Government of Saskatchewan, 2021a, 2021b). These initiatives help to create a more cohesive and supportive environment for micro-credential development.

Hindering Implementation

Despite the supportive measures, certain aspects of government policy or the lack thereof can hinder the broader implementation and impact of micro-credentials in Canada. The absence of a unified national definition and consistent standards for micro-credentials across all provinces creates challenges for their portability and widespread recognition by employers and other educational institutions nationwide (Colleges and Institutes Canada, n.d.a; Government of British Columbia, 2021; Government of Nova Scotia, n.d.; Higher Education Strategy Associates, 2021; University Affairs, 2021). Policies that primarily prioritize short-term, employment-focused upskilling may inadvertently limit the potential of micro-credentials to serve as pathways for more comprehensive reskilling or as stepping stones towards traditional academic credentials like degrees and diplomas (Government of British Columbia, 2023; Higher Education Strategy Associates, 2021; University Affairs, 2021). Additionally, the often bureaucratic and slow-moving approval processes within academic governance structures in post-secondary institutions can impede the agile development and seamless integration of micro-credentials into existing academic programming, potentially limiting their responsiveness to rapidly changing labour market needs (Higher Education Strategy Associates, 2021; University Affairs, 2021).

Finally, the existing funding models for post-secondary education may not be optimally designed to accommodate the unique characteristics and potential scale of micro-credential offerings, suggesting a need for potential adjustments to ensure their long-term sustainability and impact (University Affairs, 2021).

Insights

Government policies in Canada have been instrumental in initiating and supporting the growth of competency-based micro-credentials through financial investments and the establishment of guiding frameworks. However, to fully realize the potential of these credentials, there is a need to address the challenges posed by the lack of national standardization, potential limitations in the scope and integration of micro-credentials within the broader education system, and the responsiveness of institutional policies and funding models.

A more coordinated and nuanced approach at the national and provincial levels could help to overcome these hindering aspects and further enhance the impact of micro-credentials on the Canadian workforce.

Proven Practices and Challenges

INNOVATIVE MODELS

Examples of jurisdictions effectively implementing competency-based micro-credentials.

Australia

Australia's implementation of a National Micro-credentials Framework stands as an innovative model. The framework's direct linkage to the Australian Qualifications Framework (AQF) ensures that micro-credentials are not only nationally recognized but also understood within the context of broader educational qualifications (Australian Government Department of Education, Skills and Employment, 2021a, 2021b, 2022; Department of Education, Skills and Employment, 2021; MicroCred Seeker, n.d.; Pattison, 2022; Skills and Employment, Australian Government Department of Education, n.d.). This integration promotes portability and facilitates credit recognition across different institutions and industries. Furthermore, the Australian government's strategic funding of pilot projects in sectors of national priority demonstrates a targeted approach to addressing skills gaps and fostering innovation in micro-credential development (Learn & Work Ecosystem Library, 2025).

Ireland

The MicroCreds project in Ireland represents another effective model. This national initiative, led by the Irish Universities Association (IUA), fosters a strong collaborative environment between universities and industry (Irish Universities Association, n.d.a, n.d.b; Learn & Work Ecosystem Library, 2025; MicroCreds, n.d.a, n.d.b; Ramsey, 2021). By aligning with both European standards and the Irish National Framework of Qualifications (NFQ), the project ensures the quality and recognition of micro-credentials. The creation of a central national platform, microcreds.ie, to showcase offerings from partner universities enhances accessibility and transparency for learners.

Singapore

Singapore's national SkillsFuture movement provides a broad and supportive ecosystem for lifelong learning, with micro-credentials playing a key role (Civil Service College Singapore, n.d.; SkillsFuture Singapore, n.d.). The Singapore Institute of Technology's (SIT) Competency-based Stackable Micro-credential (CSM) pathway is a prime example of an innovative institutional model. This pathway focuses on recognizing specific industry-relevant competencies and allows learners to stack these micro-credentials towards a full degree, offering a flexible and competency-driven approach to higher education (Singapore Institute of Technology, 2022, n.d.). The establishment of a national micro-credential policy further underscores Singapore's commitment to a unified and strategic approach.

Ontario (Canada)

Within Canada, Ontario's efforts, spearheaded by eCampusOntario, provide an innovative model at the provincial level (eCampusOntario, 2019, n.d.a, n.d.b; Ontario Micro-credentials Portal, n.d.; Ontario Ministry of Colleges and Universities, 2020, 2021a, 2023). eCampusOntario has developed a comprehensive framework for micro-credentials, facilitated numerous pilot projects in collaboration with industry, and launched a provincial portal to enhance micro-credential discoverability. eCampusOntario’s focus on building a connected ecosystem and ensuring quality through defined principles and guidelines serves as a significant example of effective implementation within the Canadian context.

Education Design Lab (US)

While based in the United States, the Education Design Lab's micro-credential framework offers an innovative approach to structuring competencies (Education Design Lab, n.d.). By focusing on durable skills and breaking them down into specific, measurable sub-competencies, the Lab's model allows for more precise assessment and recognition of in-demand skills. The use of performance-based assessments and digital badges further enhances the value and portability of these micro-credentials.

Insights

These examples of effective implementation across different jurisdictions highlight several common themes: the importance of a clear framework (whether national or provincial), a strong emphasis on quality assurance and relevance to industry needs, the facilitation of collaboration between educational institutions and employers, and the strategic use of digital credentials for recognition and portability. Additionally, models that support stackability and provide clear pathways for learners to progress in their education and careers appear to be particularly effective.

CHALLENGES

Barriers to implementation, including funding, standardization, and industry buy-in.

Funding

A significant barrier to the widespread implementation of competency-based micro-credentials is the challenge of securing adequate and sustainable funding (University Affairs, 2021). The costs associated with curriculum development, the establishment of technological infrastructure for online delivery and digital badging, and the provision of necessary student support services can be substantial. Furthermore, the need for ongoing program maintenance and updates to ensure relevance in a rapidly evolving job market requires sustained financial commitment.

Standardization

The lack of consistent definitions, standards, and quality assurance frameworks for micro-credentials at national and international levels presents a major impediment to their broader adoption and recognition (Higher Education Strategy Associates, 2021; University Affairs, 2021). The proliferation of diverse providers, including both accredited and non-accredited entities, offering micro-credentials with varying levels of rigour and assessment, contributes to a lack of consistency and makes it difficult for learners and employers to evaluate and compare their value.

Industry Buy-in

Gaining widespread acceptance and recognition from employers remains a crucial challenge for the successful implementation of competency-based micro-credentials (Future Skills Centre, 2023; University Affairs, 2021). Many employers still have limited awareness and understanding of what micro-credentials are, how they differ from traditional qualifications, and their value in assessing job applicants' skills and competencies. Overcoming skepticism and building trust in the rigour and relevance of micro-credentials is essential for their wider adoption in hiring and promotion practices.

Other Challenges

Additional barriers to the effective implementation of micro-credentials include the complexities involved in integrating them into existing academic structures and ensuring seamless credit transfer and stackability towards larger credentials (Higher Education Strategy Associates, 2021; University Affairs, 2021).

Securing the buy-in and active participation of faculty in the development and delivery of these new forms of credentials can also be a hurdle (University Affairs, 2021). Moreover, ensuring equitable access to micro-credentials for diverse learners, including those from underrepresented groups and those with limited technological resources, requires careful consideration in program design and delivery (University Affairs, 2021). Finally, establishing and maintaining the necessary technological infrastructure to support online learning, digital badging, and credential management systems can present significant challenges for some institutions (University Affairs, 2021).

Insights

The successful implementation of competency-based micro-credentials faces a multifaceted set of challenges that span funding, standardization, gaining acceptance from both industry and academia, ensuring quality and accessibility, and navigating the complexities of integration and infrastructure. Addressing these barriers effectively will require a concerted and collaborative effort involving all stakeholders in the post-secondary education and workforce development ecosystems.

Recommendations for British Columbia

HIGH-LEVEL RECOMMENDATIONS

British Columbia can leverage its existing Micro-Credential Framework as a strong foundation and further enhance its micro-credential ecosystem by adapting successful strategies from other leading jurisdictions as well as its own (BCcampus, n.d.a; Government of British Columbia, 2021, 2024, n.d.). Drawing inspiration from Ontario's eCampusOntario model could involve establishing a more centralized provincial body with a mandate to coordinate micro-credential initiatives, develop province-wide standards, and create a comprehensive portal to improve the discoverability and accessibility of micro-credential offerings across BC institutions (eCampusOntario, 2019, n.d.a, n.d.b; Ontario Micro-credentials Portal, n.d.; Ontario Ministry of Colleges and Universities, 2020, 2021a, 2023).

To enhance national recognition and portability for BC learners, the province could explore ways to more explicitly link micro-credentials to a potential BC skills and qualifications framework, if one is further developed, similar to the integration seen in Australia with its AQF (Australian Government Department of Education, Skills and Employment, 2021a, 2021b, 2022; Department of Education, Skills and Employment, 2021; MicroCred Seeker, n.d.; Pattison, 2022; Skills and Employment, Australian Government Department of Education, n.d.).

Adopting elements from Ireland's MicroCreds project could involve more actively fostering deep and sustained collaborations between BC's post-secondary institutions and key local industries through dedicated programs and platforms. This would ensure that micro-credential development is directly informed by and aligned with the specific needs of BC's workforce (Irish Universities Association, n.d.a, n.d.b; MicroCreds, n.d.a, n.d.b; Ramsey, 2021).

Continuing to emphasize and promote the use of robust competency-based assessment methods, as exemplified by the Education Design Lab and various Canadian institutions, will be crucial for ensuring that BC micro-credentials effectively validate the mastery of specific skills and knowledge (Education Design Lab, n.d.).

Strategic alignment of micro-credential development with BC's existing post-secondary priorities, such as increasing access for diverse learners, promoting lifelong learning opportunities, and addressing clearly identified skills gaps in key sectors of the provincial economy (e.g., technology, healthcare, trades), is essential for maximizing their impact (Government of British Columbia, 2021, 2024, n.d.; Life Sciences British Columbia, 2024; SkilledTradesBC, 2023; WorkBC, n.d.).

Building upon existing financial support mechanisms like the StrongerBC future skills grant and exploring opportunities to expand the eligibility and amount of financial aid available to learners pursuing micro-credential programs would significantly enhance their accessibility across the province (Government of British Columbia, 2023, 2024, n.d.).

Encouraging and supporting the widespread adoption of digital badges with rich, standardized metadata across all BC post-secondary institutions will greatly improve the portability and recognition of micro-credentials by employers and other educational organizations (BCcampus, n.d.a; Colleges and Institutes Canada, n.d.a, n.d.b; eCampusOntario, 2019, n.d.a, n.d.b; Lethbridge Polytechnic, n.d.; McGill University, n.d.; Mount Royal University, n.d.; NAIT, n.d.; Ontario Micro-credentials Portal, n.d.; Saskatchewan Polytechnic, n.d.b; University of Alberta, 2024; University of Saskatchewan, n.d.a; University of Toronto School of Continuing Studies, n.d.).

Summary Table of High-Level Recommendations

The table below highlights each high-level recommendation area alongside a specific action, making it easier to compare and reference key strategies.

RECOMMENDATION AREA	RECOMMENDATION DETAILS
Centralized Coordination	Establish a provincial body to coordinate micro-credential initiatives, set province-wide standards, and create a unified portal, as demonstrated by Ontario's eCampusOntario model.
Qualifications Framework Integration	Link BC micro-credentials to a provincial or national qualifications framework (once developed) to enhance national portability, similar to Australia's AQF integration. Or work with a national body such as CICan to model such an approach.
Industry Collaboration	Foster deep, sustained partnerships between post-secondary institutions and local industries-modeled on Ireland's MicroCreds project-to ensure programs meet workforce needs. A recent demonstration by DigiBC at the CredX symposium is an example from a key BC industry sector.
Competency-Based Assessment	Promote robust competency-based assessment methods to validate mastery of specific skills and knowledge, as demonstrated by Thompson Rivers University's Micro-Credential Assessment Pathways project, the Education Design Lab's durable skills assessment approach, and other models from leading Canadian institutions.
Strategic Alignment with Provincial Priorities	Align micro-credential development with goals such as increasing access for diverse learners and Indigenous learners - supporting lifelong learning, and filling skills gaps in key sectors (technology, healthcare, trades).
Financial Support Enhancement	Expand and adapt financial aid programs (e.g., StrongerBC Future Skills Grants) to increase eligibility and funding amounts for learners pursuing micro-credentials. Use the Ontario OSAP model as a reference approach.
Digital Badge Adoption	Encourage all post-secondary institutions to issue digital badges with standardized, rich metadata to improve recognition and transferability among employers and educational organizations.

Insights

By strategically adapting and integrating proven practices from other successful models, British Columbia can further strengthen its competency-based micro-credential ecosystem, ensuring alignment with provincial priorities, addressing the needs of its industries, and maximizing the benefits for learners and the workforce. Continued government support and funding will be essential to drive these adaptations and ensure the long-term success of micro-credential initiatives in the province. Upgraded policies, frameworks, and partnerships will be required to enhance micro-credential adoption in BC.

POLICIES

Policy recommendations include the following:

1. Develop a clear and comprehensive provincial policy that formally recognizes micro-credentials within the BC post-secondary education system and establishes clear guidelines for credit transfer and stackability towards larger credentials across different institutions.
2. Establish a standardized and rigourous quality assurance framework specifically designed for competency-based micro-credentials in BC, potentially through a collaborative effort involving the Ministry of Post-Secondary Education and Future Skills, building on work being piloted by Thompson Rivers University, and relevant quality assurance agencies or accrediting bodies.
3. Implement policies that actively encourage and formally recognize the participation of employers and industry associations in the co-development, validation, and assessment of micro-credential programs, ensuring their relevance and acceptance in the workforce.
4. Conduct a review of existing provincial student financial aid programs to assess the eligibility of micro-credential programs and explore opportunities for expanding financial support to learners pursuing these shorter, focused credentials, particularly those from underrepresented backgrounds.
5. Formulate policies that promote the portability of micro-credentials earned in British Columbia to other provinces and internationally, potentially through active engagement with national organizations like Colleges and Institutes Canada and exploration of international recognition agreements and standards.

FRAMEWORKS

Framework recommendations include the following:

RECOMMENDATION AREA	RECOMMENDATION DETAILS
Competency Framework	Develop a publicly accessible, comprehensive competency framework mapping key skills, knowledge, and attitudes required for priority sectors in BC's economy to guide program design and industry alignment. This framework can serve as a valuable resource and guide for post-secondary institutions in the province when designing and developing micro-credential programs that are aligned with industry needs.
Micro-Credential Registry	Establish a centralized, user-friendly provincial registry or expand the functionality of the existing BCCAT or EducationPlannerBC platforms to include a comprehensive listing of all micro-credentials offered by BC post-secondary institutions. This registry should provide detailed information about the learning outcomes, assessment methods, potential for stackability, and the level of recognition from employers for each micro-credential.
Recognition of Prior Learning (PLAR) Framework	Create a clear and efficient framework for the recognition of prior learning (PLAR) that is specifically tailored to micro-credentials. This framework should enable individuals with relevant work experience or non-formal learning to gain formal recognition for their competencies through the awarding of micro-credentials or credit towards larger qualifications. to earn formal recognition or credit toward larger qualifications.

PARTNERSHIPS

Partnership recommendations include the following:

- Actively foster the development of strong and sustainable partnerships between British Columbia's post-secondary institutions and key industry associations, business councils, and labour organizations. These partnerships should focus on the co-development of micro-credential programs that directly address specific and evolving skills gaps within the province's workforce (Digital Promise, 2023; Irish Universities Association, n.d.b; MicroCreds, n.d.b).

- Establish a collaborative network or consortium of BC post-secondary institutions dedicated to the sharing of innovative and proven practices, the pooling of resources, and the potential co-development of micro-credential programs in areas of common need or strategic importance to the province.

- Forge strategic partnerships with national organizations such as Colleges and Institutes Canada (CICan) to ensure that British Columbia's micro-credential initiatives are aligned with emerging national standards, leverage national practices, and explore opportunities for enhanced inter-provincial recognition (Colleges and Institutes Canada, n.d.a).

- Develop strong working relationships and partnerships with relevant government ministries and agencies responsible for economic development, labour market development, and skills training. This collaboration will ensure that micro-credential initiatives are strategically aligned with broader provincial economic goals and workforce development priorities (Government of British Columbia, 2024; WorkBC, n.d.).

Conclusion

Competency-based micro-credentials offer a powerful and agile tool for addressing the evolving skills needs of British Columbia's workforce and for promoting lifelong learning among its citizens. The analysis of provincial, national, and international models reveals that while BC has made significant progress in establishing a foundation for micro-credentials, there are opportunities to further enhance its ecosystem.

By strategically adapting proven practices from other successful models, implementing clear and supportive policies, developing comprehensive frameworks, and fostering strong partnerships between post-secondary institutions, industry, and government, British Columbia can maximize the potential of micro-credentials. This will not only empower individuals to acquire the specific skills and competencies needed to thrive in a changing economy but also enable employers to access a highly skilled and adaptable workforce, ultimately contributing to the province's long-term economic prosperity and social well-being.

A comprehensive and coordinated strategy involving well-defined policies, robust frameworks, and strong collaborative partnerships among educational institutions, industry, and government is essential to significantly enhance the adoption, quality, and impact of competency-based micro-credentials in British Columbia. These recommendations are designed to address the key challenges identified in the research and to build upon the province's existing strengths, ultimately contributing to a more skilled, adaptable, and future-ready workforce.

References

Alberta University of the Arts. (n.d.). Micro-credentials. Retrieved from https://www.auarts.ca/continuing-education/professional-development/micro-credentials

American Council on education. (n.d.). Evaluations, credits, and transcripts. Retrieved from https://www.acenet.edu/Programs-Services/Pages/Credit-Transcripts/Credit-Transcripts.aspx

Asia-Pacific Economic Cooperation. (2024). Online micro-credentials toolkit. Retrieved from https://www.apec.org/publications/2024/06/online-micro-credentials-toolkit---addressing-skill-needs-through-online-micro-credentials-in-higher-education

Australian Government Department of Education, Skills and Employment. (2021). National Micro-credentials Framework. Retrieved from https://www.education.gov.au/higher-education-publications/resources/national-microcredentials-framework-0

BCcampus. (2023, August 14). Educational Pathways. Retrieved from https://opentextbc.ca/bcmicrocredential/chapter/educational-pathways/

BCcampus. (n.d.a). Micro-credentials. Retrieved from https://bccampus.ca/projects/micro-credentials/

BCcampus. (n.d.b). Micro-Credential Toolkit for BC Retrieved from https://opentextbc.ca/bcmicrocredential/

BC Chamber of Commerce. (2022). Support for the Development of Micro-credential Programs. Retrieved from https://bcchamber.org/policy-search/support-development-microcredential-programs-2025

BCDiploma. (n.d.). Retrieved from https://www.bcdiploma.com/en

Bow Valley College. (n.d.). Micro-credentials. Retrieved from https://pivot-ed.bowvalleycollege.ca

Campus Manitoba. (2025, January 21). Meeting Needs, Finding Means: Micro-credentials and the Future of Learning. https://www.campusmanitoba.ca/career-development/meeting-needs-finding-means-micro-credentials-and-the-future-of-learning/

Chaktsiris, M., McCallum, K. E., & Luke, R. (2021). Is the future micro: unbundling learning for flexibility and access. Toronto: Future Skills Centre. Retrieved from, http://fsc-ccf.ca/research/is-the-future-micro-unbundling-learning-for-flexibility-access/

Chartrand, J., Freeman, S., Gallersdörfer, U., Lisle, M., Mühle, A., van Engelenburg, S. (2020). Building the digital credential infrastructure for the future. https://digitalcredentials.mit.edu/docs/white-paper-building-digital-credential-infrastructure-future.pdf

Civil Service College Singapore. (n.d.). Lifelong Learning Through a Global Lens. Retrieved from https://knowledge.csc.gov.sg/digital-issue-10/lifelong-learning-through-a-global-lens/

Colleges and Institutes Canada. (n.d.a). National Framework for Micro-credentials. Retrieved from https://www.collegesinstitutes.ca/colleges-and-institutes-in-your-community/benefit-college-institute-credential/national-framework-for-micro-credentials/

Colleges and Institutes Canada. (n.d.b). The Status of Micro-credentials in Canadian Colleges and Institutes: Environmental Scan Report. Retrieved from https://www.collegesinstitutes.ca/news-release/cican-releases-new-national-framework-for-micro-credentials/

Conference Board of Canada. (2022). Beyond Blue and White Collar: A Skills-Based Approach to Canadian Job Groupings. Retrieved from, https://fsc-ccf.ca/research/beyond-blue-and-white-collar-a-skills-based-approach-to-canadian-job-groupings/

Contact North (2021). 10 key actions to ensure micro-credentials meet the needs of learners and employers. ContactNorth.ca, teachonline.ca, May 20, 2021. Available from: https://teachonline.ca/tools-trends/10-key-actions-ensure-micro-credentials-meet-needs-learners-and-employers

Council of Atlantic Ministers of Education and Training. (n.d.). Atlantic competency framework online platform. Retrieved from https://atlanticcompetencies.ca

CourseLoop. (2022). Micro-credential management: where to start and how to succeed. June 2022. Retrieved from, https://courseloop.com/resource-library/micro-credential-management-where-to-start-and-how-to-succeed/

Cox R., Niederer, S., Forssman, V., & Sikorski, L. (2020). Climate adaptation competency framework. Adaptation Learning Network, 2020. Available: https://macal.royalroads.ca/introducing-the-climate-adaptation-competency-framework/

Credential Engine (n.d.). Making credentials transparent. Retrieved from https://credentialengine.org

Credentialasyougo.org. (n.d.). Credential as you go: incremental credentialing. https://credentialasyougo.org

Deel. (n.d.). 14 industry-specific competency model examples to clarify. Retrieved from https://www.deel.com/blog/competency-model-examples/

Digital Credentials Consortium (2023). Digital credentials consortium. MIT. Retrieved from https://digitalcredentials.mit.edu

Digital Promise. (2023, July 6). How Can We Use Micro-Credentials to Assess Competency-Based Education? Retrieved from https://digitalpromise.org/2023/07/06/how-can-we-use-micro-credentials-to-assess-competency-based-education/

Duke-Benfield, A. E. (2019). Defining quality non-degree credentials is crucial to putting students on a path to success. National Skills Coalition. https://nationalskillscoalition.org/blog/higher-education/defining-quality-non-degree-credentials-is-crucial-to-putting-students-on-a-path-to-success/

Duklas, J. (2020). Micro-credentials: trends in credit transfer and credentialing. https://www.bccat.ca/publication/microcredentials/

eCampusOntario. (2020). Micro-credential Principles and Framework. Retrieved from https://micro.ecampusontario.ca/wp-content/uploads/2020/12/Micro-credentials-en_v2.pdf

eCampusOntario. (2022). Micro-credential Toolkit. Retrieved from https://ecampusontario.pressbooks.pub/micro-credentialtoolkit/

eCampusOntario. (n.d.a). About eCampusOntario. Retrieved from https://ecampusontario.ca/about/

eCampusOntario. (n.d.b). Micro-Credentials. Retrieved from https://ecampusontario.ca/micro-certifications/

eCampusOntario. (n.d.c). Micro-credentials. Retrieved from https://micro.ecampusontario.ca/

Edalex. (n.d.). Powering your single source of truth for skills, credentials and learning data. Retrieved from https://www.edalex.com

Education Design Lab. (n.d.). Durable Skills Micro-credentials. Retrieved from https://eddesignlab.org/micro-credentialing/micro-credentials/

European Commission, DG EMPL. (n.d.). European Skills/Competences, Qualifications and Occupations (ESCO). Retrieved from https://employment-social-affairs.ec.europa.eu/policies-and-activities/skills-and-qualifications/skills-jobs/european-skillscompetences-qualifications-and-occupations-esco_en

European Commission. (n.d.a) European Skills, Competences, Qualifications and Occupations (ESCO). Retrieved from https://esco.ec.europa.eu/en/about-esco/what-esco

European Commission. (n.d.b). How to present your skills and qualifications. Retrieved from https://commission.europa.eu/education/skills-and-qualifications/how-present-your-skills-and-qualifications_en

European MOOC Consortium (2019) EMC common micro-credential framework. Retrieved from: https://emc.eadtu.eu/images/EMC_Common_Micro-credential_Framework_.pdf

Folio. (2022, September 26). Newly funded micro-credential programs will provide Albertans with job-ready skills. Retrieved from https://www.ualberta.ca/en/folio/2022/09/newly-funded-micro-credential-programs-will-provide-albertans-with-job-ready-skills.html

Forth, S. (2020). Designing the open competency model architecture. Retrieved from, https://www.ibbaka.com/ibbaka-talent-blog/designing-the-open-competency-model-architecture

Future Skills Centre. (2023, March). Micro-credentials in Flux: Challenges, Opportunities and Insights from FSC's Portfolio. Retrieved from(https://fsc-ccf.ca/wp-content/uploads/2022/03/Learning-Bulletin-Micro-credentials-in-flux-EN.pdf

Government of Alberta. (n.d.). Micro-credentials. Retrieved from https://www.alberta.ca/new-micro-credential-learning-opportunities

Government of British Columbia. (2021). Micro-Credential Framework for BC's Public Post-Secondary Education System. Retrieved from https://www2.gov.bc.ca/assets/gov/education/post-secondary-education/micro-credentials/mc_framework.pdf

Government of British Columbia. (2023, May 25). StrongerBC: Future Ready Action Plan. Retrieved from(https://news.gov.bc.ca/releases/2023PSFS0023-000637

Government of British Columbia. (2024, April 11). Micro-credentials. Retrieved from https://www2.gov.bc.ca/gov/content/education-training/post-secondary-education/micro-credentials

Government of Canada. n.d.). Occupational and Skills Information System (OaSIS). Retrieved from https://noc.esdc.gc.ca/Oasis/OasisWelcome.

Government of Newfoundland and Labrador. (2024, November 12). Department of Immigration, Population Growth and Skills. Retrieved from https://mattbarter.ca/wp-content/uploads/2024/11/IPGS-051-2024-Final-Response.pdf

Government of Nova Scotia. (n.d.). Micro-credentials framework. Retrieved from https://beta.novascotia.ca/sites/default/files/documents/1-3545/nova-scotia-micro-credentials-framework-en.pdf

Government of Saskatchewan. (2021a, December). Saskatchewan's Guide to Micro-credentials. Retrieved from https://pubsaskdev.blob.core.windows.net/pubsask-prod/130996/Saskatchewan%2527s%252BGuide%252Bto%252BMicro-credentials.pdf

Government of Saskatchewan. (2021b, December 2). Supporting the Province's Workforce Through Micro-Credentials. Retrieved from https://www.saskatchewan.ca/government/news-and-media/2021/december/02/supporting-the-provinces-workforce-through-micro-credentials

Government of Saskatchewan. (n.d.). Micro-credentials in Saskatchewan. Retrieved from https://www.saskatchewan.ca/residents/education-and-learning/micro-credentials-in-saskatchewan

Green, D. & Levy, C. (2020). Open competency toolkit. eCampusOntario. Retrieved from, https://ecampusontario.pressbooks.pub/competencytoolkit/front-matter/introduction/

Hays Canada (n.d.). The importance of including skills and competencies in a job description. Retrieved from: https://www.hays.ca/market-insights/article/importance-of-including-skills-and-competencies-in-job-description

Higher Education Strategy Associates. (2021, April 27). Micro-credentials in Ontario. Retrieved from https://higheredstrategy.com/micro-credentials-in-ontario/

Higher Education Quality Council of Ontario. (2024, March 26). Postsecondary-offered Micro-credentials in Ontario: What does the Evidence Tell Us? Retrieved from https://heqco.ca/pub/postsecondary-offered-micro-credentials-in-ontario-what-does-the-evidence-tell-us/

Humber College. (n.d.). Continuous professional learning micro-credentials. Retrieved from https://humber.ca/continuous-professional-learning/learner-programs/micro-credentials.html

ICTC. (2024, March 7). Micro-Credentials Are Poised to Become a Mainstream Rapid Education and Training Solution. Retrieved from https://ictc-ctic.ca/news-and-events/news-articles/micro-credentials-are-poised-become-mainstream-rapid-education-and

Irish Universities Association. (n.d.a). MicroCreds National Project. Retrieved from https://www.iua.ie/ourwork/learning-teaching/microcreds/

Irish Universities Association. (n.d.b). Overview - MicroCreds. Retrieved from https://www.iua.ie/overview-microcreds/

Labour Education Applied Research North (LEARN). (2021, March 5). Micro-Credentialing in Northern Alberta. https://nadc.ca/media/17900/learn-micro-credentials-final-mar-5-21.pdf

Learn & Work Ecosystem Library. (2025, April 20). MicroCreds National Project - Ireland. Retrieved from https://learnworkecosystemlibrary.com/initiatives/microcreds-national-project-ireland/

Learn & Work Ecosystem Library. (2025). Competency/Skills Models & Learning Frameworks. Retrieved from https://learnworkecosystemlibrary.com/topics/competency-skills-models-learning-frameworks/

Learn & Work Ecosystem Library. (2025). Micro-credentials Pilot in Higher Education - Australian Government Department of Education. Retrieved from https://learnworkecosystemlibrary.com/initiatives/micro-credentials-pilot-in-higher-education-australian-government-department-of-education/

Lethbridge Polytechnic. (n.d.). Micro-credentials. Retrieved from https://lethpolytech.ca/programs-and-courses/micro-credentials

Life Sciences British Columbia. (2024, February 13). BC's Life Sciences Sector Faces 10-fold Increase in Skilled Talent Gap. Retrieved from https://lifesciencesbc.ca/lsbc-news/b-c-s-life-sciences-sector-faces-10-fold-increase-in-skilled-talent-gap/

Matkin, G. W. (2018). Alternative digital credentials: an Imperative for higher education. University of California, Irvine 2.18 (February 2018). UC Berkeley: Center for Studies in Higher Education. Retrieved from https://escholarship.org/uc/item/44r5w9f0

McGreal, R., & Olcott, D. Jr. (2022). A strategic reset: micro-credentials for higher education leaders. International Journal of Educational Technology in Higher Education, 19(1), 1-22. https://slejournal.springeropen.com/articles/10.1186/s40561-022-00190-1

McGill University. (n.d.). Micro-credentials. Retrieved from https://www.mcgill.ca/continuingstudies/areas-study/micro-credentials

MicroCred Seeker. (n.d.). About Micro-credentials. Retrieved from https://www.microcredseeker.edu.au/about

MicroCreds. (n.d.). Re-imagining lifelong learning in Ireland. MicroCreds National Project. Retrieved from https://microcreds.ie/about

Microlearn Ontario (2022). Micro-credentials portal. Retrieved from: https://microlearnontario.ca

Ministry of Education. (2022, May 9). Government's recognition of skills and vocation-based training. Singapore. https://www.moe.gov.sg/news/parliamentary-replies/20220509-governments-recognition-of-skills-and-vocation-based-training

Mount Royal University. (n.d.). Micro-credentials. Retrieved from https://www.mtroyal.ca/ContinuingEducation/Programs/micro-credentials.htm

Mohawk College. (n.d.). Micro-credentials. Retrieved from https://www.mohawkcollege.ca/programs/explore-mohawk-micro-credentials

NAHQ. (n.d.a). Healthcare Quality Competency Framework. Retrieved https://nahq.org/why-nahq/healthcare-quality-competency-framework/

NAHQ. (n.d.b). Micro-credentials. Retrieved from https://nahq.org/credentials/micro-credentials/

NAIT. (n.d.). Micro-credentials. Retrieved from https://www.nait.ca/micro-credentials

National Skills Coalition (2023). https://nationalskillscoalition.org/about

New Zealand Qualifications Authority (2017). Recognising learning for credit: Guidelines for the recognition and award of credit for learning. Retrieved from: https://www2.nzqa.govt.nz/assets/Tertiary/NZQAs-QA-system/Recognition-of-prior-learning/Guidelines-for-the-recognition-and-award-of-learning-for-credit.pdf

New Zealand Qualifications Authority (2018). Micro-credentials in New Zealand's education and training system: A consultation paper. Retrieved from: https://www.nzqa.govt.nz/assets/About-us/Consultations-and-reviews/Micro-credentials/Micro-credentials-consultation-paper-March-2018.pdf

New Zealand Qualifications Authority (2022). Aotearoa New Zealand's rationale for micro-credentials. Retrieved from: https://www2.nzqa.govt.nz/about-us/publications/insights-papers/improving-relevance-and-responsiveness-2/

New Zealand Qualifications Authority (2023 Micro-credentials. Retrieved from: https://www.nzqa.govt.nz/providers-partners/approval-accreditation-and-registration/micro-credentials/

North West College. (n.d.). Micro Credentials. Retrieved from https://North Westcollege.ca/programs/micro_credentials.html

OECD (2023), "Micro-credentials for lifelong learning and employability: Uses and possibilities", OECD Education Policy Perspectives, No. 66, OECD Publishing, Paris, https://doi.org/10.1787/9c4b7b68-en

Oliver, B. (2019). Making micro-credentials work for learners, employers and providers. 1-48. https://dteach.deakin.edu.au/wp-content/uploads/sites/103/2019/08/Making-micro-credentials-work-Oliver-Deakin-2019-full-report.pdf

Oliver, B. (2022). Towards a common definition of micro-credentials. https://unesdoc.unesco.org/ark:/48223/pf0000381668

ONCAT. (2023, March). Micro-credentials in Ontario: Landscape Scan and Learner Pathways. Retrieved from https://www.oncat.ca/sites/default/files/mediafiles/r2246_micro-credentials_final_report_21-3-23.pdf

Ontario Ministry of Colleges and Universities. (2021a, April 14). Ontario Expanding Financial Assistance to Include Micro-credentials. Retrieved from https://news.ontario.ca/en/release/60792/ontario-expands-financial-assistance-to-include-micro-credentials

Ontario Ministry of Colleges and Universities. (2023, November 23). Ontario Supporting More Industry-Focused Training Programs. Retrieved from https://news.ontario.ca/en/release/1004681/ontario-supporting-more-industry-focused-training-programs

Ontario Micro-credentials Portal. (n.d.). About. Retrieved from https://microlearnontario.ca/about/

Ontario Student Assistance Program. (n.d.). OSAP for Micro-credentials. Retrieved from https://www.ontario.ca/page/micro-credentials-ontarios-postsecondary-schools

Ontario Tech University. (2023, November 28). Policy on Micro-credentials and Continuous Learning Offerings. Retrieved from https://usgc.ontariotechu.ca/policy/policy-library/policies/academic/policy-on-micro-credentials-and-continuous-learning-offerings.php

Orr, D., & Li, Y. (2020). Towards a European approach to micro credentials: a study of practices and commonalities in offering micro-credentials in European higher education. https://doi.org/10.2766/7338

Patterson, L., & Hepburn, G. (2025). Implementing a competency-based assessment approach to micro-credentials. Distance Education. Advance online publication. https://doi.org/10.1080/01587919.2024.2441247

Pattison, P. (2022, September). Introduction to The National Micro-credentials Framework. Retrieved from https://aii.unimelb.edu.au/wp-content/uploads/2022/09/National-Micro-credentials-Framework.pdf

Peoplebox.ai. (n.d.). What Are Competencies? Retrieved from https://www.peoplebox.ai/blog/what-are-competencies/

Pichette, J., Brumwell, S., Rizk, J., Han, S. (2021). Making Sense of Micro-credentials. Toronto: Higher Education Quality Council of Ontario. Retrieved from https://heqco.ca/pub/making-sense-of-micro-credentials/

Porter, D. A., Cox, R. S., & Forssman, V. (2023). Designing agile pathways for climate adaptation skill development: Leveraging open competency frameworks, micro-credentials, and open educational resources. The Open/Technology in Education, Society, and Scholarship Association Journal, 3(2). Retrieved from https://journal.otessa.org/index.php/oj/article/view/52/38

Porter, D.A.,(2025a). CredX was a super great event. March 1, 2025. Retrieved from https://www.linkedin.com/pulse/credx-super-great-event-david-porter-ed-d--d5rmc/

Porter, D.A. (2025b). Unlocking BC's workforce potential: Why pairing micro-credentials and RPL could be a game changer. May 25, 2025. Retrieved from, https://www.linkedin.com/pulse/unlocking-bcs-workforce-potential-why-pairing-rpl-david-porter-ed-d--o2ulc/?trackingId=IMQpvyeOThySAiNZ06k5PQ%3D%3D

Ramsey, L. (2021, May 19). Building an accredited and flexible micro-credentials system for Irish Universities. Retrieved from https://micro-credentials.eu/wp-content/uploads/sites/20/2021/05/19.05.2021-Presentation-Ireland-.pdf

Royal Roads University. (n.d.). Micro-credentials: carve your own path. Retrieved from https://www.royalroads.ca/why-royal-roads/micro-credentials

Saskatchewan Polytechnic. (n.d.a). Surge Micro-credentials. Retrieved from https://surgemicro-credentials.com/

Saskatchewan Polytechnic. (n.d.b). Sask Polytech contributes to Quick Train Canada Micro-credentials. Retrieved from https://saskpolytech.ca/news/posts/2023/sask-polytech-contributes-to-quick-train-canada-micro-credentials.aspx

Saskatchewan.ca. (n.d.). Micro-credentials in Saskatchewan. Retrieved from https://www.saskatchewan.ca/residents/education-and-learning/micro-credentials-in-saskatchewan

Schatzman, M. (2022). On outlining the establishment of a United States Qualification Framework. May 18, 2022. UNESCO 3rd World Higher education Conference. Retrieved from https://www.academia.edu/94787792/On_Outlining_the_Establishment_of_a_United_States_Qualification_Framework

Seneca College. (n.d.a.). Accessible Podcasting. Retrieved from https://www.senecapolytechnic.ca/programs/workshops/ACP100.html

Seneca College. (n.d.b). Microcredentials. Retrieved from https://www.senecapolytechnic.ca/programs/bycredential/microcredential.html

Singapore Institute of Technology. (2022, November 28). SIT Launches Singapore's First Competency-Based Stackable Micro-credential Pathway. Retrieved from https://www.singaporetech.edu.sg/news/sit-launches-singapores-first-competency-based-stackable-micro-credential-pathway

Skills and Employment, Australian Government Department of Education. (n.d.). National Micro-credentials Framework. Retrieved from https://www.education.gov.au/higher-education-publications/resources/national-micro-credentials-framework-0

SkillsFuture Singapore. (2018). Skills Framework for Training and Adult Education [PDF]. https://www.skillsfuture.gov.sg/docs/default-source/skills-framework/sfw_tae_booklet_20181101_finalv01.pdf

SkillsFuture Singapore. (2023, May 19). Workforce Skills Qualifications. https://www.skillsfuture.gov.sg/wsq

SkillsFuture Singapore. (2024, December 5). Skills Frameworks. https://www.skillsfuture.gov.sg/skills-framework

SkillsFuture Singapore. (2025, April 8). SkillsFuture Level-Up Programme. https://www.skillsfuture.gov.sg/level-up-programme

SkilledTradesBC. (2023). Service Plan 2023/24 – 2025/26. Retrieved from https://skilledtradesbc.ca/sites/default/files/2023-03/Service%20Plan%202023-2024%20to%202025-2026.pdf

The HEAD Foundation. (2020). Vocational training and continuing education for employability in Singapore and Philippines [PDF]. https://headfoundation.org/wp-content/uploads/2020/11/thf-papers_Vocational-training-and-continuing-education-for-employability-in-Singapore-and-Philippines.pdf

Thompson Rivers University. (2025). TRU Open Learning receives funds to improve micro-credential assessment. January 28, 2025. https://inside.tru.ca/2025/01/28/tru-open-learning-receives-funds-to-improve-micro-credential-assessment/

Training Industry. (n.d.). Competency Model. Retrieved from https://trainingindustry.com/wiki/professional-development/competency-model/

UBC Centre for Teaching, Learning and Technology. (n.d.). https://ctlt.ubc.ca/2021/09/28/edubytes-digital-and-micro-credentials/

University of British Columbia. (n.d.). Micro-credentials. UBC School of Engineering. https://engineering.ok.ubc.ca/programs-admissions/microcredentials/

University Affairs. (2021, November 10). Are micro-credentials the future of higher ed? Retrieved from https://universityaffairs.ca/features/are-micro-credentials-the-future-of-higher-ed/

University of Alberta. (2024, January). U of A Non-credit Micro-credential Development Guide. Retrieved from https://www.ualberta.ca/en/provost/media-library/u-of-a-non-credit-micro-credential-development-guide-v2.0.pdf

University of Saskatchewan. (n.d.a). Micro-credentials. Retrieved from https://continuing.usask.ca/#Micro-credentials

University of Saskatchewan. (n.d.b). Micro-credential Framework Development and Pilot Programs. Retrieved from https://governance.usask.ca/documents/council/agenda/2021-2022/october-2021/15.1-2021-10-21-apc_ppc-info---micro-credential-framework-development-and-pilot-programs.pdf

University of Toronto School of Continuing Studies. (n.d.). Micro Courses and Micro-credentials. Retrieved from https://learn.utoronto.ca/programs-courses/unique/micro-courses-and-micro-credentials

Vancouver Community College. (2025). CredX: BC's Inaugural Symposium on Micro-credentials, Badges, and Recognition, February 28-29, 2025. Retrieved from https://continuingstudies.vcc.ca/about/conferencesMain.jsp

Vancouver Community College. (n.d.). Micro-credentials. https://continuingstudies.vcc.ca/registration/microCredentialsMain.jsp

WorkBC. (n.d.). Skills for the Future Workforce. Retrieved from https://www.workbc.ca/plan-career/skills-future-workforce

World Economic Forum (2025a). Future of jobs report 2025. January 7, 2025. Retrieved from https://www.weforum.org/publications/the-future-of-jobs-report-2025/

World Economic Forum. (2025b). Global Skills Taxonomy Adoption Toolkit: Defining a Common Skills Language for a Future-Ready Workforce. World Economic Forum. Retrieved from https://reports.weforum.org/docs/WEF_Global_Skills_Taxonomy_Adoption_Toolkit_2025.pdf

Appendix 1 - Australian CIS as a micro-credential assessment guide

The Australian Government (2021) established a minimum standard for a critical information summary (CIS), a standard by which to award micro-credentials digitally, with a verifiable CIS that is contained in the metadata for each award. **A BC micro-credential assessment standard might incorporate the Australian examples.**

ELEMENT	STATUS	DESCRIPTION
Title	Required	The title of the micro-credential, described in plain English.
Provider	Required	The institution delivering the micro-credential, and, if relevant, the company that developed the micro-credential, i.e., XYZ Vendor micro-credential being delivered by ABC University. A provider will also include partner providers, co-branding partnerships and industry endorsers. A provider is any company or institution that provides a micro-credential.
Content / description	Required	A description of the structure of the micro-credential and a summary of the content that will be taught, i.e., key topics.
Learning outcomes	Required	The knowledge, skills or competencies a student will acquire upon completing a micro-credential. Guidance on these learning outcomes is outlined in Section 5.1.
Language	Required	The language/s of instruction in which a micro-credential will be taught in/ assessed. To recognize interoperability and global citizenship, micro-credentials may be offered in multiple languages.
Delivery mode	Required	The method of delivery of a micro-credential, e.g., onsite, online or a combination of both, and whether the micro-credential requires synchronous engagement or is asynchronous. Where delivery is onsite, the location(s) will be stated.
Date of delivery	Required	The set relevant delivery dates (start/ end) and an outline of the schedule within these dates, or whether a micro-credential can be completed at a learner's own pace and commenced on any given date.
Learner effort	Required	The commitment/ effort (volume of learning) required of learners. This estimate of hours should include: i. Number of hours of in-person face-to-face contact with teaching staff. ii. Number of hours of synchronous online contact with teaching staff. iii. Number of hours of peer-to-peer engagement and its mode. iv. Estimated number of hours of asynchronous online content and reading/viewing of audiovisual material, etc. v. Estimated number of hours spent on assessment.
Inherent requirements	Required	The resource/s (if any) needed to undertake a specific micro-credential, i.e., a laptop, specific software, textbooks etc.
Price and financial assistance	Required	The cost of a micro-credential to learners, including any GST, discounts stipulated by providers, government funding and accepted payment mechanisms i.e., PayPal, and scholarships. The financial assistance for which a micro-credential may qualify for.

ELEMENT	STATUS	DESCRIPTION
Assessment	Required	The assessment element: the method and type of assessment (competency vs proficiency). Where assessment is onsite, the location/s will be stated.
Certification	Required	The proof of learning outcomes being met, i.e., certificate of completion. This proof of learning is issued upon completion of the micro-credential.
Credit / other recognition	Required	The type of recognition (credit towards award courses, credit towards vendor/ industry certifications, pathways or other recognition) that can be given upon completion of a micro-credential.
Quality assurance	Required	The assurance that micro-credentials are developed and delivered in an educationally sound manner for learners. This may be a statement of quality assurance processes applied to the micro-credential such as provider or CRICOS codes, relevant regulator, and approach to academic integrity and assessment.
Pre-requisites	Required	The micro-credential or level of experience that must be successfully completed prior to attempting to earn or complete the referenced micro-credential.

The Government of Australia (2021) also lists additional ***desirable*** elements that could be noted in the CIS.

ELEMENT	STATUS	DESCRIPTION
Expiration of the Micro-credential	Recommended	The date when a micro-credential is due for review and resubmission. Micro-credentials should be reviewed as required and appropriate, depending on the nature of content and learning outcomes.
Depth of learning	Recommended	The mastery level of a learner upon achievement of learning outcomes and completion of a micro-credential, i.e., a learner has completed X micro-credential which sits at novice level.
Jurisdiction	Recommended	The institutions or jurisdictions where the micro-credential is applicable or recognized.
Industry support	Recommended	The assurance that micro-credentials meet an industry need and reflect skills sought by employers. For example, a statement of support from industry.
Stackability	Recommended	Any other micro-credentials that a micro-credential combines with (stacking) that lead to an overall certification being awarded upon completion, or entry into a further course.
Industry / occupation	Recommended	The industry/s that a micro-credential sits within, and the occupations/ career pathways a micro-credential may lead to.
Industry alignment	Recommended	Industry competency framework/s that a micro-credential may be aligned to, i.e., Skills Framework for the Information Age (SFIA), CPA.

Appendix 2: Structuring micro-credential programs for extensibility

SEQUENCING, STACKING, AND LADDERING MICRO-CREDENTIALS

Designing for short-duration delivery with both horizontal and vertical stacking "pathways"

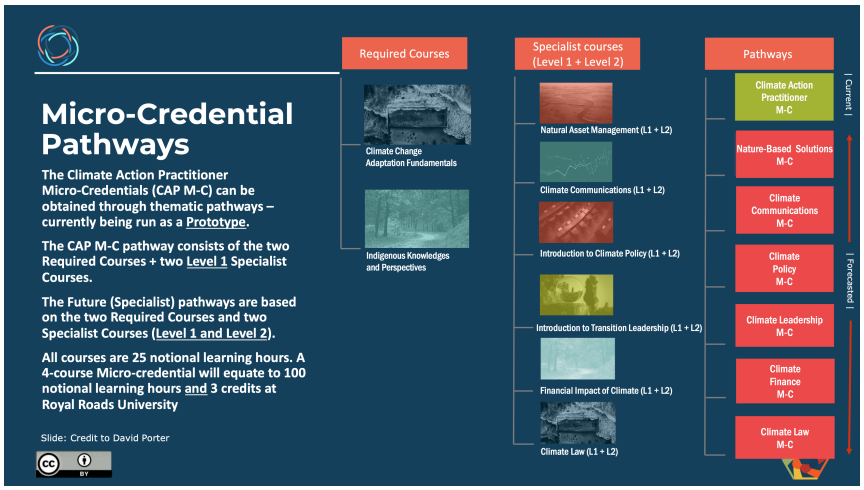
Micro-credentials are modular and can be grouped together to form a larger credential. And, as noted in the recommendations for micro-credential development, micro-credential programs should be designed for short duration delivery, embedding the idea of both horizontal (fundamentals) stacking and vertical (deeper knowledge and skills) stacking to account for emergent skill areas where both broad foundational knowledge and skills, and specialist knowledge and skills will be a requirement of learners.

Design for the stacking and laddering micro-credentials into degree, diploma, or certificate programs

Design micro-credential programs with a view to stacking and laddering into undergraduate programs a using common currency of credit-hour equivalency. In the case of an existing program and an undergrad certificate, using 100-120 hours as a baseline for each set of micro-credential components (4 x 25-30h) provides an opportunity for aligning with undergraduate degree programs that might use these micro-credentials as qualifying courses for the program, as-is, or through a recognition of prior learning (RPL) process that provides an equivalency.

PATHWAYS - STACKING MICRO-CREDENTIALS

The most common way to enable stacking is to build "micro-credential pathways." The RRU *Climate Action Fundamentals Micro-credential* illustrates the pathways concept by including both horizontal and vertical pathways in its design. The micro-credential is based on a 2 + 2 + 2 approach, stacking both horizontally and vertically:



- 2 required courses
- 2 specialist courses chosen by learners, levels 1 and 2, which provide a broad grounding in climate adaptation fundamentals
- 2 pathway courses, chosen by learners, that provide deeper knowledge and skills in a thematic pathway chosen by the learner. Pathways include nature-based solutions; climate communication; climate policy; climate leadership; climate finance; or climate law
- Each course is 25-30h notional learning hours, delivered in a hybrid format, with assessments
- Each course is assessed against learning outcomes that align with the Climate Adaptation Competency Framework (CACF) (Cox et al., 2020).