



BCcampus Micro-credential Toolkit for B.C.

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ANNIE PRUD'HOMME-GÉNÉREUX



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The web version of this resource *BCcampus Micro-credential Toolkit for B.C.* (<https://opentextbc.ca/bcmicrocredential/>) has been designed to meet Web Content Accessibility Guidelines 2.0 (<https://www.w3.org/TR/WCAG20/>), level AA. In addition, it follows all guidelines in Appendix A: Checklist for Accessibility (<https://opentextbc.ca/accessibilitytoolkit/back-matter/appendix-checklist-for-accessibility-toolkit/>) of the *Accessibility Toolkit – 2nd Edition* (<https://opentextbc.ca/accessibilitytoolkit/>). It includes:

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- **PDF.** You can download this book as a PDF to read on a computer (Digital PDF) or print it out (Print PDF).
- **Mobile.** If you want to read this textbook on your phone or tablet, you can use the EPUB (eReader) file.
- **HTML.** An HTML file can be opened in a browser. It has very little style so it doesn't look very nice, but some people might find it useful.

Table 1 explains the technical requirements and characteristics of each file format.

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Table 1. Technical requirements and characteristics of available file formats for the BCcampus Micro-credential Toolkit.

Format	Internet required?	Device	Required apps	Accessibility Features	Screen reader compatible
Online webbook	Yes	Computer, tablet, phone	An Internet browser (Chrome, Firefox, Edge, or Safari)	WCAG 2.0 AA compliant, option to enlarge text, and compatible with browser text-to-speech tools	Yes
PDF	No	Computer, print copy	Adobe Reader (for reading on a computer) or a printer	Ability to highlight and annotate the text. If reading on the computer, you can zoom in.	Unsure
EPUB	No	Computer, tablet, phone	An eReader app	Option to enlarge text, change font style, size, and colour.	Unsure
HTML	No	Computer, tablet, phone	An Internet browser (Chrome, Firefox, Edge, or Safari)	WCAG 2.0 AA compliant and compatible with browser text-to-speech tools.	Yes

For more information about the accessibility of this toolkit, see the Accessibility Statement in the front matter.

Navigating This Toolkit

Accessing the Table of Contents

This toolkit has a linked table of contents to help you navigate it. In the online webbook, you can view the entire structure of the document from the homepage (<https://opentextbc.ca/bcmicrocredential/>) (once on the homepage, scroll down below the title information). Note that on this table of contents, some of the subsections are hidden and can be made visible by clicking on the + sign next to a toolkit section or chapter name.

In a chapter, the table of contents is accessible through the "Contents" top menu. Note that the "Contents" menu provides a high-level view of the toolkit at the section level. Clicking each section's + symbol will reveal the list of chapters in that section. Clicking the + symbol next to each chapter will make visible each of the subheadings in a chapter.

If using a PDF reader like Adobe Acrobat Reader, look for the window that displays the bookmarks (the linked table of contents).

Viewing Interactive Lists

This toolkit contains many lists – lists of questions to consider, of resources, of elements. Rather than present these lists as text, many have been embedded into interactive H5P elements. As a default, you will see the list items, but not their descriptions or explanations. To view them, you must click on the + symbol next to the list item. Presenting the information in this way organizes the information, making it clearer, while still making details available based on your interests.

Searching the Toolkit

As an electronic resource, this toolkit does not have an index at the end. However, it is easily searchable. If using the online webbook, you can use the search bar in the top right corner to search the entire toolkit for a key word or phrase. To search a specific chapter, open that chapter and use your browser's search feature by hitting **[Ctrl] + [f]** on your keyboard if using a Windows computer or **[Command] + [f]** if using a Mac computer.

The **[Ctrl] + [f]** and **[Command] + [f]** keys will also allow you to search a PDF, HTML, and EPUB files if you are reading them on a computer.

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Returning to the Home Page

When reading the document as a webbook, if you wish to return to this toolkit's homepage, you may access it by clicking on the BCcampus Micro-credential Toolkit for B.C., which can be found at the top of every chapter in this resource (it appears above the chapter name).

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Opening a new link in the same tab as the toolkit may interrupt the flow of your reading. It may therefore be helpful to simultaneously hit **[Ctrl]** and the link when you want to visit an external link. This will force your browser to open the link in a new tab. This will keep your place in the chapter in the original tab so that you can return to it once you have investigated the external link in the new tab.

Downloading Template Documents

Some chapters provide access to template documents to help you plan or offer micro-credential programs. For example, the chapter *Campus Collaborations* contains an MS Excel file to guide the development of your team project charter. Click on the linked file name to download it to your computer and open it in a suitable software program to access it.

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- Tiffany Snauwaert, dean, community education and workplace training, Selkirk College;
- Simon Towner, senior policy analyst, research universities & institutional policy, Ministry of Post-Secondary Education and Future Skills.

5. Don went above and beyond to share his wealth of expertise on micro-credentials. He rapidly responded to requests for information, shared documents and figures, and answered questions. We are particularly grateful to Don for his eagerness to share his extensive micro-credential knowledge.

INTRODUCTION

Welcome to the Micro-credential Toolkit for B.C.

This overview explains how the BCcampus Micro-credential Toolkit for B.C. came to be, what it contains, and how to use it for optimal impact.

Chapter Audience:



Administrators



Program Managers



Faculty

How Did This Toolkit Come About?

In February 2021, the Ministry of Post-secondary Education and Future Skills announced a first round of funding (<https://news.gov.bc.ca/releases/2021AEST0012-000225>) for the development of a new type of credential. *Micro-credentials* "recognize stand-alone, short duration learning experiences that are competency-based, align with industry, employer, community and/or Indigenous community needs and can be assessed and recognized for employment or learning purposes" (*Micro-credential Framework for B.C.'s Public Post-secondary Education System* (https://www2.gov.bc.ca/assets/gov/education/post-secondary-education/micro-credentials/mc_framework.pdf), 2021, p. 6).

Micro-credentials are different from the traditional credentials offered at most post-secondary institutions. They are competency-based, can be credit or non-credit bearing, and are usually recognized with a digital badge. Most notably, they require academics to work together with external partners like employers, professional associations, and Indigenous and community organizations to not only identify areas of training need but also collaborate on design and delivery.

Many institutions are actively engaged in discussions about how to implement and integrate micro-credentials into their existing credential ecosystem. This often requires internal collaborations between several units that previously had few opportunities to work together. Micro-credentials require new approaches and processes at many post-secondary institutions.

In Ontario, eCampusOntario published a Micro-credential Toolkit (<https://ecampusontario.pressbooks.pub/microcredentialtoolkit/>) in June 2022. Interest in this tool surpassed expectations. It's clear that institutions are looking for resources to help them operationalize micro-credentials.

In fall 2022, BCcampus launched a project to create a made-in-British Columbia micro-credential toolkit. The goal was to use *eCampusOntario's Micro-credential Toolkit* as a starting point and expand on areas specific to B.C. This was felt to be important because Ontario and B.C. post-secondary education is organized differently in each province, and this impacts the information in the toolkit. For example, B.C. published a *Micro-credential Framework* (https://www2.gov.bc.ca/assets/gov/education/post-secondary-education/micro-credentials/mc_framework.pdf) in 2021 to help institutions align in their definition of this new credential, while Ontario has not adopted a provincially suggested definition. Ontario has a framework that defines credentials uniformly across the province, but in B.C. each institution creates its own credential framework. Such differences impact the resources needed to support institutions as they work to develop and offer micro-credentials.

To kick off the project, we conducted a survey of B.C. post-secondary institutions last year. It drew responses from 18 institutions. We supplemented this data with a few focus groups with stakeholders of micro-credential training. We learned that micro-credentials are an active area of development in many institutions. Institutions are working to define them, to identify who will have primary responsibility for them, to determine how they will be reviewed and approved, and how best to support them. Institutions expressed the most interest in learning how to involve external partners in the development and validation of micro-credentials, developing policies and procedures supporting them, and establishing business models that ensure that micro-credentials are sustainably funded.

From this information, we decided to create a completely new resource for B.C.

What To Expect from This Toolkit

We created this toolkit to address the needs expressed by the B.C. post-secondary community. It assembles a collection of resources to help people engaged in offering micro-credentials.

It was clear from the survey and focus groups that many institutions are developing solutions and innovating quickly in this field. What's missing is a forum to share practices and lessons so institutions are not reinventing the wheel on their own each time they face a similar challenge.




This toolkit provides that forum. It captures over 30 stories from B.C. micro-credential practitioners that share the context and challenges they faced and how they found a solution. These experiences can provide inspiration for building micro-credentials at other institutions, and the practitioners who shared them can serve as expert resources. Most stories end with a Top Tips section that summarizes the lessons learned or recommendations from each practitioner. These stories provide an emergent community of practice and break institutional barriers to help all post-secondary institutions build a stronger micro-credential ecosystem.

The stories capture a moment in time in the system, as institutions work to understand how micro-credentials will fit at their institutions. As the practice of creating micro-credentials matures, these stories may become less relevant as practitioners work through other phases in the evolution of micro-credentials. This toolkit is not meant to be evergreen; it's meant to support post-secondary institutions now, as they work to launch a new type of credential.

How to Navigate This Toolkit

To have the best experience navigating this pressbook, we recommend you review the *Tips for Accessing This Book*. There, you will find information about where to find the table of contents for each chapter, how to ensure you do not lose your place in a chapter when you visit outside links, and how to make visible all the information in a chapter.

Each chapter begins with a brief overview to help readers quickly decide whether it aligns with their needs. Each chapter also includes an intended audience that falls into three categories:

- **Administrators**  : Practitioners who lead micro-credential efforts at an institution, put in place systems to facilitate the work of others in developing the curriculum, and ultimately are accountable for its success. They are usually senior leaders such as deans, directors, or vice presidents.
- **Program managers**  : Practitioners who coordinate the efforts of a team to develop a micro-credential "on the ground." They manage communications and ensure workflow between subject-matter experts, instructors, and support staff. They are usually managers, project managers, instructional designers, educational developers, or program coordinators.
- **Faculty**  : Subject-matter experts. They include instructional staff at post-secondary institutions and working professionals who advise, create, and teach work-aligned curriculum.

The intended audiences for each chapter are based on the contents of the chapter and the group most likely to gain from, and be interested in, the information. However, all groups could benefit from reading any chapter.

Each chapter contains a table of contents (with each item linked) to help readers find what they're looking for.

The chapters include information to engage readers in the development and offering of micro-credentials, questions to ask before planning work, suggested resources, and stories from B.C. practitioners who solved one challenging aspect of that work. Sometimes, when there are many stories (especially in chapters that cover active areas of development for many B.C. post-secondary institutions), the stories are included in a companion chapter to ensure the length of each chapter is manageable.

The toolkit is organized in five sections (Figure 1).

- **Introduction:** Three chapters, including this one, to help readers get their bearings. It provides the *what* and *why* of micro-credentials.
- **Implementation:** How an institution can administer and manage micro-credentials. It's about internal processes to support micro-credentials.
- **Collaborations:** How an institution can manage relationships with outside partners. It's about finding, defining, and sustaining partnerships.
- **Learning design:** How the curriculum fits within the existing credential ecosystem and how to recognize it. It's focused on the instructional aspects of the credential.
- **Conclusion:** What comes next for the toolkit and what's on the horizon for micro-credentials in B.C. and globally.

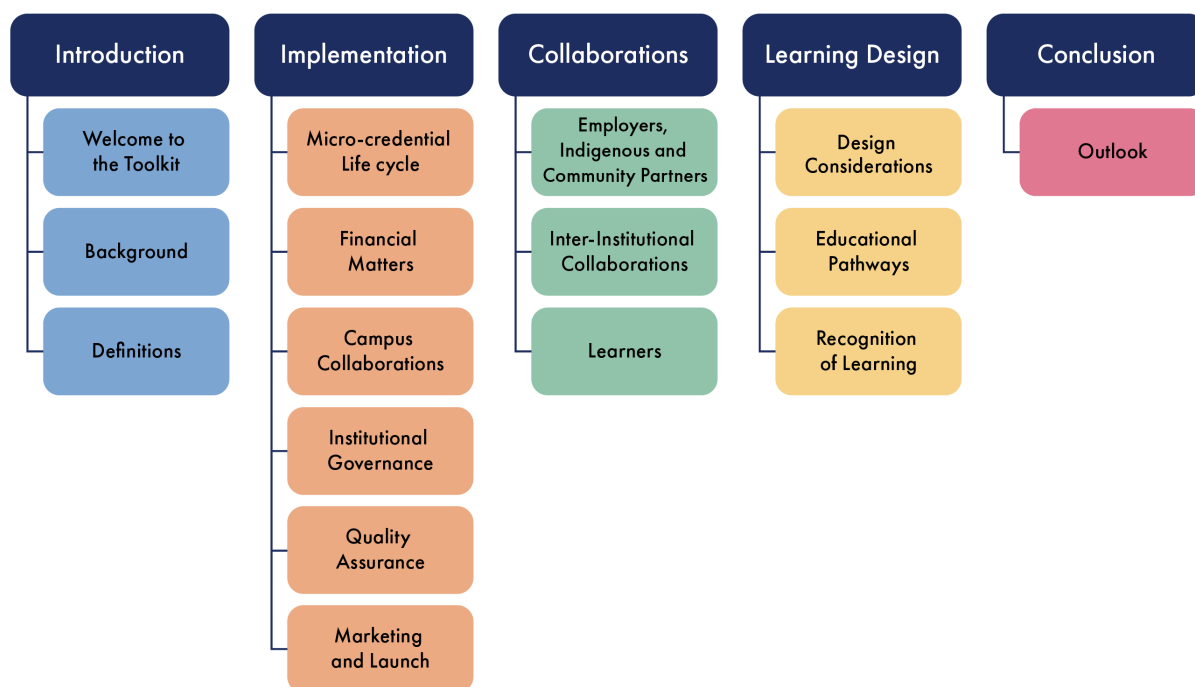


Figure 1. Overview of the BCcampus Micro-credential Toolkit for B.C.

In recognition that many stakeholders are involved in developing micro-credentials, and that each group has different roles and responsibilities and need different resources, each chapter in this toolkit is self-contained.

Contribute Your Stories

The *BCcampus Micro-credential Toolkit for B.C.* captures a moment in time in the province's development of micro-credentials. No doubt, as the practice of micro-credentials matures, the system will solve other aspects of their delivery not yet anticipated. With your feedback, we can ensure that the toolkit evolves and continues to align with the needs of the community. As you engage in micro-credential practice, keep an eye out for innovative approaches you develop that could benefit others. Consider contacting us (<mailto:projects@bccampus.ca>), so that we can learn from your innovations and consider including them in future versions of this toolkit. By combining our experiences, we can build a strong micro-credential ecosystem that supports the lifetime educational journeys of adult learners in British Columbia.

Happy micro-credentialing!

Background

This chapter answers the question: Why have micro-credentials risen in popularity in recent years? It provides an overview of micro-credential practice globally and emerging research in this field.

Chapter Audience:



Administrators



Program Managers



Faculty

Why the Growing Interest?

The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn.

Alvin Toffler, misquoted¹

¹ This text is commonly attributed to author and futurist Alvin Toffler. While it is powerful and perfectly encapsulates this section, it is a misquote. Toffler actually wrote: "By instructing students how to learn, unlearn and relearn, a powerful new dimension can be added to education" (Toffler, 1970, p. 211).

Revolutions in the Workplace

The world of work is in flux. Rapidly emerging technologies are displacing workers, the aging population is causing vacancies to go unfilled, and the climate crisis and COVID-19 are causing large disruptions to the labour market (Burning Glass Institute, 2022 ([https://static1.squarespace.com/static/6197797102be715f55c0e0a1/t/6202bda7f1ceee7b0e9b7e2f/1644346798760/The Emerging Degree Reset \(22.02\)Final.pdf](https://static1.squarespace.com/static/6197797102be715f55c0e0a1/t/6202bda7f1ceee7b0e9b7e2f/1644346798760/The+Emerging+Degree+Reset+(22.02)Final.pdf)); Conference Board of Canada & Future Skills Centre, 2022; Dharmaratne et al., n.d.; eCampusOntario, 2022; Environics Institute et al., 2020; Fissuh et al., 2022; Future Skills Council, 2020; Hill et al., 2022; Leaser, 2021; Leblanc et al., 2021; Lund et al., 2021; OECD, 2020; Russek et al., 2021; Statistics Canada, 2022).

In the face of a changing world, the currency of a degree — the length of time the skills and knowledge learned during training remain current — is estimated to be between five and seven years (Allen & van der Venden, 2002; Eggers et al., 2012).

Many people no longer stay in the same job for their entire working life. More than two thirds of Canadian baby boomers stayed in their jobs for 12 or more years. Gen Xers typically held 3.2 jobs in that same period, and Gen Ys held 3.9 jobs (Workopolis, 2014). The trend of people switching occupations is accelerating. For this reason, and because of the short duration of degree currency, the training people received at the start of their career is unlikely to sustain them through their working lives (Tugend, 2019).

We are entering a world predicted by author and futurist Alvin Toffler, where people need to learn, unlearn, and relearn throughout their career. Dubbed “the 60-year curriculum,” education is no longer a once-and-done affair. Adults must return to education at various points in their careers (Dede & Richards, 2020; Richards & Dede, 2020).

The current credential system is not well suited to learners who weave in and out of the worlds of work and education (Modern Campus, 2021 (https://moderncampus.com/blog/what-do-microcredentials-mean-for-the-modern-higher-education-institution.html?__hstc=128368595.ac7e6efce696868d8126900a44b19e27.1675619475229.1675619475229.1675619475229.1&__hssc=128368595.7.1675619475229&__hsfp=2666009759); Oliver, 2019). Adults juggle many commitments and can't invest in (and often do not need) a four-year degree. Most macro-credentials (degrees, diplomas, certificates) do not offer recognition for partial completion, so when an adult interrupts their education, they receive no validation of the competencies already mastered (Gallagher, 2016, p. 43; Hope, 2022; Perea, 2020). Adult learners need competency-specific, rapid, modularized training that recognizes their learning as it occurs, accumulates toward larger and more complex achievements, and allows them to adapt to new work conditions (Fuller et al., 2022; Society for Human Resources Management, 2018).

The following drivers create a need for a new type of post-secondary credential:

- **Workplace relevance:** Many existing credentials focus on theory, but adult learners are pragmatic. They want authentic curricula and competencies that will make training relevant, validate their abilities to employers, and make them sought-after in the job market.
- **Rapid upskilling and reskilling:** The job market is rapidly evolving, and there is a need for training that provides the tools and competencies workers need to adapt to a rapidly changing workplace.
- **Accessibility:** Busy adults have multiple commitments. Traditional education, offered as full-time learning on a set schedule, is not accessible. Adult learners need online and self-paced courses, intensive programs, weekend or part-time schedules, and a shorter time commitment.
- **Affordability:** Adult learners have multiple commitments and need affordable solutions for continued education. Shorter and online programs make education accessible.
- **Transparency:** Certificates, diplomas, and degrees are signals employers use to assess the abilities and suitability of prospective employees. But these credentials can be opaque. “One of the most common complaints about university degrees is that they are blunt instruments lacking in detail about the skill or learning of the holder and existing as static paper documents” (Gallagher, 2016, p. 112). There is a need for a more descriptive list of a learner’s abilities than what is captured on a traditional transcript (Gauthier, 2020; Oliver, 2019).

What's the Solution?

“There appears to be consensus among key parties that the future higher education landscape will include a proliferation of new options and university credentials beyond the monolithic degree” (Gallagher, 2016, p. 18). Post-secondary institutions have entered a period of experimentation and innovation, exploring ways to serve this new need for lifelong learning. This includes a focus on credentialed learning that allows learners to validate their competencies to employers.

More than one solution exists. The rise of massive open online courses (MOOCs) in the early 2010s marked a turning point, and they are making a comeback (Lohr, 2020). Bootcamps — intensive, short, hands-on training (usually a few months of full-time learning) popular in the tech sector — are another (Burke et al., 2018; Waguespack et al., 2018). Other options include master classes, MicroBachelors and MicroMasters (proprietary brands of edX), and Nanodegree (proprietary brand of Udacity). Together, these shorter credentials that target adult lifelong learners are called alternative credentials (Brown & Kurzweil, 2017).

Competition Ahead!

Employers and private trainers are responding to this need. For example, in 2018 Google launched a suite of career certificates that give people a fast-track to in-demand technical jobs such as data analytics and cybersecurity (Grow with Google, n.d.). These certificates are offered at scale through online, flexible training that can be completed in three to six months. Google also partnered with

over 150 companies that now hire directly from their alumni pool, creating an education-to-job pipeline adults want and need. Within four years of its launch, 50 000 people had completed a Google Career Certificate, with 82 per cent of alumni reporting the training helped them further their career (Beshkin, 2022). Google is not the only company to offer large-scale, short-term, career development training. Many others do as well.

Where does this leave post-secondary institutions? B.C. post-secondary institutions have a mandate to meet the educational needs of their communities. For most of their existence, they have been the de facto provider of education for adult learners, but now there is competition.

Public Post-Secondary Institution Response

Not all institutions want to engage in the delivery of alternative credentials. Institutions need to assess their mandate and determine whether this pursuit aligns with their purpose (McGreal & Olcott, 2022).

Institutions must consider how to closely align some their operations to the priorities and needs of external stakeholders — employers who can guide curriculum development and validate training (McCarthy, 2014). Institutions can leverage what they have that their competitors lack: a vast ecosystem of credentials. What most competitors cannot do is use short-term, work-aligned trainings as on-ramps for more comprehensive educational opportunities.

Responding to workforce development training needs is not new for most post-secondary institutions. Historically, it has been the purview of schools of continuing education and contract training (Universities Canada & CAUCE, 2022). This has worked well, but schools of continuing education often work in isolation from the rest of an institution (Etter et al., 2023). The conversation around micro-credentials has put a spotlight on continuing education as institutions rethink how to better integrate these units' activities into larger institutional systems. Continuing education is being moved from the margins to the centre of some institutions' operations.

Micro-credentials

The interest in alternative credentials has been around for two decades, spurred by the recognition of lifelong learning needs, ongoing efforts to develop accessible and affordable pathways to education, and advances in online technologies.

The term *micro-credential*² first appeared in published literature in 2014. Its use grew from there

2. A recent systematic review found the hyphenated version *micro-credential* is used in 68 per cent ($n = 42$) of studies. The unhyphenated *microcredential* is used 32 per cent of the time ($n = 19$) (Varadarajan et al., 2023).

(Brown et al., 2021; Nguyen et al., 2022; Varadarajan et al., 2023). There was a surge of interest during the COVID-19 pandemic, when governments and industry stakeholders saw that workplace changes and disruptions were about to be kicked into high gear. Although the interest was global in scope, in Canada, provincial governments have supported the development of micro-credentials since 2019 (MacDonald, 2022) (see *Status of Micro-credentials Across Canadian Provinces*).

Emerging Themes and Trends

Many academics have researched how micro-credentials are implemented (Ahsan et al., 2023; Brown & Nic-Giolla-Mhichil, 2022; Nguyen et al., 2022; Selvaratnam & Sankey, 2021; Tamoliune et al., 2023; Varadarajan et al., 2023). Common findings include:

- There is no consensus in the definition of micro-credentials (Future Skills Centre, 2022; Oliver, 2019). Most practitioners agree that it denotes short-term, work-aligned training. UNESCO recognized the challenges that this lack of common understanding presents and attempted to come up with a consensus definition (Oliver, 2022).
- Concerns over funding and financial support are the second-most cited challenge to the success of micro-credentials. Varadarajan et al. (2023) found a third of published studies cite this concern.
- Research supports the idea that micro-credentials foster innovation, the development of new pedagogical models (Varadarajan et al., 2023), and institutional discussions about educational reforms.
- Employers have a low level of awareness about micro-credentials (Nguyen et al., 2022), likely because it is ill-defined as a concept and can take many forms.
- There is little evidence of the outcome of micro-credential training (Oliver, 2019). Practitioners and learners want concrete data about its effectiveness in helping people with career goals and increasing accessibility to adult education.
- Some micro-credential providers report challenges in developing and updating course materials given the fast-changing nature of industry practices and the need for micro-credentials to be work aligned (Nguyen et al., 2022).
- Despite the name, micro-credentials require a large investment of effort, time, and money for learners and institutions (Nguyen et al., 2022). They should be entered into thoughtfully.

Some have critiqued the emphasis on workplace preparation in micro-credentials (Wheelahan & Moodie, 2021; 2022). They worry that post-secondary education will be reduced to workforce development and fail in its important role to train engaged, critical, creative citizens. They also question whether micro-credentials are more accessible and affordable forms of education. They argue that workforce development should be the burden of employers, not employees, and that putting the cost of workplace preparation on workers is morally dubious. They caution that by

unbundling education, micro-credentials blur the lines between private and public education and constrain higher education to the demands of industry, contributing to the neoliberal forces that privatize education and reduce the autonomy of the academy (Ralston, 2021).

Some of these concerns merit attention, and practitioners should consider the broader impacts of micro-credentials. Nguyen et al. (2022) is a good guide. These authors conclude that micro-credentials are not a zero-sum game, and that their gains are not macro-credentials' loss. The two types of credentials can offer different advantages that complement each other to the benefit of learners. The post-secondary credential ecosystem can support both types of credentials.

Expected Benefits of Micro-credentials

Micro-credentials benefit each stakeholder in different ways (Brown et al., 2021; Downs, 2022; Varadarajan et al., 2023).

For learners:

- Increased employability;
- Access to purpose-built training focused on work readiness;
- Ability to demonstrate and validate granular competencies;
- Access to up-to-date curricula and content;
- More flexible learning designed to meet the needs of working adults with multiple commitments;
- Lower cost of study than macro-credentials;
- Gateway to larger educational opportunities.

For post-secondary institutions:

- Developing learning experiences that bracket macro-credentials and serve as on-ramps to education and off-ramps to employment;
- New business model with the possibility of new revenue streams;
- Meeting the needs of the community and society;
- Outreach opportunities that bring new learners to post-secondary institutions;
- Diversifying the learner population at post-secondary institutions;
- Greater collaboration with industry and network development outside post-secondary institutions;
- Opportunities for innovation in education, especially in tools and digital learning;
- Increasing learner motivation, retention, and completion rates;
- Improved quality of course design;
- Breaking down silos within the institution as units collaborate;

- Opportunity for conversations about the purpose of post-secondary institutions.

For employers:

- Assist with recruitment;
- Improve employee retention;
- Discover "invisible" or emergent skills in employee pool;
- Workforce development; new continuing professional development options; More fit for purpose professional learning;
- Take steps to address the widening skills gap between education and work;
- Enhance collaboration with post-secondary institutions;
- Leverage 70-20-10 learning³;
- Ensure authenticity, validity, and usefulness of the training for the workplace.

For government:

- Address broad labour market needs in a responsive and innovative way.

Micro-credential Frameworks – An International Survey

Many jurisdictions have developed micro-credential frameworks to define micro-credentials and support a consistent approach to their development across institutions and stakeholders (Lang, 2023). Some examples include:

Australia

Australia released a national framework for micro-credentials to ensure consistency across higher education, vocational education, and industry (Australian Government, 2021). It defines critical information requirements, which is the information that must be shared on a micro-credential attestation of learning (e.g., a digital badge awarded to validate achievement).

European Union

In 2022, the European Union accepted the council recommendation on a European approach to

3. The 70-20-10 Model for Learning and Development proposes that the optimal sources of learning for adult learners is: 70% of their learning from on-the-job challenging experiences, 20% from developmental interactions with colleagues (often their supervisor), and 10% from readings and formal coursework (Jefferson & Pollock, 2014; Training Industry, 2023). This ratio was obtained from a 1996 survey of 200 executives who were asked how they believe they learn new knowledge and skills (Lombardo & Eichinger, 1996).

micro-credential learning and employability (Council of the European Union , 2022). This document outlines a definition of micro-credentials adopted throughout the European Union, as well as information that must be shared when awarding a micro-credential to a learner (i.e., what information to include in a digital badge or transcript).

Inter-American Development Bank (IDB)

In addition to development financing, the IDB provides research, knowledge transfer, and education and training services across Latin America and the Caribbean (LAC). Its digital credentialing service, CredencialesBID, has a library of over 700 digital badges that have been issued to over 250 000 adult learners since 2018. The IDB Digital Credential Framework was published in April 2023 as the key reference tool and roadmap to recognize knowledge building and continuous learning for the IDB Group, partner organizations, and citizens of the LAC region (CredencialesBID, 2023). The Framework is a living document that was developed outside an academic context, but it has been informed by several academic frameworks in addition to IDB's encapsulated experience in credentialing (Porto & Presant, 2023).

Ireland

Although not a framework, Ireland has a micro-credential road map that provides recommendations for implementing a national strategy for micro-credentials and the results of a national employer and employee survey (Nic Giolla Mhichil et al., 2020).

Malaysia

In 2020 the Malaysian Qualification Agency released a set of guidelines for the development of micro-credentials (Malaysian Qualifications Agency, 2020).

New Zealand

The New Zealand Qualifications Authority (NZQA) (<https://www.nzqa.govt.nz/providers-partners/approval-accreditation-and-registration/micro-credentials/>) introduced a micro-credential system in 2018. There is no published framework, but it established clear guidelines for developing micro-credentials that align with the country's Qualifications and Credential Framework. It also provides clear instructions and criteria for approval and accreditation. The NZQA hosts a portal where prospective learners can search available micro-credentials (the Register of NZQA-Approved Micro-credentials (<https://www.nzqa.govt.nz/nzqf/search/microcredentials.do>)). In 2023 the NZQA is expected to release a new skill standards (<https://www.nzqa.govt.nz/providers-partners/rove/simplifying-the-design-of-vocational-qualifications/working-group/>) that defines the core building blocks of vocational qualifications and will allow learners to more easily transfer between fields (e.g., if they have demonstrated health and safety skills standards in one industry and move to another, their prior achievements are recognized in their new program).

UNESCO

The United Nations Educational, Scientific and Cultural Organization (UNESCO) published a policy paper, "Short Courses, Micro-Credentials, and Flexible Learning Pathways: A Blueprint for Policy Development and Action," to support international efforts to define micro-credentials (van der Hijden & Martin, 2023). The paper stressed the importance of a shared understanding and framework for micro-credentials as institutions work to develop this new type of programming. It proposes guidelines for success.

United States

The United States has no national micro-credential framework. Some noteworthy organizations and projects include:

- Credential Engine (<https://credentialengine.org/>): A non-profit organization that provides access and transparency about available credentials. It has an online registry (the Credential Finder (<https://credentialfinder.org/>)) for micro-credential programs and competency frameworks and a system for supporting quality assurance across the country.
- Credential As You Go (<https://credentialasyougo.org/>): A project that disrupts the US credentialing system by creating opportunities for learners to integrate credentials from varied providers (post-secondary institutions, employers, military, third-party organizations, state licensing boards) and building an incremental credentialing system. The incremental credential framework was recently published (Credential As You Go, 2023).
- The American Association of Collegiate Registrars and Admissions Officers (AACRAO) released a report on campus guidelines and best practices for alternative credentials, primarily micro-credentials and certificates (AACRAO Alternative Credentials Work Group, 2022) (<https://www.aacrao.org/resources/newsletters-blogs/aacrao-connect/article/alternative-credentials-considerations-guidance-and-best-practices>).

Micro-credential Reports (from External Stakeholders)

International Organizations

Several non-governmental organizations have published findings in support of micro-credentials. These include:

- ICDE: 2019 report of the International Council for Open and Distance Education on alternative digital credentials, including recommendations to institutions for ensuring their success (ICDE, 2019)
- Lumina Foundation: Private foundation dedicated to helping Americans access post-secondary

education. It has published several reports on micro-credentials.

- *All Learning Counts* is a toolkit that provides recommendations for recognizing credit-worthy learning through workplace training, military experience, apprenticeships, and professional certifications. It helps workers transfer learning to post-secondary credentials (Hunter et al., 2021).
- *Connecting Credentials* is a proposed credential framework that integrates short-term training like micro-credentials into the larger credential ecosystem (Lumina Foundation, 2015). It uses competencies as the common currency and proposes eight levels of achievement.
- *The Short-term Credential Landscape* provides an overview of the ecosystem and outcomes for adult learners who complete a certificate (defined as any training of less than a year) (Ositelu et al., 2021).
- OECD: 2020 paper from the Organisation for Economic Co-operation and Development (OECD) to inform policy makers and leaders about the emergence and implications of alternative digital credentials (Kato et al., 2020). OECD also published an environmental scan and overview of the costs and benefits of digital credentials (OECD, 2021).
- UNESCO: 2018 paper that provides an overview of the digital credential ecosystem based on a literature review and interviews with key players (Chakroun & Keevy, 2018)
- **World Economic Forum:** White paper in support of revamping the educational system using skills as the unit of learning to readily translate academic achievements to the world of work (World Economic Forum, 2019)

Canadian Organizations

In addition to economic development organizations calling for the growth of micro-credentials (e.g., Conference Board of Canada, McKinsey Global Institute), several groups have published reports on the Canadian credential landscape and made recommendations about micro-credentials:

- **Canada West Foundation** published a policy brief called *What Now? Micro credentials: "Small" Qualifications, Big Deal* (Lane & Murgatroyd, 2021) that provides 11 recommendations for post-secondary institutions about how to move forward with micro-credentials.
- **Royal Bank of Canada** published an article about the impacts of COVID-19 on education (Schrumm, 2020). To stay competitive, RBC recommends post-secondary institutions make "proposals to modernize the credit transfer system that recognize micro-credentials and experiential learning completions towards a diploma or degree."

Micro-credential Toolkits

Several organizations have micro-credential toolkits to help their constituents engage in the

practice. They vary in depth of information. *eCampusOntario's Micro-credential Toolkit* (<https://ecampusontario.pressbooks.pub/microcredentialtoolkit/>) is the most comprehensive. Others include:

- Commonwealth of Learning's *Designing and Implementing Micro-Credentials: A Guide for Practitioners* (<https://oasis.col.org/items/e2d0be25-cbbb-441f-b431-42f74f715532>);
- Institute for Credentialing Excellence's *Microcredentialing Toolkit* (<https://www.credentialingexcellence.org/Resources/Microcredentialing-Toolkit>);
- Lethbridge College's *Micro-Credential Development Handbook* (https://learninginnovation.ca/wp-content/uploads/2021/08/microcredentialHandbook_2024.pdf);
- State University of New York's *Our Story: Building SUNY's Microcredential Program and Initial Lesson's Learned*; (<https://www.suny.edu/microcredentials/program-development/>)
- UNC-Chapel Hill's *Digital Badging: A Quick Start Guide for Higher Education Program Administrators* (https://dll.unc.edu/wp-content/uploads/sites/1206/2022/03/uncch-dll_badges_quick_start_guide.pdf);
- University of Toronto's *Microcredentials Toolkit* (<https://ocw.utoronto.ca/microcredentials-toolkit/>).

Survey of Canadian Micro-credential Practices

In fall 2019, before the pandemic, Joanne Duklas conducted a survey of 90 Canadian post-secondary institutions for the British Columbia Council on Admissions & Transfer (Duklas, 2020). The goal was to map the landscape of current and planned micro-credentials in the country.

Duklas reported that 41 per cent of Canadian post-secondary institutions had offered or had plans to explore micro-credentials. Ontario institutions reported high interest, with 65 per cent planning to establish micro-credentials. In B.C. the number was lower at 25 per cent. This was before the B.C. Ministry of Post-secondary Education and Future Skills supported the development of pilot programs.

Only 33 per cent of the Canadian institutions that offered micro-credentials labeled them as such. Instead, institutions used the terms *certificates* (67 per cent) or *badges* (39 per cent). Most institutions offered their micro-credentials through their school of continuing education (61 per cent), although a substantial number of academic program areas also served as the administrative centre offering them (56 per cent).

The motivation for offering micro-credentials was primarily to provide access to further education (74 per cent) or meet workplace needs (68 per cent).

When asked how respondents felt about certain features of micro-credentials, the most agreed

upon aspects were that micro-credentials should be competency-based (44 per cent) and use a record of achievement awarded in a shareable electronic format (39 per cent).

In fall 2020, the Higher Education Quality Council of Ontario, in partnership with Colleges and Institutes Canada, Business Higher Education Roundtable, and Abacus Data, conducted an environmental scan of Canadian post-secondary institutions' micro-credential practices (Colleges and Institutes Canada, 2021; Pichette et al., 2021). The report summarized the perspectives on micro-credentials of 201 employers, 2000 working-age Canadians, and 105 post-secondary institutions.

A year after Duklas's survey, in the midst of the pandemic and with stimulus from government funding for micro-credentials, 89 per cent of respondents indicated they either offered or had plans to offer micro-credentials, compared to 41 per cent a year earlier. In Ontario only 5 per cent of institutions had no plans to offer micro-credentials. In B.C. that number was 10 per cent. Along with Alberta, these provinces had the most active micro-credential activity. Of institutions offering micro-credentials, half were offered through schools of continuing education, and 28 per cent were offered via a faculty or academic department in the institution.

This survey also asked which features institutions viewed as important to a micro-credential program. Ninety per cent viewed alignment with industry as critical, and 87 per cent indicated competency-based training was a key component.

Pichette et al. (2021) reported on some of the questions raised by interviewees in their study that indicated unresolved challenges (p. 15):

- "What are the implications of industry 'beating colleges and universities to the punch' and offering microcredentials?"
- Are microcredentials financially viable? Could institutions coordinate/differentiate their microcredential *[sic]* offerings to capitalize on economies of scale?
- Is there something essential lost in the modularization of learning (e.g., general education courses, interconnected skillsets)?"

Around the time of these reports, several national bodies that represent post-secondary education constituents advocated for government investment in the study or pilot of micro-credentials:

- **Universities Canada** made four recommendations for the 2021 federal budget, of which recommendation 2 — invest in access, upskilling, and reskilling — specified "providing funding for institutions to develop accessible short course in key demand areas" (Universities Canada, 2020).
- **Colleges and Institutes Canada** published a white paper that outlined four strategies to support COVID-19 recovery. One was to "fill labour market gaps" through the development of "short

courses developed with employers and experts to quickly reskill and upskill the workforce" (Colleges and Institutes Canada, 2020). It also published a micro-credential definition and guiding principles, available on its website (Colleges and Institutes, n.d. (<https://www.collegesinstitutes.ca/colleges-and-institutes-in-your-community/benefit-college-institute-credential/national-framework-for-microcredentials/>))

- **Polytechnics Canada** made four recommendations for the 2021 federal budget. Recommendation 2 proposed the allocation of funding to support learners in taking micro-credential courses. "Empower Canadians to rapidly retrain and upskill by providing financial support and navigation to short-cycle training programs focused on career-relevant skills" (Polytechnics Canada, 2020).

Other national organizations reported on their exploration of micro-credentials across their membership:

- **Universities Canada and the Canadian Association for University Continuing Education** published a survey of the activities of schools of continuing education at universities across the country (Universities Canada & CAUCE, 2021). The report found more than half of universities had a school of continuing education engaged in making learning accessible for adult learners. Offerings have become increasingly focused on workforce development. Many of these programs could be considered micro-credentials, but the lack of common terminology means they are called by different names such as certificates or badges.
- **Confederation of University Faculty Associations of British Columbia** released a white paper on micro-credentials to support their development but warned of strains on academic mission and autonomy. It emphasized the importance of using academic governance processes for the development and delivery of all credit-bearing micro-credentials. In particular, "with crossover to for-credit programs, then continuing studies will need recalibration to align better within the collegial governance model of the institution" (CUFA BC, 2021, p. 10).

Status of Micro-credentials Across Canadian Provinces

In Canada post-secondary education falls under the portfolios of the provinces. Several provinces are supporting their development and are at different stages of implementation. The following lists shows the status of development in each province as of April 2023:

- **Alberta**
 - The province invested \$5.6 million in the development of 56 micro-credential programs (<https://www.alberta.ca/release.cfm?xID=79751EB14245D-A1A3-1839-F8E28403B62AD644>) in 2021.
 - There is currently no provincial framework or definition of micro-credentials, though cross-

institutional workgroups are collaborating to develop recommendations to the Ministry of Advanced Education.

- In 2021 the Labour Education Applied Research North (LEARN) partners⁴ contracted the Academica Group to research and recommend the best approaches for micro-credential programs in Northern Alberta (Academica Group, 2021).
- **Saskatchewan** developed a guide to micro-credentials (<https://pubsaskdev.blob.core.windows.net/pubsask-prod/130996/Saskatchewan%2527s%252BGuide%252Bto%252BMicro-credentials.pdf>) in 2021.
- **Manitoba** doesn't yet have an official micro-credential plan, but the province's Manitoba's Skills, Talent and Knowledge Strategy (https://www.gov.mb.ca/asset_library/en/mbskills/MB-IBG-S TK-Report.pdf) lists micro-credentials as part of its strategy (p. 10);
- **Ontario** has made the most progress in developing micro-credentials.
 - **Framework:** In 2019 eCampusOntario published a set of principles and a framework (<http://www.ecampusontario.ca/wp-content/uploads/2019/10/2019-10-07-microcertification-s-en3.pdf>) for micro-credentials. The working group that developed it chose not to include a definition.
 - **Pilots:** From 2019 to 2021, the RapidSkills pilot program and the eCampusOntario pilot funded the development of 36 new micro-credentials (<https://micro.ecampusontario.ca/pilots/>).
 - **Report:** In 2021 eCampusOntario, in partnership with the Diversity Institute, published the report *Is the Future Micro?*, which evaluated the 36 pilot projects and their impact (Chaktsiris et al., 2021).
 - **Funding:** In 2021 Ontario created the Challenge Fund (<https://news.ontario.ca/en/release/61236/ontario-invests-in-new-and-expanded-rapid-training-programs>) to support the creation of new micro-credentials. An investment of \$15 million that year resulted in 250 new programs.
 - **Student aid:** In 2021 Ontario announced micro-credentials would be eligible for student assistance programs (<https://news.ontario.ca/en/release/60792/ontario-expands-financial-assistance-to-include-micro-credentials>) (i.e., student loans and grants support).
 - **Portal:** In December 2021 Ontario launched the eCampusOntario Micro-credential Portal (<https://microlearnontario.ca/>), which consolidates all micro-credentials offered at public post-secondary institutions and provides prospective learners with a website where they can explore all micro-credential training offered in the province. This is similar to New Zealand's Qualification Authority Register (<https://www.nzqa.govt.nz/nzqf/search/microcr>

4. LEARN (<https://www.northernlakescollege.ca/about-us/learn>) is a group of Northern Alberta post-secondary institutions that includes Northwestern Polytechnic (formerly Grande Prairie Regional College), Keyano College, Northern Lakes College, and Portage College.

- edentials.do) of approved micro-credentials.
- Toolkit: In 2022 eCampusOntario released a micro-credential toolkit (<https://www.ecampusontario.ca/new-micro-credential-toolkit-enables-pathways-for-lifelong-learning/>) to help institutions design and offer micro-credentials.
 - Québec has engaged in the development of micro-credentials, though the programs are given different names, making it challenging to track across the province.
 - In 2021 the province invested \$30 million in the Programme de formations de courte durée (<https://www.quebec.ca/nouvelles/actualites/details/le-ministre-jean-boulet-annonce-un-investissement-majeur-de-30-m-pour-soutenir-la-requalification-de-la-main-doeuvre-33018>) to help 1500 workers reskill and retool in short-term training in fields of agriculture, electric transportation, green economy, and aeronautics.
 - At Cégeps a credit-bearing micro-credential is referred to as *perfectionnement crédité*. In the Montreal region, the website Montez de niveau (<https://www.montezdeniveau.ca/?cs=t=advanced&cl=5&ciecd=1>) is a portal that helps learners select the right program from a range of institutions. The portal is supported by Services Québec, a branch of the Québec government.
 - At Cégeps non-credit bearing micro-credentials are called *certifications collégiales*.
 - Université Laval calls a micro-credential a *nanoprogramme* (<https://www.ulaval.ca/etudes/nanoprogrammes/quest-ce-quun-nanoprogramme>), which it describes as at the intersection of credit-bearing programs and continuing education;
 - Nova Scotia published a Microcredential Framework (<https://beta.novascotia.ca/documents/microcredentials-framework>) in April 2023.

Some Canada-wide efforts support institutions in developing micro-credentials and learners. These include:

- The Future Skills Centre (<https://fsc-ccf.ca/>) is funded by the Government of Canada's Future Skills Program. Working with partners across the country, the organization studies global trends that affect workforce changes and use this information to develop skills and training to help Canadians thrive in today's rapidly changing economy. The Future Skills Centre is interested in the prospect of micro-credentials to address skills shortages and gaps and to help workers rapidly pivot and upskill. Its website shares findings on micro-credentials. For example, see the learning bulletin *Microcredentials in Flux: Challenges, Opportunities and Insights from FSC's Portfolio* (2022).
- Quick Train Canada (<https://quicktraincanada.ca>) is an association of colleges, polytechnics, and Cégeps that supports the transition to the low-carbon economy through fully funded training programs in Canada. The Canadian Colleges for a Resilient Recovery, which lead this project, are funded by the Government of Canada's Sectorial Workforce Solutions Program. The only B.C. member of the coalition is the British Columbia Institute of Technology.

Micro-credential Developments in B.C.

B.C. is one of the leaders in micro-credential development in Canada. The Ministry of Post-secondary Education and Future Skills began its support of this new form of credential in 2020, resulting in rapid expansion in the number of offerings. The Ministry's support of micro-credentials include:

- **Micro-credential development funding**
 - Since 2020 (and as of April 2023), the Ministry has funded the development of more than 130 new micro-credentials across the public post-secondary system.
- **Framework**
 - In fall 2021, following a year of consultations with stakeholders, the province released the *Micro-credential Framework for B.C.'s Public Post-secondary Education System* (https://www2.gov.bc.ca/assets/gov/education/post-secondary-education/micro-credentials/mc_framework.pdf) to provide a common understanding of micro-credentials, support the development of institutional structures, and facilitate alignment between institutions.
- **Capacity building**
 - Through BCcampus the province has facilitated several training sessions and discussion forums to help members of the post-secondary sector bolster their knowledge and skills in this emerging field. This includes:
 - Offering online, facilitated, cohort-based one-week FLO MicroCourses (2021 (<https://bccampus.ca/event/flo-microcredentials-in-the-b-c-context/>), 2022 (<https://scope.bccampus.ca/course/view.php?id=589>), 2023 (<https://bccampus.ca/event/flo-microcourse-current-topics-in-micro-credentials-2-0/>))
 - Hosting a one-day online event called *Micro-Credentials: Competency at the Core* (<https://bccampus.ca/event/micro-credentials-competencies-at-the-core/>), which included keynote addresses and panel discussions
 - The development of this *Micro-credential Toolkit for B.C.*
- **Learner pathways**
 - In the fall 2022, to support additional learner pathways across B.C. public post-secondary institutions, the province funded Thompson Rivers University (TRU) – Open Learning to develop a Micro-credential Assessment process to enhance education pathways from non-credit micro-credentials to credit programs (see *TRU's Experience with the Credit Bank* in the chapter *Educational Pathways* for more details).
- **System coordination and collaboration**

- In the spring 2023, the province funded Vancouver Community College (VCC) to develop and pilot a Micro-credential Collaboration framework to support sharing micro-credential curricula and resources across B.C. public post-secondary institutions.

Suggested Resources

Influential Works

This early primer has informed many efforts to define micro-credentials around the world.

Oliver, B. (2019). *Making Micro-credentials Work for Learners, Employers, and Providers*. Deakin University. <https://dteach.deakin.edu.au/wp-content/uploads/sites/103/2019/08/Making-micro-credentials-work-Oliver-Deakin-2019-full-report.pdf>

Open Universities Australia conducted a survey of 600+ prospective adult learners to identify their perspective on micro-credentials. The report provides concrete data about the duration and costs adult learners are willing to invest in micro-credential training and what they value in these credentials.

Open Universities Australia. (2021). *Microcredentials: Exploring the Student Perspective*. <https://www.open.edu.au/-/media/oua-pdfs/microcredentials-exploring-the-student-perspective.pdf?rev=d517ec08244c4de1b57f392ce207f9da&hash=0B750CF0A17E7BE3042046A2E74AE364>

Alternative Credentials

Sean Gallagher conducted early research into the role of alternative credentials at colleges and universities for his doctoral work. He wrote an accessible and fascinating account of the history of alternative credentials and the rationale for their inclusion in higher education. He offered thoughts about where they may be headed. This account predates the rise of micro-credentials, but much of it applies to this field.

Gallagher, S. R. (2016). *The Future of University Credentials. New Development at the Intersection of Higher Education and Hiring*. Harvard Education Press.

You can hear Gallagher's thoughts on micro-credentials by watching this recorded panel discussion.

Young, J., Gallagher, S., & Soares, N. (2018). *In evolving world of microcredentials, students, colleges and employers want different things*. EdSurge. <https://www.edsurge.com/news/2018-01-23-in-evolving-world-of-microcredentials-students-colleges-and-employers-want-different-things>

Micro-credential Toolkits

Bigelow, A., Booth, C., Brokerhoff-Macdonald, B., Cormier, D., Dinsmore, C., Grey, S., ... & Zahedi, E., (2022). *eCampusOntario's micro-credential toolkit*. <https://ecampusontario.pressbooks.pub/microcredentialtoolkit/>

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State University of New York. (n.d.). *Our story: Building SUNY's microcredential program and initial lessons learned*. <https://www.suny.edu/microcredentials/program-development/>

University of Toronto. (n.d.). *Microcredentials toolkit draft*. <https://ocw.utoronto.ca/microcredentials-toolkit/>

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Definitions

This chapter provides an overview of important concepts as well as global and local efforts to define micro-credentials.

Chapter Audience:



Administrators



Program Managers



Faculty

What Is a Micro-credential?

The first thing to note is that there is no universally agreed-on definition of micro-credentials (Colleges and Institutes Canada, 2021; Contact North, 2020; Duklas, 2020; Future Skills Centre, 2022; Nguyen et al., 2022; Oliver, 2019; Pichette et al., 2021). Because micro-credentials are new, many organizations and jurisdictions have defined them in a way that suits their needs and context (Chakroun & Keevy, 2018; Commonwealth of Australia, 2019; D'Orio, 2019; eCampus Ontario (<http://www.ecampusontario.ca/wp-content/uploads/2020/11/Micro-credentials-en1.pdf>); European Commission, 2020; European Higher Education Area, 2022; European MOOC Consortium, 2019; International Council of Distance Education, 2019; Kato et al., 2020; Malaysian Qualifications Agency, 2020; MicroHE, 2019; Nova Scotia, n.d.; New Zealand Qualifications Authority, n.d.; Pichette, 2021; Saskatchewan, 2021; State University of New York, n.d.; The Quality Assurance Agency for Higher Education, 2021). This can cause confusion since the term "micro-credential" can refer to different things in different documents. This lack of consensus also hampers efforts to raise awareness about micro-credentials, build trust, and move this new type of credential forward (Oliver 2019; 2022).

There are areas of commonality across definitions, however. Oliver (2022) identified these areas to create a consensus definition on behalf of the United Nations Educational, Scientific, and Cultural

Organization (UNESCO). Her goal was to develop an authoritative international understanding of micro-credentials.

Oliver studied 15 definitions published in policy documents around the world (including Canada) and distilled common elements. She enlisted the help of 45 international experts (several of them Canadian) to discuss each element. Their conversations resulted in the following definition (Oliver, 2022, p. 20):

"A micro-credential:

- Is 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 standalone value and may also contribute to or complement other micro-credentials or macro-credentials, including through recognition of prior learning.
- Meets the standards required by relevant quality assurance."

The group was unable to agree on some issues. For example, the definition does not specify a duration for a micro-credential but describes it as "focused." Many advocate that micro-credentials be aligned with the demonstration of competencies, irrespective of the time required to learn them. In this context, "focused" indicates a narrow scope for the learning, reflecting the "micro" nature of micro-credentials.

The expert panel also could not agree on whether prior learning should be recognized with a micro-credential (see *NAIT Innovates with Direct Assessment to Offer Micro-credentials* in the *Educational Pathways* chapter) or whether it should be awarded only on completion of training. There were conversations about the place of micro-credentials in the existing credential ecosystem and whether they supplement or replace existing credentials. The group also disagreed about trusted providers who could award micro-credentials, since some operate outside the regulated education sector (e.g., commercial entities, private providers, professional bodies, and community organizations).

Finally, there were conversations about the place of quality assurance in the definition of a micro-credential. This element is not included in the definition of other credentials. The group chose to include quality assurance in its definition. Oliver concluded, "Micro is the distinguishing feature of micro-credentials, but to be accepted and trusted, they must be seen to bear the quality hallmarks of credentials" (Oliver, 2022, p. 24). In other words, the distinction between micro- and macro-credentials (i.e., certificates, diplomas, and degrees) may be a matter only of scope and scale, and the inclusion of quality assurance in the definition is needed to build trust in this new type of credential.

The group's definition outlined the core elements that make up a micro-credential, but practitioners may want more information about the logistics of putting it in practice: the *where*, *who*, and *how* of micro-credentials. These elements are addressed in Oliver (2019). Figure 1 is a visual overview of these elements of a micro-credential.

The expert panel discussed some of the options in Figure 1 (Oliver, 2022), but they did not agree on whether a micro-credential should include all of them. For example, the “*what*” options in Figure 1 suggest a micro-credential can be used to recognize new or existing knowledge and skills, but not everyone on the panel agreed.

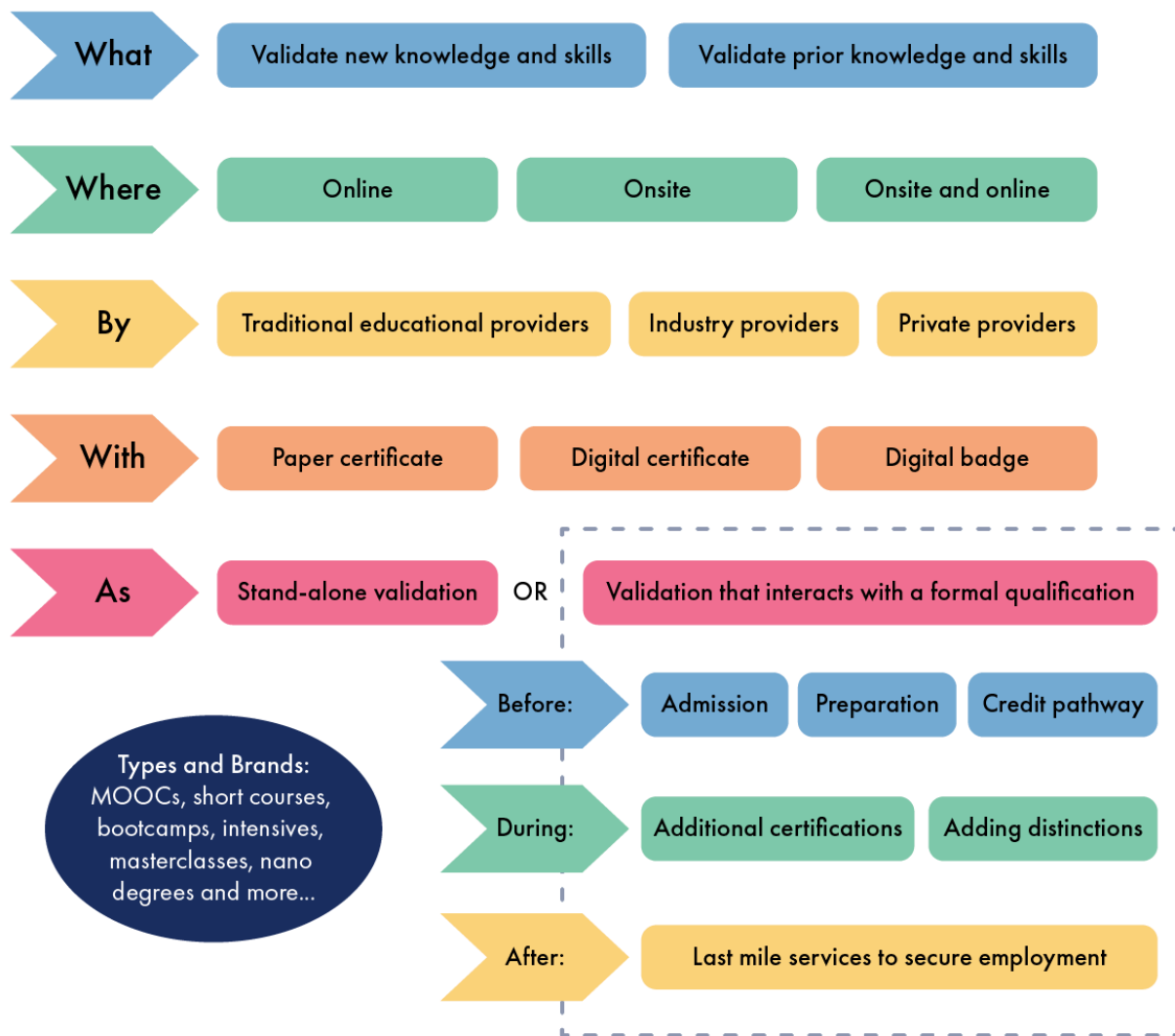


Figure 1. The what, where, who, and how of micro-credentials. Each aspect of a micro-credential can take many forms, as shown in the options on the right-hand side. Source: Oliver (2019, p. 17). CC BY-ND. [Image description]

B.C. Micro-credential Definition and Framework

Adopting a shared understanding of micro-credentials is important to the B.C. post-secondary system. A consistent approach across institutions will ensure institutional efforts to develop micro-credentials align with funding opportunities. It will facilitate learner movement between institutions as they use micro-credentials to pursue their education, and it will reduce confusion among learners, employers, and Indigenous and community partners.

To support the development of micro-credentials in B.C., the province consulted post-secondary institutions and other stakeholders. The resulting *Micro-credential Framework for B.C.'s Public Post-secondary Education System (2021)* proposed a shared definition of micro-credentials:

Micro-credentials recognize standalone, short-duration learning experiences that are competency-based; align with industry, employer, community and/or Indigenous community needs; and can be assessed and recognized for employment or learning purposes. (p. 6)

The framework defines terms like *short duration*. While the duration of a micro-credential is not set, the program should be less than 288 hours.

The framework indicates that **assessment** is a necessary component of a micro-credential to ensure competencies are achieved.

It also says micro-credentials may be **credit-bearing** or **not credit-bearing** and that they should be assessed using the institution's relevant **quality assurance** processes for credit- and non-credit programs.

The framework encourages **collaboration with relevant partners** such as employers and community or Indigenous organizations to develop curriculum and assess program quality. It encourages institutions to build connections between micro-credentials and their credential ecosystems to create **pathways for learners** that increase educational opportunities.

Toolkit Alignment with the Micro-credential Framework for B.C. Public Post-secondary Education System (2021)

This toolkit covers several aspects of the principles described in the *Micro-credential Framework for*

B.C.'s Public Post-secondary Education System. Table 1 outlines the connections between the framework and this toolkit.

Table 1. Connections between the *Micro-credential Framework for B.C.'s Public Post-secondary Education System* and this toolkit.

Micro-credential Framework for B.C.'s Public Post-secondary Education System	Toolkit Chapter
Definition	
Duration	Institutional Governance
Delivery	Design Considerations
Collaboration and coordination	Financial Matters Campus Collaborations Employers, Indigenous and Community Partners Inter-institutional Collaborations Learners
Quality assurance	Institutional Governance Quality Assurance
Assessment	Design Considerations Educational Pathways Recognition of Learning
Registry	Educational Pathways
Learning pathways	Educational Pathways
Prior learning assessment and recognition	Educational Pathways
Post-secondary system recognition and transfer	Educational Pathways Recognition of Learning
Guiding Principles	
Access	Financial Matters Learners Educational Pathways
Quality	Institutional Governance Quality Assurance
Relevance	Marketing and Launch Employers, Indigenous and Community Partners Learners

Collaboration and coordination	Financial Matters Campus Collaborations Employers, Indigenous and Community Partners Inter-institutional Collaborations Learners
Employer and industry engagement	Employers, Indigenous and Community Partners
Clarity and transparency	Marketing and Launch Institutional Governance Quality Assurance

Disambiguation

As an emerging credential, some of the terms associated with micro-credentials are in flux. In a B.C. context, most confusion can be resolved by referring to the definition of a micro-credential in the *Micro-credential Framework for B.C.'s Public Post-secondary Education System*. Additional disambiguation of terms and concepts are provided below.

Micro-credentials and Digital Badges

The terms *micro-credential* and *digital badge* are sometimes used interchangeably (Duklas, 2020; Weaver, 2021). In other contexts, digital badges are seen as a “micro” micro-credential (i.e., digital badges are envisioned as tiny programs that can be stacked towards a micro-credential) (Presant, 2023).

However, a distinction is emerging, with *micro-credential* used to refer to the program and *digital badge* to the recognition of learning awarded to learners (Galindo, 2023; University at Buffalo, n.d.). In other words, a digital badge is to a micro-credential what a transcript is to a degree. The chapter *Recognition of Learning* provides more details about this distinction. You can also read about two B.C. post-secondary institutions' definition of these terms – which aligns with this distinction – in the chapter *Institutional Governance: Stories from the B.C. Post-secondary Sector* (see UBCO's *Development of a New Micro-credential Policy* and the UFV's *Development of a New Micro-credential Policy*).

Credit and Non-credit Micro-credentials

The *Micro-credential Framework for B.C.'s Public Post-secondary Education System* defines micro-credentials as either credit-bearing or non-credit-bearing. This is not unique to B.C. Many definitions of micro-credentials include both credit-bearing and non-credit-bearing options (see Bigelow et al., 2002; McGreal & Olcott, 2022).

This can pose a challenge, since most institutions have different systems, policies, and procedures for administering the two types of programs. Quality assurance and approval processes, the responsibility for managing them, and who is allowed to teach each type of program can differ substantially. Institutions should be aware of this element when developing policies and procedures for micro-credentials. Some institutions have different policies for credit-bearing and non-credit-bearing micro-credentials (see the chapter *Institutional Governance: Practical Guide*).

Using one term — micro-credentials — to refer to programs that bear credits and some that do not can create confusion, especially for institutions where different governance processes apply. With time, the language may evolve to differentiate the two types of programs. For now, both are called micro-credentials.

Continuing Education and Micro-credentials

Another point of confusion is the distinction between continuing education or contract training programs and micro-credentials. In some cases, there is no distinction. Recent surveys of Canadian post-secondary institutions found that more than half of micro-credentials are offered through schools of continuing education (Colleges and Institutes Canada, 2021; Duklas, 2020; Pichette et al., 2021).

In these cases, micro-credentials are a subset of the programs offered through continuing education. To be a micro-credential, a continuing education program must conform to the definition of a micro-credential. According to the *Micro-credential Framework for B.C.'s Public Post-secondary Education System*, the program should be competency-based, aligned with external stakeholders, and formally assess learners. The latter element is not a component of every continuing education program.

Micro-credentials are meant to create educational pathways for learners. Providing laddering opportunities between micro-credentials and macro-credentials may require tighter collaboration between continuing education and the rest of an institution. This is one of the ways in which micro-credentials differ from traditional continuing education programs. Figure 1 in the chapter *Educational Pathways* provides an overview of different learning opportunities, including continuing education courses and micro-credentials, and explains how one type of program may connect learners to larger educational opportunities.

Micro-credential Providers

Post-secondary institutions are not the only providers of micro-credentials (Contact North, 2020). Micro-credential programs are also offered by companies, non-profit organizations, private educational organizations, professional bodies, and licensing organizations.

Some are offered in partnership with post-secondary institutions; others are offered independently. Some faculty include micro-credentials offered by outside providers as a requirement for completing an undergraduate or graduate course to help learners gain work-ready skills (Bell, 2017; McCaffery et al., 2020). Often, these training opportunities are not recognized by the institution, so it can be difficult to report on the adoption of micro-credentials.

When we talk about micro-credentials in this toolkit, we refer to programs that are developed and offered by post-secondary institutions. It's important to recognize these are not the only type of micro-credential available. Sometimes micro-credentials offered by other organizations make their way into academic coursework.

Micro-credential Typology

Micro-credentials vary in their purpose, or in why learners register to complete them.

Pichette et al. (2021) recognizes four purposes for micro-credentials:

- As pathways toward a formal qualification (e.g., a bridging program);
- To update previous qualifications (e.g., incorporate emerging practice or knowledge into professional practice);
- To gain a technical skill (e.g., how to use a software program);
- To develop transferable skills (e.g., communication skills).

Micro-credentials serve other purposes, too. Based on a recent analysis of micro-credentials in Canada, Contact North (2023) identified 10 kinds of micro-credentials. Some additional categories are:

- "Teaser" micro-credentials, which serve a recruitment purpose and showcase larger programs offered by an institution;
- Assessment-only microcredentials, which are not concerned with where and when a learner picks up a competency but only with their ability to demonstrate proficiency (see *NAIT Innovates with Direct Assessment to Offer Micro-credentials* in the chapter *Educational Pathways*);
- Pick-n-choose micro-credentials that give learners flexibility in creating a custom program to address their individual needs.

It is important to recognize this diversity because it impacts how people in the field think about micro-credentials. The type of micro-credential influences how it is designed and administered. For example, for a micro-credential designed as a pathway toward a formal qualification, the institution must ensure that the program is credit-bearing, recorded on a formal transcript, and can ladder into larger learning opportunities. Micro-credentials that are focused on gaining a technical skill may not

include laddering opportunities; it may be more important to provide authentic, work-aligned assessments, and a digital badge that the learner owns and can share with employers.

Micro-credentials are not homogenous. They are short-term, work- or community-aligned, competency-based, assessed trainings that vary in their goals and how they are constructed.

Suggested Resources

Micro-credential Framework for B.C. Public Post-secondary Education System (2021)

The *Micro-credential Framework for B.C.'s Public Post-secondary Education System* is an essential reference when engaging in micro-credential work in the province. It provides a consistent approach to the development and evolution of micro-credentials in B.C.:

B.C. Ministry of Advanced Education and Skills Training. (2021). *Micro-credential Framework for B.C.'s Public Post-secondary Education System*. https://www2.gov.bc.ca/assets/gov/education/post-secondary-education/micro-credentials/mc_framework.pdf

International Efforts to Define Micro-Credentials

Although there are many definitions for micro-credentials, the authority in this field is Beverley Oliver. Two of her reports are described in some depth in this chapter:

Oliver, B. (2019). *Making Micro-credentials Work for Learners, Employers, and Providers*. Deakin University. <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*. UNESCO. <http://hdl.voced.edu.au/10707/588576>

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Duklas, J. (2020). *Micro-credentials: Trends in credit transfer and credentialing*. Report prepared for the British Columbia Council on Admissions & Transfer. <https://www.bccat.ca/intro/MicroCredentialsReport>

European Commission. (2020). *A European approach to micro-credentials: Output of the Micro-credentials Higher Education Consultation Group*. Final Report. <https://education.ec.europa.eu/sites/default/files/document-library-docs/european-approach-micro-credentials-higher-education-consultation-group-output-final-report.pdf>

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Image Description

Figure 1. The what, where, who, and how of micro-credentials.

Types and Brands: MOOCs, short courses, bootcamps, intensives, masterclasses, nano degrees and more...

- What: validate new knowledge and skills, validate prior knowledge and skills
- Where: online, onsite, onsite and online
- By: traditional education providers, industry providers, private providers
- With: paper certificate, digital certificate, digital badge
- As: stand-alone validation, or validation that interacts with a formal qualification
 - Before: admission, preparation, credit pathway
 - During: additional certifications, adding distinctions
 - After: last mile services to secure employment

[Return to Figure 1]

Media Attributions

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IMPLEMENTATION

Micro-Credential Lifecycle

This chapter provides an overview of the steps toward creating a micro-credential, from the ideation to the evaluation of the pilot and decision to offer it again.

Chapter Audience:



Administrators



Program Managers



Faculty

Overview of the Micro-credential Life Cycle

Developing any new program in a post-secondary setting requires more or less the same steps. ADDIE (Analysis, Design, Development, Implementation, and Evaluation) is a commonly used framework for thinking through the stages from the initial idea for a program all the way to its retirement (Branson, 1978).

That said, micro-credentials, by virtue of their goals, the population they serve, and their business model (i.e., funding structure), may be a little different to an institution's standard offerings. For instance, it's been observed that the mindset adopted when developing a micro-credential may be more similar to how companies develop new products than a typical academic offering (Young, 2017). For this reason, some of the steps may be a little different.

Outlined below are 10 phases in the micro-credential life cycle:

1. Ideation
2. Team Formation
3. Feasibility

4. Design
5. Approval
6. Marketing
7. Build
8. Launch and Delivery
9. Recognition of Learning
10. Evaluation

Figure 1 shows how the 10 phases align with the familiar ADDIE framework as well as to the chapters in this toolkit. While these steps are presented in a linear fashion, it should be acknowledged that the development and offering of a micro-credential may be envisioned as a circular process where the last step, which is evaluation, serves as a springboard to inform the next iteration of the same (or another) micro-credential. Also note that the chronology of the phases may differ in some institutions. For example, each institution's governance processes may position the approval step in a different place.

ADDIE	Analysis			Design		Development		Implementation		Evaluation
Micro-credential Life cycle	Ideation	Team Formation	Feasibility	Design	Approval	Marketing	Build	Launch and Delivery	Recognition of Learning	Evaluation
Toolkit Chapter	Background Definition Institutional Governance	Campus Collaborations Employers, Indigenous and Community Partners Inter-Institutional Collaborations	Financial Matters	Learners Design Considerations Educational Pathways Recognition of Learning	Institutional Governance Quality Assurance	Launch and Marketing	Design Considerations	Launch and Marketing	Recognition of Learning Educational Pathways	Design Considerations

(https://opentextbc.ca/bcmicrocredential/wp-content/uploads/sites/425/2023/01/4_Overview-and-Chapter-Alignment.png)

Figure 1. Overview of the micro-credential life cycle. The phases in the development of a micro-credential are captured in the middle row. The top row aligns these phases with the ADDIE stages, a framework which may be more familiar to post-secondary professionals. The chapters of the toolkit aligned with each stage of the micro-credential life cycle are indicated below. [Image description] [Click to view image full size]

Phases of the Micro-credential Life Cycle

1. Ideation

Micro-credentials can be initiated in a variety of ways: by employers to solve an industry gap, or by an institution, community, or learner need.

- Explore and learn about micro-credentials in B.C. and beyond. Begin with the Micro-credential Framework for B.C.'s Public Post-Secondary Education System (https://www2.gov.bc.ca/assets/gov/education/post-secondary-education/micro-credentials/mc_framework.pdf). Read about the current state of design and implementation. Investigate exemplars to inspire your thinking.
- Consider what your institution is known for. What are its programmatic strengths? This area may be a good place to start when looking for a micro-credential topic as the institution's reputation will help you market the program.
- Talk to the target population you are hoping to serve. What are their pain points? What stands in the way of their goals and success? What are their wants and aspirations? What educational needs do they have?
- Use information such as job postings and labour market outlook reports to conduct labour market research to identify employer or community training needs. The government and certain professional associations periodically conduct surveys of their membership and publish reports on job market trends and outlook in a region (e.g., WorkBC's Research the Labour Market (<https://www.workbc.ca/research-labour-market>) site). Perusing a list of available training grants may also suggest priorities and workforce development needs.
- Talk to faculty at your institution who regularly engage with industry. What do their contacts notice as trends and training needs? Speak with senior leaders at your institution – they regularly engage with leaders outside the institution and may be able to not only inform your thinking but also provide industry contacts.
- Connect with local employers and professional bodies to inquire if they are interested in participating in a focus group. From these discussion sessions, determine what necessary knowledge, skills, and attributes (i.e., competencies) these industries would like their employees to have.
- Conduct an environmental scan of educational opportunities offered by other post-secondary institutions and private trainers. From this, identify the unique opportunity that you may serve.
- Review your institution's offerings to determine what already exists and what gaps may be filled.
- Identify the purpose of a micro-credential, or what needs the micro-credential will address. Articulate your “why” clearly. Prepare an elevator pitch or a one-pager – this will come in handy in the next phase.

- Identify the target audience and at what level the micro-credential could be offered (e.g., is it aimed at professionals who already have a degree? Or, is it aimed at undergraduates who are currently completing a program of study?)

2. Team Formation

Once you have an idea for a micro-credential, socialize it. Engage in conversations with potential stakeholders in and out of your institution to build awareness and test whether the idea has merit. In doing this, you will identify potential allies who share your vision and encounter critics whose objections you will need to carefully consider. Use this period to identify who could collaborate on the project. This includes internal members of the project team who will be directly involved, but also stakeholders within and outside of your institution whose input will be critical to the success of the project.

- Identify leaders within your institution who will champion and support the project.
- Identify the people who will be tasked with the primary responsibility of bringing this project forward. These could be a project manager, faculty, instructional designers, and a project lead.
- Identify the departments within the institution that would be impacted by the launch of a micro-credential and reach out to them to inquire about their perspective on the project and considerations for their participation (e.g., timelines, resources). This may include your institution's marketing team, registrar's office, prior learning assessment and recognition (PLAR) office, school of continuing education, senate or deans' council, centre for teaching and learning, etc.
- Engage external partners such as employers who may provide expertise about the field to gauge their interest in collaborating on a micro-credential.
- Contact potential students to ask for their opinion on a prospective program.
- If the goal is to offer the micro-credential across the province, consider partnering with other post-secondary institutions. Which institution could make a good partner, and why?
- Discuss the idea with potential funders to identify available or upcoming funding opportunities.

Assembling a Micro-credential Team

Typically, the design of a micro-credential is a team-based effort. Members of a micro-credential internal team usually involve the following members:

Project Lead

The project lead coordinates the activities of each member of the team to ensure that the project moves forward. This person initiates the project and holds it together. They should be aware of each aspect of its development. This person should be a good problem solver, able to navigate internal processes and external collaborations.

Project Manager

The development of a micro-credential is a team-based activity with many stakeholders and moving parts. It is also often done under tight deadlines. To ensure success, many micro-credential teams employ a dedicated project manager who monitors progress and ensures communication across the team. Depending on the team's composition, this is a function that is sometimes performed by a dedicated person, sometimes by the project lead, and sometimes by the instructional designer.

Employer Engagement Lead

Getting employers and external partners such as other institutions on board early is critical. This person should have a track record of successful partner engagement and be able to speak their language and get calls returned. When a dedicated person cannot be assigned to this role, it usually falls to the project lead.

Subject Matter Expert (SME)

The subject matter expert is a content expert who knows the discipline or topic that will be the focus of the micro-credential. They participate in the design and development of the micro-credential. This person may be a faculty member employed by the institution or they may be industry or community experts who have experience "on the ground."

Instructional Designer

This person (sometimes called an educational or curriculum or program developer) has a background in adult learning and can guide the design and development of the program. They work closely with the subject matter expert(s) and industry partners to harness the content knowledge and convert it into learning experiences and the evaluation of competencies. Depending on the needs of the micro-credential, they will also have expertise in learning management systems or other digital tools to design online learning. They may be attached to your institution's centre for teaching and learning. It may be helpful for them to have access to your institution's systems (e.g., student registration system) to input program information and communicate with other departments such as the registrar's office.

Champion

Sooner or later, you're going to need this person — someone at the director, dean, or vice president level who believes in what you're doing and can advocate at high levels.

3. Feasibility

Once the idea has been socialized and there is enthusiasm about moving forward, it's time to work on determining whether the micro-credential is feasible.

- Consider how the micro-credential aligns with institutional priorities (e.g., academic plan, strategic mandate agreements), institutional micro-credential policies, and unit plan resourcing priorities. Ask yourself whether the micro-credential fits within the scope and scale of the institution's vision for these programs.
- Familiarize yourself with your institution's policies and procedures for rolling out a micro-credential. If there are initial steps to presenting a new program for approval to your institution's governing bodies, do it.
- Create an initial budget. Consider the sources of revenue and costs. You may need to create two budgets: one to develop the initial program and one to offer the program once it is created. Identify your business model. For example, will this program be offered on a cost-recovery basis? Will it be revenue-generating? Identify your costs, including marketing, partner consulting fees, cost of developing materials, etc. Connect with your collaborators for these items (e.g., your marketing team can estimate the level of resources a program will need to be successful). Also be mindful of the B.C. Tuition Limit Policy (<https://www2.gov.bc.ca/gov/content/education-training/post-secondary-education/institution-resources-administration/tuition-limit-policy>) for credit-based programming, to ensure that the initial tuition fees are sustainable in future years. As you set the pricing for tuition, consider learner and employer pricing sensitivity.
- Identify and apply for internal or external funding opportunities to support the design of the micro-credential. Consider also whether you should apply for funding to support the learners (e.g., some funding programs can provide daycare subsidies or support the cost of supplies for learners).
- Map out your unit's resources, and plan when such a new program could be developed and launched. Identify the timelines and deliverables.
- Secure resources to carry out the project. Find qualified people and assign a team to the project. Ensure that they will have the resources they will need to complete the project.
- Formalize the partnership with outside organizations. This may involve the development of a memorandum of understanding (MOU) or general service agreement (GSA) outlining roles and responsibilities. Negotiate fees for the consulting services.

4. Design

Once all of the pieces are in place, the resources are available and the initial approval is secured, it's time to build the program's structure. Typically, the instructional designer will take the lead in facilitating conversations between stakeholders to create the framework for the program. This is usually a team effort, and not the work of a single person.

- Engage in consultation with employers or community partners, subject matter experts, and other stakeholders to identify:
 - The competencies that will be targeted by the micro-credential.
 - Evidence that a learner has achieved a satisfactory level of mastery of these competencies.
- Build a learner profile to make informed decisions. Talk to prospective learners about their expectations to inform the design of a micro-credential to meet their needs. For example, do they expect to have work-integrated learning (WIL) opportunities? Do they prefer to learn using videos, activities, or text? If video, what level of production polish do they expect? What is their comfort with engaging in formal education, and what are their abilities for independent learning?
- Determine what prior knowledge, work experience, or credential a learner will need to enroll in the micro-credential. Identify the level of the micro-credential and situate it within your institution's credential framework.
- Determine the best delivery method for the micro-credential: online, hybrid, or face to face. If online, will this be a self-paced training program or a cohort-based model? If in-person, identify where it will be offered and when. Determine if there is a set instructional time (e.g., this is a 45-hour micro-credential), and if not, how long a learner will have to complete the training (e.g., they may complete the training within six months of registering). Also discuss the target population's availability to engage in the program (e.g., do they have full-time jobs that would prevent them from attending during the day? Is a bootcamp format more appropriate?)
- Investigate and purchase appropriate resources to develop the micro-credential, such as a suitable learning management system (LMS), video production or graphics design services, and digital badging software.
- Consider how best to structure the program to achieve the competencies. Should it be modularized into separate short courses that can be stacked towards one micro-credential? Do several micro-credentials build towards a larger credential? Should the micro-credential be credit-bearing (making it easier to ladder into other learning pathways) or part of the non-credit offerings at your institution (which usually benefits from quick approval processes leading to nimble and responsive curriculum development). Articulate the rationale for your choices.
- Will the micro-credential ladder into another educational pathway at your institution, or other institutions? If so, this may require engaging teams from other departments, such as those that

will accept the micro-credential into their program, or from your institution's PLAR office (if there is one), to develop these agreements.

- Design the micro-credential plan (sometimes called the blueprint), which should include a description of its target competencies and goals, how learners can demonstrate their mastery of these competencies, and activities to help them develop them. Consider whether a learner must complete the entire program if they can demonstrate that they begin the program with some existing (demonstrated to be satisfactory) competencies. Design the structure of the program and its activities.
- It may be a good idea to keep the lines of communication open with the rest of the institution during this stage, so that the community has an opportunity to provide feedback. This can anticipate objections, improve the design, and help head off challenges during the next phase.

5. Approval

Each institution may differ in what information must be provided to its governance body for approval of a new program. Usually, such an approval process requires submitting information about the program's learning outcomes or target competencies, assessments, and formats. Therefore, this step is likely to happen in conjunction with the design phase or soon afterwards.

Most institutions have separate curricular and quality approval processes for credit-bearing and non-credit programs. The proposed micro-credential should follow the appropriate procedure.

6. Marketing

Once the micro-credential has been approved by the institution, it's time to put in place the marketing plan and to promote the program. A best practice is to begin promotion as soon as the program is approved rather than wait until the program is developed and ready to accept registrations. It will likely take some time to spread the message in the community and to convert prospective learners into registered learners. Don't forget that learners may need to re-adjust their busy lives to be able to take a micro-credential program. They may need time to secure the funds required for the tuition, take a leave from their work or apply for professional development funds from their employer, or make other arrangements to participate in the program. It's never too early to start building awareness of the program with the target audience.

- Develop a marketing plan.
- Consider the following key questions:
 - Who is the target audience?
 - How does the micro-credential help them meet a need and reach their goals?
 - What's unique about this program that no other program will offer?

- Where is your audience / how can you reach them where they are?
- Research your audience.
 - Conduct surveys or focus groups or interviews with prospective learners.
 - Compile findings into learner profiles to envision the target audience.
- Reach out to your audience using multiple channels.
 - Leverage your partners' existing networks. They have the credibility and contacts to reach your target population. They may be able to include information about your program in their newsletter, on their website, or in their social media posts.
 - Develop a website to provide information.
 - Use social media marketing to build awareness, if it is appropriate for your audience.
 - Use materials created for the micro-credential in your promotion. For example, consider including video clips of the subject matter expert or instructor.
 - Participate in events where your audience is likely to be, e.g., a trade conference in the target industry or a college open day event.
 - Reach out to prospective students through class visits, information sessions, and free webinars that include a teaser learning activity from the program.
- Don't forget to include industry or community endorsement, recognition, or validation in your promotional materials. Micro-credential learners have concrete goals for their training, and they will want to know that the credential will be a tangible investment of their time and money.
- Develop marketing materials that reflect your micro-credential's brand. Be sure to enlist the help of (or at least consult with) the marketing department to ensure that your materials comply with your institution's marketing and brand guidelines.
- Assign someone as the contact for the program. This person will provide individualized assistance and respond to the questions of prospective learners.

7. Build

In ADDIE-speak, this is called the development stage. This is where the plans (created during the design phase) are converted into concrete training materials. Typically, this is led by the instructional designer but the subject matter experts are doing the detailed work.

Some of the considerations in developing this material include:

- They should be authentic to the context in which they will ultimately be used in the workplace or community. For example, it may include real-world case studies from the target industry.
- They should acknowledge that adult learners come to the training with experience and have concrete goals of where to apply new knowledge and skills (e.g., activities may give learners the chance to develop plans for their workplace).
- The materials must take into consideration the target audience's expectations for format and

polish. This will be based on who they are (e.g., are the learners professional adults or young adults right out of high school?), as well other related products available to them (i.e., your competition) (e.g., if learners can obtain similar training on LinkedIn Learning, they may expect high-quality videos). Adopt a brand consistent with this audience and with the micro-credential.

- There should be ample opportunities for feedback on performance along the way. The assessment criteria and targets should be transparent from the start.
- The learner journey through the training should be seamless. Consider how learners will access the materials. If they plan to complete some of the course on their mobile phones during their daily commute to work, then choosing a learning management system that is compatible with, and offers a good user experience on, a mobile platform will be important.

Some of the materials developed may include:

- Course outline or syllabus.
- Assessment materials (e.g., assignment instructions, rubrics, etc.). Consider validating these with industry. Employers will ultimately recognize and accept these measures as evidence that learners have the required skills.
- Materials to transfer knowledge such as readings and handouts, lectures (including slides, videos, podcasts, etc.), demonstration and field videos, etc.
- Activities, practices, case studies, discussions, etc.
- Site visits or work-integrated learning opportunities, agreements to support them, and activities aligned with the learning goals (e.g., reflection).
- The online course built in a suitable learning management system.
- The digital badge on a suitable open badge platform. This includes meta-data about, among other things, the competencies that a learner has successfully demonstrated and how they did so.

8. Launch and Delivery

Once the program is developed, it is ready to be offered. Consult with your partners and prospective learners to identify the best start date and to schedule the first offering. Accepting registrations will likely require collaboration with the registrar's office. The following are best practices for piloting and delivering a micro-credential:

- Hire an instructor to facilitate the program. It may be the subject matter expert involved in the design and development of the course.
- Decide whether you plan to engage in a splash launch or a soft launch.
- Schedule the program and accept registrations.
- Offer the program, providing timely feedback to learners and support as needed.

- Ensure all invoices are promptly paid.
- Update partners along the way – they have invested a lot of resources into this training and will want to be kept in the loop as it is implemented.
- Monitor delivery and take note of what's working and what can be improved. Consider including learner surveys about the program to improve the current and future offerings.

9. Recognition of Learning

The successful completion of a micro-credential may be recognized in a number of ways by the institution, but the most common one is by awarding a digital badge. Digital badges are digital objects (usually an image) accompanied with meta-data containing information about what the learner demonstrated to earn it. It provides a greater depth of information to prospective users (e.g., a hiring manager) than a traditional transcript. Once issued by the awarding institution, learners control with whom they share the badge.

- The institution should maintain a permanent record of each learner's completion of the program.
- If a learner demonstrates the micro-credential's competencies at the required level, they are issued a digital badge.
- As this form of learning attestation is new, learners may need to be educated about how to use it. Encourage learners to share the digital badge on their social media accounts, such as LinkedIn, to not only celebrate their achievements but also help potential employers find them. They may also share the digital badge in their job searches (e.g., in a résumé).
- Industry partners may also need to be educated about the digital badge. If the partner was involved at each step in the development and design of the program, they will have buy-in in the validity of the badge as an indicator of competencies. This step is then simply about helping them use the technology and interpret the information (e.g., teaching them how to search for prospective employees on LinkedIn who have completed the training). This is also an opportunity to promote the graduating class with prospective employers who are looking to hire employees with these skills.
- Explain to learners the opportunities for stacking and laddering micro-credentials into other programs, expanding the learners' options for pursuing their education.

10. Evaluation

The final stage in offering a micro-credential is a debrief. It's an opportunity for the team to review data and take stock of what worked, what could be improved, and how. It's also an opportunity to revisit the value of the micro-credential. Did it achieve its goals? Should it be offered again? Should it be retired? What general lessons were learned and could be applied to other programs?

- Conduct a debrief meeting with all stakeholders. Some meetings may seek to review performance on the micro-credential as a whole. Others may examine specific aspects of it, e.g., the partnership with an industry collaborator.
 - Collect data to analyze. This may come from key performance indicators for each channel of the marketing plan, learner surveys, employer surveys of satisfaction with their employees' training, registration and demand data, program completion data, classroom observations, learning management system analytics, and observations and/or reflections made by the team during the planning and offering of the program. Although it can be more challenging to collect, try to find data about the impacts of the program. For example, how many learners were hired as a result of the training? How many used the micro-credential as a springboard to return to post-secondary education?
 - Discuss what went right. Use data to back up conclusions. Celebrate those achievements.
 - Discuss what could be improved. Use data to support assertions. What are solutions to make these improvements?
 - What are the unleveraged opportunities? For example, is there another type of industry that may be interested in taking this course? Could parts (modules) of this program be used in other programs? Can this micro-credential be stacked with others toward a greater set of competencies needed in industry?
 - What were some of the lessons learned? Some of these lessons may be specific to this program while others may be more general to offering micro-credentials.
- Consider whether the program is sustainable in its current incarnation. Does it depend on grant funding to maintain its tuition level? What sources of revenue may be untapped? Are there ways to make this program more sustainable?
- Decide whether the micro-credential should be re-offered or retired. Is the need for this training still there? Are there pools of prospective learners who have yet to take this training? Is it sustainable to offer the program again? Is it possible to obtain funding to support it again? Is the effort worth it?
- If the decision is to re-offer the program, determine the frequency of offering (e.g., next month, next year, or in three years?)
- Depending on the purpose of a micro-credential, some may have hard expiry dates when the content is no longer up to date as determined by industry partners (e.g., when a software taught in a micro-credential is no longer used by that industry). Others may become out of date over time, and require consistent content and curricular review to remain relevant (e.g., ensuring that the micro-credential keeps up with changing legislations and best practices over time).
- Share the outcomes and impacts of the program, as well as the lessons learned, with the community. This includes your industry partners but also other members of your institutional community.

Waterfall or Iterative?

There are two philosophies guiding project management. One develops a project in a linear fashion. It describes a sequence of steps to reach the end goal. This is called waterfall project management. ADDIE is an example of such a method, applied to instructional design (and thus the micro-credential life cycle presented above would constitute an example of waterfall project management). A strength of this approach is that it is logical, chronological, repeatable, and provides clear sequential steps in progressing toward the goal. The drawback is that errors in the assumptions of the project only become visible once the end product is usable and it may be too late to course-correct (e.g., once an online course is completely designed and learners experiences the course for the first time, the team discovers that most of the learners do not have sufficient internet bandwidth to access the materials, or that the learners do not find reading to be engaging and that they would prefer video delivery).

In response, an alternative project management technique has emerged called iterative or AGILE (Align, Get set, Iterate and Implement, Leverage, Evaluate) or SAM (Successive Approximation Model). While initially created for the software development industry, an iterative approach to project management has been used in education. The method starts by identifying the minimum viable product. Then, in a short period of time called a sprint (usually one week), the team works to create a finished product. This is not a prototype – it is a fully usable product. The product is presented to the client for review and feedback. The product is then either revised in the next sprint or added to. In the software industry, for example, developers of a word-processing program might set out to first meet the most basic needs of potential users – to type and record words – in order to create a minimal viable product that meets customer expectations. Once that goal is achieved, the developer can use any remaining time and resources to add additional features to the program, such as a spell-checking tool or a thesaurus. The developer then repeats this process to add additional capabilities to the software in an iterative and incremental way.

In an instructional setting, after identifying all the competencies needed for a micro-credential, this could take the form of completely creating one of the modules in the program over the course of a sprint. This module would then be presented to industry partners or prospective learners to test it. The team would take the feedback to improve this module, and then turn their attention to the next module.

Whether choosing a waterfall or an iterative (i.e., agile) approach, each of the steps described in this chapter will need to be performed. The two methods simply dictate a different order for completing these steps. Figure 1 shows a diagram of the two approaches. You should select the one that best suits your institutional context, skills, and needs.

Comparison of Waterfall and Agile Approaches

Waterfall Approach



Agile Approach

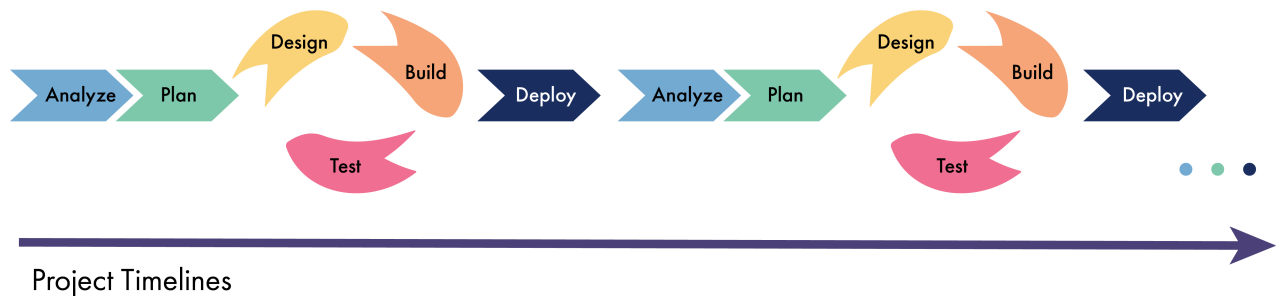


Figure 2. Diagram comparing waterfall and iterative (agile) project management approaches. While the micro-credential life cycle described in this chapter uses a waterfall approach, iterative methodologies have been successfully applied in instructional design settings.

Suggested Resources

Field guides for the creation of micro-credentials

The following document provides concrete information on some of the steps required to develop workforce-aligned training and is set in an American context. The checklists are particularly helpful.

Credly. (2021). *Partnering with employers to create workforce-relevant credentials. A field guide.*

<https://cdn2.hubspot.net/hubfs/2629051/>

Credly_Employer_Engagement_Field_Guide.pdf?submissionGuid=efbae8cf-0166-45d4-a9ca-1dd9e20b5f86

Comparing waterfall (ADDIE) with iterative (AGILE, SAM)

Not sure which approach – waterfall or iterative – might be best for your project? Look at this short article that reviews the pros and cons of each project management technique for instructional design projects.

Pappas, C. (2021). *ADDIE model vs SAM model: Which is best for your next elearning project*. Elearning Industry. <https://elearningindustry.com/addie-vs-sam-model-best-for-next-elearning-project>

ADDIE

A detailed description of the early versions of the ADDIE model and its current incarnation.

Allen, W. C. (2006). Overview and evolution of the ADDIE training system. *Advances in Developing Human Resources*, 8(4), 430-441. <https://doi.org/10.1177/1523422306292942>

This blog post goes through each step of the ADDIE model, providing a set of questions that users can ask themselves at each stage.

Kurt, S. (2017). *ADDIE model: Instructional design*. Frameworks & Theories. Educational Technology. <https://educationaltechnology.net/the-addie-model-instructional-design/>

This blog post describes each of the five stages of ADDIE, including sub-stages for each one. This can help practitioners cover their bases when implementing ADDIE.

Van Vulpen, E. (n.d.). *The ADDIE model for instructional design explained*. Academy to Innovate HR. <https://www.aihr.com/blog/addie-model/>

This article argues that ADDIE should be called ARDDIE, integrating "Research" as an initial step.

Ruark, B. E. (2008). The year 2013: ARDDIE is IN, ADDIE is OUT. *Talent Development*. 62(7), 44-49.

AGILE

The BCcampus web development team utilizes AGILE project management. Read this account of the benefits and drawbacks in moving this type of instructional project forward.

Ebeattie. (2018). *Agile software development at BCcampus*. <https://bccampus.ca/2018/02/06/agile-software-development-at-bccampus/>

This book is a great little toolkit with concrete step-by-step guides for managing an instructional design project using agile techniques.

Torrance, M. (2019). *Agile for instructional designers*. Association for Talent Development.

Another great little toolkit providing concrete resources for applying an agile project management ethos to instructional design.

Allen, M. W., & Sites, R. (2012). *Leaving ADDIE for SAM: An agile model for developing the best learning experiences*. American Society for Training and Development.

This very short blog post describes agile instructional design methods in comparison to ADDIE and clarifies some of its defining steps and features.

Culatta, R. (2023). *Rapid prototyping*. Instructional Design. https://www.instructionaldesign.org/models/iterative_design/rapid_prototyping/

This article describes using an agile process to manage the development of an educational program. It focuses on the team dynamics and offers lessons learned from its application.

Sweeney, D. S., & Cifuentes, L. (2010). Using agile project management to enhance the performance of instructional design teams. *Educational Technology*, 50(4), 34-41.

Review of several models for project management of instructional design

Looking for an alternative way to project manage your micro-credential? This scholarly article argues that Master of Education programs do not provide sufficient project management background, and reviews some of the project management models that have been applied to the design of educational programs.

Van Rooij, S. W. (2010). Project management in instructional design: ADDIE is not enough: Project management in instructional design. *British Journal of Educational Technology*, 41(5), 852-864. <https://doi.org/10.1111/j.1467-8535.2009.00982.x>

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Young, J. R. (2017). *More colleges are offering microcredentials—And developing them the way businesses make new products*. EdSurge. <https://www.edsurge.com/news/2017-10-05-more-colleges-are-offering-microcredentials-and-developing-them-the-way-businesses-make-new-products>

Image Descriptions

Figure 1. Overview of the micro-credential life cycle

The ADDIE framework align with 10 phases of micro-credential life cycle as well as to the chapters in this toolkit

- Analysis
 - Ideation
 - Background
 - Definition
 - Institutional Governance
 - Team Formation
 - Campus Collaborations
 - Employers, Indigenous and Community Partners
 - Inter-Institutional Collaborations
 - Feasibility
 - Financial Matters
- Design
 - Design
 - Learners
 - Design Considerations
 - Educational Pathways
 - Recognition of Learning
 - Approval
 - Institutional Governance
 - Quality Assurance
- Development
 - Marketing
 - Launch and Marketing
 - Build
 - Design Considerations
- Implementation
 - Launch and Delivery
 - Launch and Marketing
 - Recognition of Learning
 - Recognition of Learning
 - Educational Pathways
- Evaluation
 - Evaluation
 - Design Considerations

[Return to Figure 1]

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Financial Matters

This chapter is about assessing the feasibility of a new micro-credential and ensuring that its business model is sustainable.

Chapter Audience:



Administrators



Program Managers

Building a Business Case

Developing a business case is crucial before investing resources in a new micro-credential program. This document outlines the rationale for the program and the reasons why it is likely to be successful. It presents market research that identifies a gap between what target learners need to succeed and current offerings, and shows how the proposed program can bridge that gap. It also proposes a business model that has the potential to be financially sustainable. Moreover, the document demonstrates the program proposer's diligence in researching their proposal, which can help leaders make more informed decisions about the proposed program.

A business case for a proposed micro-credential typically contains the following elements:

1. **Problem or opportunity statement.** A statement that explains the need for the new program and its potential benefits. This could be external (e.g., filling a gap in industry hiring needs) or internal (e.g., aligning with the institution's strategic goals).
2. **Micro-credential objectives.** A list of learning objectives or competencies that the new program should strive to impart.
3. **Market analysis.** An analysis of the current market, including an environmental scan of competitors, and the demand prospects for the new micro-credential.
4. **Cost analysis.** A financial analysis of the costs associated with creating and running the program.

5. **Implementation plan.** A plan for how the program will be developed and launched. This can be high-level, and can include proposed timelines and staff assignments.
6. **Risk assessment.** An assessment of the risks associated with the program and how they can be mitigated. The risks could be internal (e.g., competing priorities or limited resources) or external (e.g., competitors who may be developing related programs).
7. **Conclusion.** A conclusion that summarizes the main points of the business case and how the new micro-credential will benefit the institution.

Some elements from the business case, notably market research and budgeting (including sources of funding and sustainable business models), are detailed below.

Conducting Market Research

Market research is the process of gathering and analyzing information about the needs, demand, and preferences of prospective learners and employers for a training program. It also involves researching the competitive landscape and overall market trends.

Sources of Information

Data about prospective learner and employer needs can be obtained from many sources. Consider the following:

- **Employers, professional associations, Indigenous and community partners.**

People who are embedded in the workplace and who are engaged in hiring skilled workers can provide information about in-demand, hard-to-come-by competencies. This information can provide clues for a new micro-credential. Some of the methods of collecting information from industry experts include conducting interviews, focus groups, and surveys. You might also consider attending a relevant conference to collect data on emerging employment trends directly from people working in the field.

Although individual employers can be consulted, there are several organizations in British Columbia that represent the interests of many employers in an industry. For example, the B.C. Construction Association (<https://bccassn.com/>) represents over 10,000 employers. Such groups often conduct surveys to identify the training needs of the construction industry and can provide information on labour market trends in their sector.

Your institution may have existing connections with your target industry through program advisory committees, work-integrated learning or cooperative education office, faculty who work in or with industry, membership in your local chamber of commerce, or through the network of senior leaders at your institution. Consult the chapter *Employers, Indigenous and Community Partners: Practical Guide* for more information.

- **Prospective learners.**

Another potential source of information are the people targeted by the proposed program. Surveys, interviews, and focus groups with potential learners can provide insights into their career goals and help identify the skills they lack, their preferred training format, and the amount of tuition they can afford, for example. Consult the chapter *Learners* for more information on this group.

- **Learner performance data.**

Analyzing performance and employment data of current learners or alumni in related programs can provide insight into areas where learners may need additional training or support. For example, if a significant number of graduates in a particular program at your institution are struggling to find jobs in their field, you could conduct research to determine the root cause and then consider developing a program that addresses any identified training gaps.

- **Community "learning councils."**

Several post-secondary institutions, particularly those in smaller communities, regularly meet with stakeholders in their region to identify labour training needs and opportunities. These groups bring employers such as industry and non-profit leaders, government representatives, and Indigenous community representatives together with post-secondary institution delegates. Together, the group can analyze where the region's economic development is headed (e.g., labour shortages and areas of rapid growth) and identify appropriate training solutions. These "learning councils" offer post-secondary institutions an opportunity to conduct market research in a cost-effective manner that is specific to their region and backed by community support. For an example, see *Stories from the B.C. Post-secondary Sector: NIC and Learning Councils Meet the Needs of the Community*.

- **Labour market data.**

Several organizations, including governments and private companies, conduct labour market research and release their findings. This data can provide valuable insights into in-demand jobs and those that are expected to grow in demand (i.e., labour market outlook), as well as the corresponding skills and competencies likely to be needed. The data typically can be analyzed by region, profession, and industry, and can include details such as average compensation, which could be useful in developing a marketing plan for the program.

The National Occupational Classification (NOC) (<https://noc.esdc.gc.ca/>), Canada's authoritative reference on occupation, is a useful tool when engaging in this type of labour market research. With over 30,000 job titles organized into 520 occupational group descriptions, it can be used to compile, analyze, and communicate information about occupations, and can aid in understanding the range of jobs found across Canada's labour market.

Some sources of labour market research include:

- **WorkBC**

WorkBC (<https://www.workbc.ca/research-labour-market>) is operated by the Government of British Columbia to provide resources and tools to help job seekers and employers in the province. Its British Columbia Labour Market Outlook (<https://www.workbc.ca/research-labour-market/bcs-labour-market-outlook-2022-edition>) is a report that forecasts job openings over the next decade across 64 industries, 500 occupations, and seven regions of the province. In addition to the static report (in PDF format), the website provides access to an interactive High Opportunity Occupations (<https://www.workbc.ca/research-labour-market/high-opportunity-occupations>) search engine that allows visitors to filter jobs by region, education level, wage, and occupational interest. Users can also download the raw data (<https://catalogue.data.gov.bc.ca/dataset/labour-market-outlook>) for analysis, or use an online Tableau application (<https://public.tableau.com/app/profile/bc.labour.market.information.office/viz/2022BCLabourMarketOutlook/TableofContents>) to dig deeper into the data.

WorkBC offers grants and funding programs for workforce training in areas determined by the province to be priorities based on labour market research. You can benefit from this and leverage their research by simply looking at their funding programs to pinpoint these priority areas.

- **B.C. Labour Market Statistics**

If the goal is to focus on current employment data rather than future projections, then the Labour Market Statistics (<https://www2.gov.bc.ca/gov/content/data/statistics/employment-labour/labour-market-statistics>) is the place to go. The data is obtained from Statistics Canada (<https://www2.gov.bc.ca/gov/content/data/statistics/economy/labour-market-statistics/statistics-canada-data-tables>) and can be viewed in tables or in the Labour Market Dashboard (https://bcstats.shinyapps.io/LFS_app/). The data can also be downloaded as .csv files and analyzed on your own.

- **Job Bank Trends Analysis (Government of Canada)**

Job Bank is the Government of Canada's database of job listings. One of its associated tools provides labour market information in the form of trends analysis (<https://www.jobbank.gc.ca/trend-analysis>). Users can filter by occupation to learn about a job's outlook by region. Another tool gives users the opportunity to look at the Canadian labour market (<https://www.jobbank.gc.ca/trend-analysis/job-market-reports>) by province.

Statistics Canada is the national clearinghouse for census and other data about the Canadian population. Among its many tools and reports, it provides

information on Labour Statistics (https://www.statcan.gc.ca/en/subjects-start/labour_).

- **Canadian Occupational Projection System (COPS)**

Employment and Social Development Canada publishes reports generated from COPS (<https://occupations.esdc.gc.ca/sppc-cops/welcome.jsp?lang=en&fbc=Y>). This system projects future labour market trends in Canada and provides information on the supply and demand for labour in various industries and occupations.

- **Labour Market Information Council (LMIC)**

The LMIC (<https://lmic-cimt.ca/>) is a non-profit organization that provides labour market information to help Canadians make informed decisions about their careers and education. Its website provides data on labour market trends, occupations, industries, and regions. Some of its reports are produced in partnership with the Future Skills Centre.

LMIC publishes reports and hosts a Data Hub (<https://lmic-cimt.ca/lmi-resources/data-hub/>), a cloud-based database containing information about Canadian employment such as employment rate, growth month over month, compensation, job posting counts, work requirements, etc. The data is collated from multiple sources, including Statistics Canada, Employment and Social Development Canada, and Vicinity Jobs. It can be accessed through the Job Trends Dashboard (<https://lmic-cimt.ca/data-dashboards/canadian-job-trends-dashboard/>), allowing users to peruse the skills required from all of the job postings for a specific profession in a specified date range (e.g., the dashboard indicates that of the job ads for "university professors" posted between April 2022 and March 2023, 31 per cent cited teaching and training skills as a requirement, 30 per cent wanted communication skills, 22 per cent called for leadership, 21 per cent cited planning, 13 per cent required teamwork, etc.).

Here are examples of LMIC reports that might be of interest:

- Developing Indicators for Skill Demand: Three approaches to developing indicators for skill demand using online job posting data (<https://lmic-cimt.ca/developing-indicators-for-skill-demand/>) (2022)
- Employer-Sponsored Skills Training: A picture of skills training opportunities provided by Canadian employers (<https://lmic-cimt.ca/employer-sponsored-training/>) (2023)
- How to Forecast Skills in Demand: A Primer (<https://fsc-ccf.ca/research/how-to-forecast-skills-in-demand-a-primer/>) (2021)

- **Future Skills Centre**

The Future Skills Centre (<https://fsc-ccf.ca/>) is a project funded by the

Government of Canada. Its mission is to prepare Canadians for the changing labour market. It does so by researching future skill needs, leading knowledge mobilization, and facilitating the exchange of ideas. The Centre shares its findings through reports made public on its website (<https://fsc-ccf.ca/reports/>).

■ Indigenous Labour Market Research

Indigenous Labour Market Research (<https://indigenoulabourmarkets.ca/>) is a collaboration between Fleming College and the social enterprise Vicinity. The website provides Indigenous labour market intelligence. This includes a searchable database that allows users to review job postings as well as the skills described in them from around the country.

■ SkilledTradesBC

SkilledTradesBC (<https://skilledtradesbc.ca/>), formerly the Industry Training Authority (ITA), is an information portal for learning about a career in the trades. The database can be searched by skill, certification type, field, and compensation. Notably, the trades can be filtered by "top in-demand trades" to identify occupations that are forecast to be highly sought-after.

■ Conference Board of Canada

The Conference Board of Canada (<https://www.conferenceboard.ca>) is a research organization that provides data, analysis, and forecasts on a range of economic and social issues, including labour markets. Its reports are specific to Canada and provide insights into industry trends, skills gaps, and other labour market issues. Access to certain reports may require payment, while others are freely available. Below are some free reports by the Conference Board of Canada (many written in partnership with the Future Skills Centre). The reports are free to access, but require registration.

- Building a Digitally Skilled Workforce: Insights From Canadian Employers and Skills Leaders (<https://www.conferenceboard.ca/product/building-digitally-skilled-workforce/>) (2023)
- Essential Skills for Learning and Working: Perspectives From Education and Employment Leaders Across Canada (<https://www.conferenceboard.ca/product/essential-skills-for-learning-and-working-perspectives-from-education-and-employment-leaders-across-canada/>) (2022)
- From Low-Mobility to Rapid-Growth Jobs: How Governments and Agencies Can Build the Bridge to Clean Economy Careers (<https://www.conferenceboard.ca/product/from-low-mobility-to-rapid-growth-jobs-how-governments-and-agencies-can-build-the-bridge-to-clean-economy-careers/>) (2022)
- The Labour Market of Tomorrow: Projections From the Model of Occupations, Skills, and Technology (MOST) (<https://www.conferenceboard.ca/product/th>

e-labour-market-of-tomorrow-projections-from-the-model-of-occupations-skills-and-technology-most/) (2022)

- The Only Constant: Changing Nature of Work and Skills (<https://www.conferenceboard.ca/product/the-only-constant-changing-nature-of-work-and-skills/>) (2022)

■ Industry-specific labour market research

Some industries have formed organizations dedicated to supporting employers and job seekers in their sector by conducting labour market research and publishing reports summarizing their findings. One example is the Environmental Careers Organization of Canada (ECO Canada) (<https://eco.ca/>), which supports the environmental sector. Another example is DigiBC, which represents the creative technology sector. In 2021, DigiBC released the results of a benchmark study (<https://www.digibc.org/cpages/creative-tech-benchmark-study>) that examined the labour market for this sector in the province.

■ Region-specific labour market research

In addition to industry-specific labour market research, some regions conduct their own labour market research. For example, the Vancouver Economic Commission (<https://vancouvereconomic.com/>) is an economic development organization that provides data and analysis of the Vancouver labour market. Its reports provide insights into industry trends, talent needs, and other labour market issues. As another example, the North Vancouver Chamber hosts the North Van Data Centre (<https://www.nvchamber.ca/our-resources/data-centre/>) on its website that allows users to research workforce characteristics in the region, industry trends, and other local labour issues.

■ Organisation for Economic Co-operation and Development (OECD) Reports

The OECD (<https://www.oecd.org/canada/>) is an intergovernmental organization with 38 member countries, established to stimulate economic progress and world trade. Its website contains data on Canadian and employment statistics. Most useful however are the OECD reports that the website provides access to, including, for example:

- Big Data for the Labor Market: Sources, Uses, and Opportunities (https://www.apec.org/docs/default-source/publications/2021/12/big-data-for-the-labor-market-sources-uses-and-opportunities/221_psu_big-data-for-the-labor-market.pdf?sfvrsn=e379dgbe_2) (2021)
- What Skills Do Employers Seek in Graduates? (https://www.oecd-ilibrary.org/education/what-skills-do-employers-seek-in-graduates_bf533d35-en) (2020)

■ O*NET

O*NET Online (<https://www.onetonline.org/>) is the primary database of

occupational information in the United States. It allows the public to search occupations by skills, abilities, knowledge, work activities, and interest linked to over 900 occupations.

■ Labour market research companies

There are several companies that specialize in preparing labour market research and reports, which they then sell to organizations to assist them in their planning.

- Vicinity Jobs (<https://vicinityjobs.net/>) is focused on the Canadian labour market. Working in partnership with several of the organizations mentioned above, it makes available a Canadian Job Trends Dashboard (<https://lmic-cimt.ca/data-dashboards/canadian-job-trends-dashboard/>), the Indigenous Labour Market Platform (<https://indigenoulabourmarkets.ca/indigenouelmi/>), Magnet (<https://magnet.today/job-seeker/>) (which helps job seekers understand the labour market in their region for a specific sector), and OpportuNext (<https://www.opportunext.ca/>) (which identifies pathways for professionals to transition between careers).
 - Lightcast (<https://lightcast.io/open-skills>) publishes an open-source library of more than 32,000 skills gathered from millions of online job postings, which is updated every two weeks. It uses American job postings, but the skills classification system is different to O*NET. Access to the database is free but requires registration.
 - EMSI (<https://lightcast.io/resources/blog/introducing-the-emsi-knowledge-base-for-canada>) is Lightcast's database created using Canadian data. It uses Canada's National Occupational Classification (NOC) (<https://noc.esdc.gc.ca/>) codes to classify jobs and links them to training.
 - Glassdoor (<https://www.glassdoor.com/research/>) publishes freely accessible information on employment trends. Notably it publishes a Job Market Report (<https://www.glassdoor.com/research/job-market-report/>), which focuses on the American labour market.
 - LinkedIn (<https://www.linkedin.com>), the digital social platform for professionals, provides insights into workforce trends through its Talent Blog (<https://www.linkedin.com/business/talent/blog>), which draws on data from millions of job seekers and employers. For example, see *The Most In-Demand Skills for 2023* (Dewar, 2023) (<https://www.linkedin.com/business/talent/blog/talent-strategy/linkedin-most-in-demand-hard-and-soft-skills>) and *The Most In-Demand Jobs Right Now* (Lewis, 2023).
- The National Association of Colleges and Employers (NACE)
- NACE is a professional association that connects American post-secondary institutions and employers. The organization conducts research and produces reports that track the trajectory of graduates as they enter the workforce. It is chockful of sobering data about gaps between what undergraduates can do

upon completing their degree and what employers want from their entry-level hires. For example, 96 per cent of employers cite communication as the most important hiring competency (Job Outlook 2023), 80 per cent of graduates believe themselves very/extremely proficient in communication (2022 Student Survey report), yet only 47 per cent of employers agree that they are (Job Outlook 2023) (cited in Data Bites). Such data can help inform the development of micro-credentials that bridge the gap between undergraduate education and employment. While many of the reports cost a fee to access, the NACE website provides access to free blogs and other postings that also provide valuable insights.

- **B.C. Chamber of Commerce Policy and Position Manual**

Each chamber of commerce conducts labour market research to understand the needs of employers in their region. Based on this information, they propose policies and position statements to the B.C. Chamber of Commerce (<https://bcchamber.org/>), their parent organization, to take up and work to advance throughout the province. The ones identified as provincial priorities are published in an annual Policy and Position Manual (<https://bcchamber.org/policy-overview>). Such documents contain data and business cases for economic development in the province. There is usually a section of the document identifying post-secondary training needs and opportunities for partnerships with post-secondary institutions.

- **Will Robots Take My Job?**

Will Robots Take my Job? (<https://willrobotstakemyjob.com/>) is a website that shares predictions about the potential impact of automation on various occupations. Despite its playful name, the website is based on a serious study conducted by two researchers at the University of Oxford (Frey & Osborne, 2013). The website could be used to identify careers that are likely to be replaced by automation and to help develop ways to transition impacted workers to new occupations.

- **Job postings**

Reviewing online job postings can provide insight into in-demand occupations, as well as information about the skills and knowledge required to apply for those positions. More details about how to perform this type of research is provided in the next section.

Analyzing Job Postings

Online job postings provide a wealth of information about the labour market. By analyzing them, you can determine which skills are in demand for a specific industry and create training that matches this need.

Below are the steps involved in conducting labour market research using online job postings:

1. Identify target occupations.

Start by identifying the job titles that you are interested in researching. You may begin the search by looking at all job ads in your area to identify the job titles that are in demand. Alternatively, you may begin with a specific job title in mind. For example, if you are interested in the instructional design sector, you might look for job titles such as instructional designer, curriculum designer, and eLearning designer.

2. Find relevant job boards.

Identify online job boards or job search engines that are popular for the job titles and sector you are interested in researching.

Some general job boards include Job Bank (<https://www.jobbank.gc.ca/home>) and the WorkBC job search engine. In Alberta, there is ALIS (<https://alis.alberta.ca/>). There are also private companies that collate job postings such as Vicinity's Worxica (<https://worxica.com/>) job vacancy search engine, Indeed (<https://ca.indeed.com>), LinkedIn (<https://ca.linkedin.com/jobs>), Glassdoor (<https://www.glassdoor.com/Job/index.htm>), Monster (<https://www.monster.ca/>), and CareerBuilder (<https://www.careerbuilder.ca/>), to name just a few. Recruiter websites can be a useful source of job postings for executive-level leadership positions.

Several sectors have their own job board. WorkBC's Industry Job Boards (<https://www.workbc.ca/search-and-prepare-job/industry-job-boards>) webpage provides a list specific to certain sectors with links. There you will find organizations such as the BC Association of Social Workers (<https://www.bcasw.org/careers/jobpostings>)' job posting webpage, which are tailored specifically for job positions in that sector.

3. Collect job postings.

Collect current and past job postings for the target occupation from the relevant job boards. Collect as many as possible to get a comprehensive view of the labour market.

4. Analyze competencies in job postings.

Read through the job postings and take note of the more commonly required skills, competencies, qualifications, and experience for each occupation. Look for patterns or similarities across the postings to identify trends in the labour market. Follow these steps:

- a. Identify the most common competencies listed for the occupation;
- b. Group them into categories such as technical skills, soft skills, and industry-specific skills;
- c. Rank the competencies by demand based on the frequency of occurrence in the job posting data. Consider, for example, collating all of the required skills and creating a word cloud to draw out their frequency (see Figure 2 of Brodmann et al. (2022) as an example);
- d. Identify trends or changes in the demand for the competencies over time and adjust your

analysis accordingly;

- e. Analyze the number of postings for each job title and compare it to the number of job seekers in your area. This supply and demand analysis can identify competency gaps.

5. Draw conclusions.

Use your analysis to draw conclusions about the labour market. You might conclude that certain skills or qualifications are in high demand, or that there is a shortage of job seekers for a particular job title.

6. Confirm findings with employers, subject matter experts, and learners.

Speak with people in the target sector to validate your findings. Ask clarification questions. For example, if a specific skill is found to be in demand, ask hiring managers to describe what would satisfy the requirement in an applicant (i.e., what evidence do they want of this competency?).

7. Develop training to address labour market needs.

Use the identified skills gap obtained in the previous steps to support a proposal for a training program. Pitch it to decision-makers. If approved, work with partners to develop the training.

8. Monitor changes.

Keep monitoring job postings and analyzing the labour market over time to identify changes or trends that may impact your decision to develop this program.

The *Suggested Resources* section lists articles in which the authors describe how they used job postings data to inform their labour market research.

Differentiating Between Need and Demand

When conducting labour market research, it is important to differentiate between a “need” for a training program and the “demand” for it. As explained in *Stories from the B.C. Post-secondary Sector: UBCV’s Approach to Financially Sustainable Micro-credentials*, “demand” is an indicator of the feasibility and sustainability of a micro-credential, while “need” is not.

One way to differentiate between the two is to obtain concrete evidence that prospective learners are willing to invest resources to complete the training. In the chapter *Marketing and Launch*, the *Stories from the B.C. Post-secondary Sector: Using Start-Up Models* describes one approach for testing the feasibility of a prospective program in a low-risk manner.

Environmental Scan

Once you have identified a competency gap in the labour market that could be addressed through training, the next step is to explore the existing training opportunities. This means investigating related training programs at other institutions, including these programs’ target audience, curriculum, format, duration, industry affiliations, outcomes, and cost. Research not only B.C. post-

secondary institutions, but also institutions from other regions, especially if the program is offered online. Look at private training providers as well, which specialize in short-term training to help adults who want a rapid career transition. Examples include Lighthouse Labs (<https://www.lighthouse labs.ca/>) and BrainStation (<https://brainstation.io/>) for coding camps. Finally, investigate the options offered by providers of Massive Open Online Courses (MOOCs) like Coursera (<https://www.coursera.org/>), Udemy (<https://www.udemy.com/>), and LinkedIn Learning (<https://www.linkedin.com/learning/>) (formerly Lynda). They offer training at a modest price with digital badges as proof of completion. These factors will make them appealing to prospective learners.

One way to analyze and present the information is to create a table, where each row describes one competitor program, and the columns organize the features of the programs that will be compared (e.g., learning outcomes, tuition, duration, etc.). Use this summary to determine whether there is a need for an additional program in the area you identified in your labour market research. You should also identify how your proposed training might differentiate itself from what's currently available.

Budget Considerations

Like any budget, a micro-credential budget is composed of revenues and expenses, and programs can be revenue-generating, break even, or operate at a loss.

Below is a list of possible items to include under expenses and revenues when putting together a budget.

Revenues

- Tuition from learners;
- Contract training fees (i.e., tuition from an organization that has paid to offer training to a group of people, typically their employees);
- Grant funding (internal or external);
- Industry support or sponsorship;
- Donation or endowment;
- Licensing fees from products or services owned by the institution and used by another;
- Rental fees (where the institution's facilities are rented out to other organizations);
- Earnings from other programs offered by the unit (revenues earned from a profitable program that are re-applied to another program that is offered at a loss, but typically aligned with a mission goal);
- The institution's operational funding.

Expenses

The following expense categories are commonly encountered in a micro-credential budget:

- Staffing

Some sources of staffing costs are listed below. Additional labour and expertise may be required, depending on your program and context. Note that compensation may include benefits, which should be budgeted accordingly.

- Subject matter expert;
- Instructor (include preparation time, class time, grading, interaction with learners to answer questions, etc.);
- Guest speaker honorarium;
- Instructional designer;
- Project manager;
- Program assistant or other front-facing support staff;
- Marketing officer;
- Multimedia designer;
- eLearning and/or tech support;
- Administrator;

- Facilities

- Room rental;
- Specialized equipment rental;
- Administrative fee (institutions typically charge an overhead fee for administering a program, i.e., for using services such as the institution's financial services, systems, facilities, etc.);
- Security services (e.g., guards, CCTV, etc. — this may be relevant if the program is offered in-person and at times when the campus is not typically in operation, like in the evenings or on the week-end);

- Technology

- Audio-visual equipment for in-person classrooms (e.g., projector, microphone, etc.);
- Learning management system;
- Web conferencing tool;
- Video streaming platform;
- eLearning design tool;
- Digital badging licence;
- Speciality software licence for a course;

- Registration

- Student registration system;

- Tuition payment processing platform (i.e., a platform to process credit card payments);
- Scholarships to support some students' access to the course;
- Stationery, including issuing print diplomas or attestations of learning;
- Postage and handling fees;
- Marketing
 - Stock image and video licensing fees;
 - Social media advertisement fees;
 - Social media management tools (e.g., social media calendar tool);
 - Print brochures and flyers;
 - Print advertisement (e.g., in the local newspaper);
 - Media advertisement (e.g., on radio, on transit);
 - Website hosting and domain registration;
- Course Materials
 - Name tags or name tent for each learner;
 - Printing/handouts;
 - Video and audio production costs;
 - Travel and accommodation expenses (e.g., if instructor provides training in a community);
 - Access to special events (e.g., attendance at a concert as part of a music course);
 - Food and refreshments;
 - Other course materials as required;
- Miscellaneous
 - Administrative costs such as office costs (e.g., facilities, telephone, internet access, stationery, computer and software, etc.)
 - Consulting fees for an industry partner (e.g., to review curriculum, identify subject matter experts, survey employer needs, promote the micro-credential on their social media channels, etc.);
 - Accreditation fees (for programs that require accreditation with an outside organization).

The Continuing Education and Training Association of British Columbia (CETABC) has compiled checklists, budget templates, and questions to ask when putting together a budget from some of its members (schools of continuing education and contract training). They are available from CETABC's Resources webpage (<https://cetabc.org/resources>), under the Program Management section.

Micro-credentials are often developed in collaboration with other units within the institution and sometimes with outside partners. Consulting with these stakeholders when putting together a budget makes sense, since they may have data that relates to the budget (e.g., the marketing department may be able to estimate the costs of a promotional campaign for the new micro-credential).

It is not uncommon to develop two separate budgets for a micro-credential. One pertains to the costs of developing a new program. Developing a new program is a time-consuming task. Estimates of development time for new curriculum vary widely (Defelice, 2018). On the lower end, some instructional designers estimate that it takes roughly three hours to develop every hour of in-class activities (Laird, 1985). However, a survey of 249 companies representing 3,947 instructional designers found that the ratio was closer to 22:1 (Chapman, 2010). Based on this, a realistic estimate for in-person classes that balances costs and quality might be 10 hours of development for every one hour of class time.

Given the costs of development, it is not uncommon to search for funding to support this one-time significant expense. The development project is then treated separately from the routine offering of the program, which has its own budget.

Based on recent Ministry-funded micro-credentials, the development costs of the majority of programs fell within the range of \$35,000 to \$135,000, with the length of program between 45 and 117 hours.

Identifying Sources of Funding

Due to the high costs associated with developing a new micro-credential, many institutions seek additional funding to support it. Some sources of revenue were identified in Budget Considerations.

Often institutions turn to funding opportunities, typically in the form of grants, to support the development of a new program. A listing of potential funders is too long to include here; however, sources to explore include:

- The B.C. Ministry of Post-Secondary Education and Future Skills (<https://www2.gov.bc.ca/gov/content/education-training/post-secondary-education/micro-credentials>) has supported several calls for proposals from public post-secondary institutions to develop new micro-credentials that align with the Micro-credential Framework for B.C. Public Post-secondary Education System (2021).
- WorkBC (<https://www.workbc.ca/find-loans-and-grants>) administers several grants and funding opportunities to help train the workforce. Although post-secondary institutions are not eligible to apply for many of these programs, they may partner with organizations that are, and either serve as the training provider to a grant holder, or else collaborate with other (usually non-profit) organizations who provide the training. Here are specific grants that align with micro-credentials:

- The Community Workforce Response Grant (<https://www.workbc.ca/find-loans-and-grants/community>) supports the training of workers in an area that the community identifies as a priority for its economic development. There are several streams of funding such as Emerging Priorities, Indigenous Communities, Workforce Shortages, and Community Response.
- The B.C. Employer Training Grant (<https://www.workbc.ca/find-loans-and-grants/industry-and-employers/bc-employer-training-grant>) serves employers who seek to train their employees or prospective employees. The funds can be used to pay for contract training by a provider, including post-secondary institutions.
- CleanBC (<https://communityclimatefunding.gov.bc.ca/fund-finder/>) has a webpage connecting visitors to funding for climate action. A quick way to identify training sources is to filter the database by "Project Activity," and select "Capacity Building for the Community." Many programs are not for post-secondary applicants but can be obtained by a community or municipal organization who then contracts with the post-secondary institution to deliver the training.
- The Government of B.C. (<https://www2.gov.bc.ca/gov/content/employment-business/economic-development/funding-and-grants>). has a search engine for funding and grants that support economic development. The tool collates funding programs from each of the B.C. ministries. Entering keywords such as "training" will search the database for funding opportunities that can support workforce development. As with the WorkBC programs, the eligibility criteria may exclude post-secondary institutions from applying; however, partners who seek to train their employees or members of their community can apply for the funding and contract with a post-secondary institution to develop custom training.
- The Government of Canada (<https://www.canada.ca/en/government/grants-funding.html>) has a similar search engine to search federal sources of grants and funding. By filtering the search to "Jobs or Apprenticeship Training," the search engine will provide a list of relevant programs. This provides links, for example, to the Indigenous Skills and Employment Training (ISET) (<https://www.canada.ca/en/employment-social-development/programs/indigenous-skills-employment-training.html>) program. While only Indigenous communities may apply for this funding, post-secondary institutions can partner with First Nations service delivery organizations to offer the training (for example, by providing access to specialized facilities, equipment, and expertise).
- The Government of Canada's Employment and Social Development (<https://www.canada.ca/en/employment-social-development/services/funding.html>) has a webpage that lists current and upcoming funding opportunities for jobs, training, and social development projects. People are encouraged to sign up for a free email service that alerts them of new opportunities.
- Many government departments and agencies, at the municipal, provincial, and federal levels, periodically offer funding opportunities to support their portfolio. Some may align with proposals for training programs that aim to help members of your community upskill or retool.

For example, a grant from the Government of Canada's Immigration, Refugees, and Citizenship Canada (IRCC) funded the development of a micro-credential to help women newcomers develop entrepreneurship skills (see *Collaborating with a Non-Profit Organization to Benefit the Community* in the chapter *Employers, Indigenous and Community Partners: Stories from the B.C. Post-secondary Sector*).

- Several private foundations have grant programs that seek to create more vibrant communities and meet societal goals. Some post-secondary institutions have been successful in obtaining funding from these sources to support training for under-represented groups in certain industries. Some foundations to investigate include:
 - TD Charitable Foundation (<https://www.td.com/corporate-responsibility/funding.jsp?tdta=b=2>)
 - Muttart Foundation (<https://muttart.org/>)
 - Molson Foundation (<https://fondationmolson.org/en/>)
- Certain professional organizations and coalitions of organizations pool their resources to make funding available to their members. Some micro-credentials have been developed with support from the following example organizations: CETABC (<https://cetabc.org/>), Canadian Colleges for a Resilient Recovery (C2R2) (<https://resilientcolleges.ca/>), and Cascadia Innovation Corridor (<https://connectcascadia.com/>).
- When conducting a funding search, consider using the following keywords to guide your research:
 - Training;
 - Capacity building;
 - Economic development;
 - Workforce development;
 - Skills training.

Financial Feasibility and Sustainability

A key factor in ensuring the success of a micro-credential is to have a viable plan to fund its operations in the long run. Usually this means identifying a dependable source of funding to balance the books and cover expenses.

When relying on an internal source of revenue to support a program, there are several funding models to choose from. Consider, for example, the following funding structures:

- **Tuition-based model.**

This is the default model in post-secondary education. Learners pay for individual courses or programs. This assumes that the learner population can afford to pay the tuition, and that the tuition can recover all of the expenses.

- **Corporate training.**

Many schools of continuing education operate on this model. Here, the institution provides training services to outside organizations. This can include customized training programs, executive education, and workshops. The client organization usually pays a flat rate for the training and learners from that organization are trained as a cohort (i.e., they have their own instructors, meeting time, etc.)

- **Subscription-based model.**

This model is gaining popularity and may be particularly suitable for competency-based programs where learners proceed at their own pace. In this model, learners pay a flat rate to access educational content for a set period (e.g., access for a semester). In that time, learners may complete as many (or as few) courses and programs as they want. This model is used by Western Governors University (<https://www.wgu.edu/>) in the United States, which offers competency-based education. It's also been made popular by many online services such as audio and video streaming platforms.

- **Freemium.**

In this model, basic educational content is provided for free, but premium content and services require payment. Here the freemium content is used to recruit large numbers of prospective learners and to make the training accessible to as many people as possible. However, it is only those learners who register for the premium content that support the program's operations. A version of this was mentioned in the *Marketing and Launch* chapter in the section *Stories from the B.C. Post-secondary Sector: UBCO's Experimentation with Promotional Approaches*. One way to implement this would be to provide the content for free but require payment to obtain official certification of the learning. This model is used by the MOOC provider Coursera and edX and by many language learning apps such as Duolingo and Babbel.

- **Licensing model.**

Rather than creating content from scratch, another option is to use existing course content. Many schools of continuing education partner with third party online content providers, such as ed2go (<https://www.ed2go.com/Default.aspx>), MindEdge (<https://www.mindedge.com/continuing-education/>), and LERN (<https://lern.org/>), to access their content. Typically, the agreement stipulates that the two organizations will share revenues in an agreed upon manner based on enrollment. Some schools of continuing education also license their content.

- **Funnel funds from profitable programming.**

A common approach in the non-profit sector is to engage in activities that may not necessarily align with the organization's mission but can generate revenue. The profits from those activities are then used to support another activity that operates at a loss but is aligned with the organization's mission. In this way, the organization sets up a paired budget where one activity supports another.

The *Suggested Resources* section includes a collection of articles on ways to develop sustainable business models for micro-credentials.

Go/No Go Decision

A commonly used term for programs that are offered on a cost-recovery or revenue-generating basis is the "Go/No Go decision." This is the point at which program administrators examine the number of learners registered in a program and determine whether it is sufficient to break even. Most programs have fixed costs that must be paid no matter how many learners are in a course (e.g., instructor costs), and others that depend on the number of learners in a course (e.g., printing of handouts). The Go/No Go decision considers whether the tuition collected from the number of learners registered in a program is sufficient to recover the fixed expenses. If the tuition covers the fixed costs, the program will break even, and it is allowed to go ahead (the "Go" decision). Otherwise, the program is canceled (the "No Go" decision).

Typically, the contracts and policies for a program are written such that the program may be canceled without penalty a few days prior to its start date (i.e., the instructor does not need to be compensated if informed by a certain date; learners will be refunded as per the policies). Having a Go/No Go decision date, along with a set of policies and contracts that match it, is an important element of ensuring that a program does not operate at a loss and is financially viable.

Stories from the B.C. Post-secondary Sector

NIC and Learning Councils Meet the Needs of the Community

Bob Haugen is the director of continuing education and contract training at North Island College (NIC). One of the ways in which his unit stays abreast of the region's training needs is through the use of learning councils. The idea was imported from the College of New Caledonia in 2013 when John Bowman left the first institution to join the second as president. Haugen shares how learning councils work.

Interview

What is a learning council?

"A learning council is a group of representatives from several sectors in a region who can advise on the community's training needs. This includes members from Indigenous communities, employers, private and non-profit organizations, representatives from several levels of government, staff from private training institutions, and of course from North Island College. In all, this group includes roughly 40 people."

How does the council advise your unit's activities?

"The council meets three times a year. We have timed these meetings to correspond with calls for funding application.

"Usually what happens at these meetings is that employers will describe some of the labour shortages they are experiencing in the region. What are the jobs that they are having a hard time filling, or that they anticipate having a hard time filling in the near future to complete upcoming projects?"

"The college and private training institutions provide an overview of their existing programs that could address that workforce gap. For example, NIC might have a new heavy equipment operator training program, or a facilities maintenance program that could help train people for these jobs.

"In some of the regions we serve, Indigenous learners make up a significant proportion of our students. The Indigenous representatives will speak about the training and skillsets that are of interest to their community. They also have access to training funds and can speak to how the training might need to fit certain parameters to meet the requirements for that funding. For example, a program might need to be offered over a six-week period. They might also stipulate the inclusion of culturally appropriate learning under the guidance of an Elder from their community.

"The learning council bypasses the need for NIC to engage in extensive labour market research, because it provides concrete, actionable intelligence about the training that is needed in our community."

Can you give an example of a way in which this worked in the past?

"In Port Alberni, we are experiencing a housing boom, and we do not have enough people to work on construction crews. Technically, anyone can go to a construction company and ask to be taken on as an apprentice. However, not everyone has the confidence, the prior experiences, and their own tools needed to do this. This is particularly true of Indigenous youth.

"For this project, we worked with the Nuu-chah-nulth Tribal Council. The Council is wonderful to work with. They support their learners with advisors that provide wraparound

services to ensure the students' success. They were also able to find some funding to support the training.

"We hired a Red Seal-trained instructor who is from that community. He modified our curriculum for the Facilities Maintenance micro-credential and put a focus on carpentry. In the first few days of the program, he took students to an old, abandoned house in the village. Students asked, 'Are we tearing down this house?' The instructor said, 'No, we are going to rebuild it.'

"Students spent six weeks doing that. They replaced the floor, fixed doors, installed windowsills, replaced the steps, the gyprock, the plumbing, and worked with an electrician to rewire it. In six weeks, they converted a derelict house into a home. A family was even able to move into it. The students were proud. They had learned something very tangible, with a demonstrated product of their skills.

"During the six weeks, we also invited local construction companies to speak to our students about what it is like to work in their company. Students got to know the people working in these companies, ask their questions, and it demystified the whole process.

"Six students registered for the program. All completed the program, and all were offered apprenticeships by local construction companies after the training. This was a success story. It addressed a labour gap in our community, developed customized training that met our students' needs, and fostered economic development for the region."

How replicable is this learning council model?

"It's very replicable. The first learning council was established in the Alberni Valley (Port Alberni) in 2013. We just started one in Campbell River and another in Port Hardy. There are plans to start one in the Comox Valley. As you can see, we are strong believers in the benefits of learning councils."

Top Tips from NIC's Experience

1. **Form a learning council in your community.** This is an excellent way to embed your institution in the community and engage all stakeholders in a conversation about the community's training needs. All participants share ownership for addressing the

region's economic development. It's also a forum to identify potential partnerships between your institution, employers, Indigenous communities, and private training schools. It's a community-based approach to conducting labour market research.

2. **Listen to what the community wants.** Do not go to learning council meetings with a "selling" mindset, or pre-conceived ideas about what the community needs. Listen more than you speak. Describe what you can provide, but then allow the community to identify what meets their needs.
3. **Be flexible.** Be willing to customize your existing offerings to meet the needs of the community and its learners.
4. **Include the community in the training.** Find members of the community to participate in the delivery of the training. This should be a community effort. Invite employers to speak with your students. Hire instructors from the community. Consider doing projects that give learners a chance to apply their skills and return something to the community.
5. **Community celebration.** Consider ways to celebrate the learners' success in the community. Hold a graduation ceremony and consider the best forum for it. NIC sometimes hosts lunch events to showcase the students' new abilities to the community and to celebrate the learners' achievements.

UBCV's Approach to Financially Sustainable Micro-credentials

Larry Bouthillier is the executive director of the University of British Columbia Vancouver campus's (UBCV) extended learning (ExL). He provides strategic leadership for his unit and works with faculties across campus to bring continuing and professional education to the local and global community. Below, he shares his insights on ways to make micro-credentials financially sustainable.

Interview

In your experience, which micro-credential programs are likely to be successful?

"One important thing to note is the distinction between 'need' and 'demand' for a new program. They are related concepts, but 'demand' is a predictor of a micro-credential's financial viability, while 'need' is less so.

"For example, health care experts might say that there is a need for a specific type of training in the field and claim that health care professionals would benefit if it were offered. That might be true. However, health care workers are busy people, and while they might want to take that training, their time is limited. Unless that training is linked to maintaining their credentials, it is unlikely that many will pursue it. You cannot assume there's a demand for the micro-credential, despite the need.

"There is a solution to a situation like this, which is to work with the professional accreditation agencies to get the training recognized for continuing education credit. That way, the training will count towards the mandatory professional development hours that professionals must take each year to maintain their professional accreditation. This will create demand for the program. Without this, even though there is a need, the micro-credential may not be viable."

What are some of the challenges of developing a financially sustainable model for micro-credentials?

"What it comes down to is the cost of acquiring a student. Institutions must invest a lot of resources to promote a program. They need to spread the word about a program's existence so that prospective students become aware of it. This includes resources to offer information sessions, advertise digitally, print and distribute brochures, and answer questions from prospective students. Once a student enrolls, these costs are recovered as part of the tuition for the program.

"The problem with micro-credentials is two-fold. First, micro-credentials are short, so there are fewer opportunities to recuperate those expenses. Consider the opportunities to recuperate the costs of promotion from a learner who registers in an undergraduate degree and completes 40 courses at an institution, compared to a learner who completes a micro-credential in one or two courses. It's more costly to acquire the micro-credential student, relative to the revenue you'll collect.

"In addition, micro-credentials are a dynamic market, with new ones created frequently. That means that institutions have to expand even more marketing resources to get the word out and let prospective learners know about it. Institutions may not be able to depend on word of mouth and alumni to spread the word as much. For these reasons, the costs of acquiring a student for a micro-credential program are quite high compared to longer programs, yet the opportunities to recuperate those costs are fewer, since the program is short."

What are some potential solutions?

"There is an economy of scale to be gained here. The more students you can put through a

program, the more likely it is to break even. While automating course delivery is one way to make a course more financially viable — for example, by offering self-paced online courses — it is a solution not always aligned with institutions of higher education. Massive Open Online Course (MOOC) providers like Coursera, Udemy, and LinkedIn Learning have mastered this market, offering professionally produced videos and outsourcing the instruction. They offer training for \$20. We cannot compete with that.

“Our value, our advantage, is likely to come from the personalized attention we can give each student. We need to connect learners with jobs at the end of the training. That could come from offering career and placement services. Alternatively, if we can recruit industry leaders to teach micro-credential courses, they can provide direct pathways to employment for learners, a competitive advantage that MOOCs simply cannot offer. Students will register for a course with such tangible career outcomes.

“That still doesn't address the cost of acquiring a student for short-term training. We have a hypothesis, which we are testing right now. Since the costs of acquiring a student are high, we are expanding efforts to retain students once they have registered with us. Retaining a student is much easier to do than recruiting a new one.

“Micro-credentials were created to help people transition in their career. To achieve that outcome, they generally need more than one short course. They need something short, but large enough to develop new competencies. One seven-week micro-credential course is probably not enough, but a series of such courses may provide the depth of learning that achieve the outcome that adult learners are looking for.

“What we are working to create is a portfolio of courses in a subject area or for a given audience. This stackability of related programming can provide a reason for learners to re-enroll. It creates a win-win situation; for the learners who deepen their learning sufficiently to impact the trajectory of their careers, and for us by lowering the cost of acquiring students for our courses.”

Top Tips from UBC's Extended Learning Experience

1. **Look for demand (not just need) for a new program.** Investigate whether there is a market of people who not only think the training is a good idea but are willing to

invest their time and money to complete it. If there is need but insufficient demand, explore options for transforming the need into demand (e.g., by working with professional accreditation agencies to recognize the training and make it a requirement for accreditation).

2. **Provide tangible career advantages.** Micro-credential providers are not limited to post-secondary institutions. Private companies have automated, and scaled up, their delivery of such programs. To gain a competitive advantage, consider developing programs that link learners with employers in your region and help them find work in those industries.
3. **Develop clusters of offerings.** The cost of acquiring a student is high, particularly for short micro-credentials. Consider ways to retain learners and deepen their learning so that they gain the abilities required to effect the desired change in their career. This will help to make the program financially viable.

Suggested Resources

Labour Market Research Using Job Postings

The Open Skills Network is an international coalition of educational institutions and employers that are working to create rich, machine-readable, standardized descriptions of skills. By creating this system, they hope to capture people's competencies and facilitate the transition between training and employment.

The Open Skills Network (<https://www.openskillsnetwork.org/>). (n.d.).
<https://www.openskillsnetwork.org/>

The articles below illustrate how job postings can be used to analyze the labour market, enabling researchers to identify in-demand competencies. While some of the methods use automation to parse the data, similar analyses can be performed manually on a smaller scale. Some of the articles describe the benefits and pitfalls of using this approach to conducting labour market analysis research.

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Launching a new micro-credential program is risky. Administrators must weigh the costs of risks against the potential gains of innovation. This article provides tips for starting new things in higher education (not necessarily micro-credentials, but the considerations also apply to this type of initiative).

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Campus Collaborations

Micro-credentials bring together the expertise and resources of people from across campus. This chapter provides a guide to productive inter-departmental collaboration at an institution.

Chapter Audience:



Administrators



Program Managers

Why Are Campus Collaborations Needed?

Few departments or units in an institution have the expertise, resources, and access to systems required to develop and offer a micro-credential on their own. To successfully create a new program, a unit must engage other units across campus. Collaborations may be with departments that offer support services or other academic departments whose subject matter expertise is called upon to create a multidisciplinary program. This chapter identifies key players and offers questions to consider as a multi-departmental team is assembled to support the project.

Who Are the Stakeholders?

The resources and expertise of several groups across campus may be required to facilitate the successful deployment of a micro-credential. While the list of collaborators will vary with each project and institution, some collaborators to consider are listed in Table 1.

Table 1. List of potential collaborators across campus.

Department or Unit	Department or Unit Expertise or Resource to Contribute to a Micro-credential
Academic departments	Subject matter experts in departments other than your own can help co-create an interdisciplinary or multidisciplinary program by lending their disciplinary knowledge and/or contacts in industry. They can help design, develop, and teach the new program. They may provide financial support for the program and/or agree to a revenue-sharing arrangement.
Alumni office	This office maintains contact with graduates, who are often the target of micro-credentials programs. They can provide insight into the skills and needs of this group and facilitate the promotion of relevant micro-credentials to them. In some cases, the alumni and development office may also be able to link to alumni who are now leaders of industry, who could then serve as potential subject matter experts, employer partners, or even sponsors of programs that meet the needs of their company.
Career services centre	This group's close involvement with learners as they transition to the workforce gives them unique insight into their preparedness. Based on this knowledge, they can provide advice on the skills learners need for successful entry into the workforce.
Continuing education unit	<p>These units offer short-term, work-aligned training for adult learners. They have contacts in industry and are aware of potential funding sources to support the development of workforce training. These units also tend to have key resources for facilitating and incorporating the input of several stakeholders during the development of a new program, such as project managers and instructional designers, as well as access to systems and resources that support the delivery of non-credit, open-enrollment, and short-term courses.</p> <p>See section <i>Continuing Education Unit</i> below.</p>
Grants office	Micro-credentials often require external financial support to respond to specific needs, or to make the training more accessible. Typically, the funds are managed through the institution's established channels, such as the grants or research office and possibly the finance department.
Human resources department	This department can advise on the labour context for hiring subject matter experts and instructors for the development and delivery of the micro-credential. They can also assist with the hiring process.
Indigenous engagement office	This group monitors the institution's relationships with local Indigenous communities to ensure that proper protocols are followed and communication remains manageable, given the numerous institutional constituents who might wish to engage these communities. Micro-credentials designed for Indigenous audiences or developed in partnership with Indigenous groups to offer the credential should first consult with the institution's Indigenous engagement office.

Department or Unit	Department or Unit Expertise or Resource to Contribute to a Micro-credential
Information technology office	Depending on the software and equipment required for the micro-credential, it may be a good idea to contact the I.T. department. For example, in some institutions, non-credit students do not have access to certain university services, such as email and the learning management system. Addressing these issues is an important component of micro-credential development.
Marketing department	This group can advise on the most effective channels and messages for promoting new programs, for monitoring the outcome of promotional campaigns, and for allocating marketing dollars toward the channels that have the greatest impact. The unit may also have graphic designers to develop media and assets to promote the program. The marketing department often has access to special pricing for advertisements in local newspapers and social media, so it is advantageous to utilize their contacts or accounts. As this department serves the entire institution, it is important to notify them of new projects ahead of time — sometimes months in advance — so that they can allocate resources to support the project amid competing priorities.
Media production department	Not all institutions have a media production department, but those that do will find here an invaluable ally in the production of high-quality videos and multimedia for the new course.
Prior learning and assessment recognition (PLAR) office	If the goal is for a micro-credential to ladder into other educational opportunities at the institution, then engaging in a conversation with the institution's PLAR experts can provide insight on the most effective approach. This conversation can also address how to evaluate, recognize, and document learners' prior experience when there is a prerequisite for admission into the micro-credential.
Registrar's office	The registrar's office may be able to assist with registration and tuition collection for the micro-credential, as well as offer guidance and support on learning recognition in the form of transcripts or digital badges. Speak to the registrar's office early in the project, as some student registration systems may not be designed for micro-credentials. In such instances, alternative registration systems may need to be explored.
Senior academic leaders	Chairs, directors, and deans should be kept in the loop when any new program is created under their portfolio. These administrators can open doors to partners (such as employers), recruit staff internally, and provide administrative (and sometimes financial) support.

Department or Unit	Department or Unit Expertise or Resource to Contribute to a Micro-credential
Teaching and learning centre	The design and development of a micro-credential follows a different process than the typical approach to new course development at most institutions. The process usually involves a team, including employers, subject matter experts, and faculty. For this reason, the process is facilitated by an instructional designer who uses their expertise to leverage each person's contribution. Instructional designers can advise on instructional design, including how to create a competency-based program, and they can shed light on the differences between andragogy (curriculum and teaching for an adult audience) and pedagogy (curriculum and teaching practices that target younger learners, which is the most common model used in post-secondary institutions). They also can advise on the selection, design, and use of instructional technology, including accessibility requirements.
Work-integrated learning (WIL) office	Given the work-aligned nature of micro-credentials, some programs will include an internship or some sort of work placement. The office of work-integrated learning can link students with work placement opportunities, provide frameworks for ensuring that the field learning is rigorous, document the learning, ensure that the experience meets all safety and other regulations, and manage risks.

Table 1 is not a complete list of potential campus collaborators but is a good place to start. Some questions to consider as you assemble a cross-campus team to support the micro-credential are:

- Do we have the right team to be making each decision?
- Are there other people we should be talking to?
- What resources and expertise do they have? Are there other people we might need?

It is important to reach out early to potential collaborators so that they can schedule the project in their workflow, allocate staff, and ensure their ability to support the project. Early communication is key as each department may have requirements or limitations that can impact the project (e.g., they may not have expertise in a particular area and will need to hire a contractor, requiring you to include this in the project budget).

Conversely, each department has its own internal processes and operations. These should be communicated to the micro-credential team early on to avoid potential issues that may impact the delivery of key deliverables, creating a possible negative ripple effect in other departments.

Continuing Education Unit

The continuing education unit at your institution is, in many ways, an ideal partner for the design and implementation of micro-credentials. As a unit dedicated to offering work-aligned, competency-based, short-term training to adult learners, they have the connections to industry, the

expertise to design competency-based programs, and the systems in place to help other units in the institution succeed in putting together their micro-credentials. Indeed, a 2023 survey of 190 North American post-secondary institutions found that 75 per cent of continuing education units offer micro-credentials (Modern Campus, 2023). In B.C., out of 24 pilot micro-credentials funded by the Ministry of Post-Secondary Education and Future Skills, at least eight were offered by, or jointly with, schools of continuing education (Claire Sauvé, personal communication; Government of British Columbia, 2021).

“Microcredentials aren’t new, and Continuing Education is the expert in this field. Institutions should look to these leaders when adapting to this new demand in programming.”

Sheila LeBlanc, 2021
associate vice-president for continuing education, University of Calgary (<https://evollution.com/programming/credentials/how-continuing-education-can-facilitate-the-adoption-of-microcredentials-2/>)

Institutions seem to recognize this, as 60 per cent of continuing education units report collaborating with other academic units and schools (Modern Campus, 2023).

It is important to recognize that as a campus partner, continuing education units are unique. In most institutions, the continuing education unit operates under a different business model from the rest of the institution. Its operations may not be supported by the institution’s base funding. Rather, it operates on a cost-recovery or revenue-generating basis. Indeed, a survey of 190 continuing education units found that revenue generation is the primary business driver for 90 per cent of them (Modern Campus, 2023). In a way, continuing education operates like an independent small business inside the institution.

Many of the non-academic units in an institution, such as the registrar’s office or the marketing department, are supported by the institution’s operational funding and their mission is to support the institution’s academic offerings. They provide this support as part of their operations. However, the self-funded nature of continuing education units means that they must recover their operational costs. They might be amenable to supporting an academic department’s micro-credential project, but they will need to recover their operational costs in doing so.

Schools of continuing education report that a lack of understanding and knowledge about how they operate represents the biggest challenge to collaborating with other parts of their institution

(Modern Campus, 2023). Therefore, when engaging with a continuing education unit on a micro-credential project, it is best to inquire about their business model in order to understand some of the financial exigencies and expectations that might come from working together.

Another financial matter to consider arises from the fact that continuing education units often have developed parallel systems and processes to the rest of the institution. These support things like open enrollment (where learners can register for a course without first being admitted to a program or institution), contract training (programs developed or offered to a particular employer), programs that begin and end anytime throughout the semester, non-credit courses, and marketing channels that target an audience that differs from the larger institution. These align with the delivery of micro-credentials. In fact, using these systems and processes can solve some of the challenges of offering micro-credentials that the institution's systems are not suited to support. However, continuing education units often pay for access to these systems (e.g., pay for access to a different learning management system than the rest of the institution), and these operational costs must be recovered. This is another consideration when partnering with a continuing education unit: These units may have access to appealing resources, staff expertise, and systems, but their costs must be factored into the micro-credential's budget.

Another thing to keep in mind about continuing education units is their customer-focused approach, driven by their entrepreneurial business model. This includes not only responding to the needs of both learners and employers, but also operating within timelines that align with the business world. Whereas academia tends to function on a semester system, continuing education units often can implement programs in a matter of days or weeks rather than months, providing faster solutions to employers' needs on their timeline, not the academy's.

What this means is that continuing education units are fast-acting. As the leader of one school of continuing education in B.C. expressed: "When I am coordinating the development of a new program for an employer, I need to assemble all of the pieces in a matter of a few days. Academia tends to work by committee, and that takes time. I am happy to go door to door and meet with every stakeholder over a matter of a couple of days and get everyone's input to come to a good solution, but I cannot wait two weeks to schedule a meeting with everyone there. By then, the employer will have moved on to a competitor to provide the training."

As a final consideration, it is important to discuss expectations for the final product and its delivery. Adult learners have different expectations in pursuing education than those of traditional post-secondary learners, which are typically fresh out of high school. Adult learners expect the curriculum to be relevant and applicable to their lives. They also want opportunities to apply what they have learned to their work context with meaningful and authentic assignments. Moreover, they may have expectations for a polished product, such as professionally produced videos, which is the standard in workplace training. In effect, the expectations may be closer to vocational training. This

may be different to the type of product typically offered as part of a diploma, certificate, or degree program. An early conversation about what a desired final product looks like is a wise investment.

Partnering with an institution's continuing education unit makes sense since they have the expertise and systems to help other departments offer micro-credentials. However, when initiating a partnership, departments may want to clarify the answers to several questions. In addition to questions listed under *Guidelines for Productive Collaborations*, which apply to collaborations with any campus partner, those considering a partnership with a continuing education unit will want to consider the following questions:

General operation

- What is the continuing education unit's business model? Does it operate on a cost-recovery basis? Revenue-generating basis? What are some of the financial exigencies guiding its operations?
- What is continuing education's financial expectations in terms of supporting the delivery of a micro-credential? What services can they provide? What expertise can they supply? What are some of the costs of accessing these services and staff?
- What is the agreement for revenue-sharing between the collaborating departments?
- What is the evidence from the labour market analysis for the program? (Note: As entrepreneurial, cost-recovery units, continuing education is particularly attentive to this kind of data when making decisions about moving forward with a new program.)
- Will decisions be reached by consensus? Are some people designated to make decisions after consulting everyone? (Consider the timeline implications, as described in the section above.)

Roles and responsibilities

- Who may be hired as instructors in the program? If existing faculty at the institution, does the micro-credential count towards their full-time workload? If not, what processes may ensure that there is no conflict of interest, with someone taking on too much? Who will do the hiring of subject matter experts and instructors? (Note: Continuing education sometimes falls outside of an institution's collective agreement.)
- How are each team member held accountable? Who has the authority to provide feedback and manage members of the cross-departmental team? (e.g., if a faculty who is a member of an academic department is not meeting their responsibilities on the micro-credential project, can a leader in continuing education fire them from the project, since the faculty does not technically report to this administrator?)

Logistics

- Which brand should be used to promote the program — the department's, continuing education's, or the institution's?
- Who will accept registrations and process tuition payment — the institution's registrar's office or continuing education?
- If the decision is made to use continuing education's learning management system, which is different to the institution's, who will train the faculty to use this system?
- Who awards the credential? Is it the department/institution through the registrar's office, or is it continuing education?

Guidelines for Productive Collaborations

As a new team forms, it will move through different stages of working collaboratively. Tuckman's (1965) theory of group development provides a framework for thinking about these stages. Stein (n.d.) describes each one (called forming, storming, norming, performing, and adjourning), and offers suggestions for how best to leverage each stage to carry out a team project.

Roles and Responsibilities

Once the stakeholders for the development of a new micro-credential are identified, the next step is to clarify their roles and responsibilities. Describing and communicating this to the team will ensure fluid collaboration and mitigate conflicts down the line.

Questions to consider while defining roles include:

- Who is the sponsor or senior leadership champion for this program?
- Who owns the project? Who is ultimately accountable for the success or failure of this program? Who will report on it to senior leadership or governance?
- Who is responsible for assembling and coordinating the team?
- How are critical implementation decisions made? Who is responsible for approving each deliverable?
- What are expectations for timelines for all parties? What is an appropriate balance between the need to proceed nimbly and quickly while ensuring quality, and being realistic about what can be accomplished under tight turnarounds?
- In which unit's portfolio will this project's budget fall? Who are the authorized signatories for this budget? Who can authorize payments to vendors? Who controls the budget? Who can make changes to the budget? Who tracks expenses and revenues? How and when will summaries of expenses and revenues be reported to the team?
- Who will manage the project, track its progress, and identify liabilities and risks if deadlines slip?

- Who will communicate with the stakeholders to inform them of progress (e.g., scheduling meetings, reminding people of upcoming deadlines for their deliverables, etc.)?
- How do the partners share risks? (e.g., if the program incurs a loss, how is it spread among partners?)
- Who will own the intellectual property of the curriculum and its learning resources once it is produced?
- Where will the student registrations (and their full-time equivalency (FTE)) be reported? (e.g., under continuing education or one of the academic departments involved in the project?)
- Where will the online component of the course be stored? (Note: Non-credit students may not have access to the institution's learning management system and work-arounds will need to be found.)
- What happens after the first offering? Is the goal to re-offer the program? If so, is there a certain point at which the partnership automatically renews or is there a review process after the pilot offering to discuss the possibility of partnering for a second offering?
- Who assumes primary responsibility for each aspect of the program such as:
 - Who is responsible for identifying, and applying for, funding opportunities (e.g., grants or sponsorships) to support the program?
 - Who will engage external partners, such as employers?
 - Who will ensure that the program has received institutional approval and meets quality standards?
 - Who is responsible for program promotion? Is there a designated person leading all marketing efforts or are different groups responsible for different aspects of it? (For example, faculty may leverage their department's alumni list to spread the word about the program while the marketing department may use social media to advertise it to new audiences.)
 - Who will write the program description and ensure that it is added to the institution's website or course catalogue?
 - Who will accept registrations?
 - Who will accept tuition revenues for these registrations?
 - Who will respond to prospective and registered learners' questions about the program?
 - Who will handle room reservations and ensure the offering's schedule fits with the institution's processes and resources?
 - Who will support the technology infrastructure to offer the program, such as the learning management system? (e.g., IT? The centre for teaching and learning? An academic department? The continuing education unit?)
 - Who will purchase the necessary materials, equipment, and course software for the course?
 - Who will develop the program? If multiple people are involved (e.g., an instructional design and a subject matter expert), what is each person's role in the process? Who can approve

the curriculum?

- Who will search for and hire subject matter experts to develop the program?
- Who will search for and hire instructors for the program?
- Who will monitor registration and make a decision on whether the breakeven point has been achieved to offer the program? Who will inform all stakeholders (learners, instructors, and partners) of the decision?
- Who will monitor all contracts to ensure compliance and process the prompt payment of all invoices?
- Who is the point of contact for instructors during the program?
- Who will issue attestations of completion to learners?
- Who will keep a record of learners who successfully completed the program?
- Who will archive the curriculum in a safe place for re-use in the future?
- Who will ensure that the program is evaluated and follow through with this information to improve the program?
- Who will be responsible for reporting on the program's outcomes to funders? To governance bodies?

Part of clarifying the roles and responsibilities also means identifying:

- Each of the project deliverables;
- When each deliverable is due;
- Who is responsible for delivering it.

Communication

The team will likely need to meet frequently during the development of the project. Setting a recurring meeting time can ensure that team members block their schedule to attend, and that communication takes place on a regular basis. Sharing an agenda ahead of each meeting and minutes after it can provide a record of decisions and ensure that those who could not attend are kept in the loop. Ensure that the length of time for each meeting and its format (i.e., online or in person) fit the goal of each meeting.

The team should also have an agreed upon location for collecting documents and resources as the project progresses. Moreover, all project-related documents, such as meeting minutes and course resources, should be kept on a shared, cloud-based drive.

Another aspect to consider is how to inform the campus community about the project. Micro-credentials are still a novel concept at many institutions, and staff and learners may need to be educated about them. Staff who are not part of the development or implementation team may become indirectly involved; for example, by receiving questions from prospective students.

Developing a brief FAQ document and presenting at inter-departmental meetings about the program can help spread the word about the program and get the entire campus up to speed.

Business Models

Discussing the business model for the micro-credential is essential. Is the program going to be offered on a cost-recovery basis? At a loss? As a form of revenue for the institution? The business model sets a financial goal and ensures that all stakeholders understand the driver behind some of the decisions that will be made during the development of the program.

If multiple departments are involved in designing and offering a micro-credential, it's important to discuss how the revenues will be shared. Will they be split evenly or in favour of one department? Which of the departments that contributed to the micro-credential will take part in the revenue-sharing?

What about risks and costs? Do some departments take on a greater burden of risk? For example, in most instances the cost of developing a program far outweighs the costs of delivering it. Thus, the institution usually operates at a loss until a program has been successfully offered a few times. But what if the program is canceled and as a consequence there are no opportunities to recuperate the costs? Which department(s) bears those costs? If the risks are spread among several departments, what is the ratio of contribution and risks attributed to each one?

Project Charter

A project charter captures this information in one document. Its purpose is to communicate fundamental information about the project to all team members. A blank template can be used during the first team meeting to direct the conversation, articulate goals, clarify roles, set deadlines, and assign accountabilities.

According to McGowan (2016), the project charter for an educational project should contain the following elements:

1. Project purpose
2. Measurable objectives and success criteria
3. High-level requirements
4. Assumptions/constraints
5. High-level project description and boundaries
6. High-level risks
7. Summary milestone schedule
8. Summary budget

9. Stakeholder list
10. Project approval requirements
11. Assigned project manager and authority level
12. Name and authority of the sponsor

It may be helpful in the first team meeting to identify not just the high-level milestones, but also each of the deliverables, including when they are due and who is accountable for each one. This will provide clarity to all team members.

Several project charter templates are available, but the following one, created by Dave Cormier (2022), digital learning specialist at the University of Windsor, was developed especially for micro-credentials. It has been modified from the original document to include the list of deliverables, dates, and accountabilities. Users may add additional sections or delete existing ones based on their needs and context. The template is shown below and is available as a downloadable Excel file: [TEMPLATE – Micro-credential Project Charter \[XLSX\]](https://opentextbc.ca/bcmicrocredential/wp-content/uploads/sites/425/2023/01/TEMPLATE-Micro-credential-Project-Charter.xlsx) (<https://opentextbc.ca/bcmicrocredential/wp-content/uploads/sites/425/2023/01/TEMPLATE-Micro-credential-Project-Charter.xlsx>).

Cormier provides the following instructions when using this template:

Micro-credential overview section

- The overview section defines the micro-credential's **Goals and Objectives**. While there are distinctions between these two terms, goals are more conceptual. They speak to the strategy or value that the micro-credential will bring. Objectives are observable changes. They are measurable. One reason to include both goals and objectives is that some people on the team will respond better to aspirational language while others will respond better to concrete language. Articulating both will address all team members' preferences.
- The **Program Description** field can serve as common language for the team when talking about the micro-credential with external people. They can simply copy the description and paste it in an email.
- The **Desired End State** serves to identify when the project objectives are met and the project wraps up. There is always the risk of scope creep and/or of the work continuing beyond the intended scope. Having this indicator allows the team to recognize when the intended project is finished, and to determine whether to close the project and move on to the next one or turn it over to the people who will maintain and operate the program as part of regular operations.

Scope section

- The role of this section is to protect against scope creep. In any project, there are always opportunities to do more than initially intended. However, if these are pursued, the project may

never get done, or not done in a timely manner. This section keeps the team and decision-makers focused.

- The **Out of Scope** section can also serve as a "parking lot" where excellent ideas are noted for future projects.

Risks section

- This section allows a team to identify potential risks to the timeline or the completion of the project.
- The **Likelihood** of each identified risk is given a score from 1 to 4, with 1 representing an event that is very unlikely to occur, and 4 an event that is very likely to occur. A similar scale is applied to the **Impact** column, with 1 an event that will have minimal effect on the team's ability to complete the project as planned, and 4 an event that causes significant disruption.
- In a risk management matrix, the score given to the likelihood of an event happening is multiplied by the score given to the impact of that event. This score can help to prioritize which mitigation strategy to put into place, with the higher scored risks given greater priority.
- Critical members of the group will have helpful input for this section. And by having a mitigation strategy in place, the group can adopt a positive, solutions-focused mindset.

Micro-credential Project Charter

Micro-credential Name			
Date Created		Faculty Lead	
Admin Lead		Project Contact	
Other Contacts		Version #	
Target Start Date		Target End Date	
Estimated Funding Required		Funding Source	

Micro-credential Overview

Goals	(How will offering this micro-credential improve the current situation for learners, employers, or other stakeholders?)
Objectives	(What measurable changes will happen?)
Program Description	(How would this project be explained to a person not involved in it?)
Employer Connection	(Define the depth of integration with employers and name them.)
Desired End State	(How do we know this project is over?)

Deliverables

Deliverables	Responsible Person	Due Date

Scope

In Scope	Out of Scope

Roles

Name	Role	Time Required
	Project sponsor	
	Team lead	

Risks

Risk	Likelihood of Occurrence (1 to 4)	Impact if it Occurs (1 to 4)	Priority (Likelihood × Impact)	Mitigation

Project Approval

Approved By	
Links to Other Documents	

Examples of project charters created for a range of educational projects are provided in the *Suggested Resources*.

Stories from the B.C. Post-secondary Sector

UFV's Partnership Between the College of Arts and Continuing Education

Carolyn MacLaren is director of continuing education at the University of the Fraser Valley (UFV). In a partnership between her unit and the UFV college of arts, the institution rolled out a Digital Marketing Micro-credential (<https://www.ufv.ca/faculty-business-and-computing/microcredential/s/digital-marketing-microcredential/>). Below, she shares her experience of working in partnership with an academic unit in her institution, which was a new way of operating for her unit.

Interview

Describe the micro-credential program.

"We wanted to experiment with the micro-credential format. To do this, instructors from continuing education and the faculty in the UFV college of arts developed 15, four-week-long, skills-focused, evening, online courses in digital communication. These courses teach skills like how to use Adobe Photoshop or how to write content for the web. The college of arts already offered three-credit courses on this content area, but we reasoned that these courses may be too intense for what students want and need. Students might want to sample the skillsets they need to function with these software, but taking a full course in it was intimidating and costly. So, we extracted the skills-based, applied content and created a series of short courses. The hope was that it would help students sample skills in a more accessible manner while also allowing them to curate their learning by picking and choosing the skills they wanted for their career.

"Each course was the equivalent of one-credit. They were developed by our instructors and faculty and had gone through the regular approval and quality assurance processes. Students could then choose to do just the one course, which we called a micro-course, or they could do several and earn an array of recognitions for it.

"There were several mapped-out pathways offered to students. Some combinations of three micro-courses could be converted into a three-credit, 100-level course in communications on their transcript. For example, by taking the micro-courses Photoshop Essential, Illustrator for Graphic Design, and Photoshop for Graphic Design, the student was entitled to claim the three-credit course GD 157: Digital Design Media I, which could be used toward degree requirements. Some combination of courses led toward an elective first-year three-credit course. There were five such combinations mapped out to three-credit courses. We were able to do this because we had looked at the learning outcomes of the each one-credit micro-course and found them to be equivalent to the larger three-credit course.

"Finally, if students completed nine specific micro-courses, they earned the micro-credential in digital marketing. We developed a suite of stacked micro-course options to meet a variety of needs."

Why did continuing education partner with the UFV college of arts to offer this program?

"It came down to logistics. Both continuing education and the UFV college of arts wanted to experiment with this innovative delivery model, but our university systems were not designed to accommodate short, one-credit courses, with open enrollment. Continuing education is set up differently, so we already had those systems in place. It was a natural partnership.

"The courses were offered under the umbrella of continuing education. We took care of marketing the program, put it up on our website to accept student registrations and process

payment. We used our platforms to deliver the program online. And we also managed the recognition of learning, meaning that we awarded badges to students who completed course, and communicated with the registrar's office for those students who wanted to count the credits toward their degree or claim one of the mapped three-credit courses. Because of our labour environment, continuing studies also hired the faculty to teach these courses as contract instructors. This was made possible because we had received funding to support this program, and we were able to compensate instructors at their regular faculty rate. However, the work did not count towards their annual teaching workload — it was work performed in addition to their regular workload."

What has been the response to this micro-credential?

"Overwhelming! We had expected the micro-courses and the micro-credential to appeal to a combination of external students and to our own learners. We discovered that most students were our existing students. They were attracted by the ability to earn credit toward their degree while curating their own learning and orienting it toward skills that aligned with their career goals. The 'pick and choose' approach, made possible by smaller courses, was a success. Interestingly, only about half of students claimed the three-credit course equivalency on their transcript. It turns out that some wanted the first-year course requirement, but many just wanted to learn subjects of interest and be recognized for it on their transcript as one-credit courses. We also believe that, since these courses were offered in shorter 'modules,' it was not onerous for students with a full course load to pick up an additional one-credit course.

"We see the potential of this concept for high school students who want to try out university-level courses, and experience our institution, and perhaps even earn advanced placement credits. Unfortunately, the timing of this pilot didn't allow us to engage high school students. In the future, we view this as a wonderful opportunity for high school students to get ahead and to recruit students to our institution in our academic programs.

"These courses would likely appeal to external students and employers. Unfortunately, we didn't have time to do meaningful employer engagement in this pilot offering. That would be the goal for the next iteration of this program."

1. **Put the learner first.**

If university systems do not exist to offer flexible pathways that benefit learners, forge partnerships across the institution to create them. Don't let the absence of existing systems to be a roadblock. Different groups across the institution may hold a piece of the solution.

2. **Have team guiding principles.**

Establish a set of agreed-upon principles on goals and the methods to achieve them to facilitate an effective collaboration between continuing education staff and their academic faculty partners.

3. **Secure needed resources.**

Different groups will have different expectations and needs for resources in order to bring a project to fruition. Investigate these needs early on in the project and find the resources to support them. In the case of UFV, this meant finding the funding to support instructor compensation, since these funds would be unlikely to be recovered by tuition alone.

4. **Engage employers.**

Micro-credentials are new and many employers are unaware of what they are. Involving employers in the development of the micro-credential can help raise awareness, gain buy-in, validate the skills taught and assessed, and gain recognition and acceptance of the credential for hiring purposes. Employers will see the value of this type of short training and may be willing to financially support their employees who wish to take the courses.

5. **Brainstorm prospective learners.**

Consider the possible benefits of completing the micro-credential for a broad range of learners. In the case of UFV, they thought about promoting the program to high school seniors too late to act on it effectively, but this program could clearly benefit them, and UFV plans to promote the micro-course to them next time.

Suggested Resources

Collaborating Across Campus to Offer Micro-credentials

In this article, the co-authors describe the process of intra-institutional collaboration and communication required to ensure that all campus units were aware of, and knew how to answer learner questions about, a new micro-credential program.

Lokey-Vega, A., & Malliett, R. (2022). *Lessons learned from launching a micro-credential program*. The EvoLLLution. <https://evollution.com/programming/credentials/lessons-learned-from-launching-a-micro-credential-program/>

The Role of Continuing Education Units in the Delivery of Micro-credentials

In this hour-long panel discussion recorded at the 2021 Canadian Association for University Continuing Education (CAUCE) conference, Paul Mazerolle, president and vice chancellor of the University of New Brunswick, Joanne Duklas, president of Duklas Cornerstone Consulting Inc., Deb Adair, executive director and CEO of Quality Matters, and David Leaser, senior program executive of innovation and growth initiatives at IBM, discuss how micro-credentials expand an institution's existing suite of credentials and present an opportunity to bring continuing education units into the core of an institution's operations.

Ahluwalia, A. (moderator), Adair, D., Duklas, J., Leaser, D., & Mazerolle, P. (2021). *Panel presentation. 2021 Canadian Association for University Continuing Education (CAUCE) conference*. <https://youtu.be/yp55hJwRzeM>

In this interview, Sheila LeBlanc, associate vice president of continuing education at the University of Calgary, provides a frank account of some of the challenges in implementing micro-credentials across the academy and how schools of continuing education are positioned to lead the way.

LeBlanc, S. (2021). *How continuing education can facilitate the adoption of microcredentials*. The EvoLLLution. <https://evollution.com/programming/credentials/how-continuing-education-can-facilitate-the-adoption-of-microcredentials-2/>

In this 20-minute podcast, Kristine Collins, assistant dean of academic programs in the school of continuing studies at University of Toronto, explains the scope of work of schools of continuing education and how their expertise contributes to the delivery of work-aligned adult education such as micro-credentials.

Collins, K. (2021). *Creating a constellation of offerings with microcredentials and continuing education*.

Modern Campus. <https://moderncampus.com/blog/creating-a-constellation-of-offerings-with-microcredentials-and-continuing-education.html>

Collins, K. (2021). *Episode 14: Creating a constellation of offerings with microcredentials and continuing education* [Podcast]. Modern Campus <https://moderncampus.com/podcast/episode-fourteen.html>

This article summarizes the 2023 State of Continuing Education Report and highlights key findings such as how most schools of continuing education operate, their involvement in micro-credentials, and some of their challenges.

Donadel, A. (2023). *Despite high interest, continuing education programs are sputtering*. University Business. <https://universitybusiness.com/despite-high-interest-continuing-education-programs-are-sputtering/>

How can non-credit continuing education programs help adult learners ladder into academic programs? This article explains some of the challenges and possible solutions for working across campus to develop solutions for adult learners.

Richardson, D. (2018). *Working cross-campus to build a flexible and responsive educational ecosystem*. The EvoLLLution. <https://evollution.com/programming/credentials/working-cross-campus-to-build-a-flexible-and-responsive-educational-ecosystem/>

This article explains how continuing education programs serve adult learners for whom an institution's traditional suite of offering may not be accessible. For this reason, the author argues for the development of pathways from continuing education programs into the institution's academic programs.

Kunkel, E. (2022). *Leveraging continuing education programming in conjunction with traditional degree programs*. The EvoLLLution. https://evollution.com/revenue-streams/extending-lifelong_learning/leveraging-continuing-education-programming-in-conjunction-with-traditional-degree-programs/

In this article, the author explains how schools of continuing education can work in partnership with credit-based faculty in their institutions to offer work-aligned programs for adult learners.

Infanzon, E. (2022). *The long-lasting value of workforce and continuing education*. The EvoLLLution. https://evollution.com/revenue-streams/workforce_development/the-long-lasting-value-of-workforce-and-continuing-education

Project Charter

The following examples of project charters were created for a range of educational projects. While capturing information that is similar to what is collected in Cormier's (2022) template, the documents vary in their details. They are provided to inspire the development of your own document.

- Project charter for online course development (https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwjCloDmte79AhXzJUQIHZqmAXwQFnoECA4QAQ&url=https%3A%2F%2Fwww.mohawkcollege.ca%2Fsites%2Fdefault%2Ffiles%2Faccessible-pdf%2Facademic-quality%2FProject_Charter_for_Online_Course_Development_FINAL.pdf&usg=AOvVawolqi2gATwN2OL7HIRnN4Eu) from Mohawk College
- Project charter to develop professional development materials (https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjCloDmte79AhXzJUQIHZqmAXwQFnoECBAQAQ&url=https%3A%2F%2Fdocs.google.com%2Fdocument%2Fpreview%3Fhgd%3D1%26id%3D1dQO1irUpeCEMqTswunE2a9gxjnj3CICJ_ZcKmyW4Zw&usg=AOvVawogxaHWBLVjkE35ZVZjJctr) for faculty at the University of Memphis

In addition, the University of British Columbia's operational excellence project (<https://opex.ubc.ca/raining-coaching/toolkits-and-templates/project-management-tool-vault/>) provides free templates for a variety of project management tools geared toward campus collaborations, including a project charter, a project governance and team structure template, and project plans.

Works Cited

Cormier, D. (2022). *Microcredential project charter*. <https://docs.google.com/document/d/1jzEb4zU8lOYwmajgN4XHo-S5MVW2bEEgKalUe6GnLQ0/edit>

(Note: This is Cormier's original document, not the version provided in this Toolkit which was modified from the original source.)

Government of British Columbia. (2021, February 8). *Micro credentials fast track to high-demand jobs* [press release]. Ministry of Post-Secondary Education and Future Skills <https://news.gov.bc.ca/releases/2021AEST0012-000225>

McGowan, K. (2016). *Creating a project charter for your eLearning project*. LinkedIn. <https://www.linkedin.com/pulse/creating-project-charter-your-elearning-kevin-mcgowan-pmp-csm/>

Modern Campus. (2023). State of Continuing Education 2023.
<https://resources.moderncampus.com/state-of-ce-2023>

Stein, J. (n.d.). *Using the stages of team development*. MIT Human Resources. <https://hr.mit.edu/learning-topics/teams/articles/stages-development>

Tuckman, B. W. (1965). Developmental sequence in small groups. *Psychological Bulletin*, 63(6), 384–399. <https://doi.org/10.1037/h0022100> PMID 14314073.

Institutional Governance: Practical Guide

This chapter describes approaches to developing a set of policies and procedures to govern how micro-credentials are proposed, approved, administered, and retired.

Chapter Audience:



Administrators

Why Is Institutional Governance Important for Micro-credentials?

Micro-credentials may represent a new form of credential at an institution. They may be distinct from other credentials in terms of their target audience, duration and format, and their credit/non-credit status. A set of institutional policies and procedures can ensure that all stakeholders understand what they are and how they fit into the existing credential ecosystem. These documents also provide clarity on how to create, approve, and deliver micro-credentials, as well as how to integrate them into your institution's existing systems.

Developing a set of policy and procedure to govern micro-credentials is an opportunity to engage the community in a conversation about what micro-credentials are and their purpose at your institution. It's also a vehicle to come to a shared understanding about who is responsible for them and how they will be implemented.

What Are Elements of Policy and Procedures Governing Micro-credentials?

Typically, policy and procedures capture the agreed-upon vision and process for offering micro-credentials at an institution. The policy document outline the underlying principles and rationale for offering such credentials, aligning them with the institution's mission, values, and strategic priorities.

The procedures provide the details of “who, what, where, when, and how” to do it. They clarify roles and responsibilities, as well as the processes governing micro-credentials. Each institution will develop its own procedures based on its context and existing systems.

Items usually covered in the micro-credential policy and procedures documents include:

Policy

- Rationale and positioning
- Definitions
- Standing of the micro-credential in relation to the institution's credential framework

Procedures

- Roles and responsibilities
- Processes for program approval, changes, and retirement
- Processes for quality assurance

Rationale and Positioning

Your institution may wish to begin its exploration of micro-credentials by engaging in a conversation with its internal and external community about how these credentials fit within your institution's mission, priorities, strategic plan, values, and vision. Why should your institution offer micro-credentials? What specific needs would micro-credentials address for your learners that cannot be met with the current suite of credential offerings?

For example, a doctoral-medical institution may view micro-credentials as a tool to serve its alumni and help them meet their professional development training needs. In this context, micro-credentials are pitched at the post-graduate level and serve to maintain or update the specialized expertise of alumni. Alternatively, at a college or teaching university, micro-credentials may serve to make post-secondary education accessible for those who need flexible options for returning to education. Here, it would make sense to consider how micro-credentials can ladder into other academic programs since they serve as an on-ramp for post-secondary education.

As you engage in this conversation, consider:

- How can you use micro-credentials to achieve your mission, vision, and goals?
- Why is your institution offering micro-credentials? What do you want to do that you currently cannot with your existing suite of credentials? What is the value of adding micro-credentials to your credential framework? What are you trying to achieve?
- Who are you hoping to serve in offering micro-credentials? What do these learners need from

this training?

Definitions and Credential Framework

Some jurisdictions, like Ontario (Government of Ontario, 2023) and Alberta (Government of Alberta, 2018), have a provincial qualifications framework. This framework defines each credential (e.g., diplomas, certificates, degrees) by describing each one's typical duration, purpose, admission requirements, and the types of institution authorized to offer it. These province-wide frameworks ensure uniformity across all institutions. A certificate at the University of Calgary is defined in the same manner as a certificate at the Southern Alberta Institute of Technology (SAIT).

Other Canadian jurisdictions, like Saskatchewan, Manitoba, Quebec, and British Columbia, do not have a provincial qualifications framework¹ (CICIC, 2022). What this means is that each institution must create its own.

There are restrictions on this. For example, institutions must abide by the provincial act guiding their work and the type of programs they can offer (e.g., the University Act (1996), the College and Institute Act (1996), the Royal Roads University Act (1996) and the Thompson Rivers University Act (2005)). Institutions also tend to follow the sector consensus on the scale and scope of each credential (EducationPlannerBC, 2023), so that their credentials will be understood provincially, nationally, and internationally.

Beyond this, each institution develops its own credential framework. This means defining each credential and articulating how they fit with one another. Here are examples:

- Selkirk College's Policy #8100: Instructional Programs (<https://policies.selkirk.ca/policy/8100/>) explains the distinction between credit and non-credit programs and defines citations, certificates of various types, diplomas of various types, and two categories of degrees the college can offer.
- The College of New Caledonia's Procedure E-1.10 College Credentials (<https://tools.cnc.bc.ca/CNCPolicies/PolicyFiles.ashx?attId=210>) provides a clear example of a credential framework.
- The British Columbia Institute of Technology Policy 5401 and accompanying Procedure 5401-PR1 (https://www.bcit.ca/files/pdf/policies/5401_pr1.pdf) define the types of credential offered by the institution and the credential standards for each one.
- Vancouver Island University's Policy 97.13 Programs and Credentials and its accompanying Procedure 97.13.001 (https://isapp.viu.ca/PolicyProcedure/docshow.asp?doc_id=22725)

1. While these provinces do not have a provincial qualifications framework, ministers of education across Canada have agreed to a Canadian Degree Qualifications Framework (Council of Ministers of Education, Canada, 2007), so a degree is defined uniformly across the country.

provides a list and description of all of the credentials that can be approved by senate and offered at the institution.

- The University of the Fraser Valley's Policy 64: Credentials ([https://www.ufv.ca/media/assets/secretariat/policies/Credentials-\(64\).pdf](https://www.ufv.ca/media/assets/secretariat/policies/Credentials-(64).pdf)) provides a description of each of its credential offerings.
- The University of Victoria's Policy AC1135 Policy for the Establishment of Certificate and Diploma Programs (<https://www.uvic.ca/universitysecretary/assets/docs/policies/ac1135.pdf>) defines what non-degree programs mean at this institution.

Micro-credentials are a new type of credential. Thus, institutions need to engage their community to determine how and where they fit within their existing credential framework.

Although B.C. does not have a province-wide credential framework, it has a Micro-credential Framework (https://www2.gov.bc.ca/assets/gov/education/post-secondary-education/micro-credentials/mc_framework.pdf) that defines the credential, including the number of hours typically allocated to this form of training.

Duration

Individual micro-credentials should be sufficient in length for learners to acquire the competency being sought and be shorter in duration than other formal post-secondary credentials (under 288 hours).

Institutions are not mandated to adopt the Micro-credential Framework for B.C. Public Post-secondary Education System (2021) into their own definition, but drawing from this document can facilitate a common understanding of micro-credentials among learners, employers, and post-secondary institutions in B.C.

It is possible that your institution will define not one micro-credential, but rather a suite of credentials corresponding to the Micro-credential Framework for B.C. Public Post-secondary Education System (2021). Some of the characteristics of these programs that can be used to define separate categories of micro-credentials include:

- **Credit-bearing and non-credit micro-credentials.** These two types of credentials may, for example, be subject to different governance and quality assurance oversight as per your institution's existing systems. (See *KPU's Development of a New Micro-credential Policy* in the companion chapter *Institution Governance: Stories from the B.C. Post-secondary Sector*).

- **Scale and scope of the training.** While the Micro-credential Framework for B.C. Public Post-secondary Education System (2021) defines a micro-credential as training that is less than 288 hours in length, your institution may distinguish between different types of micro-credentials that vary in length or number of competencies. For example, your institution may have a credential for training that is less than 50 hours long, another for training that is between 51 and 150 hours in length, and one for training that is 151 to 288 hours long. (See *UBCO's Development of a New Micro-credential Policy* in the companion chapter *Institution Governance: Stories from the B.C. Post-secondary sector*)
- **Rigours of assessment.** Adult learners come to micro-credentials with different needs. Some may simply want to acquire a practical skill without any formal assessment (in fact, assessment could be a deterrent to enrolling in the program). For others, it will be important to formally verify their abilities so that they can be showcased to employers. Micro-credential types could thus differ in terms of the type of assessment they validate, ranging from verifying attendance to assessing learners' proficiency against specific standards. (See *UBCO's Development of a New Micro-credential Policy* in the companion chapter *Institution Governance: Stories from the B.C. Post-secondary Sector*)
- **Differences in academic level.** Is the micro-credential offered as vocational training? As preparation for post-secondary education? At the undergraduate level to give learners work-ready competencies upon graduation? Or, does it target working professionals as part of their continuing professional development training (i.e., is the training offered at the post-graduate level)? Your institution might want to distinguish between these different credentials based on the academic level they target.
- **Nimble versus established programs.** Some micro-credentials are designed to quickly meet employer needs and may have a short shelf life requiring fast approval processes to meet external timeline constraints. Others are more academic in focus. They are envisioned to be more durable and aim to meet the needs of a group of learners. For those programs, speed of approval is not as much of a factor. Institutions may want to consider developing two separate approval processes: one that streamlines the process for rapidly developed micro-credentials and another that follows a more typical timeline for more durable academic programs. It's important to note that the two types of program so approved may have different constraints imposed on them (e.g., the one approved by expedited processes may not ladder into the institution's other programs since the expedited process may shortcut consultation with other departments). (See *CapU's Use of Existing Policies to Approve Micro-credentials* in the companion chapter *Institution Governance: Stories from the B.C. Post-secondary Sector* and also *BCIT's Expedited Process to Review Micro-credentials* in the chapter *Quality Assurance*)

If your institution chooses to define several categories of micro-credentials, it is helpful to describe how these are related to one another and to other credentials at your institution (e.g., What distinguishes one from the other? Can one type of micro-credential ladder into another?).

The name of the credential at your institution may not include the word "micro-credential." In these instances, it is important to clarify which of your institution's credentials align with micro-credentials as defined in the Micro-credential Framework for B.C. Public Post-secondary Education System (2021). This will guide members of your community in activities such as engaging in conversation with external stakeholders (i.e., because stakeholders, like employers, may be more familiar with the term "micro-credential" rather than your institution-specific term) and in applying for funding.

Roles and Responsibilities

When developing a process to govern micro-credentials, the people or units involved and their roles and responsibilities should be clearly identified. This will provide clarity and prevent conflicts.

Some of the roles and responsibility to consider include:

- **Who may propose a new micro-credential program?** Presumably, academic groups or people will be able to do so, but something to consider is whether non-academic units (e.g., the career services at your institution) may also propose a program. Related to this question is who may apply for micro-credential funding?
- **Who can authorize the submission of a proposal?** Advancing a proposal indicates that the institution has assessed the financial impact of the proposed program and concluded that it can be adequately funded. Typically, a senior leader should sign-off on a proposal before it moves ahead with a broader institutional review.
- **Who will be given the responsibility to review and approve proposals?** This will likely be aligned with your institution's existing governance processes to review new programs, i.e., often this is a subgroup of the senate or faculty council. Some institutions have proposed a bifurcated approach to reviewing micro-credential proposals, depending on the type of micro-credential. For example, Kwantlen Polytechnic University (academic policy AC15 (<https://www.kpu.ca/sites/default/files/Policies/AC15%20Micro-credentials%20Policy.pdf>) and academic procedure AC15 (<https://www.kpu.ca/sites/default/files/Policies/AC15%20Micro-credential%20Procedure.pdf>)) defines two types of micro-credential and each is approved by a different body. Non-credit programs are approved by a committee composed of senior leaders, while credit-bearing programs must be approved by the senate curriculum committee (followed by senate approval).
- **Who are the stakeholders that should be consulted as a new proposal is considered?** For example, should the departments offering programs in related fields be consulted to ensure that the new micro-credential does not duplicate or compete with existing offerings? Should employer groups be consulted to verify the need for or the authenticity of the training proposed? Should the Indigenous engagement centre have an opportunity to review the proposal to ensure that respectful engagement practices are in place?
- **Who "owns" the micro-credential once it is approved?** Who is responsible for mobilizing and

coordinating resources to offer it and for project managing it to completion? Who has the authority to make decisions for it, including cancelling it? In some institutions, this may be the group making the proposal. Once the program is approved, this group enlists the institution's support services (e.g., registrar's office, technology office, etc.) to implement the program. In other institutions, micro-credentials fall outside of the institution's regular support structures, and additional help must be sought (e.g., if the registrar services cannot accept registration or tuition for non-credit courses). Often this means enlisting the help of the institution's school of continuing education, since this unit has the expertise and access to tools to manage such programs to help with registration, marketing, learner support, technology, instructional design, etc. If such an association between units is envisioned at your institution, there should be clearly defined roles and responsibilities for each unit (e.g., Which unit can make decisions to offer or cancel a program based on the number of registrations? Which unit is responsible for evaluating the program?)

- **What sort of business model applies to micro-credentials at your institution?** For example, should all micro-credential programs be revenue-generating? Or, should they only be offered on a cost-recovery basis? Can an institution's base funding be used to support the delivery of the program?
- **Who can facilitate the micro-credential training?** In some institutions, subject matter experts may be recruited from industry as contract instructors to teach a micro-credential. In others, the collective agreement may stipulate that only faculty may teach in micro-credential programs. In such cases, it is helpful to clarify whether the micro-credential teaching will be considered part of the faculty's regular workload or will be regarded as supplementary to their contractual obligations. If so, there should be clear guidelines as to what constitutes overload for a faculty (e.g., is a full-time workload plus one micro-credential considered a conflict of interest?).
- **Who is responsible for monitoring the quality of each micro-credential and for maintaining the documentation of their quality assurance processes?** Who should be involved in the review? What is the frequency of review?

Process for Program Approval, Changes, and Retirement

Procedures provide instructions about how to carry out each of the three stages in a program's life cycle: program proposal, changes, and retirement.

Although Selkirk College's Policy 8100 Instructional Programs (<https://policies.selkirk.ca/media/ab-out-web-section/governance/college-policies/Policy-8100-Instsructional-Programs-2014-06.pdf>) was developed for academic courses (rather than micro-credentials), it can serve as an example of what to include in a procedures document to define roles, responsibilities, and actions for:

- Creating new programs (Section 2: Creating New Programs, and Section 7.1: New Course Development)

- Modifying a course or program (Section 4: Changes to Existing Programs, and Section 7.4: Changes to Existing Courses)
- Retiring a program (Section 6: Program Suspension or Deletion, and Section 7.6: Suspension or Deletion of Courses)

Proposal

When a program is first proposed, it is likely to come under greater scrutiny than at later stages. Several questions need to be answered at this time, such as whether there is a need for it (and perhaps more importantly, whether there is a demand for it), whether there is a viable business plan in place to sustainably offer the program, whether the institution is appropriately positioned to offer it, how the program fits into the institution's existing suite of offerings, whether the institution has the resources to support it, whether partners have been consulted, and other benchmarks of quality (see *Process for Quality Assurance* below).

The procedures should describe how someone who is interested in proposing a new micro-credential would go about doing so. It should also outline how the proposed program will be evaluated and who has the authority to approve it. The procedures also may contain the criteria that will be used to determine whether to greenlight a new proposal.

Changes

Whenever a program is modified, there is the possibility that the program will lose its integrity and that its quality will not be as high as the original one. In its commitment to quality assurance, an institution should clarify when and how to handle such program changes. The need to review program changes should be balanced with the need to give instructors the ability to improve the program based on feedback from past offerings and evolving external partner needs. The procedures document should address some of the following questions:

- What extent of change triggers the review of a program?
- How is the extent of change measured? Are there specific aspects of a program that, when changed, automatically trigger a review? For example, do any changes to a program's learning outcomes (or targeted competencies) trigger a review? Or, is the extent of change measured in quantitative terms, e.g., when more than 10 per cent of the course content is modified?
- Once the threshold for review has been met, what is the process to review the program? Who should submit the program for review, and to whom? What information should be submitted? What criteria will be used for the review? How will the outcomes of the review be communicated and when? How is this information documented?

Retirement

Micro-credentials are meant to respond to employer or community needs and are therefore ephemeral. Once a program is no longer needed, there should be a clear process for retiring it. This could include information such as:

- Who may propose to retire a micro-credential?
- What information should be presented?
- Who should be informed of a program's retirement? Consider internal as well as external stakeholders.
- Is there a prescribed timeline for informing all stakeholders? Consider how much notice learners need to ensure that they can complete their ongoing program before it is retired.
- Does a program retirement require the approval of a person or group?
- How will the information about this program – its syllabus and list of learners who completed the program – be archived?

Process for Quality Assurance

Quality assurance is the set of practices that an institution puts in place to ensure that any program it offers meets certain standards. Having transparent standards and processes gives external stakeholders, like learners, employers or community or Indigenous partners, and other institutions, confidence in an institution and its programs.

One aspect of micro-credential quality assurance that may be different to quality assurance for other programs is a focus on *outcomes* (Liu, 2020; Moodie & Wheelahan, 2022; Taylor & Soares, 2020). The standards for traditional academic programs tend to focus on *inputs*, like the design of the program, including the learning outcomes, the assessment activities, the qualifications of the instructors, and student ratings of instruction. Since micro-credentials tend to have more pragmatic aims, often aligned with the workforce, there is an argument to be made that what happens during the program doesn't matter so much as what happens after the program. Markers of quality might then provide evidence in answer to questions such as:

- Are employers (or community or Indigenous partners) willing to publicly endorse the program?
- Do employers require the credential for hiring purposes?
- Are graduates of the micro-credential sought after by employers? How long does it typically take for a graduate to be hired on the basis of this credential? What percentage of graduates find employment in the field shortly after completing the training?
- Are the employers who hire graduates satisfied with their abilities?
- Do employers consider the verification of assessment that occurs during the training an accurate reflection of how well a prospective employee is likely to perform in the workplace?

- Can learners apply what they have learned in new situations?
- How does completion of the training translate into an employee's increased income potential?

Programs are typically reviewed for quality assurance prior to approval and then periodically thereafter to ensure that they continue to meet the institutional standards for quality.

Quality assurance is covered in more detail in the chapter *Quality Assurance*.

Three Approaches to Developing Micro-credential Policies

Each institution should begin the process of formulating a micro-credential policy by examining their existing policies and procedures. Based on existing documents, three approaches have been adopted by B.C. post-secondary institutions:

1. Use existing policies.

Some institutions may already have existing policies and procedures in place that can govern micro-credentials. The analysis at these institutions typically begins by mapping the definition of a micro-credential program as described in the Micro-credential Framework for B.C. Public Post-secondary Education System (2021) to the institution's existing credentials and the policies that govern them. If the resulting analysis maps micro-credentials to existing credentials and policies, it would be beneficial to communicate this information to the community. This would help those involved in developing and offering micro-credentials to understand which of their institution's credentials correspond to the B.C. definition of a micro-credential, especially since an institution's credentials may have different names.

As examples, see *CapU's Use of Existing Policies to Approve Micro-credentials* and *VCC's Use of Existing Policies to Approve Micro-credentials* in the companion chapter *Institution Governance: Stories from the B.C. Post-secondary Sector*

2. Modify existing policies.

Although existing policies may cover such aspects as how a micro-credential is defined, how it fits into an institution's credential framework, or how it is governed, these policies may require small tweaks. For example, some institutions may intend to introduce micro-credentials as a new type of credential but opt to use existing policies and procedures developed for other credentials to govern them. In such instances, policy development would involve defining the credential and clarifying which existing processes apply to the

program.

As an example, see Langara College's F1001 Regular Studies Credentials and Micro-credentials (<https://langara.ca/about-langara/policies/pdf/F1001-june-2022.pdf>), modified to include micro-credentials.

3. Create new policies.

Some institutions may find that micro-credentials are so different to existing credentials that the institution's policies are not appropriate. In such cases, the institution will need to develop a new set of policies and procedures specific to micro-credential programs. As examples, see *KPU's Development of a New Micro-credential Policy* and *UBCO's Development of a New Micro-credential Policy* and *UFV's Development of a New Micro-credential Policy* in the companion chapter *Institution Governance: Stories from the B.C. Post-secondary Sector*.

The section *What Are Elements of Policy and Procedures Governing Micro-credentials* provided a range of topics to consider when developing a micro-credential policy. Here are questions to ask about the process of policy development and broader questions to consider about its contents.

Policy development process

- Who should be assigned responsibility for developing the policy? What expertise might be helpful? (e.g., policy knowledge, teaching and learning innovation, strategic focus for the institution, etc.)
- How will the perspectives of diverse stakeholders be solicited and incorporated? For example, how will you ensure that the office of the registrar, the school of continuing education, and learners are consulted? How will key elements of the policy be communicated to stakeholders as it is being developed to prevent any surprises when it is presented to the wider community?
- How might you incorporate the advice of external stakeholders into the process? External input is not typically sought in post-secondary institution policies but may be particularly important for micro-credentials which have an external audience. For example, employers, community, or Indigenous partners could provide insights on the quality assurance process and its impact on the credibility of the program from their perspective.
- How will the policy be embedded within existing governance processes? How can you ensure that the policy is respected and accepted at your institution? Who has the authority to do this? (Note: Usually this is the senate, faculty council, or a deans' council).

Policy content

- How will proposed processes fit within existing policies and procedures? Is it possible to draw

from existing procedures? When creating new ones, what are the implications? How will modifying one part of the institution's systems modify other aspects of the institution's systems?

- How can the institution balance the need to respond quickly to employer needs and funding opportunities when creating micro-credentials with the need to apply rigorous oversight and quality assurance processes, which can be time-consuming?
- Should authority for the creation of micro-credentials be centralized at your institution, or should several different groups have the ability to create them? Who might want to create new programs? Who has the resources and knowledge to successfully manage and offer them?

Examples of Micro-credential Policies

Below are some examples of micro-credential-specific policies that may inspire the development of your institution's own:

B.C. institutions

- Kwantlen Polytechnic University's AC15 Micro-credentials Policy (<https://www.kpu.ca/sites/default/files/Policies/AC15%20Micro-credentials%20Policy.pdf>) and AC15 Micro-credentials Procedure (https://sppublic.kpu.ca/board/Board/2021%20Agendas%20and%20Minutes/09%20September%2029,%202021/08.2_3%20Draft%20AC15%20Micro-credentials%20Procedure.pdf)
- University of British Columbia Okanagan Campus's Policy O-129: Non-Credit Credentials (https://senate.ubc.ca/files/2021/08/O-129-Non-Credit-Programs-FINAL_0.pdf)
- Langara College's Policy F1001 Regular Studies Credentials and Micro-credentials (<https://langara.ca/about-langara/policies/pdf/F1001-june-2022.pdf>) and its accompanying Regulation (<https://langara.ca/about-langara/policies/pdf/F1001-regulations-june-2022.pdf>)

Other institutions

- Western University's Certificates, Diplomas and Micro-credentials policy (https://www.uwo.ca/univsec/pdf/academic_policies/general/certificates_and_diplomas.pdf)
- Toronto Metropolitan University's Policy 76: Development and Review of Continuing Education Offerings ([https://www.torontomu.ca/content/dam/senate/policies/pol76\(a\).pdf](https://www.torontomu.ca/content/dam/senate/policies/pol76(a).pdf))
- Deakin University's Micro-credentials Policy (<https://policy.deakin.edu.au/document/view-current.php?id=5&version=6>)

The State University of New York (SUNY), a leader in micro-credentials, has developed an overarching framework to guide its many campuses in developing their own micro-credential policies and procedures. The *Suggested Resources* section provides information about the SUNY framework and links to the policies of individual campuses.

Suggested Resources

Example of a Multi-Campus Micro-credential Policy Framework

The State University of New York (SUNY) has created a website that provides a detailed account of its policy's inception, along with various reports generated during its development. It may be helpful to note that SUNY is a multi-campus institution (a fact that is taken into consideration when developing approval processes for micro-credentials).

State University of New York (2018). *SUNY Launches Micro-credential Policy*. Academic Affairs. <https://system.suny.edu/academic-affairs/microcredentials/suny-launches-new-micro-credential-policy/>

The following document provides a quick overview of the SUNY policy.

State University of New York (2018). *Highlights: The State University of New York (SUNY) Micro-credential Policy*. <https://system.suny.edu/media/suny/content-assets/documents/academic-affairs/microcredentials/SUNY-Micro-credential-Policy-Summary.pdf>

Since SUNY is composed of many campuses, each one may develop its own policies and procedures. The following website links to several campuses' policies and procedures governing micro-credentials and shows a range of implementation approaches.

State University of New York (2023). *Local Policies and Practices*. Academic Affairs. <https://system.suny.edu/academic-affairs/microcredentials/procedures/#d.en.49952>

The following article provides an overview of the policy and process at SUNY.

Proctor, C. (2021). *Defining a role for high-quality microcredentials in higher education*. The Evolllution. <https://system.suny.edu/media/suny/content-assets/documents/academic-affairs/microcredentials/Defining-Role-for-HighQuality-Microcredentials-in-HigherEd.pdf>

Guidelines for Developing a Micro-credential Policy

The following white paper was written by a group of academics on how institutions can develop a framework for short-term, work-aligned training and include these programs in their existing credential framework and policies.

Flintoff, K. S., Casilli, C., Gibson, D., Derryberry, A., Pempedijan, G., Bixler, B., & Harvey, F. (2014). A

collaboratively drafted campus policy framework for open badges. *Badge Alliance*.
<https://www.academia.edu/8830797/>

State of Micro-credentials Across the United States

This interactive website allows you to view the status of micro-credentials across the United States. By choosing filters such as "district-level incentives" and "State-level Policy," you can see how each state has pursued and supported micro-credentials.

Digital Promise (n.d.). *Micro-credential Policy Map*. <https://digitalpromise.org/initiative/educator-micro-credentials/micro-credential-policy-map/>

Works Cited

Canadian Information Centre for International Credentials (CICIC). (2022). *Qualifications frameworks in Canada*. https://www.cicic.ca/1287/provincial_and_territorial_qualifications_frameworks.canada

College and Institute Act, RSBC 1996, c 52. https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/96052_01

Council of Ministers of Education, Canada. (2007). *Ministerial statement on quality assurance of degree education in Canada*. <http://www.cmec.ca/Publications/Lists/Publications/Attachments/95/QA-Statement-2007.en.pdf>

EducationPlannerBC. (2023). *Credentials*. <https://www.educationplannerbc.ca/plan/start/credentials>

Government of Alberta. (2018). *Alberta credential framework (ACF)*. <https://open.alberta.ca/dataset/c8ff10eb-eccc-448b-92f6-c91ac8e3b482/resource/ea7b90da-52bb-4265-84d4-5d0eb34a5181/download/alberta-credential-framework.pdf>

Government of Ontario. (2023). *Ontario qualifications framework*. Ministry of Colleges and Universities. <https://www.ontario.ca/page/ontario-qualifications-framework>

Liu, Q. (2020). The impact of quality assurance policies on curriculum development in Ontario postsecondary education. *Canadian Journal of Higher Education*, 50(1), 53–67. <https://doi.org/10.47678/cjhe.v50i1.188301>

Moodie, G., & Wheelahan, L. (2022). Credentialing micro credentials. *Journal of Teaching and Learning for Graduate Employability*, 12(1), 58–71. <https://ojs.deakin.edu.au/index.php/jtlge/article/view/1564>

Royal Roads University Act, RSBC 1996, c 409. https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/96409_01

Taylor, S. C., & Soares, L. (2020). Quality assurance for the new credentialing market. *New Directions for Community Colleges*, 2020(189), 67–82. <https://doi.org/10.1002/cc.20398>

Thompson Rivers University Act, SBC 2005, c 17. https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/05017_01

University Act, RSBC 1996, c 468. https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/96468_01

Institutional Governance: Stories from the B.C. Post-secondary Sector

This chapter shares how some B.C. institutions have wrestled with existing and new policies in order to define and support micro-credentials within their unique context.

Chapter Audience:



Administrators

KPU's Development of a New Micro-credential Policy

David Burns is associate vice president academic at Kwantlen Polytechnic University (KPU). He took up the position in October 2021. Prior to this role, he served as vice chair of KPU's senate where he was involved in the development of governance processes that resulted in KPU's academic policy AC15 (<https://www.kpu.ca/sites/default/files/Policies/AC15%20Micro-credentials%20Policy.pdf>) and academic procedure AC15 (<https://www.kpu.ca/sites/default/files/Policies/AC15%20Micro-credentials%20Procedure.pdf>), both specific to the proposal, approval, and implementation of micro-credentials. Below, he provides insights into the collaborative process behind the development of these policies and their impact on the institution.

Note: The perspective of his former colleague, Rajiv Jhangiani, who was associate vice president teaching and learning during the policy development phase, is captured in a podcast that can be accessed through the *Suggested Resources* section.

What motivated the development of a micro-credential policy at KPU?

"There's no denying that conversations about micro-credentials were in the air. To translate that buzz into action, we had strong champions. Our president, Alan Davis, had been thinking about things like alternative credentials for some time. He was working closely with our associate vice president for teaching and learning, Rajiv Jhangiani, on ways that KPU could do that. When you have two people at that level who are focused on moving something forward, that's really important.

"I would say that there is another component to this. One of the things I like about working at KPU is that it's big enough to do big things, and yet small enough to try new things. There was, as a result, a natural appetite for trying this new approach to the recognition of achievement. My colleagues took the attitude that 'if we're going to look into this, let's invest substantially and devote our attention to developing it well.' One of the things that we wanted to do was to make micro-credentials permanent. We didn't want this to be a short-term quick project. We wanted this to be an enduring change in how we do things. To do that, you need formal policy."

KPU defined micro-credentials as distinct from short-duration completion-based learning. Explain what drove the creation of these two distinct types of programs.

"In developing a policy governing micro-credentials, we wanted to first define what they are. In particular, we wanted to differentiate micro-credentials from short duration completion-based learning.

"Continuing & professional studies (CPS) often responds to external opportunities that have short timelines. For their audience, there is often no need for formal assessment and limited value to associating credits to the program. What matters most is the ability to be responsive and act quickly. The micro-credential policy clearly identifies that these types of programs are not micro-credentials. It also describes an expedited approval process for these programs since the ability to move forward quickly is essential. These programs are approved by a small committee composed of appointed members. This speeds things up. But, that's also the limitation of this approach. Since they are not senate-approved, these programs are vulnerable to the critique that, say, 'a particular individual wanted to do this.'"

There is less shared ownership of these programs. Also, they are less stable. By definition, if something can be created tomorrow, it can be discontinued the day after.

"We envisioned micro-credentials as being built to last. For this to happen, more people need the opportunity to participate in the decision to offer them and have their say. Micro-credentials are approved by senate. As a result, the process of approving a new micro-credential takes more time, but once approved, it is more enduring.

Micro-credentials are defined in the policy as arising from **short duration experiences** where the learners are **formally assessed**. They can be either **credit-bearing or non-credit bearing** and are **approved by senate**.

"You can see that we created two types of approaches to meet two different needs of the institution. One is important to allow us to experiment or respond quickly to external opportunities, but these programs are often ephemeral. Then we have micro-credentials that can be similar in scope, but include assessments, and once approved enjoy the full democratic support of the institution because we decided as a whole that we would offer them."

"The micro-credential policy was approved in September 2021. In the year and a half since then, we've approved several short duration completion-based offerings. We are working on launching the first formal senate-approved micro-credentials right now. This gives you a sense of the difference between the two types of programs."

What are some considerations in developing a micro-credential policy?

"Policy is a complex system. It's not like a strategic plan where you're trying to articulate compelling values that can capture collective ideals and inspire people. Policies are structural, and in the end, mechanical. They are like gears. They are almost mathematical in their construction. So, at a certain point, a new policy begins with somebody sitting down and drafting a first version of the policy. You've got to just put some ideas down on paper and see if it's going to work. A small group of us worked on these initial drafts.

"For micro-credentials, the way that you imagine them is unusually important. For other policies like academic appeals, there are all sorts of fixed concepts that you can draw from in creating the policy. You can criticize them, and you can say 'we should do it differently,' but there is a starting point. With micro-credentials, there wasn't. It's explicitly designed as 'not normal credentials.' It was harder than usual to discuss them in the abstract because we didn't have a precise definition.

"In fact, on the issue of terminology, we debated from the first day to the last day of that process what the words mean. In the discourse of micro-credentials, some of the language is analytic and descriptive, and some is aspirational. The aspirational language does not

work in policy. It just doesn't. Aspirational often means things that don't exist, or concepts with disputed meanings, and policy needs to refer to at least tentatively concrete concepts.

"One of the big challenges of micro-credential policy was that the second-order effects were not known. If micro-credentials are approved by senate, then micro-credentials plug into the set of existing policies that the senate oversees. How are they going to connect to other things in the system? It's like plugging a new part into a car that's never been put in a car before. How does it plug into the alternator? What kind of power draw is it going to cause?"

"We had to map that out. We had to go through a lot of 'if A, then B' scenarios. 'If we do this, what will that enable people to do when it plugs into everything else in the system?' If a micro-credential policy is approved by the senate, how does it connect to other policies governed by the senate? Do the senate's appeal rules or our other credential rules apply?"

"In many cases, you didn't want that because micro-credentials are not supposed to be just shorter versions of things that we've done before. They are supposed to be a categorically different thing. So, a lot of the policy drafting process was spent mapping out these implications. You consider things like, 'Is it transcribed? No. If it's not transcribed, where is it recorded? How is that record kept and what regulates it?' You have to run the logic through. It's a pretty intricate process."

How was the community consulted during the development of the policy?

"Writing a draft got the ideas on the floor. Next, we consulted the community through the governance process (i.e., senate discussions).

"This allowed us to have the conversation in public, not behind closed doors. The transparency was important. You can imagine how people come to the discussion with different lenses. One person might be interested in micro-credentials for the opportunity to innovate and question learning and teaching on a deep level. Another person might be interested in the strategic opportunities for the university. Another might be looking for ways to operationalize this and focus on the policy component. These people come to different conclusions about the policy. Allowing everyone in the community to hear their perspectives and explanations about how different components of the policy would work, or not work, is important. It contributes to a shared understanding about how the policy evolved and why certain elements are included.

"Going to governance also forces you to think about how this is going to impact different groups of people that you don't necessarily encounter every day, because they're going to vote on the policy. You have to consider what's going to happen when we go to the senate with this policy; how will representatives from this faculty or that faculty respond? You have

to really think that through. That's the beauty of democratic governance. It forces people, like me, to try to understand more about the lives of the people impacted by the decisions that I am proposing that we make.

"Micro-credentials are new. They bring up all kinds of fundamental educational philosophical questions, as well as operational questions, about how to roll them out. Inevitably, people in different corners of the university will say that we should have done it in a different way. But going fully and properly through the senate on the policy, and then on the approval of the micro-credentials, means that we own the decision together. That's ours. Whether you like it or not, we had the process move through, we voted, this is what we decided. If you put something through the senate, then collectively we own that decision. The process gives legitimacy to policy. This is incredibly important in a university environment."

Top Tips from KPU's Experience

1. **Take your time with the structure, so that you can go fast when it's done.** Invest the time and effort to thoughtfully craft policies and procedures for creating and implementing micro-credentials at your institution. It took KPU over a year to hash out theirs. By going more slowly at this stage, you'll be able to accelerate the implementation process.
2. **Balance innovation and system coherence.** An institutional policy and procedures framework is like an ecosystem, where introducing a new element can result in significant changes, some of which may be beneficial if you anticipate them and their impacts. They can also be dangerous because they could result in something important inadvertently being replaced or by causing confusion in another area of your institution. The existing credential system works well because it's been in place for a long time and countless mistakes have informed its growth and evolution. As you work to add new components to it, adopt a systems-thinking mindset and balance the desire for innovation with the need to maintain the health of a complex system.
3. **Governance and broad consultation are indispensable.** Micro-credentials represent a significant shift in how we think about credentials, and that touches everyone's work.

A credential is a fundamental unit of interaction between faculty and departments in the post-secondary system. Changing something so important will generate differences of opinion about how to move forward. People need to feel that they have a say in the process.

4. **Formalize the process into policy.** Transform the support of champions into formal structures that will outlast them. Leaders come and go, but the initiatives should outlast them. Formalizing the process into policy also distributes leadership. At KPU, several of the people who were instrumental in moving the policy forward have moved on to other roles. Yet the policy is still in place and others have picked up the mantle of moving it forward.

UBCO's Development of a New Micro-credential Policy

Michelle Lamberson is director of flexible learning special projects in the office of the provost and vice president, academic at the University of British Columbia Okanagan Campus (UBCO). She provides strategic support to innovative teaching, learning, and curriculum initiatives. She was involved in the development of UBCO's policy governing micro-credentials, and is currently overseeing support structures for the development of the institution's new micro-credentials.

Interview

Tell us about UBCO's micro-credential policy.

"UBCO doesn't have a micro-credential policy, per se. In 2016, working with colleagues across the campus, we began a conversation around how to recognize a broader set of student achievements. How do we recognize learning and how do we document it? What's the evidence? The goal was to help learners understand what they've learned. Out of those year-long conversations came a set of policies that govern non-degree offerings.

"On the credit side, the conversations centered around scoping out the traditional levels. Which non-degree credentials were needed at the undergraduate, post-baccalaureate, graduate, and post-graduate levels?"

"It will be interesting to see how the micro-credential ecosystem evolves as we go forward

and where each institutions chooses to focus its offerings. For us, the focus to date for our externally offered micro-credentials has been at the post-baccalaureate level.”

“On the non-credit side, our discussions led us to an understanding that there were also different achievement levels. We captured those in our non-credit credential framework. In this credential framework, there are four levels of achievement.

“The first level is attendance – we know (we can verify) you were there. We call that a ‘letter of attendance.’

“The next layer is completion – we know you were there, and we know you completed all of the tasks that were put before you. We are not saying anything about the level at which you did them, but you did them. There can be some rigour around that – for example, perhaps you had to do reflections on your learning. However, there isn’t a defined standard – grade levels, percentages, etc. – against which that completion is measured. We call that a ‘letter of completion.’

“Then there is the next level – we know you were there, we know you completed all of the tasks, and you did so to a particular, defined standard (e.g., a competency rubric). This is a ‘letter of proficiency.’

“All the above are programs that are shorter than 150 hours. The authority to approve and discontinue them is delegated from the senate to the faculties or colleges that wish to offer them.

“Finally, there is a non-credit certificate. It is for programs that are longer than 150 hours of learning. The credential verifies that the learner was there and that they completed all the required tasks to a defined standard. It can be composed of one or more of the aforementioned credentials (i.e., a stacked credential), but it must have a coherent set of learning outcomes for the certificate as a whole. For this larger credential, the senate must approve the program.

“Policy O-129: Non-Credit Credentials (https://senate.ubc.ca/files/2021/08/O-129-Non-Credit-Programs-FINAL_0.pdf) describes our framework for non-credit offerings. The letter of proficiency and the non-credit certificates are the two credentials that map onto the B.C. framework as micro-credentials, given the importance of robust assessment in the micro-credential framework.

What brought about the need for a policy at UBCO?

“It’s hard to pin down exactly what caused the conversation to begin. It’s a culmination of a decade-long conversation around teaching and learning innovation, and the changes they brought to how we view learning and learning recognition. The development of the internet

opened flexible ways to access knowledge. Suddenly you could have a museum's archives online and could access that knowledge whenever it was convenient for you to do so.

"A good example of how this played out locally is in Makerspace UBCO. If you want to use the makerspace (a space with 3D printers and other such equipment), we need to ensure you can operate safely. Once you earn that badge and we feel you understand safety in that space, you can choose which equipment you want to become proficient at using. Once you learn and earn the badge for one, or more, equipment, you may decide to facilitate others' learning with some leadership training. We can also recognize that with a badge.

"And I think there were also outside providers like LinkedIn Learning that started to offer digital badges to recognize learning. Learners could own that learning recognition, share it publicly, or choose who to share it with. That popularized the concept of learner-owned credentials, modularized learning recognition, and it became part of the culture of what people expected when they learn something new.

"You can see how there were these conversations about flexibility, about customizing a learner's journey, about recognizing learning along the way. It was changing how we view learning and education. Some of our faculty wanted to leverage those opportunities and innovate in their classroom. I think it was an idea whose time had come and people wanted to use it. To make that happen, we needed to define some credential entities and the process governing them. We needed to clarify it and provide structure to it in order to support it. We needed policy.

How was the policy developed?

"The need for policy brought the conversation to the senate, specifically as part of the senate curriculum committee. As it should – if it was just a group of people working on this in the provost's office, you wouldn't get the types of institution-wide conversations that were needed.

"The challenge with embedding this as part of the senate curriculum committee is that the committee oversees a large portfolio and we couldn't have the sorts of conversations and work that needed to happen. The curriculum committee wisely chartered a working group. This group was small and nimble and could move things ahead quickly. It included members of the curriculum senate committee who were interested, but it also invited the contribution of people who could bring something to the conversation who were not members of the senate, like me, from the provost's office.

"We began by doing an environmental scan of peer and leading institutions. What were they doing in this space? What were the exemplars? How were they defining things? The interesting thing about micro-credentials is that it is a fast-evolving field so many of the

definitions are still fluid. We had to define these terms for ourselves. For example, we had a conversation about the distinction between a badge and a micro-credential. We ended up clarifying for ourselves that a badge is not a credential; rather, it's the thing that holds the credential. As part of this stage, we also discussed how these types of new credentials would fit within our mission and strategic plan.

"We developed a policy – and the work continues! In our credential framework, we recognize learning achievements at different assessment levels. We also want to be able to communicate robust information about the program. Currently, we are working on how to encapsulate that in the metadata of the digital badges that are awarded at each level. The key fields of that metadata are captured from the requirements defined in the policy, and the information we collect in the approval process. We are now creating templates to ensure some information about the learner's learning was captured for all non-credit credentials issued at UBCO.

"It's important when you form that working group to include different voices. Don't just put people who all share the same vision. Put people on that group who will question everything. The resulting policy will be stronger for it. We did that and what was interesting is that by the time the proposed policy came for an approval vote by the senate, it was surprisingly smooth. I believe we had brought everyone along on the journey, so there were no surprises by the time it came to the senate.

"It took us about a year to develop two policies: first the non-degree (but credit-bearing) credential credit policy and then the non-credit credential policy. The policy was approved in 2018. Our policies are reviewed every five years, so it will soon be time to revisit it."

What's the relationship between UBCO and UBCV's non-credit credential policies?

"Our two campuses have independent senates. It's interesting, how that can spur innovation. UBCO started by building upon existing policy frameworks at UBCV and elsewhere. The existing policies did not specifically differentiate credit and non-credit. Moreover, our non-credit activities were just beginning. We were able to start from scratch in many ways.

"What is exciting is that UBCV is now developing their policy and they are able to build upon ours. Since ours was written five years ago, I anticipate that we will see innovations in their policy that we'll wish to consider when we re-evaluate our own."

Top Tips from UBCO's Experience

1. **Form a nimble group embedded in governance.** Use the institution's existing governance processes, usually the senate or faculty council, to ensure that it includes the voices of every academic unit and is embedded in the institution's policies and procedures. One thing that is critical is to designate a small group that will have the resources to research information and engage in deep conversations. Wrestling with these ideas takes time. Depending on your structure, you may need to create a working group that has the resources and space to do this work. Be sure to invite as many voices as possible to strengthen the policy.
2. **Start with an environmental scan.** Look at what peer institutions are doing and also at what leading institutions are doing. Then map that onto your own institution's existing educational offerings, its mission, and strategic plans. Also consider where your institution's micro-credentials will be focused. For UBCO, because of the institution's missions, existing programs, and strengths, it is in the non-credit, post-baccalaureate space.
3. **Build flexibility into your process.** Micro-credentials are new, and you likely won't get it perfectly right on your first iteration. It's a change process, not a widget. Consider building a program approval and change approval process that's flexible enough to make adjustments easily. Consider also that micro-credentials are not like degrees, in that they may be ephemeral. The skills that industry needs may change rapidly, and your micro-credential will need to change to reflect that.
4. **Keep everyone informed.** As the small working group is researching and discussing policy, be sure to share what's being learned with the community. Make sure members of the senate know what's going on and keep the provost in the loop. This is the best way to overcome obstacles and prevent unexpected surprises. It's a community conversation.
5. **Focus on the learner journey.** There is a change in our society where people expect greater flexibility to customize their learning. They also want their abilities to be recognized on a finer level, and they want the ability to own the recognition of their learning. Embrace that. Use that as a starting point in all conversations. We want to create the best transformative education for our students so that they can explain what they have learned.

UFV's Development of a New Micro-credential Policy

Carolyn MacLaren is director of continuing education at the University of the Fraser Valley (UFV). She was part of a working group that developed UFV's policy governing micro-credentials. This policy is currently moving towards senate review and upon approval will guide the development of micro-credentials at UFV.

Interview

Why did UFV develop a micro-credential policy?

"At UFV, there are really two fundamental types of offerings that are governed differently: those that bear credits and those that do not. Arguably, the existing policies, procedures, and systems that govern non-credit offerings could have been used for micro-credentials. However, that would have limited micro-credentials to non-credit offerings. There was a desire to offer credit-bearing, as well as non-credit micro-credentials, and to do that, we needed to examine our senate-approved policies and develop new ones. Specifically, we needed to find a way to expedite the new program approval process compared to the one used for larger academic ones."

How did UFV develop a micro-credential policy?

"The university formed a small working group to work on this. It included faculty from different areas, as well as me from continuing education, representatives from the registrar's office, members of our academic program planning and quality assurance unit, and people from the provost's office. Having such a diversity of representatives on this group was critical. It laid bare the differences in perspectives of different units at the institution in some of the key concepts affecting micro-credentials. It was very helpful to have those conversations. It also made sure that micro-credentials belonged to everyone at our institution: micro-credentials wouldn't be exclusively owned by academics or continuing studies, for example."

What was the most challenging aspect of creating this policy?

"One of the things we spent a lot of time on was definitions. What is a credit versus a non-credit offering? What is a micro-credential? How is a micro-credential different from a digital badge? We researched other institutions and talked it through. These discussions, while at

time arduous, were important as they showed the wide range of perspectives and understanding of micro-credentials and illuminated what we needed to work on.

“We developed our own definition of micro-credential. At UFV, a micro-credential is a program of skill-based learning of limited scope and duration represented by a verifiable, portable, shareable badge upon completion. There are items in this definition that need to be refined, like what we do mean by ‘limited duration?’ Is it four hours or forty? But it’s a good start. We developed this before the Micro-credential Framework for B.C. Public Post-secondary Education System (2021) came out, but you can see how it aligns with it.

“We concluded that a digital badge is an indicator of accomplishment, an attestation, a verification. It’s information. It’s not exclusive to micro-credentials. It’s an alternative to a transcript. If you think about it, a transcript is not a credential. It’s just the record of it. While we were developing our policy, we also piloted digital badging in continuing education with an eye on how digital badges might be rolled out across the university in some capacity.”

What was the outcome of your policy development work?

“The conversation and policy development took six to eight months to complete. It created some rigour around what a micro-credential is at UFV. We also ended up proposing an expedited process for the review and approval of new micro-credentials. It’s essentially like the process that the credit offerings go through, but it’s faster. And it applies for both credit-bearing, and non-credit bearing offerings – anything we want to call a micro-credential.”

Top Tips from UFV's Experience

1. **Make it a collaborative effort.** Assign a working group to work on the policy and bring together different voices from across the institution. This will make visible the differences in perspectives on how micro-credentials are conceptualized, aspirations for their use, and the operational implications of the choices made. At UFV, the robust discussions helped to come to a common understanding about what a micro-credential is. It was also a critical element ensuring that the entire institution, rather than just one area, “owns” micro-credentials.
2. **Develop specific definitions.** UFV spent a lot of time on defining key concepts. It’s important to do because many of the concepts do not have an agreed upon

definition. It's also important to come to a shared understanding of these fundamental concept at the outset because this will affect every aspect of the program down the line. Some of the important definitions to consider that are inherent in a micro-credential are "competencies" and "short duration."

CapU's Use of Existing Policies to Approve Micro-credentials

Aurelea Mahood is director of academic initiatives and planning at Capilano University (CapU). She oversees the development of all new academic programs, and ensures that appropriate quality assurance processes are in place to guide the periodic review of all senate-approved academic programs of study. She jointly led an institution-wide working group that examined the purpose and place of micro-credentials at her institution. She recounts her experience below.

Interview

What was Capilano University's response to the rise in interest in micro-credentials?

"There was quite a buzz about micro-credentials in the sector. Our provost foresaw the need to define what micro-credentials would be at our institution. This was before the ministry released the Micro-credential Framework for B.C. Public Post-secondary Education System (2021).

"We formed a working group co-led by me and the director of continuing studies. To form a team, we put out a call for interest to the whole institution and those interested applied. The co-chairs selected the team to ensure representation across the institution. The group was ultimately made up of representatives from each academic faculty, as well as areas impacted by micro-credentials such as the career and development centre, and student representatives.

"Together we surveyed how different departments, faculties, and schools at Capilano University were already using micro-credentials in their academic programs. We discovered that this varied a lot by area, with some integrating industry micro-credentials in their academic courses and others never having worked with micro-credentials. We also

discovered that students had remarkable knowledge and interest in micro-credentials. They described the micro-credentials they had obtained outside of the institution (e.g., lifeguarding certifications) and explained how it was useful in finding part-time jobs.

"We also gauged the interest of the institution in using micro-credentials going forward. Academic departments were interested in exploring how micro-credentials can be leveraged to signal specific skills acquired within degree program and/or supplementary to a student's primary field of study. They wanted to give our learners the language to articulate specific skills, knowledge, and attitudes they have acquired as a result of their education. Departments also wanted to explore how micro-credentials could bring new learners to the university, and deepen relationships with local community partners (e.g., businesses, municipalities, non-profits, culture sector, etc.).

"We explored this together for a year, researching information in our areas and bringing it back to the group, and exploring what was being done beyond our walls. We captured our findings in a report that was submitted to the provost. The report was also shared with governance groups like the senate. We envisioned that another group would be convened to operationalize some of our working group's recommendations."

Was policy created or modified as a result of this working group?

"During the year that the working group was doing its exploration, the ministry came out with the Micro-credential Framework for B.C. Public Post-secondary Education System (2021) and with several calls for micro-credential funding. Those two things redirected our efforts.

"Some groups within the institution applied and obtained funding. As a result, the institution had to rapidly assess whether we had a system in place to review and approve these programs. Because the working group was already formed, we could rapidly pivot our efforts to explore this. It turned out that we already had existing policies and procedures in place that could be used to guide how we would handle new micro-credential proposals.

"Non-credit courses at Capilano University are defined by Policy B.108 (<https://www.capilano.ca/media/capilano/ouca/about-capu/governance/policies-amp-procedures/board-policies-amp-procedures/B.108-Credit-and-Non-Credit-Courses.pdf>). There are distinct review and approval processes in place for non-credit courses and programs at the institution, and these would apply to non-credit bearing micro-credentials.

"When the Micro-credential Framework for B.C. Public Post-secondary Education System (2021) came out and defined micro-credentials as training that is less than 288 hours, that was helpful to us. Drawing from Policy S2020-01 Academic Credentials (<https://web.archive.org/web/20220108032927/https://www.capilano.ca/media/capilano/ouca/about-capu/>

governance/policies-amp-procedures/senate-policies-amp-procedures/S2020-01-Academic-Credentials.pdf), it meant that credit-bearing micro-credentials could fit within our existing credential framework as a citation or certificate. From there, the normal course proposal, review, and approval process could apply.

"Typically, new program development is preceded by a senate-approved concept paper. Senate approval greenlights program development, including the allocation of resources and administrative support. If an academic unit is interested in developing a non-laddering citation or certificate (non-laddering meaning that the credential cannot be used to pursue a larger diploma or degree), then the concept paper step can be bypassed as long as the dean approves it. So micro-credentials could bypass the concept paper phase, which is important in moving rapidly to offer a new non-degree program, but the downside is that this could only apply for non-laddering micro-credentials. Laddering micro-credentials could not use this shortcut and would need to build in the time to put out a concept paper before the program is proposed.

"From there, the normal non-degree program development review and approval process apply. A proposal must first be approved within each department or school, then by the faculty council, then the senate curriculum committee, then the senate, and ultimately the board (for programs only). The whole thing, if successful at every stage, takes approximately four to six months to complete."

Are the policies and procedures working?

"It's too soon to tell. We are in the process of reviewing for approval our first non-laddering, credit-bearing, micro-credential in direct collaboration with an industry partner..."

Top Tips from Capilano University's Experience

1. **Examine existing policies and procedures.** Begin your work by examining your institution's credential framework and the policies and procedures guiding them. Evaluate whether these could be used to review and approve micro-credentials.
2. **Find ways to operate flexibly without sacrificing rigour.** New micro-credential programs sometimes need to be reviewed and approved quickly. Are there steps in your program development procedures that might be expedited for micro-credentials

without affecting the rigour of the review? Would doing this require the development of revised steps for micro-credential approval or can existing processes be leveraged?

3. **Focus on learner benefit.** As conversations happen across campus on this new type of credential, keep an eye on the learner. This is why we are exploring these opportunities.

VCC's Use of Existing Policies to Approve Micro-credentials

Adrian Lipsett is dean of continuing studies at Vancouver Community College (VCC). He shares his team's experience in rapidly putting together a micro-credential called the Award of Achievement in Production for Animation and VFX (<https://www.vcc.ca/cs/animation-vfx/>).

Interview

How did your micro-credential fit within your existing credential framework?

"VCC does not have a dedicated micro-credential policy. We took a look at our existing Policy C.1.3: Granting of Credentials (<https://www.vcc.ca/media/vancouver-community-college/content-assets/documents/policies/Granting-of-Credentials-Policy-C.1.3.pdf>), which contains our credential framework. We mapped micro-credentials, as defined in the Micro-credential Framework for B.C. Public Post-secondary Education System (2021), to an existing VCC non-credit offering called an Award of Achievement. In the end, we did not need to change or create new policy. We used what already existed."

How did you get this new program approved under tight timelines?

"We put the new program in as a non-credit offering. The review and approval process are faster than for credit offerings. That way, we could use existing governance processes in the time required. We figured that we can always transform it into a credit offering later if we determined that this is a goal. At that time, we would re-apply for approval through the credit-bearing governance process."

"In a way, we used the nimble non-credit governance processes to work quickly and pilot

this new program. It is not going to be perfect the first time through. Through the pilot offering, we will make this training as strong as possible and continue to improve it from what we learn. There's an iterative mindset to this program: We used it as an experiment."

Suggested Resources

Background on KPU's Micro-credential Policy

Rajiv Jhangiani, then associate vice president of teaching and learning at Kwantlen Polytechnic University (KPU), was interviewed as part of BCcampus's Lunchable Learning series. Recorded on April 25, 2022 soon after the approval of KPU's Policy AC15 Micro-credentials (<https://www.kpu.ca/sites/default/files/Policies/AC15%20Micro-credentials%20Policy.pdf>) and Procedure AC14 (<https://www.kpu.ca/sites/default/files/Policies/AC15%20Micro-credentials%20Procedure.pdf>), this 30-minute podcast provides background on the institution's development of a micro-credential-specific policy and procedure.

Prins, H., McKerlich, R. (2022, April 25). Interview with Rajiv Jhangiani [podcast]. *Lunchable Learning*. <https://lunchablelearning.opened.ca/2022/04/11/guest-rajiv-jhangihani/#more-880>

Quality Assurance

Micro-credentials must be trusted – by prospective learners, employers and the community, other institutions, and accreditors/governments – in order to have value. This chapter provides a primer in ways to build that trust through the development of transparent standards of quality.

Chapter Audience:



Administrators

What Is Quality Assurance?

Quality assurance refers to the systematic processes, policies, and procedures that are put in place to ensure that an institution's programs meet or exceed established standards. It is an evaluative activity that applies to program approval, program review, and even organizational review. It aims to maintain excellence in program offerings. Quality assurance protects and maintains the reputation of the institution with learners, other institutions, employers, and other stakeholders by committing to a set of transparent criteria that all of the institution's offerings must meet or exceed. The process is formal, its outcomes are public, and it serves to build trust in the institution's offerings.

Why Develop a Quality Assurance Process for Micro-credentials?

There are many reasons to develop and implement a quality assurance framework for micro-credentials. At its core, quality assurance ensures that micro-credential learners receive high-quality training that prepares them for work. Quality assurance also ensures consistency across all micro-credential offerings at an institution.

Quality assurance is a component of the Micro-credential Framework for B.C. Public Post-secondary Education System (https://www2.gov.bc.ca/assets/gov/education/post-secondary-education/micro-credentials/mc_framework.pdf) (2021):

Quality Assurance

Micro-credentials will be developed, approved and periodically reviewed, through an institutional process that aligns with existing post-secondary standards and policies, for credit and non-credit offerings, to ensure value to learners in meeting education or employment goals.

In addition, in British Columbia, all credit-based credentials should be regularly reviewed as part of the institution's internal quality assurance processes for program quality (i.e., Quality Assurance Process Audit (QAPA) (<https://www2.gov.bc.ca/gov/content/education-training/post-secondary-education/institution-resources-administration/degree-authorization/degree-quality-assessment-board/quality-assurance-process-audit>)).

Who Is Quality Assurance For?

Quality assurance serves many stakeholders. Each one values that institutions have quality assurance processes for different reasons.

For learners, the fact that institutions engage in quality assurance means peace of mind. An institution that has a quality assurance process for its micro-credential programs is signalling that it cares about the coherence, rigour, and value of its programs.

For other institutions (that may receive the learner as they continue their educational journey), quality assurance provides information about the standards that the institution sets for all of its offerings. It provides reassurance about the merits of any program offered by that institution.

For employers, community and professional organizations, and government or accreditors, it's a way to provide transparency about what an institution values in its programs. It's a way to generate trust in the institution's credentials.

An institution that puts in place a quality assurance process is signalling that it cares about the quality of its offering and, in so doing, it maintains a reputation for excellence in offering micro-credentials. Thus, quality assurance is also for the institution itself.

While all stakeholders value quality assurance, each might define micro-credential quality in slightly different ways. Arcolin & Elias (2002) have identified key performance indicators for micro-credential quality for different stakeholders. Below are markers of quality for each group.

Learners are looking for the following markers of quality in a program:

- Affordable program;
- Short-term (achievable) length of the program;
- Ability to progress in one's career; upskill and/or retool; change career trajectory; or get a new or different job – in essence, they want concrete professional growth;
- Higher wages;
- Understanding of how to apply the target skills;
- Relevance of the assessments to work environment;
- Recognition of target skills by employers;
- Gain more confidence in career path and future;
- Confidence to continue engaging in post-secondary education;
- Authentic alignment of the learning objectives and outcomes.

Employers assess quality using the following criteria:

- Meet a specific workplace need that directly support industry job roles and job descriptions that are in demand;
- Recruit skilled workforce;
- Diversity, equity, and inclusion strategy for recruitment;
- Retain and reskill/upskill current employees;
- Career pathways.

Instructors/faculty look for the following as indicators of a good program:

- Engagement of learners into the program;
- Evidence of learning;
- Authentic assessments;
- Retention of learners into the program;
- Completion rate of the program;
- On-ramps to other educational opportunities;
- Off-ramps to employment;
- Stackable educational and career pathways;
- Curricular alignment to employment;
- Career-readiness;
- Industry engagement and involvement of advisory committee.

Administrators who oversee micro-credentials at their institution are looking for the following factors:

- Meeting a specific workforce development need;
- Learner success, in the program and beyond it;
- Enrollment rate (i.e., how much demand is there for the program?);
- Retention of learners into the program once they register in it;
- Completion rate;
- Revenues generated from the program;
- Whether the marketing is effective (e.g., is the program digitally discoverable?);
- Portability of the credential for learners;
- Value to the learner;
- Validation by employers;
- Equity opportunities for learners;
- Community engagement;
- Compliance with accessibility best practices, policies, or legislations;
- Quality of learning experience (teaching, materials, etc.).

An accreditor or government agency charged with overseeing micro-credential might be concerned with the following indicators of program success:

- Evidence of the quality assurance processes for the program;
- Curricular alignment (see *Curriculum mapping / development of competencies* under the *Quality Assurance Checklist* section below for an example of how to ensure this);
- Employability of graduates;
- Transparency of tuition, fees, and costs to learners;
- Return on investment for learners.

Institutions should consider the perspectives of each of these stakeholders when developing quality assurance standards for micro-credential programs.

How Are Quality Assurance Processes Developed?

Each institution develops policies and procedures to ensure the quality of its micro-credential offerings. These vary based on the institutional context, its mission and priorities, its governance processes, and its existing systems.

Quality Assurance for Micro-credentials vs Other Credentials

It may be the case that your institution's existing quality assurance processes can be used to review and approve micro-credentials. For example, see *Capilano University's Use of Existing Policies to*

Approve Micro-credentials in the chapter *Institutional Governance: Stories from the B.C. Post-secondary Sector*.

Micro-credentials are often developed and launched rapidly to respond to evolving workplace need or to leverage a funding opportunity. In recognition of this need for nimbleness, some institutions have developed a rigorous but expedited review and approval pathway for new micro-credentials. For an example, see *BCIT's Expedited Process to Review Micro-credentials* in the textbox below.

Many institutions have separate quality assurance processes guiding the review of credit-bearing and non-credit-bearing programs. Ask yourself whether the two types of micro-credentials can or should be assessed by the same processes. This will likely depend on your institution's existing systems.

Focus on Outcomes

Micro-credentials may be substantially different to the suite of credentials that your institution offers and therefore require distinct quality assurance processes. Indeed, a recurring theme across several micro-credential quality frameworks is the need to focus on outcomes (Liu, 2020; Moodie & Wheelahan, 2022; Taylor & Soares, 2020). This contrasts to the focus on inputs that is used to assess the quality of traditional credentials in higher education.

For example, program design (learning outcomes, assessments, and learning activities) is a staple indicator of degree quality. This input is likely to also be a marker of quality for micro-credentials. However, given the work-alignment nature of micro-credentials, it may be most useful to evaluate the quality of the program based on its results rather than its inputs. For example, were graduates able to find jobs once they earned the micro-credential? Were their employers satisfied with their level of ability? Was the micro-credential accepted by another institution as a basis for further training?

Assess the Entire Life Cycle of the Micro-credential

The quality of a micro-credential depends on applying good practices and meeting quality standards at all stages of the micro-credential's creation and implementation. For example, a micro-credential that failed to conduct a proper needs assessment or environmental scan may be well designed from a learning perspective but may not be of high quality since it does not address a need of learners or employers.

Arcolin & Elias (2022) propose indicators that can be used to assess the quality of a micro-credential across its life cycle. At each stage, different data provide that insight. Accordingly, look for the following indicators of quality across a micro-credential's lifecycle.

At the **Analysis** phase of program development (i.e., ideation, team formation, and feasibility), a quality program will consider:

- The alignment of the program with the institution's or department's goals and/or mission;
- Whether an institution or department has the capacity to offer the program (this includes an analysis of personnel capacity, financial resources, competing demands, etc.);
- Feasibility analysis (needs assessment and environmental scan), to ensure that there is a market for the program;
- A SWOT analysis (Strength, Weaknesses, Opportunities, and Threats) to ensure that relevant aspects of developing and offering this new program are considered;
- Analysis of skills gap, to ensure that the proper skills are targeted by the program (rather than make assumptions that could miss the mark);
- Assessment of the technology needs to offer the program.

During the **Design and Development** phases, the following should be monitored in a quality program:

- Stakeholder involvement, engagement, and buy-in;
- Contributions from both the institution and employers to the design of the program and its assessments and standards.

After the program is **Launched and Implemented**, the following can be used to assess quality:

- Time-to-market of the program (from ideation to offering – an indicator of the institution's responsiveness and efficiency);
- Identification and use of a minimally viable product, to ensure a focus on core aspects of the training;
- Number and follow through of marketing leads generated through the program's marketing tactics;
- Number of enrollments;
- Alignment to industry and to employment/jobs;
- Transparency, validation, recognition, and reward of learner skills.

Finally, at the **Evaluation** stage, the following markers of quality can be used:

- Surveys of learner's expectations, experiences, perspectives, and outcomes;
- Learner completion rate;
- Learner outcomes from completing the micro-credentials, such as average increase in pay, percentage of learners who found a job in the field, number who received a promotion, etc.;
- Revenues generated by the program;

- How and where learners share their micro-credential (i.e., is their digital badge shared on LinkedIn?)
- Whether employers modify and integrate their recruitment, hiring, retention, and promotion processes to include the micro-credential training;
- Iterative improvement of the program over its successive offerings.

The key is not to develop a micro-credential quality assurance process that touches on these exact standards, but rather to consider whether your institution's quality assurance standards assess different stages in the development of a micro-credential, not just its final product.

Consider What Stakeholders Want to Know

As you develop a quality assurance framework for your institution, ask yourself what information a stakeholder of this program (e.g., prospective learners, employers, other institutions accepting the micro-credential, government agencies, etc.) would need in order to understand what the learner has done to earn the credential. What might convince them of the program's validity, merit, and value?

The above section *Who Is Quality Assurance For* provided suggestions for including quality assessment standards that different stakeholders might value.

Also consider the following questions:

- How can you make the process as transparent as possible?
- How can you ensure communication with all stakeholders?
- How can you encourage that micro-credentials don't just meet the standards, but aim to exceed them in some areas? For example, do you want to provide examples of different levels of achievement for each criterion, like in a rubric?

Micro-credentials are different to many other types of credentials by virtue of their alignment with the world of work. Ask yourself if there is a place for employer endorsement in the quality assurance process.

Guiding Principles

Usually, a quality assurance policy includes guiding principles for quality assessment of the credential. To inspire ideas about what principles may become part of your institution's policy, take a look at O'Leary et al.'s (2022) article. These authors propose a set of eight principles for quality frameworks for micro-credentials in the post-secondary sector. They advise that the quality assurance process encompass the following features:

- Academic and learner-centred (the programs are academically rigorous and offer value for learners);
- Academic freedom and accountability (micro-credentials are evaluated using the methods of academia and include peer review to assess quality);
- Quality culture (institution commits to continual improvement – quality assessment is not a once-and-done process);
- Informed practice (informed by the interests of internal and external stakeholders);
- Proportional implementation (the creation and administration of micro-credentials should be proportional to the volume of learning);
- Comprehensive and publicly accountable (all processes for assessing quality should be available to the public);
- Measurement, reporting, and academic governance (the institution collects data about the outcome of its programs and learners, and uses that data to improve its offerings);
- Consistent with policy and international effective practice (the policies and processes are aligned with others at the institution and follow quality assurance best practices in higher education).

Following wide-spread consultation with employers and the public in Ontario, the Higher Education Quality Council of Ontario (HEQCO) developed a set of recommendations for setting up a quality assurance framework for micro-credentials (Pichette et al., 2021) including the proposed principles shown in Figure 1. Though not captured in the figure, the authors note the importance of transparency throughout the entire process.

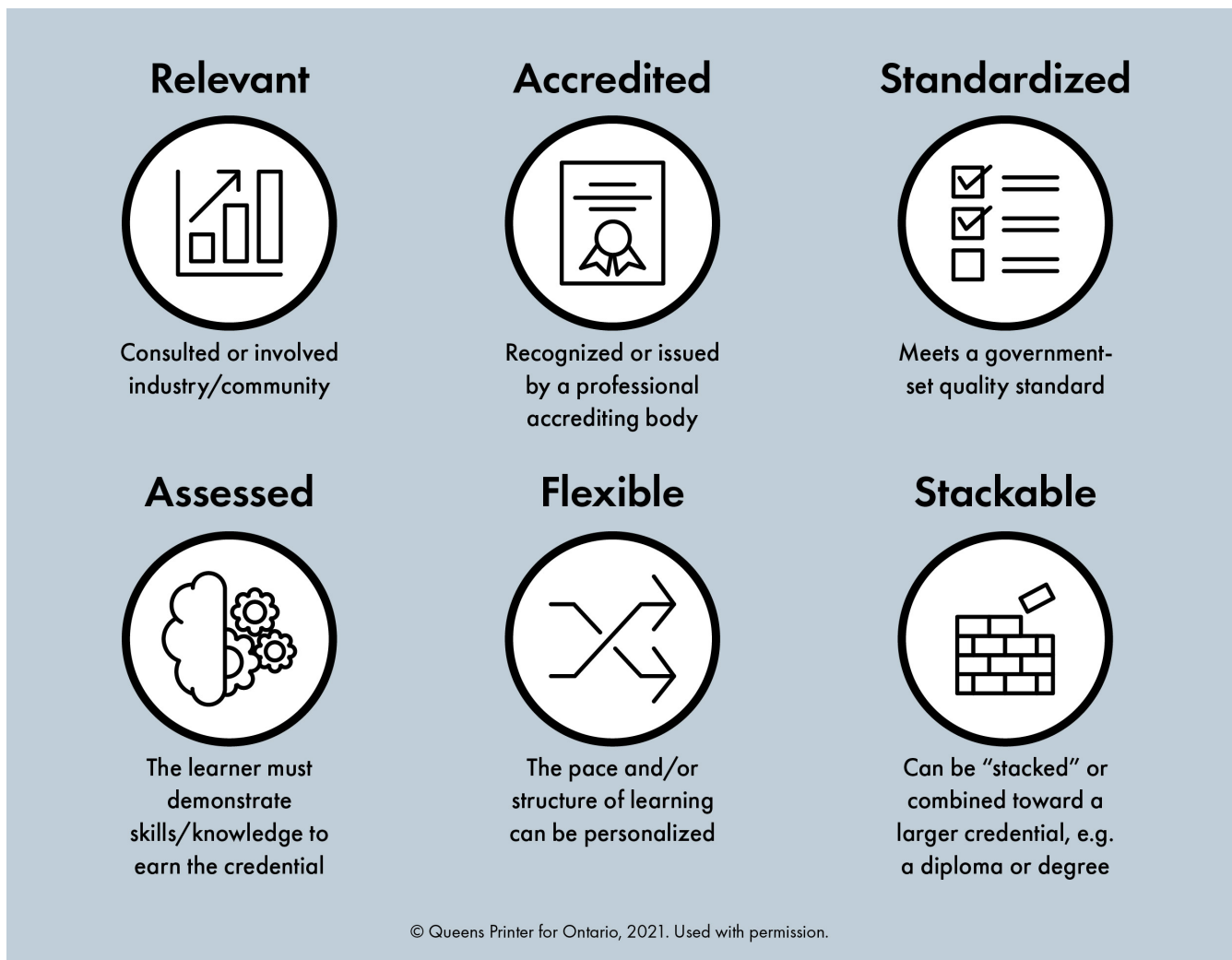


Figure 1. HEQCO's guiding principles for developing a quality assurance framework (Pichette et al., 2021, reproduced with permission). [Image description]

Quality Assurance Procedure

A quality assurance procedure provides a set of criteria (and accompanying standards) against which all the institution's programs are evaluated before they are approved and can be offered. These standards should also be used when the program is periodically reviewed after its approval.

The procedure should provide details about who is involved, what their roles are, when they conduct the work, in what context (e.g., as part of senate curriculum committee work), how the approval of new programs takes place (e.g., submitting specific forms to an approving body), and how frequently programs are reviewed to ensure they continue to meet the quality standards. As an example, Carleton University's procedure for the review and approval of new micro-credentials is

available online (Carleton University, 2022 (<https://web.archive.org/web/20240812220736/https://carleton.ca/curriculum/wp-content/uploads/MicrocredentialQualityAssuranceProcess.pdf>)).

Stories from the B.C. Post-secondary Sector

BCIT's Expedited Process to Review Micro-credentials

The British Columbia Institute of Technology (BCIT) has a well-developed quality assurance process (<https://www.bcit.ca/academic-planning-quality-assurance/>). Each school is responsible for setting up its own School Quality Committee (SQC) (https://www.bcit.ca/files/apqa/pdf/school_quality_committee_guidelines.pdf) that reviews and approves new and existing programs. Laurie Therrien is the manager of corporate training and industry services in the school of construction and the environment. She describes how micro-credentials undergo an expedited review process compared to larger credentials.

Interview

What are the steps to approve a micro-credential at BCIT?

"Like other educational institutions, the 'higher' the credential, the more stakeholders are consulted in the program approval process. Our micro-credentials go through a rigorous approval process, but it is fairly 'agile.' I smiled as I used that term because the proposal goes to the 'agile quality committee' that has a special interest in micro-credentials and badges. What happens is that the proposal is created, the dean signs off on it, it goes to the agile quality committee, and then the dean presents it at a deans' council. So, in the end, micro-credentials go through a formal approval process, but it's pretty simple."

Quality Assurance Checklist

Quality is the result of considered and continuously improved policies and procedures impacting activities across an institution. The elements below, adapted from the eCampusOntario Micro-credential Toolkit, are frequently identified in quality systems; however, they can be arranged differently, with greater or lesser emphasis placed on individual components. The elements are

organized into four main categories. The first two are inputs, and the last suggests ideas for outcomes.

Program Design

1. Alignment
2. Credential design
3. Course design
4. Learner perspectives
5. Employer perspectives
6. Delivery
7. Recognition of learning

Resources

8. Instructor preparedness
9. Technology infrastructure
10. Equipment and facilities
11. Learner support
12. Administrative support

Processes

13. Transparency of the process
14. Evaluation and continuous improvement

Outcomes

15. Satisfaction
16. Completion
17. Employment outcomes
18. Pursuit of further education
19. Credibility and reputation

Below, these items are described in more details, including areas to consider as you build and refine your quality assurance system for micro-credentials.

1. Alignment

The first element to consider in evaluating the quality of a micro-credential is its alignment to the institution's missions, priorities, and other programs. Some questions to consider include:

- Does the micro-credential align with the institution's mission and values?
- Does it support the institution's strategic goals?
- Does it duplicate existing offerings?
- Does it complement existing programs at your institution?
- Is your institution the right one to offer this micro-credential?
- Are similar programs offered by other institutions that might be better positioned to offer it?

2. Credential Design

The next thing to consider is the structure of the credential. This means examining the components that make up the credential (e.g., the coordination of its courses), the level at which it is pitched, its prerequisites, and its educational pathways.

Curriculum mapping / development of competencies

When a program is composed of several courses or modules, each one tends to be developed in turn. It is therefore important to undertake a curriculum or competency mapping exercise to ensure that learners will achieve all of the learning outcomes or competencies by the end of the program, and that learners gradually develop greater mastery as they progress through the program. For this reason, several quality assurance processes require that a program proposal include a curriculum map.

A curriculum map shows the alignment between the program-level learning outcomes or competencies and the contents of each course. It usually also captures the level of competency or learning outcome achieved in each course – represented as introduced (I), reinforced (R), mastering (M); or novice, developing, and mastery; or similar terms showing the gradual development of skills.

The curriculum map is typically visualized as a table. Table 1 shows an example. A way to think of it is as a skills matrix for the micro-credential. The *Suggested Resources* section provides additional resources to create your own, including a digital tool freely available to B.C. institutions.

Table 1. Sample curriculum map.

Micro-credential competencies	Course 1	Course 2	Course 3	Course 4	Course5
Competency 1	Novice	Developing	Mastery		Mastery
Competency 2		Novice	Developing		Mastery
Competency 3			Novice	Developing	Mastery
Competency 4	Novice		Developing	Mastery	
Competency 5				Novice	Developing

Note: The use of colour is optional but can help to quickly assess the progression and achievement of the micro-credential's competencies or learning outcomes. Some curriculum maps switch the placement of the rows and columns and put the competencies/learning outcomes along the top row and the courses that make up the program in the rows below it.

Some questions to ask yourself as you review a curriculum map:

- Do the first courses in the course sequence require that learners have prior competencies as they begin this program? Is this captured in the program's prerequisites?
- Are there competencies or learning outcomes that a course should cover that it does not?
- Are there competencies or learning outcomes that a course covers that it should not and would best be placed in another course?
- Are all of the micro-credential competencies or learning outcomes addressed through the completion of this set of courses?
- Does the sequencing of courses make sense, i.e., does it help learners build on the skills they developed in previous courses? Can the learner gradually develop their competencies as they progress through the program?
- Are all the micro-credential's competencies acquired at the target level by the end of the program?

Structure

There are many ways to structure the learning in a micro-credential. The process for earning the micro-credential should be transparent to all individuals seeking to earn it. Some questions to consider:

- Is the micro-credential composed of one course or several courses?
- Can the courses be taken in any sequence, or must some be successfully completed before the next one is taken?

- Do learners have any options, such as a choice between two electives to meet one requirement of the program?

Educational pathways

There are several elements that pertain to the micro-credential's educational pathways:

- Level targeted
- Prerequisites
- Stackable learning
- Laddering opportunities

Level targeted

Ask yourself: Does the micro-credential target the correct level for this skill set? For example, is the program aimed at high school graduates? At mid-career professionals looking to update their existing expertise? At workers who want to pivot their skills toward a new industry? Based on this, is the appropriate level for this micro-credential undergraduate or post-graduate?

Prerequisites

Will learners be required to have specific competencies or experience before they can enroll in the program? How will this be assessed? What can prospective learners do to acquire these requirements if they do not meet them?

Stackable learning

Is the credential comprised of smaller micro-credentials that can be combined to create a larger milestone credential?

Can the micro-credential be broken down into smaller components (i.e., micro-competencies) in order to make the learning more accessible and achievable for learners? In this way, learners who leave the program after achieving some but not all of the micro-credential's competencies can still receive recognition for the ones they have attained (i.e., they do not leave empty-handed). This can be a source of motivation for some learners.

Do you offer related micro-credentials that have courses in common, thus making it easier for a learner to acquire the second micro-credential once they complete the first? For example, if a micro-credential in web design includes a course in fundamental design, WordPress, and search engine optimization; and a micro-credential in graphic design includes fundamental design, fonts, and colours, a learner can rapidly achieve a second micro-credential once they have completed the first because they have already completed one of the three required courses.

How does the stacking of smaller micro-credentials toward the milestone one work? Do learners simply complete the smaller ones and are automatically granted the larger one? Do they have to apply for the larger credential? Do they have to carry out additional tasks, e.g., assemble and submit a portfolio? Are policies and procedures about how to do this clearly communicated to learners?

Laddering opportunities

How will the micro-credential, or set of milestone credentials, ladder into other credentials? Are there opportunities to use this micro-credential as an entry requirement or as an “advanced placement” requirement (or a form of prior learning and assessment recognition) for larger programs like diplomas and degrees? Where is the micro-credential recognized for further learning? Are these opportunities for further learning well identified for learners, and is the process for using the micro-credential well explained?

Each micro-credential and the program it is intended to fit into should be mapped and communicated to demonstrate opportunities for continued training and to indicate the value of the program to learners.

Length

What is a reasonable length of time to complete the micro-credential?

Competency-based education typically looks at time in a course differently to the traditional post-secondary method of measuring a credit hour (i.e., the Carnegie credit hour (McQuarrie, 2016)), which is based on time spent in the classroom or on a learning task. In competency-based education, some learners may spend a few minutes demonstrating that they can already do a skill and move on to the next unit, while others will devote hours or days acquiring that same skill. The unit of measurement is the competency, not seat time.

That said, learners need some indication of the length of time they should expect to devote to a program. It may be related to the average amount of time that a learner new to this competency

will take to master it, or to a maximum amount of time that learners may take to complete a program at their own pace. Setting a time indicator for a program is also useful for administrative purposes, such as for planning and allocating resources (e.g., compensation for an instructor).

For these reasons, each micro-credential should have some indication of scope and time. As you evaluate a micro-credential, ask yourself:

- For a learner who has not yet acquired these competencies, what is the average amount of time that they will need to master the competency?
- Is this time reasonable, from the point of view of:
 - The time it takes to acquire this competency?
 - The schedule of a typical learner (e.g., if learners are expected to complete the program while holding a full-time job, will they have sufficient time to achieve these competencies on a part-time basis)?
 - Timelines that aren't so long that the coherence of the program and the acquired competencies are likely to be lost or become out of date?

3. Course Design

The design of courses that make up a micro-credential should be clear, focused, and ensure explicit and reasoned coherence between the intended learning outcomes or competencies, the assessments, the strategies for learning, and the resources. This is likely to be the section of the checklist most familiar to those involved in the quality assurance of traditional academic courses.

Competencies/learning outcomes

The competencies or learning outcomes targeted by a micro-credential should be developed based on data and/or industry consultation. They should address the needs of employers and be mindful of learner requirements. They should also align with milestone competencies, pathways, and assessments (Duklas, 2020 (<https://www.bccat.ca/pubs/Reports/MicroCredentials2020.pdf>)).

Assessments

A micro-credential should provide learners with meaningful feedback on their progress and performance to help them improve. Ask yourself:

- Are learners given sufficient opportunities to practice and to receive feedback before the formal assessment (i.e., does the course incorporate frequent formative assessment opportunities)?

- Are multiple sources of feedback provided to learners as they practice?
- Do these practice opportunities mimic the formal assessment task to a sufficient extent that mastering it will result in a successful outcome when doing the formal assessment?
- Can learners determine when they have mastered a competency and are ready to take the formal assessment?

A micro-credential should also provide confirmation that the learner has achieved certain competencies to a defined standard. Stakeholders will be interested in how this was done as a measure of the trust they have in the micro-credential. For these summative evaluation methods, the assessment should be rigorous and fair. Ask yourself:

- Are the assessment methods aligned with the learning outcomes or target competencies for the course?
- Is the assessment fair for all learners?
- Are there systems in place to accommodate learners with different abilities, such as for someone who is colour blind or for whom English is not a native language?
- Does the assessment method authentically capture how the learner would use this competency in the workplace?
- Is the assessment appropriate for the learners' level of knowledge, skills, and competencies?
- Are there different levels of achievement possible? Is this relevant to an employer? Will this be captured in the recognition of learning (e.g., the digital badge awarded upon successful completion of the program)?
- Are the assessment methods transparent to a learner? Do learners know what is expected for a successful demonstration of competency?
- Would an employer accept this assessment as an indication that the learner can perform the task in relevant workplace contexts?
- Have you taken steps to ensure academic integrity, e.g., by verifying the identity of the learner?
- How will the successful demonstration of the assessed skill be documented and archived?

Currency of content

The content of the micro-credential should be up-to-date, relevant, and engaging. In some industries, the contents can have an expiry date, so it is important to check with employers about the currency of the materials used in the program. Ask yourself:

- Are the competencies timely?
- Is the assessment of competencies valid only for a limited period of time? When will you need to reassess a learner to confirm they still have the competencies? When will industry have changed sufficiently that workers should retrain to update their knowledge?

- Was an employer contacted to ensure that the materials are still relevant and up to date?

Nature of activities

The nature of the activities in a micro-credential program should match the program's target competencies or learning outcomes. Ask yourself:

- Are the selected resources at the appropriate level for the target learners?
- Do the chosen activities align with the target competencies or learning outcomes?
 - Will they help learners achieve those aims?
 - For example, Roessger (2015) argues that in continuing professional development, reflection is suitable for communicative learning (learning a concept or learning "what") but is not important in instrumental learning (learning "how" to do skills through task-oriented problem solving).
 - Consider whether it would be beneficial for learners to interact with other learners to exchange ideas and grow their understanding, or whether individual learning is more suitable.
- If the micro-credential is aligned with workplace competencies, should there be a work-integrated learning component?
- How will applied research or experiential learning opportunities be integrated into the program, as appropriate?
- Should this program include simulations or serious games to replicate the work environment in which the skills will be used?
- Are the learning materials, activities, and assignments authentic to the workplace application of that competency?
- Do learners have opportunities to practice competencies in the same context as they will be assessed?
- Do adult learners have choice and agency in what they learn and how they explore it?

Work-integrated learning and experiential learning opportunities, especially when simulated, require in-depth planning and organization. This should be initiated prior to the design of the program to expedite course development. If simulations or digital assets are required, the content should be developed so that it can be refined and built in conjunction with the design. Any simulations and digital assets must align with competencies or learning outcomes, and should be reviewed by employers to ensure their authenticity.

Format

Consider the delivery format of the micro-credential in the assessment of its quality. The choice to

deliver a program online, in person, or in a blended format should align with the learners and the aims of the course. Consider the following:

- Do prospective learners have the digital literacy and/or access to appropriate technology and the internet to pursue online or blended learning?
- Would this program be of interest to learners in remote areas who cannot travel to your institution?
- Can the competencies or learning outcomes be mastered using online methods?
- If so, what is the best way to help learners acquire these competencies? Would reading a text be appropriate for the learning outcome? Or would watching videos be more suitable? For example, reading text may be suitable in a leadership course, but may not be appropriate when learning to use a software.
- Consider also how you will assess learners considering your chosen format. If learners are taking the course remotely, can they produce a short video of themselves as demonstration of their ability to do a skill? Must they be in person for this step? How will you validate their identity and ensure academic integrity? Will generative A.I. be a potential source of academic dishonesty to consider?

Accessibility

Access is one of the guiding principles of the Micro-credential Framework for B.C. Public Post-secondary Education System (2021).

Access

Micro-credentials should increase access to post-secondary education and be accessible to a range of potential learners. They should provide flexibility, reduce barriers and increase opportunities for employment and life-long learning. Tuition and fees should align with the duration, skill level, learners targeted and expected outcomes of a micro-credential.

As you evaluate your program, ask yourself:

- Will the cost of this program prohibit some learners from registering in it? What tuition support mechanisms may be put in place to support access for these learners?
- Is the design of the program supportive of a range of learner abilities? For example, does it

adopt Universal Design for Learning (UDL) practices (Takacs et al., 2022)?

- Will learners from a range of backgrounds and positionalities see themselves reflected in this program and feel included and welcomed?

4. Learner Perspective

Learner input in the design and approval of a micro-credential can ensure that the program meets the needs of learners where they are. As you evaluate a micro-credential, consider:

- Is there a market for this micro-credential? Was research conducted to determine whether there are sufficient prospective learners to make this program viable? In other words, is there sufficient demand for this program?
- Were prospective learners consulted to assess their needs, pain points, existing levels of competencies and knowledge, and goals for taking this training?
- Has the situational context of prospective learners been investigated and taken into consideration in the format of the program. For example, will typical learners have full-time jobs? Can they travel for the course? Do they require support?
- What are the expectations of prospective learners coming into this program? For example, what activities do they want to engage in to learn the competencies? Who do they value as instructors? What level of product polish do they expect?
- Who do prospective learners view as competitors for your product? (This also provides information about their expectations since the program will be compared against this peer program.)
- Once the program has been offered, has learner feedback on the program been collected and used in the improvement of the program?
- Can learners who earn the credential easily find jobs? Does it help them secure employment?
- Does the training help workers progress in their careers, pivot to new industries, get a promotion, or a pay raise?
- Do learners who earned the micro-credential value the training once they are in the workforce? Does the program appear to align with how they perform these skills at work and is it relevant to what they do?

5. Employer Perspectives

Employer input is central in the creation of a micro-credential. Consulting with more than one employer can give greater insight into what is needed in a variety of workplaces.

Employer needs

Conversations with employers help to establish whether there is a demand for the skills and knowledge that the micro-credential provides in the job market. Ask the partner with whom you are collaborating:

- Does the micro-credential target a set of skills or competencies that are challenging to find in applicants? Or, alternatively, has the institution conducted labour market research to investigate gaps in the competencies that employers want to hire?
- Does the micro-credential have the potential to increase the pool of skilled applicants?
- Is the institution the right one to offer this micro-credential? (Does it have the required resources, expertise, and reputation in this field and among employers?)

Employer consultation on program design

An employer's advice and content review are essential to maintaining the quality of a micro-credential. The employer can provide valuable feedback on the accuracy of competencies/ learning outcomes, the alignment of assessments to real-world practices, and the authenticity of content and activities.

- Is the content of the program current and relevant for industry?
- How long will it stay relevant? What is its lifespan?
- Is the content accurate?
- Will the activities engage learners in authentic practice?
- Do the assessment methods mimic how the competency would be used in the workplace?
- Will you recognize as competent and hire learners who have earned a micro-credential assessed using the stated methods? How much confidence will this micro-credential give you in their abilities?

Employment outcomes

Employers are the recipients of learners who earned a micro-credential and can therefore assess how learners use the skills and adapt them to new environments. Some questions to ask them include:

- Are the employers who hired micro-credential learners satisfied with the competencies of the workers?
- Can the workers who earned a micro-credential apply the skills and competencies they learned in the appropriate workplace setting?

- Can the workers who earned a micro-credential adapt these skills to new situations?
- Has the training resulted in improved performance for the worker or improved outcomes for the workplace?
- Is the employer more or less likely to hire applicants who hold the micro-credential in the future?
- Is the employer willing to publicly endorse the training?

6. Delivery

Consider what happens during the delivery of the micro-credential, for learners and for the team supporting them:

- Were registration processes clear and user-friendly? What sort of questions did prospective learners and learners have about the program or the registration process?
- Are existing policies and practices effective in communicating and managing how the micro-credential is offered?
- Have approval and development timelines matched market expectations?
- Has performance been measured against institutional estimates and expectations?
- Has performance been measured against procedures and processes?

7. Recognition of Learning

Employers hiring for specific skills will want to be able to clearly understand the scope, depth, and quality of a micro-credential when reviewing applicants. For this purpose, a recognition of learning format like a digital badge can be more helpful than a traditional post-secondary transcript. As you evaluate the quality of this aspect of the credential, consider the following questions:

- Does the record contain information about the competencies targeted and how they were assessed, the name of the learner, the institution that awarded the credential, and the date?
- Should the credential have an expiry date? For example, for competencies that need to be recertified periodically.
- Is the format of the digital badge open sourced, so that the learner can use it on their chosen platform?
- Once awarded, is the recognition of learning owned by the learner and can they share it with whoever they choose?
- Is the information appropriately secured? (e.g., for credentials that have professional value, is block chain used to ensure the integrity of the certification?)
- Is the personal information of the learner protected, as per the institution's responsibility under the Freedom of Information and Protection of Privacy Act (FIPPA) (<https://www.bclaws.gov.bc.ca>)

a/civix/document/id/complete/statreg/96165_00)?

- Is the information saved and archived by the institution so that a learner can request it at a later date?

For digital recognition of learning, analytics can be used to assess the value that learners and employers attribute to the credential. For example:

- How many learners earned the micro-credential (how many badges were issued)?
- Of those, how many were accepted by learners?
- How many times does a learner access their digital credential?
- How many times do they share their digital credential? What was shared? And using what means or channels (e.g., LinkedIn or email)?
- How was the digital credential received and evaluated by employers?
- Did employers seek workers with these digital credentials? For example, did they do a search on LinkedIn for people who had earned this credential?

8. Instructor Preparedness

The instructor(s) teaching a micro-credential program should have the necessary qualifications, expertise, and experience. While the assessment of qualification in post-secondary environments typically focuses on academic background and research record, in the context of a micro-credential, knowledge and experience in industry should also be a factor.

Fundamentally, there are two sets of skills required to teach a micro-credential: familiarity with the contents of the program and ability to support the learners' growth. When evaluating the qualifications of instructors for a micro-credential, examine:

- Does the person have expertise in the targeted field? How closely aligned is their expertise with the topic of this micro-credential? How recently was their training completed?
- Do they have hands-on experience with this competency in the field? Do they have industry experience? How recently was this experience? If they are primarily academics, have they maintained contact with industry?
- Would employers view this person's background as relevant? Would the employer consider hiring them for the role targeted by the micro-credential?
- Has the instructor taught adult learners in the past? What evidence exists of their ability to foster an effective learning environment?
- Has the instructor been oriented to the micro-credential and to the learning environment, and given sufficient time to prepare for the course?
- Has the instructor's time on the micro-credential been protected? For example, are they doing this in addition to their full-time job or as part of it?

9. Technology Infrastructure

For online and blended micro-credentials, quality checklists should evaluate the effectiveness of learning technology (including reliable internet connectivity, online platforms for course delivery, and technical support for learners and instructors), the protection of user data, and how analytics are used to survey learner behaviour in the course.

Most institutions have access to a learning management system (LMS) for their courses and programs. As the micro-credential is designed, ask yourself:

- What is the digital literacy of prospective learners? Will they be able to operate this LMS? Will they need an orientation and support to become proficient in its use?
- Can learners easily find essential information about the course on the LMS, like its aims, assessments, and timelines?
- How will content be delivered online (e.g., using text or videos)? Will learners have access to sufficient bandwidth to access these materials? Can your LMS support this format of content delivery? Is your LMS the right platform to do it?
- What are learners' expectations for an online course? How does your LMS compare to programs that learners deem to be your competitors (e.g., LinkedIn learning provides professionally produced videos)? What can you do to provide an online experience that meets your learners' expectations for quality?
- How will learners be accessing the LMS? For example, will they access it on their phone while on their daily bus commute, or from a shared computer at a public library? Does your LMS offer a good user experience in this situation (e.g., does it offer a good experience for mobile users)?
- Does the LMS comply with the Freedom of Information and Protection of Privacy Act (FIPPA) (https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/96165_00)? Will the privacy and security of learners' data be protected?
- Can the LMS be mined through data analytics to understand learner behaviour? Can this data be used to improve the program and the learner experience?

Many quality assurance checklists have been developed for online and blended learning. The *Suggested Resources* section provides links to several of the most commonly used ones.

10. Equipment and Facilities

The availability of resources, such as libraries, facilities, and technology specific to the micro-credential, reflect the institution's commitment to providing a supportive learning environment. Some questions to consider:

- Do learners have access to the equipment and facilities they will need to practice and learn?

- Will learners be able to practice in a safe and supportive manner? Are there systems in place to ensure safety in the use of the facilities and equipment?
- Are the facilities and equipment in good working condition?
- Are these resources available when the learners are available? Will they have sufficient opportunities to practice on them?
- Do these facilities and equipment match those used in industry? Or, do they simulate them in a close enough manner to be relevant?
- Are learners required to pay extra costs to access these resources? If so, is this clearly communicated to learners ahead of registration?

11. Learner Support

In addition to the training, learners may need other forms of support such as access to tutors, academic advisers, answers to questions about the micro-credential and its administration, accommodation services, or online communities. As you evaluate the program, consider:

- Are there resources that can orient learners to the training environment?
- Is there a dedicated person to answer learners' questions as they arise?
- Are there services at the institution to which micro-credential learners have access, such as accessibility services, writing centres, work placement centre, an ombudsman, international student centre, or diversity, equity, and inclusion services?
- Is the information on how to access these support mechanisms clearly communicated so that learners are aware of, and know where to go to access, them?

12. Administrative Support

The quality of the learner experience is not only dependent on what happens inside of the course. It requires financial, administrative, and leadership support to ensure that it has the resources it needs, it can connect with the appropriate stakeholders, and it is based on a sustainable business model. One measure of the quality of a micro-credential is how much support it has from the institution's leadership. Strong support can open doors and help to allocate resources to ensure the success of the program.

- Does the micro-credential have the resources it needs to succeed?
- Does the micro-credential have a sustainable business model? Do the sources of revenue appear stable? Are its costs expected to stay the same or to decrease as more learners take the program? Is the budget balanced?
- Are there opportunities to gain efficiencies of scale as the program grows?
- Is there support for this program from senior leadership? Is there a champion that can help to

find and allocate resources and overcome challenges?

13. Transparency of the Process

The quality assurance review process should be as transparent as possible. This means specifying who is involved, what their roles are, what they will assess, and what criteria (or standards) they will use to determine whether a program is of sufficient quality to be offered by the institution. This is typically achieved through the publication of policies and procedures for quality assurance. It also means publishing a list of activities and timelines, as well as the reports from past quality assurance reviews.

14. Evaluation and Continuous Improvement

Regular review and self-assessment are pivotal to the quality process. The initial evaluation of a new micro-credential that takes place when it is developed and approved is just the first round of review of the program. The institution must have processes in place to periodically evaluate each micro-credential.

It may be helpful at the time the new program is launched to schedule the next quality assurance evaluation of the program. In this way, all stakeholders are aware of when the next review will take place.

Typically, quality assessment involves an internal review phase and an external one. During the internal review, those involved in offering the program gather relevant data and assess the strengths, weaknesses, opportunities for improvement, and threats to the continued offering of the program.

This report is then provided to an external review team, usually composed of peer reviewers from other institutions (and, in the case of micro-credentials, employer involvement would make sense). This group reviews the documentation assembled by the internal review team, meets with stakeholders, and produces an independent report of their analysis. The two documents (internal and external reviews) then go through the institution's governance process, where the institution commits to implement the recommended steps to improve the program.

The documentation is typically made publicly available so that interested stakeholders – learners, employers, and other institutions – can consult them and gauge the quality of the program. A record of this documentation is maintained.

15. Satisfaction

Kirkpatrick (1996) and Kirkpatrick and Kirkpatrick (2006) are known for proposing a four-step process

to evaluate the value of continuing professional development training (more on this is provided in the chapter on the *Design Considerations: Practical Guide*). The first step is to assess the satisfaction of learners with a program. While Kirkpatrick acknowledges that learner satisfaction is the data least correlated with actual learning, it is a foundational piece of evidence. Kirkpatrick explains that without learner engagement, the training will fail. It is a requirement for the other, deeper forms of assessment of learning. Learner satisfaction is also often the basis upon which managers decide to continue or discontinue the professional development training of their teams. Thus, one way to gauge the quality of a micro-credential is to survey learners to assess their perspective on the training. Consider asking learners who took the program:

- For those who did not complete the program, what stood in their way?
- For those who did complete the program:
 - Which aspect of the course was most enjoyable?
 - Was the training pertinent to their needs?
 - Which aspects of the program most helped them acquire the competencies?
 - Which aspects of the program hindered their learning or seemed irrelevant?
 - What could have made the training more effective?
 - How has the training helped them in their work?
 - Was the training a good investment of their time and money?
 - Would they recommend the training to someone who wants to get into/advance in the industry?

16. Completion

Completion rates are commonly used as indicators of quality, as they provide a measure of the effectiveness of educational programs in retaining learners and helping them complete their programs. You can ask yourself:

- What is the demand for this program? How many seats are available?
- How many learners registered in the program?
- How many of them attempted every course in the program?
- How many successfully completed it? How many did not manage to complete the assessment successfully?

17. Employment Outcomes

Employment outcomes mean the ability of learners who earned the micro-credential to find work based on this training. It also follows learners once they are in the workforce.

- What percentage of learners who earned the micro-credentials find employment?
- Was the micro-credential an important element in the hiring?
- How soon after completing the micro-credential were they recruited?
- Did the credential contribute to a pay raise or promotion?
- Do graduates find that the training they received was relevant?
- According to their managers or their teams, can they successfully apply what they learned to the job context?
- How adaptable are they at utilizing these competencies in new situations?
- Has the training resulted in changes in measurable improvements in the workplace (e.g., cost savings, safer environment and fewer accidents, etc.)?

Obtaining this data to judge the quality of a program will mean maintaining contact with past learners and their employers to gauge how effective the program meets its objectives and what can be done to improve it.

18. Pursuit of Further Education

One indicator of quality is whether other programs accept the micro-credential as evidence of a learner's abilities. One thing to look for are established ladder opportunities.

- Is the program accepted into other programs as part of a prearranged educational pathway?
- Alternatively, were learners successful in getting the micro-credential learning recognized as part of a prior learning and assessment recognition (PLAR) process for another program?

19. Credibility and Reputation

Perhaps the ultimate marker of micro-credential quality is that it enjoys a strong reputation for quality and credibility in the relevant industry or sector. To do this, it needs to be recognized and valued by employers and professional bodies. Some of the indicators of quality in this regard include (listed from weakest to strongest evidence of industry support):

- Employer groups partner with the institution in developing and/or offering the program.
- The employer provides expertise in an advisory capacity.
- The employer publicly acknowledges its contribution to the program and/or helps to promote it.
- Several employer groups in the industry are aware of the program and speak favourably about it (e.g., in surveys, have positive perceptions of the program).
- The employer endorses the program. One way to do this is by recognizing the training as meeting the requirements for mandatory annual professional development training.

Alternatively, it can accredit it as part of its training ecosystem.

- The employer actively seeks and recruits learners who have earned the micro-credential for employment in its organization.

Appendix I: Examples of Quality Assurance Frameworks

Examples of quality assurance frameworks can inspire the development of frameworks at other institutions. For this reason, a few examples are provided below. Additional examples are referenced in the *Suggested Resources* section.

Micro-credentials (Taylor & Soares, 2020)

The first example comes from two people who served for many years on the College Credit Recommendation Service (CREDIT®) at the American Council on Education (Taylor & Soares, 2020). They propose a quality assurance framework for micro-credentials focused on outcomes rather than on inputs. The list of their proposed elements of quality are provided in Table 2.

Table 2. Taylor & Soares (2020) proposed elements of a micro-credential quality assessment framework. The above table was created based on information provided in the article.

Elements of Quality	Description
Understanding the needs of key stakeholders	Since micro-credentials are designed to address a need in the workforce, programs should consult with employers to understand their training needs. They should also consult with learners to understand what would help them address these workforce needs.
Assuring credential outcomes	Rather than focusing on inputs (what's been put into the design of the program), the quality of a micro-credential should explore the outcomes of learners who completed the program and use those as indicators of quality. This will give the credential more credibility with employers who are focused on results (not how those results were obtained). Three types of outcomes can be the focus of a micro-credential's quality: attainment of competencies, labour market alignment, and/or learner adaptivity (a person's confidence and abilities in adapting their learning to new environments).
Transparency	Information about a program should be easily understood by all stakeholder groups (including employers and learners). This requires that institutions communicate more pertinent information about what a learner can achieve than simply providing a letter grade at the end of a program.
Demonstrable value proposition	Prospective learners need to be able to evaluate concretely how a program will help them achieve their career goals. They need data as evidence, such as which employers will recognize the credential, what the percentage of graduates found employment in their field after completing the training, and the average earning potential of a graduate. This information will allow them to compare programs and make an informed decision about their training.
Equity-minded approach	The training should be accessible to as many learners as require it as a way to improve their socioeconomic opportunities and contribute to society.

Non-degree programs (Van Noy et al., 2019)

The Rutgers University school of management and labor relations put together a quality assurance framework for non-degree credentials (this includes micro-credentials) (Van Noy et al., 2019). They recommended that non-degree programs be evaluated on the basis of four main elements of quality, and they provide indicators for each element (Table 3). Outside stakeholders, notably employers, are given a prominent role in assessing the merit of micro-credentials.

Table 3. The Rutgers University school of management and labor relations quality framework for non-degree programs. Framework obtained from Van Noy et al., 2019, used with permission.

Elements of Quality	Indicators
Credential design	<ul style="list-style-type: none"> • Content relevance • Instructional process • Assessment process • Stackability and portability • Transparency • Accessibility and affordability
Competencies	Demonstrated competencies including general knowledge, specialized skills, personal skills, and social skills
Market process	<ul style="list-style-type: none"> • Awareness of credential and/or credential granter • Endorsements and validations • Organizational policies and practices • State regulations • Employer hiring policies and practices • Educational institutions' recognition of learning

Elements of Quality	Indicators
Outcomes	<p>For the Individual</p> <p>Employment</p> <ul style="list-style-type: none"> • Job attainment • Wage gains • Promotion • Retention <p>Educational</p> <ul style="list-style-type: none"> • Stacking of additional credentials • Completion of academic degrees(s) <p>Societal</p> <ul style="list-style-type: none"> • Improved health and well-being • Greater civic involvement • Intergenerational benefits <p>For Society More Generally</p> <p>Employer</p> <ul style="list-style-type: none"> • Employee pipeline • Better retention • Higher skills and productivity • Increased diversity <p>Society</p> <ul style="list-style-type: none"> • Better public safety • Increased efficiency • Reduced inequality • More civic engagement

Short-term credentials (CHEA)

The United States Council for Higher Education Accreditation (CHEA) has put forward a report outlining quality criteria for short-term educational experiences. The report also outlined the measures that can be used to judge each of these elements of quality (van der Hijden, 2019). They are captured in Table 4.

Table 4. CHEA short-term credential quality framework. (© 2019 Council for Higher Education Accreditation.)

Elements of Quality	Indicators
Typology	<ul style="list-style-type: none"> • Mission statement of the provider • Level referenced against a qualification framework • Profile indication (e.g., research oriented, profession oriented, general interest oriented) • Workload indication (average time or credits) • Learning outcomes descriptors (knowledge, skills, degree of responsibility and autonomy) • Summative assessment • Certificates, diploma supplements, badges, etc., acknowledging learning
Appreciation	<ul style="list-style-type: none"> • Uptake among learners • Higher education institutions accept the credential as part of accredited degree programs • Employers or employers' associations recommend the credential for hiring and promotion • Professional associations accept the credential for licensing purposes or continuing professional development
Reputation	<ul style="list-style-type: none"> • Past performance of the provider in education and research (e.g., rankings and citations) • Partnerships and collaborations of the provider (e.g., leagues)

Micro-credentials (European Commission, 2021)

Finally, the European Commission has developed an approach to standardize how post-secondary institutions define, implement, and evaluate the quality of micro-credentials (European Commission, 2021). This includes outlining 10 quality principles. They are detailed below in Table 5. Note that this framework alludes to the portability of the awarded credential, employing open standards to ensure that learners can use them on their choice of platform. It also refers to the need to protect learner data, which may be of interest to public British Columbia institutions in light of their responsibilities to uphold the Freedom of Information and Protection of Privacy Act (FIPPA) (https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/96165_00).

Table 5. The principles of quality for a micro-credential according to the European Commission. (© European Commission 2021, CC BY)

Quality	Indicators
Quality	<p>Micro-credentials are subject to internal and external quality assurance by the system producing them (e.g., the education, training, or labour market context in which the micro-credential is developed and delivered). Quality assurance processes must be fit-for-purpose, be clearly documented, accessible, and meet the needs of learners and stakeholders.</p> <p>External quality assurance is based primarily on the assessment of providers (rather than individual courses) and the effectiveness of their internal quality assurance procedures.</p> <p>Providers should make sure that internal quality assurance covers all the following elements:</p> <ul style="list-style-type: none"> • the overall quality of the micro-credential itself, based on the standards referred to below; • the quality of the course, where applicable, leading to the micro-credential; • learners' feedback on the learning experience leading to the micro-credential; • peer feedback, including other providers and stakeholders, on the learning experience leading to the micro-credential.
Transparency	<p>Micro-credentials are measurable, comparable, and understandable with clear information on learning outcomes, workload, content, level, and the learning offer, as relevant.</p>
Relevance	<p>Micro-credentials should be designed as distinct, targeted learning achievements, and learning opportunities leading to them are updated as necessary, to meet identified learning needs.</p> <p>Cooperation between education and training organizations, employers, social partners, other providers, and users of micro-credentials is encouraged to increase the relevance of the micro-credentials for the labour market.</p>
Valid Assessment	<p>Micro-credential learning outcomes are assessed against transparent standards.</p>
Learning Pathways	<p>Micro-credentials are designed to support flexible learning pathways, including the possibility to stack, validate, and recognize micro-credentials from across different systems.</p>
Recognition	<p>Recognition has a clear signalling value of learning outcomes and paves the way for a wider offer of such small learning experiences in a comparable way across the EU.</p> <p>Micro-credentials are recognized for academic or employment purposes based on standard recognition procedures used in recognizing foreign qualifications and learning periods abroad, when dealing with micro-credentials issued by formal education providers.</p>

Quality	Indicators
Portability	Micro-credentials are owned by the credential-holder (the learner) and may be stored and shared easily by the credential-holder, including through secure digital wallets, in line with the General Data Protection Regulation. The infrastructure for storing data is based on open standards and data models. This ensures interoperability and seamless exchange of data and allows for smooth checks of data authenticity.
Learner-centred	Micro-credentials are designed to meet the needs of the target group of learners. Learners are involved in the internal and external quality assurance processes and their feedback is considered as part of the continuous improvement of the micro-credential.
Authentic	Micro-credentials contain sufficient information to check the identity of the credential-holder (learner), the legal identity of the issuer, and the date and location of issuance of the micro-credential.
Information and Guidance	Information and advice on micro-credentials should be incorporated in lifelong learning guidance services and should reach the broadest possible learner groups, in an inclusive way, supporting education, training, and career choices.

Suggested Resources

Curriculum Mapping

The University of British Columbia's centre for teaching, learning and technology has posted a blog entry that describes how the faculty of arts engaged in the process of curriculum mapping. It also provides several examples.

Sasagawa, E. (2016, August 31). *Curriculum mapping in the faculty of arts*. Centre for Teaching, Learning and Technology, University of British Columbia. <https://ctl.ubc.ca/2016/08/31/curriculum-mapping-in-the-faculty-of-arts/>

The British Columbia Institute of Technology's learning and teaching centre has developed a three-page handout describing how to engage in curriculum mapping. The document provides a step-by-step description of how to develop such a document for your program.

Learning and Teaching Centre (n.d.). *How to develop your new program*. British Columbia Institute of Technology. https://www.bcit.ca/files/ltc/pdf/map_the_curriculum_2017-08-10.pdf

BCcampus held an event in the summer of 2022 to demonstrate the use of the online tool Curriculum MAP that can be used to create curriculum maps. The tool is free for people with an email address at a B.C. post-secondary institution.

- A blog post (<https://bccampus.ca/2022/09/20/curriculum-map-a-tool-for-mapping-analysis-and-planning/>) describing the event and key take-aways.
- A 90-minute video recording of the August 30, 2022 event (https://bccampus.ca/event/curriculum-map-demo-for-instructors-and-professionals-in-higher-ed/?instance_id=3542) showing how to use Curriculum MAP.
- The Curriculum MAP (<https://curriculum.ok.ubc.ca/>) website at the University of British Columbia Okanagan Campus.

Quality Assurance

Though not focused on micro-credentials, the following article provides an overview of key resources on quality assurance in higher education. It is dated, but it can serve as a primer on quality assurance.

Adam, A. J., & Morrison, M. (1998). Quality assurance in higher education: A selective resource guide. *New Directions for Institutional Research*, 25(3), 93–102.

The following three articles can shed light on the Canadian quality assurance process, which differs in each province. Note that most provincially mandated quality assurance processes operate at the degree level.

Baker, D. N., & Miosi, T. (2010). The quality assurance of degree education in Canada. *Research in Comparative and International Education*, 5(1), 32–57. <https://doi.org/10.2304/rcie.2010.5.1.32>

Marshall, D. (2004). Degree accreditation in Canada. *Canadian Journal of Higher Education*, 34(2), 69–96. <https://files.eric.ed.gov/fulltext/EJ720718.pdf>

Weinrib, J., & Jones, G. A. (2014). Largely a matter of degrees: Quality assurance and Canadian universities. *Policy and Society*, 33(3), 225–236. <https://doi.org/10.1016/j.polsoc.2014.07.002>

Quality Assurance Frameworks and Checklists

Several quality assurance frameworks exist that can inspire and inform the development of your institution's micro-credential quality framework. Some are specific to micro-credentials. Others were created to evaluate the quality of specific types of educational experiences, such as an online course. While not developed for micro-credentials, these frameworks may contain elements that can be included in your micro-credential framework, especially if your institution offers digital or blended micro-credentials.

Competency-based Education

The Aurora Institute (previously the International Association for K–12 Online Learning (iNACOL)) has developed a set of 16 principles for designing and implementing competency-based education programs. It covers areas such as nurturing a culture of inclusivity, development of a growth mindset, personalized pathways, and performance assessment. Though designed for the K–12 sector, this framework could be used for post-secondary competency-based education.

Sturgis, C., & Casey, K. (2018). *Quality principles for competency-based education*. CompetencyWorks. <https://www.aurora-institute.org/wp-content/uploads/Quality-Principles-Book.pdf>

Online Courses

eCampusAlberta has developed a list of criteria and standards to be used in evaluating the quality of an online course. This could be useful for assessing overall organization, ease of navigation, and production value.

eCampusAlberta. (2017). *Essential quality standards 2.0*. WestEd. https://scope.bccampus.ca/pluginfile.php/56615/mod_book/chapter/2695/Essential%20Standards%20-%20Quality%20Online.pdf

eCampus Ontario has modified eCampusAlberta's *Essential Quality Standards 2.0* into a rubric that identifies the standards to meet, exceed, or reach exemplary status on each criterion.

eCampusAlberta. (2013). *Essential Quality Standards 2.0*. University of Calgary. https://www.ecampusontario.ca/wp-content/uploads/2019/06/Essential-Quality-Standards-2_0-updated-Nov-14-2013-1_0.pdf

The Northern Alberta Institute of Technology (NAIT) has developed its own quality standards checklist for online courses.

NAIT. (2013/2014). *Essential Quality Standards (EQS) checklist: Online learning development and delivery*. NAIT. https://publicdocs.nait.ca/sites/pd/_layouts/15/DocIdRedir.aspx?ID=4NUSZQ57DJN7-208515216-5754

Lethbridge College has put together a checklist of quality criteria for blended and online courses. These criteria are divided into those that must be included as a minimum to meet the quality requirements, and those that exceed minimum requirements to achieve excellence.

Lethbridge College. (2020). *Blended & online course rubric*. Centre for Teaching, Learning, and Innovation. https://learninginnovation.ca/wp-content/uploads/2020/05/blendedOnlineRubric_2020.pdf

The British Columbia Institute of Technology (BCIT) has also put together a checklist of items that should be included in online courses to ensure their quality. It is composed of eight main elements assessed through a variety of questions to guide the review.

BCIT. (n.d.). *Online course checklist*. BCIT. https://www.bcit.ca/files/ltc/doc/ltc_online_course_checklist.doc

Quality Matters is a faculty-centred, peer review process that is designed to certify the quality of online courses. The framework is based on a set of eight standards and is widely used in higher education institutions across the United States.

Quality Matters. (2021). *Course design rubric standards*. Quality Matters. <https://www.qualitymatters.org/qa-resources/rubric-standards/higher-ed-rubric>

Online Learning Consortium (OLC) Quality Scorecard is a set of 10 standards that provides a framework for evaluating the quality of online courses. The scorecard is designed to be used by institutions to evaluate their online courses and make improvements where necessary. These instruments are popular in the United States.

Online Learning Consortium. (2019). *OLC quality scorecard suite*. Online Learning Consortium. <https://onlinelearningconsortium.org/consult/olc-quality-scorecard-suite/>

The State University of New York (SUNY) has developed an open rubric to assess the quality of online courses. The instrument is called the SUNY online course quality review rubric (OSCQR). The resource has been incorporated into the OLC Scorecard Suite (above). However, the original link to the SUNY website is provided below as it offers examples and additional resources.

State University of New York. (2018). *The SUNY online course quality review rubric*. State University of New York. <https://oscqr.suny.edu/>

E-xcellence is widely used in Europe. It is an instrument that provides quality criteria for online learning at the university-level. It covers broad quality indicators that range from curriculum design, learner support, and the institution's strategic management for digital education. The manual is published under a Creative Commons license, which means it can be readily adopted and adapted.

Kear, K., Rosewell, J., Williams, K., Ossiannilsson, E., Rodrigo, C., Sánchez-Elvira Paniagua, Á., ... & Mellar, H. (2016). *Quality assessment for e-learning: A benchmarking approach* (3rd ed.). E-xcellence. <https://e-xcellencelabel.eadt.u.eu/about>

The Australian Government has put out a quality assurance toolkit that is specific to online education at the post-secondary level. The toolkit cites nine domains that should be assessed for quality, ranging from staffing to curriculum design.

Australian Government & Asia-Pacific Economic Cooperation. (2017). *Quality assurance of online learning toolkit*. Department of Education and Training, Tertiary Education Quality and Standards Agency. <https://tech.ed.gov/files/2018/11/APEC-Quality-Assurance-of-Online-Learning-Toolkit-AUS-2.pdf>

The following document outlines markers of quality for the design and delivery of online courses in South Africa. These quality criteria are not specific to micro-credentials, and so do not cover employer- and work-alignment. However, they provide several case studies to explore how the criteria are applied in practice.

Welch, T., & Reed, Y. (2005). *Designing and delivering distance education: Quality criteria and case studies from South Africa*. NADEOSA, Pretoria, South Africa. https://www.saide.org.za/documents/Nadeosa_Quality_Criteria.pdf

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Duklas, J. (2020). *Micro-credentials trends: Trends in credit transfer and credentialing*. Report produced for the B.C. Council on Admissions and Transfers (BCCAT). <https://www.bccat.ca/pubs/Reports/MicroCredentials2020.pdf>

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Liu, Q. (2020). The impact of quality assurance policies on curriculum development in Ontario postsecondary education. *Canadian Journal of Higher Education*, 50(1), 53–67. <https://doi.org/10.47678/cjhe.v50i1.188301>

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Pichette, J., Brumwell, S., Rizk, J., & Han, S. (2021) *Making sense of microcredentials*. Higher Education Quality Council of Ontario. <https://heqco.ca/pub/making-sense-of-microcredentials/#:~:text=Making%20Sense%20of%20Microcredentials%2C%20a,postsecondary%20institutions%20and%20potential%20students>.

Roessger, K. M. (2015) But does it work? Reflective activities, learning outcomes and instrumental learning in continuing professional development. *Journal of Education and Work*, 28(1), 83–105, DOI: 10.1080/13639080.2013.805186

Takacs, S., Zhang, J., Lee, H., Truong, L., & Smulders, D. (2022). *A comprehensive guide to applying universal design for learning: A collection of three UDL workbooks*. Justice Institute of British Columbia. <https://collection.bccampus.ca/textbooks/a-comprehensive-guide-to-applying-universal-design-for-learning/#about>

Taylor, S. C., & Soares, L. (2020). Quality assurance for the new credentialing market. *New Directions for Community Colleges*, 2020(189), 67–82. <https://doi.org/10.1002/cc.20398>

van der Hijden, P. (2019). *Digitization of credentials: Quality of shorter-term educational experiences*. Report prepared for the Council for Higher Education Accreditation. <https://www.chea.org/sites/default/files/pdf/The-Quality-of-Shorter-Term-Educational-Experiences.pdf>

Van Noy, M., McKay, H., & Michael, S. (2019). *Non-degree credential quality: A conceptual framework to guide measurement*. Rutgers School of Management and Labor Relations. <https://doi.org/10.7282/00000116>

Published Version: Non-degree credential quality: a conceptual framework to guide measurement.

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Image Description:

Figure 1. HEQCO's guiding principles for developing a quality assurance framework

- Relevant – consulted or involved industry/community
- Accredited – recognized or issued by a professional accrediting body
- Standardized – meets a government-set quality standard
- Assessed – the learner must demonstrate skills/knowledge to earn credential
- Flexible – the pace and/or structure of learning can be personalized
- Stackable – can be “stacked” or combined toward a larger credential, e.g. a diploma or degree

[Return to Figure 1]

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Marketing and Launch

The approach used to communicate a micro-credential's value and recruit learners should be considered from the time of the program's inception. This chapter provides resources to reach target audiences and formulate messaging that resonates with their needs.

Chapter Audience:



Program Managers

Marketing

Without marketing and promotion, a new program risks becoming your institution's best kept secret. While established programs may be able to rely on word of mouth and reputation to recruit learners, new programs must expend considerable resources to raise awareness about the new training among prospective learners and employers. They must also convince their targeted audience that completing the program will be a good investment of their time and money, resulting in tangible outcomes that address their needs. The journey that the learner takes as they move from becoming aware of the training to enrolling and using their new knowledge is captured in Figure 1.

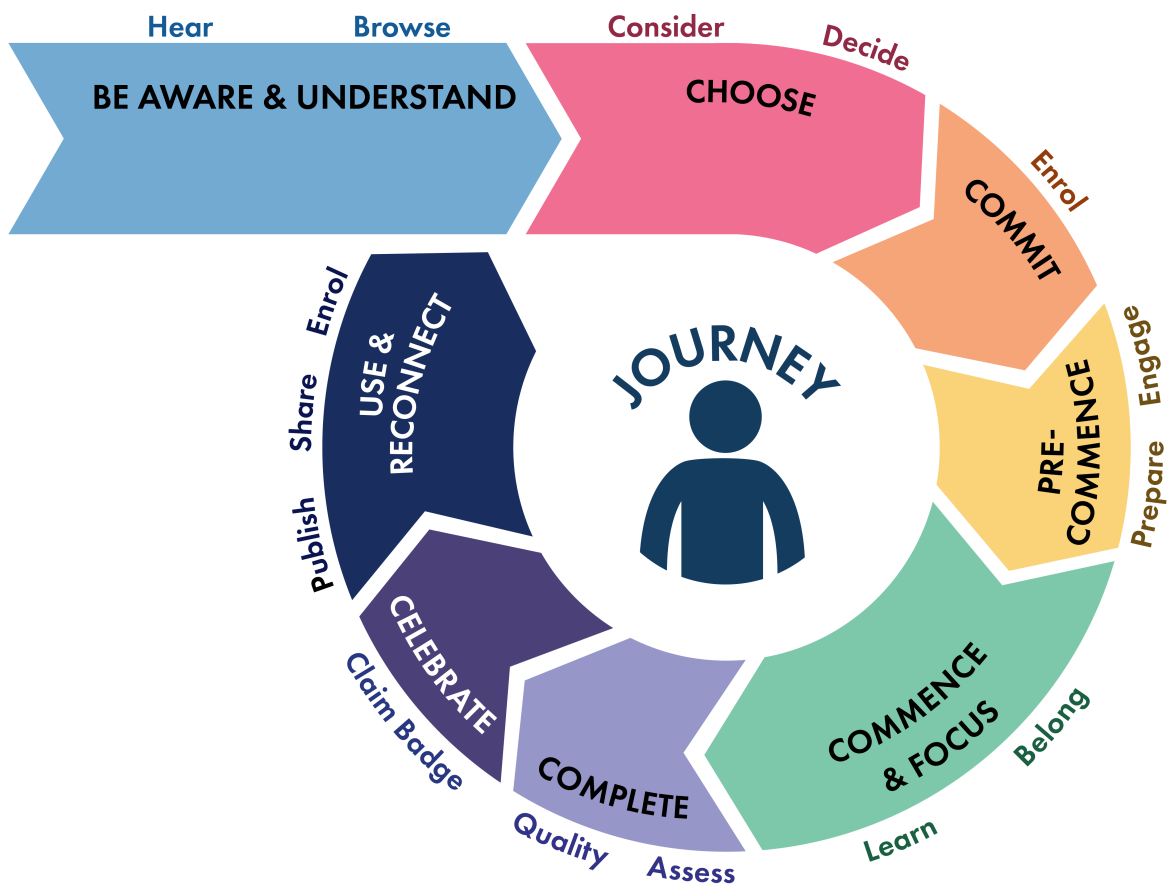


Figure 1. The journey that a learner travels from the moment they become aware of a micro-credential program to the use of the skills and knowledge gained in new settings. [Image description]

This chapter provides resources for developing a promotional strategy to help facilitate the learner's journey, particularly through the early stages of becoming aware of and choosing a program. It also presents two approaches for developers to select from for launching their new program.

Timelines

There is a tendency to market a new program only once it is fully developed or nearing completion. The rationale for adopting this approach is twofold. First, it buffers against delays in the development of the program and ensures that there are no false starts. The second reason is that institutions want to invest marketing dollars to generate registrations; if a program is not ready to enroll learners, there is a tendency to view the promotional expenditure as not generating a return on its investment.

Waiting to market a new program once it is developed can work, especially when the institution is well known in a particular field. It is also appropriate when there is a partnership with an organization that has committed to sending its employees to the training and a short marketing period is sufficient to recruit learners.

However, when the micro-credential is new, and in a field where prospective learners may not know to turn to the institution for training, or where there is no built-in pool of registrants, it may be wise to consider promoting the program earlier.

While the program is under development, it is generating content that could be used in its promotion. This content – syllabi, video clips, blogging by the instructor with updates on the course's development, milestones in registration (e.g., 75 per cent full), interviews with employers helping to develop the program – could be posted on social media. This kind of advance promotion acts as "sneak peaks" that raise awareness and enthusiasm among prospective learners. It also gives them an authentic feel for what the program will provide and who is involved, helping them make the decision to enroll in the program.

Thinking about the program's promotion could even begin sooner, as early as its inception. In the *Using Start-Up Models* case study below, Joyce Ip of Capilano University suggests promoting the prospect of a new micro-credential as a way to gauge interest in a program through the response of prospective learners. In other words, promotion and the needs assessment for a new program are merged into a single step.

The take-away from this section is that planning the marketing of a program should go hand in hand with its development.

Envision Your Target

Identify Your Goals

As with any project, it's best to begin with a clear goal and direct all your efforts toward that target. If your goal is to increase your unit's reputation in a field, the marketing tactics that you will use will likely be different from those that seek to generate registrations in a particular program.

Ask yourself why you are investing resources in marketing. The answer for most micro-credentials is likely to be that you want to generate registrations. However, there may be other goals as well. For example, your goals may be to:

- Generate excitement for a new program ahead of its launch.
- Obtain a list of prospective learners for your program, as a way to gauge interest in a new

micro-credential and to market new programs related to these people's interests as they become available (in marketing speak, this is called "generating leads").

- Let the community know that a long-awaited program is now accepting registrations (e.g., a Level 2 training for an existing successful program).
- Increase traffic to your unit's website, particularly if you offer a suite of related micro-credentials (in other words, the goal of the marketing is not to register prospective learners in one micro-credential, but to solicit the interest of people who might be interested in several programs you offer).
- Raise awareness and educate employers about the merits of a new micro-credential so that they can become allies and endorse the new training.
- Position your program or institution's reputation as a trusted source and authority in a particular training domain¹.
- Celebrate the success of your program, e.g., by sharing the outcomes of learners who completed the program.
- Attract "repeat customers," i.e., learners who have taken training from you previously return to refresh their skills and credentials (e.g., to recertify for a credential that has an expiry date).

Create Client (Learner) Profiles

When developing your marketing plan, an important step is to articulate who you are trying to reach and then take steps to gain a deeper understanding of the messages that will resonate with them.

Are you hoping to communicate with prospective new learners, returning learners, employers, or some other group? The messages you craft will be different for each audience.

Identifying your marketing targets is only one step. The next is to research who they are and what they want. Adult learners can be broadly classified into four categories, each with different goals, motivations, and preferences (Eduventures, Inc., 2008; Wiley University Services, 2022):

- 40% are **career advancers**,
Who are looking for career progression in their field and want their chosen program to be relevant to their work context;
- 30% are **degree completers**,

1. For an example of this, see the blog content for Hubspot (<https://blog.hubspot.com/marketing>) and Hootsuite (<https://blog.hootsuite.com/>), two social media companies that provide free information on social media marketing. Businesses that want to learn about social media marketing find these web pages and grow to trust the provider. As a result, these businesses may become clients. The two social media companies have thus positioned themselves as trusted brands by making their content expertise broadly available.

Who want to finish a degree in order to be agile in the workplace and they want credit for their prior skills and experience;

- 20% are **career searchers**,

Who are looking to change careers and seek mentorship and networking opportunities;

- 10% are **lifelong learners**,

Who are returning to school for personal growth and enrichment and who seek low-cost opportunities to socialize while learning new thing.

Marketers often create client profiles (sometimes called customer profiles or persona) to envision, in concrete ways, the people for whom they are crafting their messages.

As you create your client profiles, consider the following questions:

- **Who are they?** Consider their demographic characteristics (gender, age, relationship status and whether they have children, industry type, hobbies, geographic location, education, income, daily activities, etc.).
- **What is their context or life situation?** Are they stay-at-home caregivers? Professionals who travel a lot? Do they ride on transit or in cars? Are they technologically proficient? Who do they hang out with? What is their community?
- **Why might they want to take your micro-credential?** What matters to them in terms of training outcomes? What factors would they consider in making a training decision? For example, do they want data on employment rates after completing the program? What are some of the contingencies in their lives that might impact their ability to take the program? Which features of your program might appeal to them (e.g., is it offered flexibly online giving them the opportunity to do it wherever and whenever they can devote time to it?). What are their most pressing needs? How do they typically engage with institutions like yours to pursue their education?
- **Where do they spend their time? Where might you reach out to them?** Do they use social media? If so, which platform(s) do they use? How do they use the internet? Do they frequently visit certain websites? Do they follow specific blogs? Do they listen to podcasts? Do they use public transportation? Do they read the local newspaper? Where do they live? Do you have an existing connection to them? If so, describe it.

Brainstorm answers to these types of questions, but also be prepared to conduct research to ensure your assumptions don't miss the mark. A short online survey can help generate insights. Some data can also be obtained online in other ways. For example:

- Not sure which social media platform is used by your target audience? Hirose (2022) has a guide with descriptions of the typical user of the main social media platforms (Facebook, Instagram, Twitter, Snapchat, YouTube, LinkedIn, Pinterest, and TikTok).

- Marketing tools on most social media platforms allow you to gain insights into their users' behaviours, interests, demographics, and connections. You can drill down into the data to learn, for example, how their users interested in a specific topic are distributed across the country or how they break down into certain age groups or employment status. What's more, some social media platforms allow you to create "look-alike" audiences, which are users of the platform who may resemble the people that already follow you on social media.
- Statistics Canada makes census data (<https://www12.statcan.gc.ca/census-recensement/index-eng.cfm>) available and searchable to aid in your research.
- Canada Post's Precision Targeting (<https://www.canadapost-postescanada.ca/cpc/en/business/marketing/campaign/reach-every-mailbox/precision-targeter/map-buttons.page>) tool (<https://www.canadapost-postescanada.ca/cpc/en/business/marketing/campaign/reach-every-mailbox/precision-targeter/map-buttons.page>) offers a wealth of information on Canadian neighbourhoods organized by postal code. You can use the interactive map to learn whether the people living in certain neighbourhoods have children, their level of education, their average income, etc.

The *Suggested Resources* section of this chapter provides examples and templates to create your client profiles.

Articulate Your Program's Unique Value Proposition

Once the characteristics of the target learners are known, the next step is to articulate how your program can help them achieve their goals and meet their needs. It's a way to frame the benefits of the program from the perspective of the learner. Identifying this will help you formulate messages that are tailored to your audience.

Beverley Oliver has developed a framework to help institutions think through the value of a training program for learners (Oliver, 2021). The framework, shown in Tables 1a and 1b, categorizes learners into two groups: those seeking a career advantage and those seeking personal interest learning. From there, the framework guides institutions to consider eight benefits of micro-credentials and two costs for the learners. Working through this framework can help an institution develop messaging about a micro-credential from the learner's perspective.

Table 1a. Beverley Oliver's micro-credential learner value framework – benefits (Oliver, 2021. CC BY-NC).

Benefits		Learners seeking		Explanatory comments and questions about a micro-credential
		Career advantage	Personal interest	
Outcomes	Knowledge/skills			Includes new knowledge skills or insights that are validated
	Employability			Includes recruitment, promotion, salary, job security
Certification	Types of attestation			Includes paper, digital certificate, badge, or a combination
	Portability			Is it recognized elsewhere (professionally, geographically)?
	Security			Is the certification tamper proof and verifiable?
Signalling power	Provider brand			What is the standing of the provider, including in industry?
	Partner brand			If there is a partner provider, what is their standing?
Interoperability	Micro-credentials			Does it lead to other micro-credentials?
	Macro-credentials			Is it a (credit) pathway or supplement to a qualification?
Quality and standards	Quality assurance			Is the provider accredited and quality assured?
	Industry-accredited			Is it recognized and accredited by industry?
Assessment and feedback	Assessment			What is the quantity and quality of assessment?
	Identity verification			Is academic integrity assured?
	Main assessor			Is assessment mainly by educators, peers, technology?
	Feedback			Is formative feedback provided?
Engagement	With educators			Is formative feedback provided?
	With peers			Is there meaningful engagement with peers?

	With industry			Is there engagement with industry? Career advice?
Convenience	Flexibility			Scheduled or on demand; synchronous or asynchronous?

Table 1b. Beverley Oliver's micro-credential learner value framework – costs (Oliver, 2021. CC BY-NC).

Costs		Learners seeking		Explanatory comments and questions about a micro-credential
		Career advantage	Personal interest	
Financial	Course fee			Financial cost, loan, scholarship, or sponsorship?
	Payment method			Is cost up front or is delayed payment available?
Temporal	Effort			What is the likely level of effort required?
	Travel time			Fully on-site; mostly on-site; mostly online, fully online?
	Opportunity			Could the learner use this time more effectively elsewhere?

Anderson *et al.* (2006) caution against making assumptions about what your prospective learners value, and advise that you conduct research in order to understand them and their concerns, constraints, and challenges. They give the example of a paint manufacturer that initially assumed that their customers prioritized low cost in a paint product. However, after conducting research, they realized that paint only accounted for 15 per cent of their clients' business expenses; the cost of labour was the most expensive element. The company designed a paint that required fewer coats (and hence lower labour costs) and marketed the product as addressing the customer's true needs. They even priced the paint 40 per cent higher than their competitors. It was a hit because the product's value proposition resonated with its audience.

If learners have a choice for training between similar programs, the value proposition should also outline what makes your program distinct.

Once you have researched, identified, and prioritized the value of your program for learners, you should capture it in a brief statement that is one to two sentences long. You can think of it as a tag line or elevator pitch. It can be included in your marketing materials (often it is included on brochures, social media posts, and at the top of a program's web page description).

As you craft your value proposition statement, be sure to include:

- The main benefit of your program (the one that truly matters to your prospective learners and

addresses a need or pain point);

- Why your offering is distinct from similar programs.

Here are examples of value propositions from B.C. micro-credential programs:

- "Build confidence in providing care to victims of violence while preserving critical evidence" (from BCIT's Advanced Forensic Nurse Examiner microcredential (<https://www.bcit.ca/programs/advanced-forensic-nurse-examiner-microcredential-part-time-0813cm/>));
- "Launch your career as an editor or validate your experience with a respected credential" (SFU's Editing Certificate (<https://www.sfu.ca/continuing-studies/programs/editing-certificate.html>));
- "Accelerated entrepreneurship, business administration, and leadership course content tailored to Indigenous individuals, communities, and organizations that partner with our Ch'nook team" (UBC's Sauder School of Business's Ch'nook Accelerated Business Program (<https://www.sauder.ubc.ca/programs/chnook-aboriginal-education/chnook-accelerated-business-program>));
- "Understand basic food safety, learn to protect yourself and others from foodborne illnesses and leave with a 5-year certificate" (Selkirk College's Foodsafe Level 1 certificate (<https://selkirk.ca/ce/courses/hospitality-tourism/foodsafe-level-1>));
- "Help expand the potential of people with disabilities by learning to assess, plan, design, and build accessible venues" (VCC's Rick Hansen Foundation Accessibility Certification™ Training (<https://continuingstudies.vcc.ca/public/category/programStream.do?method=load&selectedProgramAreald=1027704&selectedProgramStreamId=1027722>));
- "An award-winning program for recent immigrant and refugee women to learn how to make and sell handcrafted goods at farmers' markets and craft fairs in Victoria" (Camosun College's Maker to Market Program (<https://web.archive.org/web/20240615073706/https://prosit.camosun.ca/public/category/programStream.do?method=load&selectedProgramAreald=1659273&selectedProgramStreamId=1722907>)).

Know Your Institutional Context

Before you get too far into your marketing plans, be sure to consult your institution's marketing documentation and policies. Most B.C. post-secondary institutions have them although they will vary in what they are called and their coverage (e.g., here are UBC's (<https://brand.ubc.ca/guidelines/>), Langara College's (<https://langara.ca/departments/communications-marketing/brand/brand-resources.html>), and UNBC's (<https://www2.unbc.ca/communications/unbc-visual-identity>)). Your program's brand will need to align with your institution's brand, and your marketing will need to comply with your institutional guidelines. The documents may also specify how the institution's brand assets (e.g., its logo or motto) must appear and how it should be included on all marketing materials.

Develop Your Brand

People often associate “brand” with a logo and a motto or tag line. While a brand does include these elements, they are the output of a discussion about what the product evokes – what it stands for – not the brand itself. Developing your brand means establishing the characteristics of your finished product. For example, do you want it to reflect an edgy program, with a prototype, bottom-up feel that attracts young entrepreneurs? Or, are you looking to create a more polished product that evokes authority, professionalism, and attention to detail that will appeal to mid-career professionals? This should be a discussion with your team and your partners. Once you have sketched out your brand, every aspect of your program – its content and marketing – should reflect that brand.

More information about developing your brand and its importance in attracting learners to your program is available in the *Suggested Resources* section.

Review Your Assets

Before you shape your marketing strategy, consider taking stock of your financial and human resources, as well as existing communication channels to reach your target audience. This will ensure that you create a plan that is realistic and achievable.

Budget

Determining how much of a new program's budget should be spent on marketing can seem like a balancing act. On the one hand, marketing is costly, and it can feel like precious dollars spent on resources that are not directly related to the training of learners. On the other hand, if you underinvest in marketing, you may have to cancel the program for lack of registrations. What's the right amount to put in the budget?

To find out, a first step is to consult people with expertise in marketing post-secondary programs. Consider contacting the marketing department or school of continuing education at your institution. If you are partnering with another organization in offering the micro-credential, your partner may also be able to offer some insights. If similar programs exist at other institutions, consider reaching out to colleagues there to inquire about their budget and experience. These sources may provide a ballpark number to put into your budget as a placeholder.

You can turn to the business world and examine how much they allocate to marketing new products and services. The amount varies by industry (with education usually on the lower end) but it is usually pegged at around 10 per cent of revenues (Business Development Bank of Canada, n.d;

Myers, 2021). This translates to between 10 to 25 per cent of the overall budget based on a 2022 survey of 2,937 American companies (Moorman, 2022).

A third option is to draft your marketing plan and then research the cost of each element in the plan. Be sure to build in a contingency for unexpected costs (10 per cent of the budget is a typical number).

What products or services do marketing costs usually cover? Below is a non-exhaustive list.

- Costs for conducting research on your target audience. This could include the purchase of industry reports or providing a monetary token of appreciation to people completing a survey.
- Creation, purchase, and/or design of multimedia assets such as licensing rights to stock images, hiring a photographer to take original photos, hiring a graphic designer to create logos, posting to social media posts, web pages, print ads, pamphlets, etc.
- Paid digital advertising (the cost of embedding your social media posts in your target audience's social media feeds). These costs can vary widely depending on the channel (e.g., Google Ads compared to Instagram) as well as the aggressiveness of the marketing campaign.
- Traditional advertising, such as newspaper ads, transit ads, print catalogues pamphlets, and radio or television spots. Fees to rent a vendor table at a professional conference.
- Someone to manage digital marketing, including tasks such as optimizing the likelihood that search engines will find your web page when prospective learners search the internet (aka search engine optimization), analyzing the impact of paid digital advertising, and managing social media posts.
- Subscription or access fees to digital platforms to manage social media calendar, marketing analytics, and other tools to manage your marketing campaign.
- Content producers, if the marketing plan includes a content strategy (this means putting out content on social media that not only serves as an advertisement, but also helps to build an audience and shares your expertise on a topic). A possible content producer is the subject matter expert who develops the curriculum. You may consider building this task into their contract.

Team Resources

It may be helpful to take an inventory of the human resources at your disposal before putting together a marketing plan. This will ensure that you draw upon existing knowledge and skills and do not overshoot your ability to execute.

Some of the people to consult include:

- Your team

- **Marketing lead.** Is there someone on your team with knowledge of marketing? Do they already manage (and are therefore familiar with) your unit's social media channels? Do they have the time to manage this project?
- **Subject matter experts.** Are your subject matter experts willing to contribute to marketing the program? For example, are they willing to blog about their progress, post multimedia of draft course content, present at information sessions, etc.?
- Your institution
 - **Marketing unit.** Does your institution have a centralized marketing unit that can provide expertise and support in rolling out the marketing plan for your micro-credential? If so, contact them early to ensure that they have the time and resources to support your project. Their work schedule can fill up months in advance.
- Your partner
 - **Marketing expertise.** Your partner may offer insights about how to reach your target audience (e.g., what industry podcast they follow, or what industry conference or meeting is coming up). They may also have experience in marketing in their industry that could prove helpful.
 - **Endorsements.** Ask whether the partner is willing to publicly recognize the value of your program by endorsing it.
 - **Approval.** If your micro-credential is co-developed and will carry your partner's brand, get clarity on approval processes. It is likely that they will need to review and approve any communications as a way to protect their brand. Be sure to factor this review period into your timelines and ensure that it is done to maintain a good relationship with your partner.
 - **Leverage their networks and connections.** Your partner likely has existing mechanisms to contact employers in their industry or prospective learners such as their newsletter, website, or social media channels. Inquire whether the partner would be willing to boost your communications on their own channels (i.e., reshare a social media post that you publish).
- Your sponsors
 - **Approval.** Some sponsors require that any promotion bear their logo in recognition of their support for the program. This usually comes with a requirement to consult and get approval before putting out any communication. This must be factored into your timelines.
 - **Reporting.** Do the sponsors require a form of reporting on the marketing for the program and its outcomes? Check early in order to be sure to collect data that aligns with their expectations.
- Alumni and past students
 - It may be possible to leverage the outcomes of alumni of your program. For example, consider conducting a LinkedIn search for past learners that display their digital badge for your micro-credential on their profile. You can use such success stories in your

communications. Consider reaching out to them to ask for their permission before you develop any communications.

Communication Channels

Finally, review the communication channels at your disposal. These may be ones that you have access to or have used in the past to reach prospective learners. Some ways of reaching your audience may include:

Your own channels:

- Alumni email list;
- Newsletter;
- Existing social media channels, such as LinkedIn or Facebook, which are followed by people interested in what your unit does;
- Website;
- Faculty connected to employers or to current or past learners at your institution.

Your institution's channels (usually part of the marketing department):

- Social media channels with a larger audience;
- Ability to put out press releases;
- Negotiated discount pricing for purchasing print media advertisements.

Your partner's channels:

- Newsletter;
- Email list;
- Social media channels targeting people in the industry;
- Website.

Create a Marketing Plan

What Is a Marketing Plan?

A marketing plan is both a strategic and operational document that captures why you are marketing a program (i.e., your marketing goals) and how you plan to achieve these goals.

Why Do I Need a Marketing Plan?

Why should you invest time in writing a marketing plan? There are several reasons. The first is that sitting down and thinking through each aspect of a new program's marketing will ensure it is complete and each element is aligned. It creates marketing that is deliberate and targeted as opposed to reactive and inconsistent. It also serves as a communication tool for your team so that everyone understands what is being done, why, when, how, and by whom.

It is important to monitor the audience's response to your marketing tactics and to adjust the plan in light of this data. In addition, situations sometimes change (e.g., the unexpected announcement of a similar program by a peer institution), requiring that you re-examine your strategy. The marketing plan is just that – a plan – and should be viewed as a living document.

How to Write a Marketing Plan

Although there are several models for writing a marketing plan, it typically contains the following elements, many of which were covered in the above sections.

1. **Goals.** What should your promotional efforts accomplish? This was tackled in the section *Identify Your Goals*.
2. **Market analysis**
 - a. **Positioning.** Often, this takes the form of a SWOT analysis. A SWOT analysis is commonly used in business for understanding current conditions before deciding on a strategic plan of action. The goal is to identify internal and external factors that are favorable and unfavorable to achieving your objectives. A table is often used to display the information. The table captures your strengths (assets and competitive advantage), weaknesses (things that limit your ability to carry out your plans, such as a lack of resources), opportunities (where do you see that you can make the most headway, e.g., by promoting to a new audience), and threats to your organization in promoting your program (external factors that could impact your plans negatively, e.g., the launch of a similar program or a downturn in the target industry). SWOT is an acronym of these four elements: strengths, weaknesses, opportunities, and threats.
 - b. **Client profiles.** A description of the target market, their needs, and what they value.
 - c. **Value proposition.** A brief statement of what your program offers that will resonate with the target audience.
3. **Marketing strategy.** What approaches will you take to reach your goals? What are the principles guiding your actions? For example, will marketing rely on purchased advertisement? Will it depend on earned media (e.g., someone from your team gives a free lecture on the topic of their expertise and mentions that they are developing the program). In elaborating this section

of the plan, you may consider the four Ps of marketing: product, price, place, and promotion.

4. **Action plan.** The actions that your team will take in order to reach your goals. They should align with your strategy. There can be one campaign or several, depending on the scale and scope of your plan. Each one should detail:
 - a. Name of each campaign;
 - b. What is to be done²;
 - c. When and for how long;
 - d. The budget allocated to it.
5. **Key performance indicators (KPI).** How will you measure the effectiveness of your marketing efforts or the return on your marketing investment? Digital tools make this step easy to do by reporting data on engagement with your posts. It also allows you to set up A/B testing where you carry out marketing campaigns that vary slightly (e.g., using different tag lines on media posts) and monitor the difference in the response to the two strategies (Gallo, 2017). It is also possible to measure the impact of traditional marketing methods by asking prospective learners where they heard about the program when they contact you or register for a program. You should plan when and where you will monitor the impact (e.g., every Monday morning) and revise your marketing plans based on this data.

The *Suggested Resources* section refers readers to further information for developing a marketing plan and guides for developing a digital marketing strategy. It also provides links to templates and examples.

Promotion Ideas

There are many ways to promote a new micro-credential program.

Traditional marketing ideas:

- Put out a press or news release (see CafePress (n.d.) (https://web.archive.org/web/20240712022256/https://www.cafepress.com/cp/learn/index.aspx?page=pr_anatomy) for instructions on how to write one);
- Write an article or editorial on a newsworthy topic for the local newspaper that is connected to your micro-credential (i.e., "earned media");

2. Note: Digital marketing requires considerable work to plan, carry out, and monitor responses, perhaps more so than traditional forms of marketing. It may involve, for example, developing a content calendar that schedules each social media post ahead of time. This is beyond the scope of this toolkit, but readers are directed to the guides and resources for developing a digital marketing plan in the *Suggested Resources*.

- Purchase a print ad in a local newspaper;
- Develop a pamphlet and use mass mailout to distribute it;
- Use email marketing to promote your new program through your newsletter;
- Advertise on transit (bus shelters, buses, taxis, trains, and ferries);
- Advertise on the radio;
- Pay for an ad campaign using social and/or digital media;
- Use your own social media channels to create engagement (through content marketing) and use the audience to promote your program;
- Create a web page to provide information on your program and serve as a landing page for social, digital, and print advertising.

Strategies specific to the promotion of educational programs:

- Create a splash page for a program before the program is greenlit as a way to gauge interest and decide which programs to develop (see *Using Start-Up Models in Stories from the B.C. Post-secondary Sector* below);
- Host an information session online or in person;
- Attend an event where your audience will be, e.g., host a booth at a professional conference;
- Provide free public lectures on the topic of your micro-credential to attract an audience of interested people (see *UBCO's Experimentation with Promotional Approaches in Stories from the B.C. Post-secondary Sector* below);
- Obtain funding to support free or discounted tuition for the pilot cohort. This group can provide feedback to improve your first offering while spreading news about your program through word of mouth (see *UBCO's Experimentation with Promotional Approaches in Stories from the B.C. Post-secondary Sector* below);
- Use tuition discount tactics to encourage registrations, such as early bird specials and package deals (e.g., register for the first two courses in the micro-credential and get the third one for free);
- Promote laddering opportunities in your communications. For example, position the micro-credential as a way for learners to test whether a larger program is right for them (its short duration and cheaper cost reduce the risks) (see *BCIT Ladders Micro-credentials into Associate Certificate* in the chapter *Educational Pathways*);
- Search past learner's digital badges on social media to find success stories about the outcomes of the program.

Launch

Once the marketing has brought learners to your program, it's time to plan the launch. There are two possible approaches to launching a new program: a soft launch or a splash launch. A **soft**

launch is adopted when the pilot is seen as a prototype. This is typically used when the first cohort buys in to this approach (e.g., if the micro-credential received funding to subsidize the pilot offering's tuition and the first cohort understands that they are expected to provide feedback to improve the program in exchange for the reduced tuition). A **splash launch** is used when the content of the course is timely and there is strong institutional support for the program (e.g., the program is linked to a current and public concern for skill shortages in a particular industry). Table 2 compares the two approaches. One approach is not better than the other; choose the one that best fits your situation and needs.

Table 2. Comparison of soft and splash launch approaches for new micro-credential programs. Adapted with permission from Cancred (2020).

	Soft Launch	Splash Launch
Elements	(Common to both types of launches) <ul style="list-style-type: none"> • Messaging the value proposition of the micro-credential • Building awareness with learners and employers • Consider adding testimonials from employers, learners, faculty, and leadership 	
	<ul style="list-style-type: none"> • No public announcement 	<ul style="list-style-type: none"> • Press release • Launch event
Benefits	<ul style="list-style-type: none"> • Less risk • More opportunity to correct and evolve 	<ul style="list-style-type: none"> • Bigger initial impact that can build faster • Increased awareness of the program among learners and employers • Indicates high level of support at the institution
Risks	<ul style="list-style-type: none"> • Less initial impact that can be difficult to grow organically – lost in the noise • Perception that it's not important or strategic to the institution 	<ul style="list-style-type: none"> • More risk – elements may not be ready in time, implementation may not go as planned • Potential for external pressures from more players
Suggestion	<ul style="list-style-type: none"> • Plan for a later splash launch once the program is safely running 	<ul style="list-style-type: none"> • Employers, learners, faculty, and leadership speakers at event • Have a Plan B ready if important pieces are still missing by the time of the event, e.g., delay the event if needed, go with press release initially

Stories from the B.C. Post-secondary Sector

Using Start-Up Models

At the 2021 Forum of the Continuing Education and Training Association of B.C. (CETABC), Joyce Ip, interim associate vice president of strategic growth, analytics, and continuing studies at Capilano University, presented a session entitled “Start-Up CS: De-Risking Your Program Design by Leveraging the Power of Start-Up Methodology.” Inspired by the book *The Lean Startup* (Ries, 2011), Ip introduced strategies used by start-up entrepreneurs to safely test whether there is interest and a market for new products. Below, she shares the principles behind some of these ideas.

Interview

How might micro-credential practitioners test interest in a program idea?

“The idea is to test whether there is interest in a micro-credential by collecting real data from the target audience. Institutions can build a ‘splash page’ describing a potential new program before it invests in its development – indeed, even before the program is greenlit.”

“A splash page is a web page that shares information typically provided to learners to help them decide to enroll in a program: title, learning outcomes, scope, target audience, industry opportunities, potential instructors, duration and format, etc. Then, the web page invites visitors to take a small action, perhaps to join an email list to learn more about the program when it moves ahead.”

“By asking prospective learners to act, program developers obtain real-world data about potential learner interest. People don’t just indicate on a survey that the topic sounds interesting; they have left their contact information to keep informed of next steps. This strategy also builds buy-in (by taking action, people invest in the program), spreads awareness about a prospective program, and builds a database of prospective learners to use if the program goes ahead.”

“The approach could also be used for A/B testing (Gallo, 2017). Consider, for example, building two versions of a splash page that describe the program in slightly different ways (e.g., with different program names) to gauge the audience’s response to the two versions.

Again, the key is to roll out this kind of marketing strategy early – even before a program is greenlit.”

VCC's Use of Course Development Materials to Create Promotional Materials

Reflecting on his institution's experience of developing a new micro-credential, Adrian Lipsett, dean of continuing studies at Vancouver Community College (VCC), realized that a marketing campaign could have started during the program's development.

Interview

When should micro-credential marketing be planned?

“We typically wait to put up marketing until registration is open. That means we give everybody six weeks to learn about a new program and register. Reflecting back, I see that during the development of the new program we had subject matter experts at our disposal who we could have used to run an information session. Or, we could have posted a prototype of the course content online as a teaser. For example, we could have posted a draft of a short video produced in the workplace as a way to build excitement, showcase the course content, and spread the word much earlier. Institutionally, we are simply not in the practice of applying this tactic. We tend to use social media or online ads to drive registration and avoid expenses that don't lead to an immediate action. Given how unique each micro-credential is, we'll likely need to take a new approach to marketing these things and start much earlier. We need to become more proactive and aggressive in our marketing.”

UBCO's Experimentation with Promotional Approaches

Megan Lochhead is manager of curriculum and academic programs in the Irving K. Barber faculty of science at the University of British Columbia Okanagan (UBCO). As part of her role, she uses her expertise in curriculum design to support faculty and departments as they create new micro-

credentials. The faculty has been successful in promoting these new programs. Lochhead shares some of the approaches they have used and the rationale behind them.

Interview

How did you spread the word about these new programs?

"A lot of it comes down to existing networks. For example, professional associations have avenues to inform members of professional development opportunities. Some of our faculty and staff are well connected with these groups and found they were willing to share information with their members, which generated a lot of traction for the micro-credential. Word of mouth is an important strategy to have in your promotional toolkit."

Did you employ other, more hands-on marketing approaches?

"For our Critical Skills for Communications in the Technical Sector (<https://cpe.ok.ubc.ca/programs/critical-skills-for-communications-in-the-technical-sector/>) micro-credential, we hosted a series of free webinars to increase awareness about the importance of communication skills because this is not a topic that's emphasized during a typical bachelor's degree in science or engineering. We wanted to ensure the link between strong technical communication skills and success in the workplace was on the radar. The webinars were a success, with over 1,000 people participating in the live webinars, and over 2,500 people registering. We saw this as an opportunity to give back to the community by building awareness and creating a learning environment around this topic."

Where did you promote the free lectures?

"We promoted to our existing networks and professional associations in B.C. We also posted about the event on LinkedIn and Eventbrite. We used the latter to organize registrations to the free events."

Did you use the email list you collected from these registrations to promote the micro-credential?

"No. We did not request expressed consent to contact participants. Also, the intention of the webinar series was not to generate mailing lists. We saw this as an opportunity to give back to the community and to build a reputation in this area."

Did the free lectures ladder into the micro-credential?

"No. We didn't build it that way. However, many participants requested formal recognition of their participation. UBCO has a non-credit credential called a 'letter of attendance' that could be used to recognize attendance in a lecture series. We may investigate this further, but we also need to be mindful of the integrity of the credential, if we do so."

Did you experiment with any other ways to promote this program?

"Yes. In the development of our Critical Skills for Communication in the Technical Sector (<https://cpe.ok.ubc.ca/programs/critical-skills-for-communication-in-the-technical-sector/>) micro-credential, we asked experts from well-aligned organizations in several sectors to review modules from the perspective of someone working in industry. In exchange, they gained free access to the program for one of their junior employees, who also provided invaluable feedback in this process. We wanted to ensure that we delivered an excellent learning experience that was of value to participants whether they were taking the program to advance in their career, change career paths, re-enter the workforce, or for personal interest.

"About a tenth of the learners in the pilot offering were expert reviewers. In addition to giving us feedback to improve our course, this approach helped to spread news about the program through word of mouth."

[Note: For more information about this approach (including the template used to collect feedback), see the chapter *Employers, Indigenous and Community Partners: Stories from the B.C. Post-secondary Sector* and in particular *UBCO's Use of Employers to Review Curriculum*.]

Top Tips from UBCO's Experience

1. **Give back to the community.** Micro-credentials are a great way to extend your institution's mission. They can build awareness about a subject and contribute to the continuing education of professionals. The UBCO's free lecture series achieved both of these aims while promoting the new micro-credential.
2. **Network. Network. Network.** Do not rely solely on conventional advertising. Do you have existing connections to your target audience? Consider engaging with them to help spread the word, through straightforward promotion, and by recruiting their input in the development of the program. Creating a network provides an opportunity to

share information about micro-credentials and gather input on emerging needs and opportunities.

Suggested Resources

Client Profile

Still not sure how to develop your own client profile? There are many templates available that can direct your efforts. The following is provided in a polished-looking Power Point format along with a detailed article describing its key features and an example. The template is free but the website asks for your email address to gain access.

Matsen, J. (2023). *10 easy steps to creating a customer profile [+ templates]* (<https://blog.hubspot.com/service/customer-profiling>). Hubspot. <https://blog.hubspot.com/service/customer-profiling>

Developing Your Brand

The following article proposes 10 criteria upon which to evaluate your brand.

Keller, K. L. (2000). The brand report card (<https://hbr.org/2000/01/the-brand-report-card>). *Harvard Business Review*, 78(1), 147. <https://hbr.org/2000/01/the-brand-report-card>

How do people make purchase decisions? How do you convert them from prospects to learners? In this article, the author argues that staple marketing concepts such as the "funnel" are antiquated in the age of digital media and that customers want on-going relationships with the brands with whom they do business.

Edelman, D. C. (2010). Branding in the digital age: You're spending your money in all the wrong places (<https://hbr.org/2010/12/branding-in-the-digital-age-youre-spending-your-money-in-all-the-wrong-places>). *Harvard Business Review*, 88(12), 62. <https://hbr.org/2010/12/branding-in-the-digital-age-youre-spending-your-money-in-all-the-wrong-places>

Marketing Budget

Putting together a marketing budget for a new program can be a daunting task. The following blog post provides a guide, including how much to budget, what to include, examples, and free templates.

Carmichael, K. (2022). *Startup marketing budget: How to write an incredible budget for 2023* (<https://bl>

og.hubspot.com/marketing/startup-marketing-budget). Hubspot [blog].
<https://blog.hubspot.com/marketing/startup-marketing-budget>

Written by and for entrepreneurs, this article explains how to allocate marketing costs for a start-up business. While the costs of acquiring customers cited in this article are quite high, post-secondary institutions would likely incur fewer costs because they are not starting from scratch; they have an established reputation they can leverage to obtain new clients.

Minieri, T. (2022). *How much should you spend on marketing* (<https://www.forbes.com/sites/theyec/2022/04/13/how-much-should-you-spend-on-marketing/?sh=30ac6fd258f9>). Forbes.
<https://www.forbes.com/sites/theyec/2022/04/13/how-much-should-you-spend-on-marketing/?sh=30ac6fd258f9>

Direct Mail

Canada Post has published a guide to using direct mail (e.g., for mailing pamphlets or catalogues). The guide is free but requires email registration.

Canada Post (n.d.). *The essential guide to direct mail* (<https://www.canadapost-postescanada.ca/blogs/business/marketing/our-essential-guide-to-direct-mail-is-here/>). <https://www.canadapost-postescanada.ca/blogs/business/marketing/our-essential-guide-to-direct-mail-is-here/>

Marketing Plan

The Business Development Bank of Canada has a Marketing Hub (<https://www.bdc.ca/en/articles-tools/marketing-sales-export/marketing?ref=marketing-plan-kit>) where they make resources and articles available to the Canadian business community. This includes an article detailing how to write a marketing plan.

Business Development Bank of Canada (n.d.). *How to write a marketing plan* (<https://www.bdc.ca/en/articles-tools/marketing-sales-export/marketing/5-no-nonsense-strategies-attract-customers>). <https://www.bdc.ca/en/articles-tools/marketing-sales-export/marketing/5-no-nonsense-strategies-attract-customers>

They also offer a marketing plan template. The template is free but requires providing an email address.

Business Development Bank of Canada (n.d.). *Marketing plan template*. <https://www.bdc.ca/en/articles-tools/entrepreneur-toolkit/templates-business-guides/marketing-plan-template>

If a marketing plan developed for non-profit organizations is more relevant to your situation,

consider looking at the following, easy-to-follow guide to writing a marketing plan for this type of organization.

Network for Good (n.d.). *7 steps to creating your best nonprofit marketing plan ever* (<https://artsandmuseums.utah.gov/wp-content/uploads/2019/06/Nonprofit-Marketing-Plan-Guide-1.pdf>).
<https://artsandmuseums.utah.gov/wp-content/uploads/2019/06/Nonprofit-Marketing-Plan-Guide-1.pdf>

Digital Marketing

The following eBook is an open resource that covers every aspect of digital marketing.

Stokes, R. (2018). *eMarketing: The essential guide to marketing in a digital world* (6th edition) (<https://open.umn.edu/opentextbooks/textbooks/14>). Open Textbook Library. <https://open.umn.edu/opentextbooks/textbooks/14>

Hootsuite has developed a thorough guide to help businesses set up social media marketing campaigns. It includes a step-by-step handbook with resources for every step, including examples, templates, and data to inform decisions about your campaign.

Newberry, C., & Wood, A. (2022). *How to create a social media marketing strategy in 9 easy steps (free template)* (<https://blog.hootsuite.com/how-to-create-a-social-media-marketing-plan/>). Hootsuite [blog]. <https://blog.hootsuite.com/how-to-create-a-social-media-marketing-plan/>

Hubspot has also put together a comprehensive guide to social media marketing. It includes information about each social media platform to help businesses decide which is the better platform for them, step-by-step instructions, information on measuring the effectiveness of the tactics used, templates, and examples.

Baker, K. (2022). *Social media marketing: The ultimate guide* (<https://blog.hubspot.com/marketing/social-media-marketing>). Hubspot [blog]. <https://blog.hubspot.com/marketing/social-media-marketing>

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Rossiter, D., & Tynan, B. (2019). *Designing & implementing micro-credentials: A guide for practitioners*. Commonwealth of Learning Knowledge Series. <https://oasis.col.org/entities/publication/e2d0be25-cbbb-441f-b431-42f74f715532>

Wiley University Services (2002). *Your Marketing Guide to the 4 Kinds of Adult Learners [Infographics]*. https://universityservices.wiley.com/wp-content/uploads/2017/03/Adult_Learners_Infographic_FINAL_PDF.pdf

Image Descriptions

Figure 1 Learner Journey

The journey starts with:

- Hear, browse
 - be aware and understand
- Consider, decide
 - choose

- Enrol
 - commit
- Prepare, engage
 - pre-commence
- Learn, belong
 - commence & focus
- Quality, assess
 - complete
- Claim badge
 - celebrate
- Publish, share, enrol
 - use & reconnect

[Return to Figure 1]

Media Attributions

- Figure 1 Learner Journey was adapted from Designing and Implementing Micro-credentials: A Guide for Practitioners (<https://oasis.col.org/entities/publication/e2d0be25-cbbb-441f-b431-42f74f715532>) by Darien Rossiter & Belinda Tynan, Commonwealth of Learning, CC BY-SA 4.0 licence (<https://creativecommons.org/licenses/by-sa/4.0/>).

COLLABORATION

Employers, Indigenous and Community Partners: Practical Guide

This chapter suggests ways to engage organizations that have a training need and that will accept the micro-credential as evidence of abilities.

Chapter Audience:



Administrators



Program Managers



Faculty

This chapter is about engaging external partners of micro-credential training. These are employers (in companies, non-profits, or government), as well as industry representatives, professional bodies, or Indigenous and community groups that have an interest in the training. These groups sometimes initiate new micro-credential projects by raising awareness about a training need. Most of the time they are the “recipients” of learners who have completed a micro-credential.

In this chapter, the words “external partner” are used as shorthand to refer to any of the groups listed above. These words do not refer to other post-secondary institutions or learners, whose roles in micro-credentials are different and are therefore covered in other chapters.

Why Engage External Partners?

According to a Strada-Gallup poll of 86,000 American students attending 3,000 institutions, the number 1 reason to pursue post-secondary education is to prepare for a job or career (Strada-Gallup, 2018). While 96 per cent of academic leaders think that their graduates are prepared for the workforce, only 11 per cent of business leaders agree (Lumina-Gallup, 2014). Many other studies

support these findings (Boston Consulting Group-Google, 2020; Burning Glass Institute, 2022; National Association of Colleges and Employers, 2023). There appears to be a misalignment between what post-secondary offers and what learners and external partners (particularly employers) want.

While this data comes from the United States, there is reason to believe this gap exists in Canada as well (Business Council of Canada-Morneau Shepell, 2020; Lapointe & Turner, 2020). For example, a 2015 McKinsey (https://www.cacee.com/_Library/docs/Youth_in_transition_Bridging_Canadas_path_from_education_to_employment_2_.pdf) survey found that while 83 per cent of post-secondary education providers believe they produce graduates ready for employment, 44 per cent of those graduates thought themselves ready, and 34 per cent of employers agreed. In fact, this study found that Canadian employers were 15 per cent less likely to believe graduates are workforce-ready than their American counterparts.

This is not to say that the role of higher education is only to prepare learners for the workforce. But what the above data shows is that there is a gap between what post-secondary thinks prepares learners for the workforce and what external partners want. Micro-credentials can help bridge that gap.

To get there, post-secondary institutions will need the input of external partners. These partners can shed light on:

- The suite of competencies that are difficult to find in the workforce;
- Authentic ways in which these competencies are used;
- The types of evidence that would convince them that someone has mastered these competencies.

These partners can do more than inform. They may support the development of a micro-credential by:

- Finding subject matter experts who can help develop and teach micro-credentials;
- Contacting leaders in their industry or community to participate in the development of course materials that give learners an authentic feel for what their industry or community wants and where it is headed (e.g., a CEO is interviewed about these skills in the workplace and the video is included in the course materials);
- Providing access to their community, workplace, and/or equipment to develop curriculum, for tours and field trips, or even for work- or community-integrated learning opportunities.

In short, working with an external partner ensures that the program will be authentic, that it will meet the needs that it seeks to address, and that it can help to connect learners with the people and places where they will apply newly learned competencies after training.

When to Engage External Partners?

It is important to involve external partners early in the development of a micro-credential. Contact North (2021) identified this as one of the 10 key actions needed to ensure micro-credentials meet their targeted need. This can mean contacting a potential partner as soon as a post-secondary institution identifies a prospective industry or community for a micro-credential, even before the exact nature of the micro-credential has been defined. Involving a partner early helps to build a shared vision and ensure buy-in from all partners (see the companion chapter *Employers, Indigenous and Community Partners: Stories from the B.C. Post-secondary Sector*, specifically the section *VCC's Partnership with DigiBC. Part I: VCC's Perspective*).

Employer Partners

Types of Employer Groups

There are several types of employer organizations that can be engaged as partners. Consider the one that best fits your micro-credential:

- **Specific employer.** A single company or organization. This is a suitable partner when the micro-credential will address the needs of a specific employer in a community. Working closely with the target employer ensures that the training will hit the mark. Working with only one organization may also be appropriate if the employer is a large industry leader that represents a sufficiently broad swath of the industry.
- **Industry or professional association.** These are organizations such as chambers of commerce or coalitions of employers from the same industry. These do not exist in every field, but when they do, they may be ideal partners in creating a micro-credential that addresses the needs of an entire industry. The purposes of these organizations are to listen to the needs of their members (individual companies) and to find ways to address their concerns. These organizations have a wealth of knowledge about their industry and clout with their members that will become helpful when disseminating the program to prospective learners. Perhaps more importantly, their mission and mandate may align with the post-secondary institution's goals of creating a micro-credential (e.g., if their members express that there is a training gap and the professional organization can take steps to address this gap).
- **Advisory group.** If an industry or professional association does not exist, consider forming your own coalition. Assemble a working group of representatives from several employers to capture the diversity of perspectives and needs in that industry.

Where to Find Employer Partners

There are several ways to engage prospective partners. One is to research the industry, identify suitable organizations, and, within those, suitable contacts, and send an introductory email, phone call, or LinkedIn message.

Alternatively, it may not be necessary to start from scratch. In an article in MacLean's *Agrba* (2022) has observed, "Colleges have an edge when it comes to developing microcredential *[sic]* courses, since they're typically in conversation with industry and well versed in targeting education for industry's needs." While colleges and polytechnics have close ties with employers, other types of institutions also have connections. You can leverage these existing relationships with your institution.

Here is a list of where to search for potential employer contacts at your institution:

- **Program advisory committee/council (PAC).** Does your program, department/unit, or institution employ a program advisory committee/council to provide external perspective and advice on your institution's educational offerings? This is a great starting place. You may consider using this committee's/council's expertise in the creation of the micro-credential, or else ask the members of these committees for potential contacts.
- **Leaders at your institution.** Deans, directors, vice presidents, and the president at your institution are in regular contact with people outside of the institution to ensure that external opportunities can be leveraged. Consult them. They will likely be happy to probe their network for suitable partners.
- **Faculty.** Many faculty members maintain contact with their industry – either by working in their field, maintaining a roster of people in industry to invite into their classrooms as guest lecturers, to arrange field trips for their students, or simply through social connections. They may be able to help in directing you to the right people and organizations to contact.
- **Alumni relations.** If your institution has a unit dedicated to sustaining a community of graduates, they may be able to identify and put you in contact with an alumnus that works in your target industry. This can open the door for you in that industry.
- **Development office.** The development office maintains relationships with potential funders and members of the wider community who can open doors for you within their organization.

Indigenous Community Partners

The Micro-credential Framework for B.C. Public Post-secondary Education System (2021) (https://www2.gov.bc.ca/assets/gov/education/post-secondary-education/micro-credentials/mc_framework.pdf) acknowledges the importance of working alongside Indigenous communities and institutes in the development and delivery of micro-credentials. As per the framework:

Public post-secondary institutions are encouraged to partner with other organizations to deliver post-secondary programs in community settings, including Indigenous communities and institutes. In the spirit of Reconciliation and consistent with the Declaration on the Rights of Indigenous Peoples Act, institutions should work with Indigenous communities and organizations (including First Nations, Métis chartered communities, Indigenous-controlled post-secondary institutes and urban Indigenous organizations) to:

- Jointly develop and implement relevant micro-credential offerings that recognize and respond to community and economic needs and provide meaningful pathways for learners; and,
- Determine whether additional supports are required for learners who face barriers to remote learning, such as lack of technology or diverse levels of digital literacy.

Micro-credential Framework for B.C. Public Post-secondary Education System (2021) (p. 4)

British Columbia is the first province to formally recognize the importance of these collaborations in the development and delivery of micro-credentials. As such, guidelines for forming robust partnerships in micro-credential work are still being explored. Findings will be added to the Toolkit soon. To ensure that Indigenous perspectives are authentically incorporated into this guide, the upcoming materials will be developed with by members of the Indigenous community.

In the meantime, readers are directed to three resources to help them in their work:

- First, most of the approaches to collaborating with a partner described in this chapter apply to working with Indigenous groups. This includes reaching out to prospective partners early in the life cycle of a micro-credential, co-building the project together, and ensuring frequent means of communication between partners.
- Second, many institutions have an Indigenous engagement office. People interested in collaborating with a local Indigenous community are advised to reach out to their Indigenous engagement office as a first step. The office maintains frequent communication with local Indigenous communities and may be able to direct you to groups who may be interested in collaborating, and to suitable contacts within those groups. They can also counsel you on protocols and approaches to working with your prospective partner in a respectful and productive way. Finally, as the institution's main point of contact with the local Indigenous

communities, the Indigenous engagement office can manage the institution's many requests and ensure that they do not overburden the Indigenous community's resources.

- Finally, consult the *Pulling Together Indigenization Guides*. These resources were informed by a steering committee consisting of Indigenous education leaders from B.C. universities, colleges, and institutes, the First Nations Education Steering Committee, the Indigenous Adult and Higher Learning Association, and Métis Nation in collaboration with BCcampus and the Ministry of Post-secondary Education and Future Skills. The guides help post-secondary institutions begin or supplement ways to Indigenize the institution and professional practice. There are six guides, each written for a different post-secondary audience:
 - Foundation Guide (<https://opentextbc.ca/indigenizationfoundations/>)
 - Leaders and Administrators (<https://opentextbc.ca/indigenizationleadersadministrators/>)
 - Curriculum Developers (<https://opentextbc.ca/indigenizationcurriculumdevelopers/>)
 - Teachers and Instructors (<https://opentextbc.ca/indigenizationinstructors/>)
 - Front Line Staff, Advisors, and Student Services (<https://opentextbc.ca/indigenizationfrontlineworkers/>)
 - Researchers, Hitkala. (<https://opentextbc.ca/indigenizationresearchers/>)

Several of the *Stories from the B.C. Post-secondary Sector* in this Toolkit showcase examples of engaging and partnering with an Indigenous community to offer micro-credentials. See *NIC and Learning Councils Meet the Needs of the Community*, *An Instructional Designer's Role in Creating FILMBA (CapU's Experience)*, and *TRU's Experience with PLAR*.

How to Engage External Partners

Once an institution has determined that they would like to work with an employer, indigenous, or community partner, what are the steps to engaging in this collaboration? There are matters to consider before initiating the project, during the development of the micro-credential, and after the pilot offering of the program. Some of these steps are listed in Table 1 and described in the sections below. They can serve as a guide or checklist to ensure that some of the main questions are considered.

Table 1. Overview of stages of partnership in relation to the micro-credential project.

Pre-Project	During Project	Post-Project
<ul style="list-style-type: none"> • Investigate your institution's policies, procedures, and resources for working with a partner. • Identify potential partners (survey environment but also consult within your institution to identify existing connections). • Consider and articulate what you can bring to the partnership and why you are approaching the partner. Have clarity on these issues as you approach partner(s). • Reach out to potential partner(s), explore alignment of goals and interest in working together. What might the partner gain from working with you on this project? • Explore potential micro-credentials together; consider what each partner could contribute to build something that adds value (combining expertise of each partner to meet a need). 	<ul style="list-style-type: none"> • Formalize the partnership through the development of MOU or GSA. Discuss roles and responsibility of each partner to ensure a common understanding. Discuss what each partner needs to meet those expectations (e.g., consulting fees?). • Agree on shared values. For example, should the micro-credential be developed cheaply, quickly, or be of high quality? • Agree on process (for example, will you adopt a waterfall or agile project management practice? How often will you meet?). • Co-develop the curriculum. Use partner's expertise (or contacts within their community) to: <ul style="list-style-type: none"> ◦ Identify training gap and needed competencies. ◦ Design the training, including suitable format, timing, recognition, tuition, etc. ◦ Develop course materials that reflect authentic work- or community-aligned practices. ◦ Develop assessments that partner will accept as evidence of competence. ◦ Identify potential instructors. • Leverage partner's network to promote the program to target audiences. 	<ul style="list-style-type: none"> • Debrief with partner about the partnership: what worked well, what could be done better next time? • Together, review the feedback from learners and employers/ community partners about the training to improve the program. Plan how to improve next iteration. • Discuss whether there are additional opportunities for new training resulting from the micro-credential. • Decide whether to collaborate on another offering and, if so, when. • Share lessons learned from this partnership within your institution.

Pre-Project

Once an institution has identified that they would like to collaborate with an external partner in the development of a micro-credential, it is worth reviewing the institution's policies and procedures that might apply. This may include policies guiding partnerships, engagement of an indigenous community, contracts, and service agreements, intellectual property, and collective agreements.

For example, is it appropriate and possible for you to offer consulting fees to an employer group for their assistance on the project? What are the rules guiding the hiring of subject matter experts that are recruited from industry? If the micro-credential is co-created, who owns the intellectual property of the curriculum? Who at your institution should serve as the point of contact with the indigenous community?

This is a good time to clarify for yourself what you want out of the partnership. Ask yourself the following questions:

- What expertise can the employer and community or indigenous partner contribute to the project that you do not have? What is their value to the partnership?
- What is the unique thing that you can contribute to the partnership? Why would the partner invest their time in working with you rather than with another institution? Why will working with you yield success?
- What's in it for them? How will they benefit from working with you on this project? Consider both ideological reasons (e.g., alignment with mission) as well as concrete goals (e.g., sharing revenue to meet revenue goals). Knowing this will help you convince them to partner with you.
- Review your experience of working with external partners. How can you make this an even better relationship? What opportunities exist for a more productive and cohesive partnership?
- What is your desired brand for the product of this partnership? What should it evoke?
- What are your contingencies and where do you have some flexibility?

Once a prospective partner has been identified, it is worth approaching them right away, even before the project is clearly defined. This will ensure that if a partnership is struck, both organizations will have the opportunity to contribute to the development of the micro-credential and, in so doing, feel ownership over the final product.

The initial conversation with a partner will gauge whether there is the potential for a partnership. It is possible that during this discovery phase, the partner will bring an existing workplace or community training forward that they would like recognized by a post-secondary institution. For information on this form of partnership, please consult the *Educational Pathways* chapter (see the section *TRU's Experience with the Credit Bank*).

Once it appears that both partners are interested in working together, Careless and Downing (2021) suggest asking the following questions to identify the competencies and training needs that may be fruitful topics for a micro-credential:

- What are the competencies that the external partner spends the most time training new hires to acquire?
- Which competencies do the external partners want but have a difficult time determining that a

candidate possesses?

- What does a valid assessment for one of these competencies look like to the external partner?

Note that while external partners may be able to describe their needs in general terms (e.g., "I want someone who knows MS Excel"), they may not be able to provide the granularity of a needs assessment required to develop a training program (e.g., "an employee needs to be able to use the Pivot Table function of MS Excel to conduct detailed analysis of sales"). This is where the knowledge and expertise of external partners and institutions complement one another. Educators can undertake a needs analysis to identify a competency with sufficient detail to develop a micro-credential. In turn, this can help external partners identify discrete needs to support competency-based micro-credentials (Franklin & Lytle, 2015).

During the Project

Once the project is greenlit, it's time to formalize the partnership. This will require a conversation with the partner to understand what each is willing to contribute to the project. Once an agreement has been reached, it can be documented to ensure that both parties have a common understanding of the collaboration and to hold both parties accountable. You may wish to consult your institution's contract or legal department for assistance in selecting and drafting the right kind of agreement. The *Suggested Resources* section also provides information on drafting a memorandum of understanding (MOU).

A formal agreement may take one or several forms. Here are two ways to formalize the partnership:

- **Memorandum of understanding (MOU).** This document formally recognizes the desire of the two organizations to work together toward a common goal. An MOU typically articulates the framework for the partnership at a high level, and its purpose is to endorse collaboration between members of each organization (i.e., people working in these organizations know that the collaboration has been authorized by their leadership). They typically do not provide details (i.e., logistics) of how the partnership is to be implemented. It can be seen as a way to open the door to the partnership. The contents of an MOU are not legally binding. An example is provided in the *Suggested Resources* section.
- **General service agreement (GSA).** This document is a contract between two parties that outlines what each party is committed to providing. If the external partner will be compensated for their consulting or marketing services, this is an appropriate way to define what they will contribute. A GSA may detail the roles or deliverables, the scale and scope of that work (e.g., how many hours per week? How many subject matter experts will the external partner contact? How many social media posts will they make?), timelines, and compensation for these services. A GSA usually also includes conditions for terminating the contract and/or whether it automatically renews or must be renegotiated each time the micro-credential is offered.

Having a GSA in place can give the institution peace of mind when interacting with the partner. Instead of coming to the partner with a request for assistance, the institution is coming to the partner asking for services as agreed upon in the contract.

The partner compensation, if included, can take several forms. It may include:

- Fee-for-service;
- A referral fee for each student registration that comes from the partner's website;
- A shared revenue agreement;
- Licensing fees to utilize existing curriculum, content, or equipment owned by the partner;
- Reduced tuition for the organization's members.

External partners may play roles in defining, developing, promoting, and offering the micro-credential. Each collaboration will engage the partner in a different way that aligns with the goals of the institution and of the external partner. Here are some areas where the partner may provide their expertise:

- **Needs assessment.** Identify the training gaps of employees and challenges of hiring for the required skill.
- **Subject matter experts.** Connect the institution with subject matter experts who have expertise in the micro-credential domain and who can collaborate on the design and development of the curriculum.
- **Advisers.** Provide expertise to guide the design and development of the curriculum, including target learner profile, best format and timing for the program, curriculum, tuition, and best method of reaching prospective learners. Assessment of competencies is particularly important, notably the development of methods that reflect how the competency is used in the workplace or community and what would constitute acceptable evidence of proficiency for the partner (Contact North, 2021).
- **Access to industry or community.** Conduct surveys of members; contact leaders for involvement in the curriculum; provide access to industry- or community-specific equipment and environment (to develop curricular materials or to coordinate workplace visits); find work experiences for learners, etc.
- **Promotion.** Use their network to help promote the training and recruit learner.

Not all external partners will want to be engaged at the same level. Different layers of collaboration with external partners are possible. Forms of engagement include:

- **Awareness.** The partner agrees to share the launch of a micro-credential with their network.
- **Co-producer.** The partner officially acknowledges that they were involved in the development of the training when they share news of it with their network.

- **Endorser.** The partner recommends that people who are in the industry (or want to enter the industry) or in their community take the micro-credential (Everhart et al., 2016).
- **Accreditor.** The external partner has evaluated the micro-credential and accepted it for a formal purpose in their industry. For example, it may be a requirement for application to a role, or it may count towards continuing education requirements in the profession.

So far, this chapter has focused on ways to collaborate on the development of a micro-credential with external organizations as partners. Consider that you may also consult with external groups in other ways. For example, you may send out surveys to organizations to request their input on their training needs, or you may form and consult a focus group composed of representatives from external organizations to request feedback on (rather than requesting that they help co-design) the program.

Post-Project

Once the micro-credential has been developed, promoted, and offered, it is time to reflect on and debrief the project and partnership, extract the lessons learned, share those lessons, and plan for the future. Partners should be included in any project evaluation so that they can review the data about the project's performance and participate in the decisions about what to do next. Some of those decisions may include to repeat the offering, modify and improve the offering, expand or develop new ones, or retire the micro-credential.

It may be helpful to conduct a separate review session to assess the partnership. This will provide both parties an opportunity to review the stages of the partnership and what took place, and to celebrate what was achieved. It will also provide a forum to provide open feedback about some of the challenges to strengthen future partnerships with this and other organizations.

Suggested Resources

Panel Discussion on Employer-Institution Collaboration

On February 22, 2023, BCcampus held the event *Micro-credentials: Competencies at the Core*. In the afternoon portion of this all-day webinar, there were two panel discussions about employer-institution collaborations.

BCcampus (2023, February 22). *Micro-credentials: Competencies at the Core*. https://bccampus.ca/event/micro-credentials-competencies-at-the-core/?instance_id=3626

- Panel 1 invited Claire Sauvé, associate director of continuing studies at Vancouver Community College, Loc Dao, executive director of DigiBC, and Francesca Benedetti to share their

experience of collaborating on VCC's Award of Achievement in Production for Animation and VFX (https://continuingstudies.vcc.ca/public/category/courseCategoryCertificateProfile.do?method=load&certificateId=2198341&utm_source=website&utm_medium=online&utm_campaign=VCCCMSRedirect).

- Panel 2 invited Laurie Therrien, manager of corporate training and industry services at the British Columbia Institute of Technology and Curtis Hale, design manager at EllisDon Construction Ltd to talk about their experience of developing the micro-credential in Introductory Studies in Mass Timber Construction (<https://www.bcit.ca/programs/introductory-studies-in-mass-timber-construction-microcredential-part-time-0800cm/>).

Field Guide for Employer Engagement

This document describes five strategies for engaging employers in the development of micro-credentials along with step-by-step checklists for each one.

Credly (2021). *Partnering with employers to create workforce-relevant credentials: A field guide*.

<https://cdn2.hubspot.net/hubfs/2629051/>

[Credly_Employer_Engagement_Field_Guide.pdf?submissionGuid=efbae8cf-0166-45d4-agca-1dd9e20b5f86](https://cdn2.hubspot.net/hubfs/2629051/Credly_Employer_Engagement_Field_Guide.pdf?submissionGuid=efbae8cf-0166-45d4-agca-1dd9e20b5f86)

Articles on Engaging Employers

This article describes seven actions that post-secondary institutions can take to form better partnerships with employer groups.

Boston Consulting Group (2022). *How higher ed and employers can partner to power talent pipelines*.

<https://www.bcg.com/publications/2022/bridging-the-talent-gap-by-partnering-with-higher-ed-institutions>

Written from an employer's perspective, this article details how to engage with industry to make the value of micro-credentials relevant to them. For example, it explains that credibility doesn't just mean the reputation of the institution but also who, in industry, validated the credential.

Lembo, N. (2021). *Translating microcredentials for employers*. The EvoLLLution.

<https://evollution.com/programming/credentials/translating-microcredentials-for-employers/>

Though focused on all forms of employer and institution collaborations, this easy-to-read article outlines the seven keys to a successful collaboration.

Pertuzé, J. A., Calder, E. S., Greitzer, E. M., & Lucas, W. A. (2010). Best practices for industry-university collaboration. *MIT Sloan Management Review* 51(4), 83 – 90.

This literature review highlights proven practices in managing the relationship between institutions and employers. The authors also suggest a framework based on their work.

Awasthy, R., Flint, S., Sankarnarayana, R., & Jones, R. L. (2020). A framework to improve university-industry collaboration. *Journal of Industry-University Collaboration* 2(1), 49 – 62.
<https://www.emerald.com/insight/content/doi/10.1108/JIUC-09-2019-0016/full/html>

Articles on Engaging Indigenous Community Partners

The following website from Indigenous Tourism British Columbia shares a list of 10 considerations when working with Indigenous communities.

Rullin, S. (2021). *Considerations When Working with Indigenous Communities*. Indigenous Tourism British Columbia <https://www.indigenousbc.com/corporate/what-we-do/partnerships-and-special-projects/working-with-indigenous-communities/considerations-working-with-indigenous-communities/>

The Truth and Reconciliation Commission of Canada's *Calls to Action* provides a list of 94 recommended actions "to redress the legacy of residential schools and advance the process of Canadian reconciliation." (p. 1). Many pertain to education.

Truth and Reconciliation Commission of Canada (2015). *Calls to Action*. https://www2.gov.bc.ca/assets/gov/british-columbians-our-governments/indigenous-people/aboriginal-peoples-documents/calls_to_action_english2.pdf

The United Nations's *Declaration on the Rights of Indigenous Peoples*, which is abbreviated UNDRIP, was adopted by the B.C. Legislative Assembly in 2019. As an Act, it is now enshrined into B.C. law.

United Nations (2007). *Declaration on the Rights of Indigenous peoples*. https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf

MOU Template

UBC provides information on drafting an MOU with a partner organization, including the purpose of the document, what it should include, a template, and an example.

Community-University Partnerships Working Group (2019). *Using memorandum of understanding for community-university partnerships*. UBC Migration, University of British Columbia.
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Employers, Indigenous and Community Partners: Stories from the B.C. Post-secondary Sector

This chapter shares several of the ways in which some B.C. institutions have sought employer and community partners to develop and offer their micro-credentials.

Chapter Audience:



Administrators



Program Managers



Faculty

VCC's Partnership with DigiBC. Part I: VCC's Perspective

Adrian Lipsett is the dean of continuing studies at Vancouver Community College (VCC). Under his leadership, VCC partnered with DigiBC, a non-profit organization that advances the interests of 250+ creative tech companies in British Columbia. The two organizations co-developed the Award of Achievement in Production for Animation and VFX (https://continuingstudies.vcc.ca/public/category/courseCategoryCertificateProfile.do?method=load&certificateId=2198341&utm_source=website&utm_medium=online&utm_campaign=VCCCMSRedirect). This successful partnership is opening doors to how VCC partners with industry. In this interview, Lipsett describes the elements that made this new partnership so productive.

Note: On February 22, 2023, BCcampus held the event *Micro-credentials: Competencies at the Core*

(https://bccampus.ca/event/micro-credentials-competencies-at-the-core/?instance_id=3626). In the afternoon portion of this all-day webinar, the first panel discussion invited Claire Sauvé, associate director of continuing studies at Vancouver Community College, Loc Dao, executive director of DigiBC, and Francesca Benedetti to share their experience of collaborating on VCC's Award of Achievement in Production for Animation and VFX. You can watch a recording of the panel discussion on the event website (link above).

Interview

What were the first steps in setting up a partnership with DigiBC?

"When we first connected with DigiBC, it was at the very end of the first call for micro-credential funding from the ministry. At that point it was too late to get something off the ground, but we wanted to ready ourselves for future funding calls. So, the initial funding call forced us to initiate a conversation with DigiBC, and because there was no deadline pressure, that conversation was relaxed, and we were not forcing ideas. It was like a field of dreams; we were just exploring ideas.

"In our initial conversations, we laid down our value proposition. I said: 'VCC is a training institution; we don't have exclusive specializations. But we know how to put something together with industry, because VCC has a long history of doing that.' We started the conversation with them from the perspective of 'here's what we can contribute to this partnership. We don't know what *you* know – what the employer groups actually need in industry.'

"What I think helped move things along was a willingness to explore things together. There's vulnerability in that because you admit to the partner that you don't know the answers. What you say is 'we could add some value to our community if we work together.' We suggested a couple of different ideas to get the ball rolling: we could do some tack-ons in Unreal Engine [a specific software package] for people who have gone through a two-year diploma in animation or VFX. And DigiBC was like: 'maybe...'. And then, because my portfolio includes business courses in continuing education, I brought up the idea of leveraging our existing intellectual property (IP) and creating something with courses in project management. We could take relevant pieces of existing IP and combine it with industry expertise to craft something customized to the need at hand. That got DigiBC's interest right away.

"You could see both members coming to the table, and it was clear the value that VCC brings, and the value that DigiBC brings. We were open enough to explore any idea that each party brought to the table. I feel like that was a key ingredient that set us off on the right foot.

"We also established a shared value and vision for a product. We were exceptionally clear on this because it guides decisions from both sides. That means establishing things such as, are we trying to do something cheap and quick, or are we trying and doing something of excellent quality? That decision determines how you invest your time and resources to get a product with which everyone is ultimately happy."

How did the partnership work in practice?

"Well, then comes the next step, which is: are we actually going to work together, or are we just going to sign a memorandum of understanding (MOU)? I've seen scenarios where the biggest action is simply signing the MOU. That wasn't what happened here at all. Right from the outset, in every meeting with DigiBC, there was a sincere focus and follow-up on actionable items that kept the ball moving.

"For example, we asked DigiBC to put us in contact with a person who would hire for a role that is particularly challenging to fill in industry. That was a small ask for DigiBC. They were able to put us in contact with a person from Disney. We asked the contact why it is hard to hire for this role, how many jobs are open at any given time, what are the pay grades, etc.? It happened that the contact had just posted a job ad for the target position and they shared the job description. I went back to my team, and we looked over our courses to see if we could use any portion of them as a starting point to meet some of the requirements of the job posting. We then identified our respective action items and met back two weeks later. We had frequent meetings to exchange information and keep the ball moving. A key aspect of the success of this project was just that: regular meetings, achievable outcomes, and someone keeping the partnership focused on the next step, next step, next step...

"We also hired a project manager to manage the project, including the partnership. Their role is to keep everyone on track, from both parties. This means setting up the meetings so that we connect regularly, taking minutes and sharing them, sending out the agenda, making sure we stay on track with the expenditures, and so on.

"We specified from the beginning who would be on the project team. I drew up an organizational chart of the people involved, from VCC and from DigiBC, along with what we expected them to do during the project. This included one contact person for each organization to manage the communications."

What did DigiBC do in this collaboration? You already spoke about linking you to industry contacts, subject matter experts, and so on. Anything else?

"Fundamentally, they brought a willingness and commitment to create something tangible with us, as well as the creativity, energy, and connections to see that through.

"What we hadn't predicted was that they'd be so instrumental in marketing. We assumed that they might let their membership know about the program by doing things like sending an email or putting it in their newsletter. They did that, but they also went above and beyond. They reached out to industry reps on multiple occasions, through multiple forums. They also boosted their own posts on social media. Their CEO reposted our posts on Twitter and Instagram. They suggested marketing and promotion ideas that would appeal to their members and then blasted it on their networks. That's what drove up our enrollment.

"Marketing is not easy for these micro-credentials: you're putting a new product out in record time. In addition, prospective students know it's new, so they hesitate to take it. They aren't sure it's going to be worth their time and money. I've heard from colleagues across the sector that other micro-credentials that didn't have this level of industry support were not able to recruit students in time. I think any institution would be hard-pressed to market a new course and expect that, amid all the competition for students' attention, the offering will garner enough enrollment right out of the gate.

"Connecting with DigiBC meaningfully from the beginning enabled them to have buy-in for supporting this offering. They want to bring value to their members, and that was the best marketing tool we had."

What's in it for the partner?

"DigiBC has a mandate to support the animation and visual effects industries in B.C. To support their members, they do things like listening to their concerns and then supporting them accordingly. The creative tech industry has certain labour shortages. Working with us helped them address this challenge and, by extension, supported their mandate as an association.

"It's slightly different for different organizations. With another industry association that did not have the same recruitment and training challenges, they were not so interested in working with us to develop the training beyond working on the outcomes of the program. But, to show value to their members, they negotiated a discount on tuition for their members.

"I think in both cases, the organizations wanted to reinforce their value as an association to their membership through this training opportunity. They just approached it differently."

Do you pay for the partner's services?

"The consultation has to come from somewhere, right? Compensating the partner for their time makes sense.

"We put consulting fees in the budget for the development of a new program. When we first did this, we were a bit nervous. It can be a big line item. We framed it as a consulting fee to cover the association's work consulting with their membership and we signed a general service agreement (GSA). That way, we could work with our partner to specify what this budget line will give us. Even if it's just four broad points, it at least gives us a common understanding of what that money will support. It's not just a 'thank you fee,' it's an opportunity to frame our collaboration together.

"In hindsight, it was incredibly helpful because it gave me the freedom to go to them under that framework with confidence. I could go to them and say, 'as per our agreement, what subject matter expert can you send me?'"

What were some of the unexpected benefits of engaging in this partnership?

"Micro-credentials have multiple purposes. They are a win in and of themselves in that it's a new development targeted to support a community need. But it's not *only* that. There is also the question of 'what did we learn from this, institutionally, and how can we iterate on this model to open us up to other opportunities?'

"Through this collaboration, we were investigating new models of working with industry. In the past, we might consult industry through a program advisory committee, and we had MOUs, but we didn't see industry *in the classroom*.

"We used this micro-credential to create new connections with industry, explored new ways to be meaningful partners, and to meet niche training needs. This one micro-credential that we did – and it is just *one* project – has helped us start conversations on a broad range of projects we can now pursue because we have the confidence that we can deliver.

"Even if provincial micro-credential funding dissipates, we have proved to the community that we are paying attention to what their needs are and that we are responding in a timely and effective manner. That is the value that we should be bringing as a college. And that, to me, is one of the biggest take-aways from engaging in this partnership."

Was there anything that surprised you in terms of engaging in this partnership?

"The time. The time needed to cultivate effective partnerships is significant. Working within a busy and active institution means that my attention is regularly pulled in several directions at once. However, for micro-credentials to work, they require informed and regular dialogue so that we are aware of, and appropriately responding to, the community's needs. In my role

as dean, I've had to make a conscious shift toward spending more time out of the office. Instead of waiting for people to come to us, I need to get out there and help people understand the value of working with us."

How did you select DigiBC as the organization to partner with?

"Strategically, working with an industry association is the right thing to do. They represent not one but hundreds of companies. They are far better positioned to understand the needs of these companies than we could ever be. They also have pull with these organizations, which is essential to both the program's development and promotion. Otherwise, we'd have a limited view of the industry and what it considers important. DigiBC, in particular, has an excellent record of supporting its members and, as we discovered in our very first meeting with them, they brought an openness and eagerness to the conversation that indicated an excellent collaboration ahead."

Top Tips from VCC's Experience

- 1. Start conversations early-on with a potential partner**
Funding calls come up quickly and there may not be the time to establish the relationships and explore the opportunities for a new micro-credential. Have projects in your back pocket so that you are "shovel-ready" and prepared to write up a proposal quickly.
- 2. Create a shared vision together**
Come to the partner with clarity about what you can offer and an openness to explore the environment together. Each partner should contribute to creating the new program. This will create shared ownership and buy-in.
- 3. Create and assign regular, small, focused tasks**
Give members of both organizations regular, focused, achievable (small) tasks that keep the ball moving on the project. This will ensure that both parties meet and exchange information regularly and enhance the feeling that they are part of one team. It will also contribute to the sense of co-ownership in the project.
- 4. Build consultancy costs into your budget and develop a service contract**
The industry partner will devote a lot of resources to surveying their membership for input, connecting you with the right subject matter experts, and marketing the

finished product. Define these roles and services together so that expectations are clear and put them into a service contract. Providing fees for these services ensures that the industry will be invested in providing these services and it will give you the confidence to ask for them.

5. **Leverage your partner's marketing channels**

Your partner has credibility and existing connections with your target audience. Use this network to promote the micro-credential to the right audience.

VCC's Partnership with DigiBC. Part II: DigiBC's Perspective

DigiBC is the creative technology industry association for the province, supporting the ongoing growth and success of the animation, visual effects (VFX), video game, and extended reality (XR) sectors across B.C. In 2021, in partnership with the Information and Communications Technology Council (ICTC) and with support from the provincial government, the non-profit published a benchmarking report (<https://ictc-ctic.ca/reports/benchmarking-the-creative-technology-ecosystem-in-british-columbia>) that provided an overview of the creative tech sector and its workforce. The findings in this report contributed to the development of seven micro-credential programs in partnership with six B.C. post-secondary institutions in 2022. One of those programs is VCC's Award of Achievement in Production for Animation and VFX (https://continuingstudies.vcc.ca/public/category/courseCategoryCertificateProfile.do?method=load&certificateId=2198341&utm_source=website&utm_medium=online&utm_campaign=VCCCMSRedirect). Rachel Kelly supports DigiBC as a program manager and was the main point of contact between DigiBC and VCC.

Note: On February 22, 2023, BCcampus held the event *Micro-credentials: Competencies at the Core* (https://bccampus.ca/event/micro-credentials-competencies-at-the-core/?instance_id=3626). In the afternoon portion of this all-day webinar, the first panel discussion invited Claire Sauvé, associate director of continuing studies at Vancouver Community College, Loc Dao, executive director of DigiBC, and Francesca Benedetti to share their experience of collaborating on VCC's Award of Achievement in Production for Animation and VFX. You can watch a recording of the panel discussion on the event website (link above).

Why is DigiBC interested in micro-credentials?

"The creative technology industry in our province offers exciting, challenging, and high-paying opportunities for British Columbians, and companies in our sector predict job growth over the next three to five years. To fill those positions, we will need to attract, educate, and hire thousands of people.

"DigiBC's study, *Benchmarking the Creative Technology Ecosystem in British Columbia* (<http://ictc-ctic.ca/reports/benchmarking-the-creative-technology-ecosystem-in-british-columbia>), provided a series of recommendations to grow the creative tech workforce across the province to meet the needs of today and tomorrow. Adding seats to B.C.'s existing post-secondary creative tech programs is one way to increase the number of skilled creative tech workers, but it is not the only way.

"We also need new avenues for people to gain the skills they need to enter the creative tech workforce – whether quickly reskilling from another industry, augmenting existing credentials from another region or country, or seeking new ways to gain specific, stackable skills on a flexible timeline.

"Micro-credentials, designed in partnership with industry to provide job-ready skills, fit that bill."

How did the partnership with post-secondary institutions begin?

"Education has been a key pillar for DigiBC for over a decade. Our executive director has made a concerted effort to forge relationships with leaders at post-secondary institutions. This has resulted in strong connections with the B.C. post-secondary institutions that offer programs specifically designed for our sector and those that offer cross-sector applicable (and very in-demand) training, such as computer science or software engineering. The micro-credential program development took those relationships another step forward."

What do you want or expect out of a post-secondary partner? What makes a good partner?

"Having industry and educators come together to develop and deliver new micro-credentials that will provide industry-relevant, job-ready skills is a challenging task on any timeline – let alone a compressed one of four or five months. In order to succeed, both

partners must have shared objectives, clear remits, and very open channels of communications.

"For DigiBC, the partnership with VCC to develop the Production for Animation and VFX micro-credential had all those elements.

"From the very early conversations with Adrian and his team, it was clear that VCC wanted to develop a novel micro-credential program in the spirit it was intended. Our early discussions were driven by the findings in DigiBC's benchmarking study. What does the industry need? What roles are in-demand? Where could a micro-credential best serve both learners and industry? The team at VCC had already done preliminary research before meeting with us and their analysis helped to "fast forward" our discussions.

"Together, we were able to quickly identify Production for Animation and VFX as a candidate program, providing a viable pathway for people to enter creative tech from other industries or make a career change within the sector. For example, a project manager from a resource-based company in B.C. could gain the fundamental animation and VFX production pipeline knowledge to pivot their existing skills; while people working in art, design, technical, or administrative roles in creative tech could leverage the training to switch career tracks.

"Beyond attention to our industry data and surveys, the VCC team was also proactive about working with experts from across our industry and understood how to do that effectively. We were able to connect the school with five advisers, all of whom have very demanding day jobs, and VCC was able to work with their timelines and schedules to ensure the resulting curriculum reflected real industry needs and experience.

"From the start, VCC came in with a genuine curiosity about the creative technology industry. They were cognizant of what they didn't know about our industry. Conversely, we were transparent about our relatively superficial understanding of post-secondary processes and challenges to creating and launching a novel micro-credential. This open-mindedness and clear communication from both sides, and a willingness to be honest about what we know and what we don't know, has defined and strengthened our partnership throughout the process."

What do you view as your role in the partnership?

"Representing over 250 studios across animation, VFX, video games, and XR, DigiBC has extensive access to industry insights and needs. As a result, we were able to work with VCC to identify in-demand roles in the industry – and determine which roles and capabilities would be suitable for a micro-credential. We were able to support VCC from the application

phase through to course delivery, including recruiting subject matter experts to consult on curriculum development and provide instruction.

"In addition, we were able to promote the micro-credential program with our member companies, so they understand the value these programs offer, recognize the micro-credential on applicants' résumés, and support their own staff in either taking micro-credential training or consulting on program development. This involvement is invaluable, and we continue to encourage it as the course enters its second offering, organizing guest speakers and studio tours to further strengthen the connection between education and industry."

What were some of the lessons learned from this first round of micro-credentials?

"The three biggest lessons learned for DigiBC are all around the theme of 'expansion':

1. **Expanding the message.** Understanding how and to whom we market the program. While we were confident in the curriculum and in the industry need, both VCC and DigiBC found it difficult to reach the target audience. At DigiBC, our channels of communication are very much employer focused. For micro-credentials like this one, we needed to extend that reach to people coming from other industries and recent graduates. In future, a mechanism to expand the marketing message beyond the traditional methods used by either partner is something we must consider and build into our micro-credential development plans.
2. **Expanding access.** We want to ensure that everyone has the opportunity to make a career in creative technology. Tuition subsidies for underrepresented groups, and people who might not otherwise be able to afford this type of training, should form part of the equation when budgeting for and developing micro-credential programs.
3. **Expanding reach.** All the programs DigiBC worked on in this first round of micro-credentials were offered in-person in the Lower Mainland and the Greater Victoria areas. In the future, we would like to find avenues to introduce this training across the province – whether in-person, hybrid, or fully remote – so people living in communities outside of Vancouver and Victoria have an equal opportunity to get the training they need to join our industry."

What advice would you give institutions as they continue to develop micro-credentials in partnership with industry?

"Across our sector, technology is rapidly advancing. We need to ensure that new and current creative tech workers have the skills required to ensure B.C. remains competitive on the global stage, and that they, in turn, can enjoy a long and rewarding career. So, the first

advice would be to maintain strong relationships with industry to understand how its technology and needs are changing and to update the training as the industry evolves.

"My second observation is that increased collaboration between post-secondaries to ensure that each institution is developing micro-credentials that capitalize on its strengths (and complement rather than compete with other program development) would benefit industry and learners. We are lucky in B.C. to have access to institutions that offer world-class art, design, software engineering, and other creative tech-specific training. For individuals looking to enter or progress in this sector, and for employers actively seeking skilled workers, the ability to leverage this expertise through a coordinated combination of micro-credentials across multiple institutions would be game-changing."

Top Tips from DigiBC's Experience

1. **Be honest and open.** Ensure there is true strategic goal alignment between partners. All partners need to come to the table with open minds and a willingness to learn from one another. Micro-credentials are new and there is no one-size-fits-all solution across industries or institutions.
2. **Be purposeful.** Think of long-term change when setting goals. Approach the partnership knowing your strengths and limitations and those of your partner so you both enter the project with a clear idea of the scale and scope of the commitment required.
3. **Be mindful and flexible.** Doing something new requires a commitment to working differently. Small non-profit organizations, large for-profit corporations, and post-secondary organizations do not function with the same resources, timelines, and priorities. Be clear about yours and inquire about others' organizational cultures and expectations so that you can develop strategies to facilitate their involvement in the project.
4. **Be iterative.** Start small and build from that. Micro-credentials are new. Focus on developing an excellent product in your area of strength. Once developed, consider how you can build on the curriculum, expand access to the program, and increase its reach, perhaps considering how you might bring it to the whole province through flexible delivery.

5. **Ensure relevance to industry.** Employers represented by associations are key to success.

Involve industry through several layers of engagement (from data, to discussions, to in-class involvement, to studio visits) to ensure that the curriculum aligns with industry need, and that employers understand the program's value and support its development, but also to connect learners early and often with the opportunities available across the industry.

BCIT's Consultation with Industry

The British Columbia Institute of Technology's (BCIT) mission is to "partner learners and industry for success through workforce development." As such, the institution has established contacts and processes to support employer engagement. Laurie Therrien is the manager of corporate training and industry services in the school of construction and the environment at BCIT. She shares how her institution engaged with the industry during the development of the new micro-credential in Introductory Studies in Mass Timber Construction.

Note: On February 22, 2023, BCcampus held the event *Micro-credentials: Competencies at the Core* (https://bccampus.ca/event/micro-credentials-competencies-at-the-core/?instance_id=3626). In the afternoon portion of this all-day webinar, the second panel discussion invited Therrien along with Curtis Hale, design manager at EllisDon Construction Ltd to talk about their perspectives on developing the micro-credential. You can watch a recording of the panel discussion on the event website (link above).

Interview

How did the idea for this micro-credential come to be?

"For close to a year, we had been exploring labour shortages within the mass timber industry. British Columbia has a great interest in moving mass timber forward because of the province's deep commitment to sustainable building practices. So that's what we were exploring: Is there something that BCIT could do to help the mass timber industry? We were trying to find out if there were any pressing educational needs.

"What we discovered is that across the spectrum of the construction industry – and by that I mean everybody from tradespeople, to digital modelers, to estimators, to architects, and engineers – there were people who didn't know anything about mass timber. These people have knowledge in their field of expertise, but it would be helpful if we could create something that would give everybody some common, foundational knowledge of what mass timber is.

"This educational need was very much aligned with a micro-credential. Then the funding call for micro-credentials came out, so we had two things collide. That's how the micro-credential came to be."

How did you engage industry in the development of this micro-credential?

"In our exploratory study, we had identified about half a dozen pressing training needs. That's too many to cover in a micro-credential. We needed to refine them. That's when we drew upon our industry partners.

"BCIT has a very organized way of doing that. We called together a focus group from the mass timber industry. That's a handful of people from the sector that we are hoping to serve. We asked them to rank the pressing needs. What's most pressing? They said that there are a lot of misconceptions about mass timber in the field of construction. Correcting that was the priority.

"We then collected the focus group's thoughts about what ought to be topics to concentrate on. The focus group came up with a list: myths around moisture management, acoustics, estimation, and fire protection, etc.

"We assembled the list of topics and then emailed a survey to a larger swatch of industry. We used our industry contacts, and we asked them to validate the list of topics identified by the focus group. They ranked the topics, and we narrowed our list from 15 to five topics.

"Then, we assembled a course development team. We recruited subject matter experts. These are people who are leaders in the field, and they helped to develop the course materials. My job is to find them. I look within BCIT but also externally. Because mass timber is a new area for us, I hired mostly people from the industry.

"Finally, we recruited the pilot participants from industry. Because of the funding support we received, the pilot learners took the course free of tuition, but in exchange, the employers and the learners understood that we wanted feedback on the pilot. We put over 200 people through and we got feedback at every step of the way. There were two different groups of learners in the pilot: one with experience working in mass timber and one with no exposure to it. We asked them different questions. For those who already had experience with mass timber, we asked them, 'Is this the kind of information you wished you had when you started

working in this job?' To the people new to mass timber, we asked, 'How useful is this for you in your job?' We looked at the two sets of feedback independently."

BCIT has a system in place for working with employers. What would you recommend for institutions that do not have these systems in place?

"BCIT does have a lot of industry connections. But these do not happen on their own. My role at BCIT is to make new industry connections. We didn't have expertise in mass timber. We didn't have those connections at the start.

"What BCIT has is the 'brand name' recognition. If I reach out to industry, even if they don't know me, they've heard of BCIT, and they are usually interested enough to return my calls. That helps."

Do you compensate industry partners for their time?

"No. Not in terms of going to industry and doing focus groups and surveys. Most often a cup of coffee is the pay for that. They are savvy enough to know that in general, it is an investment for the long term. They will eventually have a training in place that they can send their people to.

"Here the micro-credential is industry-driven. It serves the needs of that industry, so we do not pay for their time. But if we designed a micro-credential that was geared towards the learner rather than industry, and it served some foundational learning, then perhaps paying for industry consultation would make sense because they would not have as much of a vested interest."

What was the response to the micro-credential?

"We had to hold the tide back, in some respects. We would have employers with whom we consulted on the program call us up and say they would send us 35 people for the pilot. In a way, this was one of those junctures where industry, education, and governments all aligned at the same time. Industry needed help to fill a gap, the province was interested in promoting mass timber, and we could leverage the budding micro-credential concepts. It was fortuitous timing."

How will you, and industry, measure the success of this micro-credential?

"It's a funny time, right now, with many people retiring or changing sectors. Industry has never had to duck and weave so hard in order to try to keep or train or attract their skilled workforce. The purpose of this micro-credential is to help people determine whether they want to leverage their existing expertise into a new domain [mass timber]. So, a measure of success for this micro-credential, in the long term, will be whether more people are coming into the sector and working in mass timber."

To what do you attribute your success?

"The micro-credential is such an elegant little program. It's more than a course, but less than a credential. At BCIT, the smallest credential we have is 15 credits, which is small, but for a professional development-type training for a company, it's sizable. So, training that is more than a course, and less than a program, is just right for industry. And people come out with a badge that is very descriptive of what they have learned.

It really is a neat little concept that I think just found its time. When I first heard about it, I was like, 'Micro-credentials?' And now I'm like, 'What a no-brainer! Why haven't we been doing that all along?' I'm a big fan. I'm working on two other micro-credentials right now."

Top Tips from BCIT's Experience

1. **Develop a network**

Develop meaningful connections with employers. These will need to be fostered and that will take resources. Make clear when initiating a contact that you are not asking or selling anything, but rather approaching them in the spirit of authentic partnership with the potential to solve a problem in their industry.

2. **Discuss training needs with a group of employers**

Once you have identified a transitioning industry, consult with a subset of employers about their pain points. Forming a small focus or advisory group can help to bring voices from diverse employers into the conversation. Ask the group to identify skills that are difficult to recruit and what would need to be taught to alleviate this challenge.

3. **Validate information**

Once a handful of advisers have identified training needs in their industry, check whether this reflects the needs of a broader set of employers. Online surveys can be a useful tool to engage a larger group and build confidence in the data.

4. **Pilot the program**

If a micro-credential is designed to alleviate the shortage of skills in an industry, invite employers to register their workforce in the pilot program. Consider providing a tuition subsidy in exchange for providing feedback on whether the program addresses the industry's needs.

5. Measure the program's success from an industry perspective

Consider how industry will assess the success of the training program, which may not only be the immediate skills that learners pick up. Employers may have a longer-term goal of transitioning their workforce. How can you design an evaluation plan for the program that measures this indicator of success?

Collaborating with a Non-Profit Organization to Benefit the Community

Michael Yue is the director of the partnership development office at Vancouver Community College (VCC). In 2018, his team obtained a grant from Immigration, Refugees and Citizenship Canada (IRCC) to develop and offer a new type of program to improve the settlement outcomes of newcomer women. Called *Make It!*, the program was offered in partnership with DIVERSEcity (<https://www.dcr.s.ca/>), a local non-profit organization.

This partnership model has been successfully replicated at two other institutions in different regions of the province. One of them is in Victoria. Nannette Plant is manager of government contracts and special projects in professional studies and industry training at Camosun College. She shares her institution's experience in replicating the program, adjusting it to the region, and developing a free program guide to help more institutions replicate this model across the country.

Interview

What was the inception of the partnership for this program?

Yue: "In 2018, we responded to a funding opportunity from Immigration, Refugees, and Citizenship Canada (IRCC). The project, while focusing on entrepreneurship for immigrant women makers, was meant to support settlement – testing to what extent conducting maker-based business operations could accelerate immigrant integration into Canadian society.

"We envisioned a program for newcomer women who had limited opportunities for income and little to no professional networks in Canada, but had an interest in business. We wanted to support the development of basic skills, but also give women a hands-on experience

through an incubator-like environment where women worked in groups to launch a company. They could use their skills to create handmade artisanal products, with the goal of selling them at local farmers' and artisans' markets. This real-world experience would boost women's confidence while they learned by doing. Most of the entrepreneurship programs for immigrants focus on solo entrepreneurship, and we reasoned that by supporting a group of women who formed a cooperative business, the program would accelerate their language learning skills, and would do so in a supportive environment.

"We reached out to an immigrant service organization that works with this population, has expert knowledge of how to support them in integrating into the workforce and into Canadian society (through settlement services such as language and employment), and with whom we had a prior working relationship. The DIVERSEcity Community Resources Society's mission aligned with our goals and vision, so we greenlit a partnership. After agreeing on the basic structure of the program, VCC led the charge on the funding application, and we were successful. This is how the *Make It! Social Entrepreneurship for Newcomer Women* program was born."

How did VCC collaborate with DIVERSEcity to offer the programming?

Yue: "The program leverages the strengths of a public post-secondary institution, which has access to professional facilities, equipment, and instruction, and the strengths of a local immigrant-serving organization, which has expertise in immigrant settlement, integration, and business training and development.

"Participants spent the first 10 weeks of the program with VCC instructors to bolster their language skills, for example, by practicing how to interact with prospective buyers at a market. They also learned basic business knowledge, which they then applied to the companies they were forming. They did market research, came up with a product to offer, a company name, brand and positioning, and a social media marketing strategy. VCC has professional maker facilities and expertise that are used to offer vocational programs (e.g., a sewing laboratory for the Fashion Arts & Design program and a professional kitchen for the Culinary Arts program). Facilities and instructors were made available to the women to create their products. The women formed two companies, one that focused on sewing skills and another that cooked up foods.

"After that, participants spent six months in an incubator environment, receiving guided business development advice, continuing to develop their business and maker skills, and they also received support for employment searches. DIVERSEcity supplied a business advisor to support the women (in addition to the VCC instructors who continued to work with participants). During this period, in addition to frequent meetings to advance the

business, women attended workshops (e.g., from WorkBC), networking events, and worked with the immigration society's counsellors and settlement workers to look for employment."

What's been the outcome from this program?

Yue: "From the beginning, there was high interest in this program and it exceeded its initial target of 10 participants per cohort. The program also had high client retention. All participants completed the 10-week training program and moved into the guided business development process where they applied their learning to real-life business activities. By working as a team, the women were able to support each other and pool together their limited time and resources. Through making sales, the women reported a strong sense of accomplishment, acceptance, and recognition of their efforts. All participants also reported greater ease in using English and making decisions about life in Canada because of their enhanced knowledge about their local community gained through local fairs, events, and markets.

"Two business collectives were formed as a result of the program, *Mama's Hands* (cooking) and *Sewmates Craft* (sewing). *Sewmates Craft* (<https://www.facebook.com/sewmatescraft1>) sold over 2,700 cloth masks as part of the Intercultural Women's Maker Society Cloth Facemask Initiative between April and July 2020.

"After the funding was over, my colleagues and I created a new non-profit organization called Intercultural Women's Maker Society (IWMS) (<https://www.iwmscanada.org/>), which was registered under the B.C. Societies Act. This new organization provides a support platform for the two groups of women from the pilot program (and potentially other women makers) to further incubate their businesses before going fully independent. IWMS is now in its third year of operation thanks to the commitment of a group of passionate and socially minded colleagues (including those who were involved in the *Make It!* project)."

Could this model be replicated elsewhere by other institutions?

Yue: "Yes! The program model was also piloted in the Okanagan. Vancouver and Kelowna are quite distinct, and we wanted to see how the model would work for different socio-economic and geographical contexts. It was led by Okanagan College in partnership with the South Okanagan Immigrant and Community Services. This offering showed that the model was transferable to other contexts.

"After the *Make It!* funding ran out, Camosun College in Victoria reached out to us."

How is Camosun adapting the program to their region?

Plant: "We had heard about the program and wanted to try it in Victoria. VCC shared the program documents with us so that we could use the program as the basis for our training. We identified and reached out to community organizations in our region such as the Inter-

Cultural Association of Greater Victoria and the BC Association of Farmers' Markets. We applied for and received funding from Immigration, Refugees and Citizenship Canada (IRCC) for 'Markets as Incubators for Language, Cultural and Work Skills Development of Recent Immigrant & Refugee Women,' commonly referred to as the 'Maker to Market Program' for 2020-2025.

"For each of the four cohorts in our program, learners will create a collaborative food business and sell their products at local farmers' markets and seasonal craft fairs. Through the creation of their low-risk food business, learners improve their language and business skills and create community connections. They also gain insight into small scale food processing and the complicated rules, regulations and food safety issues involved in starting a food business in Canada.

"The program also allows the women to bring their wealth of education, experiences and expertise to the program and share it with their classmates, instructors, and communities. It is amazing to see how the women's spoken language skills and self-confidence grow as they interact with community members and customers. As owners of their business, students can continue their business after the program, either on their own or under the mentorship of the Intercultural Women Makers Society (IWMS).

"In the final year of the IRCC grant (i.e., in 2025), we will develop a free program guide to help post-secondary and non-profit groups set up similar programs based in their settings. You can think of it as an open educational resource (OER) for the sector, so that others can adopt or adapt the program to their specific needs and situation. All an interested organization would need is to obtain the funding they need (either financial or contributions in-kind) and adapt the program guide to their specific circumstances. While developed specifically for its targeted audience of immigrant and refugee women, the program can be modified for other groups who want to learn how to start a small market business. The *Make It!* Program was just the beginning – it's spawned similar programs at two other institutions and will soon spread throughout the country."

Resources

Pathways to Prosperity: Canada, an alliance of university, community, and government partners, has developed a web page to share settlement and integrating practices that work. The *Make It!* Social Entrepreneurship for Newcomer Women program is featured on this site. It includes an 18-minute video (<https://youtu.be/KY5kStWsCns>) with members of the VCC and DIVERSEcity team, as well as a program brief (<http://p2pcanada.ca/wp-content/blogs.dir/1/files/2020/10/DEB-Nominations-Brief-VCC-EN-FINAL.pdf>) that describes the program.

Pathways to Prosperity: Canada (2023). *Sharing settlement and integration practices that work*. <http://p2pcanada.ca/sharing-settlement-and-integration-practices-that-work/>

UBCO's Use of Employers to Review Curriculum

Megan Lochhead is the manager of curriculum and academic programs in the Irving K. Barber faculty of science at the University of British Columbia Okanagan campus (UBCO). To improve new micro-credentials at her institution, she and her team enlisted the aid of industry experts (aka "technical experts"), who provided feedback on the pilot offering of the course. She describes the process, imparts her insights, and shares the tool designed by the department of earth, environment, and geographical sciences (EEGS) to gather this information (Appendix I).

Interview

How did you recruit the technical experts?

"We shared the opportunity with our network of employers. We were looking for experts to review our program, and in exchange for their time, they would receive free enrolment in the program for a junior employee. Seven experts volunteered."

What were the technical experts asked to do?

"The course was divided into eight modules and each reviewer was asked to review at least one module. The feedback was more in-depth than the learner ratings of course content and instruction that we typically ask learners to complete at the end of every course. We used a form to guide their review." [This form is shared in *Appendix I: UBCO's Technical Review Team Feedback Form*]

What did you do with the feedback?

"We used the feedback to improve our course. Micro-credentials are new for us. It's a new demographic, it's a new modality. Industry engagement is relatively new. It's been a huge learning curve because micro-credentials are different to what we typically do at UBCO."

What were some of the lessons learned from this experience?

"Make sure that you are very clear to the reviewers what the commitments are. In our case,

the review commitment was approximately three hours of time. You should have the templates created ahead of contacting them so that they know exactly what their commitment will involve."

Top Tips from UBCO

1. **Know what you are asking for.** Be clear about the time commitment and required tasks when you contact subject matter experts to ask for their assistance in reviewing a curriculum.
2. **Provide a template.** This ensures that you collect information on aspects of your program that you care about. It also ensures that the feedback is consistent across modules and reviewers.
3. **Follow up.** Once a reviewer has been assigned a task, check to make sure they are comfortable with what they have been asked to do. It gives them an opportunity to clarify any question they might have. It also serves as a reminder to do the work.

Appendix I: UBCO's Technical Review Team Feedback Form

UBCO created this form to collect feedback from content experts who reviewed new courses. Each reviewer was asked to choose one of the course's eight modules and comment upon its quality. To guide the process, they used the following form. It is divided into four sections:

1. Summarized feedback on key course components;
2. Prompts to inspire feedback in Part 1;
3. Example of summarized feedback on key course components;
4. In-depth feedback on each course component.

Part 1. Summarized feedback on key course components

Module Title: _____

Reviewer Name: _____

Section of the Module	Written Material	Videos		Reflections and Assessments		Resources	Comments and Questions
	Course Content (in the LMS)	Lectures	Interviews	Exercises	Quizzes	Additional Resources, External Links	Note any comment or question here
Overview							
Section 1							
Section 2							
Section 3							

Note: For some sections, certain components won't exist (i.e., not all sections contain a lecture or an exercise). Some modules have fewer sections than others. Please leave these blank or write 'n/a' if this is the case.

Part 2. Prompts to inspire feedback in Part 1

Please note that these prompts are suggestions. You do not have to use these.

Interest and Enjoyment	What you liked, or didn't like, about that section.
Quality	The rigour, value, and professionalism of the content or delivery.
Time	Whether the time it took to read, watch, or complete was reasonable.
Amount of Information	Too much? Too little? Note if anything is missing and needs to be added. Are there materials you feel are not essential? Make note of anything that could be reduced or removed.
Relevance	The relevance to the needs of industry. Does this address gaps or needs you see in your profession?
Strengths	What stands out as particularly valuable? Does the content provide easy-to-implement strategies that can improve performance?
Instructions and Explanation	Was the subject matter communicated effectively? Did the instructions clearly explain what was expected?

Part 3. Example of summarized feedback on key course components

Module Title: Technical Reporting

Reviewer Name: Jane Doe

Section of the Module	Written Material	Videos		Reflections and Assessments		Resources	Comments and Questions
	Course Content (in the LMS)	Lectures	Interviews	Exercises	Quizzes	Additional Resources, External Links	Note any comment or question here
Overview	Easy to navigate once you learn how to do it.	Good length. Professional. Clear audio.	Would like to see an interview on x topic.	n/a	Good to have multiple attempts.	n/a	Too short overall.
Section 1	The information is useful but could be broken into smaller pieces.	Material was very relevant to the needs of industry.	Interviewing someone early in their career would be an interesting perspective.	This section could benefit from having a reflective exercise.	n/a	Valuable but distracting. Put at the end of the module.	Too long overall.
Section 2	Would like to see more information on x.	The lecture could use some annotation.	Interview was interesting. Could be longer.	Exercise is not as impactful as it could be.	Too short.	Resources were relevant and useful.	This section is the most impactful section in the module.

Part 4. In-depth feedback on each course component

Written Material

	Overall Impression Please share general comments on your overall impression of this component.	Recommendations for Improvement What could be done to improve the content, navigation, or experience?
Course Content (in the LMS)		
Mini-Textbook		

Videos

	Overall Impression Please share general comments on your overall impression of this component.	Recommendations for Improvement What could be done to improve the content, navigation, or experience?
Lectures		
Interviews		

Reflection and Assessments

	Overall Impression Please share general comments on your overall impression of this component.	Recommendations for Improvement What could be done to improve the content, navigation, or experience?
Exercises		
Quizzes		
Final Assignment/ Assessment		

Resources

	Overall Impression Please share general comments on your overall impression of this component.	Recommendations for Improvement What could be done to improve the content, navigation, or experience?
Additional Resources and External Links		

Course Navigation

	Overall Impression Please share general comments on your overall impression of this component.	Recommendations for Improvement What could be done to improve the content, navigation, or experience?
Home Page		
Start Here (Orientation)		
"Assess" Module		
Overview		
Checklist and Next Steps		
Claiming a Badge		

Instruction

	Overall Impression Please share general comments on your overall impression of this component.	Recommendations for Improvement What could be done to improve the content, navigation, or experience?
Facilitator		
Interviewees		

Reflecting on the Module as a Whole

Feedback Requested	Overall Impression and Recommendations
Time to complete the whole module (estimated at 5-6 hours). Is it reasonable, too long, too short?	
Amount of information (i.e., reasonable, too much, too little)?	
Gaps? Deficiencies? (i.e., Does the module seem complete? What is missing?)	
Assessment (Written assignment at the end of the module)	
Course Navigation (i.e., your experience navigating in LMS)	
Quality of Instruction (Facilitator)	
Value for Tuition (Is the micro-credential priced right?)	

Additional Comments

Please share any additional feedback or suggestions on how we could improve this program.
Are you willing to participate in a follow-up survey in six months?

Inter-Institutional Collaborations

This chapter explores the benefits, challenges, and logistics of developing and offering programs in partnership with another post-secondary institution.

Chapter Audience:



Administrators



Program Managers



Faculty

What Is Inter-Institutional Collaboration?

Inter-institutional collaboration, in the context of this chapter, refers to a situation where groups from at least two post-secondary institutions come together to design and/or offer a micro-credential program.

Why Engage in Inter-Institutional Collaboration?

There are many goals and benefits to partnering with another institution to develop and offer a micro-credential. Here are some reasons to consider:

- **Harmonize curriculum across the province.** In some instances, it is desirable to offer the same curriculum, with aligned competencies and assessments, throughout British Columbia. This may be particularly useful for training that employers require for employment. Employers will want to know what a credential means — what learners can do as a result of completing it — but they are unlikely to want to learn the intricacies of how each institution's program differs from others. See *Stories from the B.C. Post-secondary Sector: CETABC's Collaboration Across Four*

Institutions to Develop Harmonized Curriculum for an example of this practice.

- **Leverage institutional expertise and facilities.** Each institution specializes in delivering a type of education (e.g., hands-on learning or theoretical explorations), has its own facilities and equipment (e.g., laboratories and simulation rooms), network of partners, a distinct brand and reputation among learners and employers, and access to educators and researchers with unique expertise. By coming together to develop and offer a program, institutions combine these resources to create a program that neither institution could offer alone. See *Stories from the B.C. Post-secondary Sector: UBCV and BCIT's Collaboration to Offer Curriculum Not Possible at One Institution* for an example of this practice in action.
- **Create pathways for learners.** Co-designing a micro-credential will create buy-in for the program. Each institution is more likely to trust the quality of a program that it helped to design and to develop laddering opportunities for learners who complete the training. This benefits learners in two ways. First, the opportunity to take courses at two or more institutions gives them first-hand experience with the environment and educational style of each institution. It's a way to sample what it is like to be a learner at each institution. This knowledge can help them select the institution that is a better fit for their continued training needs. Secondly, when institutions ladder micro-credentials into further training opportunities at their institution, it expands opportunities for learners, who now have access to further training at several institutions. This mutually beneficial arrangement provides increased access for learners while also providing institutions with a recruitment on-ramp. One example of how institutional collaboration can benefit learners in this way is the international collaboration Open Educational Resources universitas (OERu) (<https://oeru.org/>). Learners can complete the micro-credentials offered by any of the partner institutions located in over 40 countries and then use the micro-credentials for credit-transfer at the first-year undergraduate level at several partner universities. McGreal *et al.* (2022) describe a few examples from this collaborative.
- **Comply with funding aims and requirements.** Some funding opportunities explicitly call for institutions to partner in order to meet the funding program's objectives. This may happen, for example, when the funder is looking to impact several regions in the province. In other cases, the funding opportunity may not explicitly require that institutions partner, but the eligibility requirements may exclude one institution that is interested in developing the curriculum. In such situations, partnership with another institution that is eligible may be a solution. For example, let's say a funding call is only intended for institutions that are members of a professional association. One institution has ambitions to create a program in this discipline but is not currently an accredited member. It may partner with another institution that is a member and propose a joint application.
- **Pool resources and avoid duplication of efforts.** Similar programs are offered by institutions across the province. Consider, for example, that most institutions offer programs in leadership, administration, and management. When each institution works in isolation to create and offer its program, there often is duplication of effort and inefficient use of resources. There is an

economy of scale to be gained by collaborating to design and offer programs. See *Stories from the B.C. Post-secondary Sector: UBCV and BCIT's Collaboration to Offer Curriculum Not Possible at One Institution* for an example that describes not only the development of common curriculum but also ways in which each institution can modify the shared curriculum to ensure they remain competitive with their peers.

Development of OER Curricula

The development of open educational resources (OER) curriculum is perhaps an example of ways in which institutions can pool resources to create curriculum and avoid duplication of effort. The distinction between the development of OER micro-credentials and other forms of inter-institutional collaborations is that there might not be an explicit partnership required.

Here, one institution develops a micro-credential curriculum and its resources (e.g., syllabus, target competencies, assessments, lesson plans, learning resources, shareable content object reference model (SCORM) package for the learning management system, etc.) and shares it using an open licence that allows other institutions to download it, adapt it to their specific context, and use it.

Typically, the institution that has created the curriculum received grant support to develop it. Read about one example in the chapter *Employers, Indigenous and Community Partners: Stories from the B.C. Post-secondary Sector* and look for the section *Collaborating with a Non-Profit Organization to Benefit the Community*. Here, an Immigration, Refugees, and Citizenship Canada (IRCC) grant supported the development of a guide for replicating a micro-credential supporting newcomer women's entrepreneurship.

eCampusOntario's OER Micro-credentials Ready for Your Use

In 2021, eCampusOntario issued a call for proposals to support its Virtual Learning Strategy (<http://vls.ecampusontario.ca/vls-1/>). Though not aimed specifically at the creation of micro-credentials, several institutions applied to develop openly licensed online micro-credential curricula. These open educational resources (OERs) are freely available to any interested institution through the eCampusOntario's Open Library (<https://openlibrary.ecampusontario.ca/>).

Several of the OER courses supported in the first round of funding are described below. They showcase the range of available OER courses, from credit-bearing undergraduate courses, to online simulation experiences when in-person practicums are not available, to professional development programs. Many more are available on the Virtual Learning Strategy Projects (<http://vls.ecampusontario.ca/vls-1/>) website (using the suggested keyword search "course" or "micro-credential"). More courses will become available with future rounds of funding.

Name of Funded Project	Originating Institution	Course Description	Link to OER Curriculum on the eCampusOntario Open Library (https://openlibrary.ecampusontario.ca/)
Apprenticeship Red Seal Certificate of Qualification Preparation Course: Electrician 309A Construction & Maintenance Electrician	Algonquin College	Conversion of the Certificate of Qualification. Preparation for apprentices transformed from face-to-face to online delivery.	<ul style="list-style-type: none"> • Apprenticeship Red Seal Certificate of Qualification Preparation
Creating Six New Online Cybersecurity Courses	Centennial College and Durham College	Six new online cybersecurity courses for working professionals.	<ul style="list-style-type: none"> • Fundamentals of Cloud Computing and Cybersecurity • Cyber Security Governance • Cybersecurity Governance: Risk Management • Cybersecurity Governance: Organizational Preparedness
Creation of a new for-credit online course: "Big-data remote sensing using Google Earth Engine."	Carleton University	Google Earth Engine is a free cloud-based software that gives learners hands-on experience with big data and remote sensing. Exercises allow learners to explore solutions to problems related to their own interest or work objectives and engage learners in collaborative code-development.	<ul style="list-style-type: none"> • Big Data Remote Sensing
Early Childhood Education – Two Practicum Simulations	Cambrian College	This OER includes two complete simulations, including videos, branching scenarios, and debrief and reflection activities that can be used in situations where a placement or practicum is not available.	<ul style="list-style-type: none"> • ECE Professional Supervision and Communication Simulations

Name of Funded Project	Originating Institution	Course Description	Link to OER Curriculum on the eCampusOntario Open Library (https://openlibrary.ecampusontario.ca/)
Entrepreneurship for Creatives	OCAD University	Digital program certification that offers artists, designers, and creatives the competencies and capabilities they need to bring their products and designs to market	<ul style="list-style-type: none"> Principles in Creative Entrepreneurship
Introduction to Higher Education Management	Ontario Tech University	Helps graduate students and junior faculty learn how colleges and universities operate and how to lead projects involving multiple stakeholders. Topics include governance, budgets, meeting management, strategic alignment, conflict management, etc.	<ul style="list-style-type: none"> Introduction to Higher Education Management

All institutions, including those in British Columbia, may use these resources to create their micro-credential offerings. Institutions may wish to modify the curriculum by incorporating areas of specialization available at their institution as a way to differentiate their offerings from those of other institutions.

How to Develop a Micro-credential in Collaboration with Other Institutions

The following recommended practices are based on the experiences of institutions engaged in inter-institutional collaborations to provide micro-credentials:

- 1. Initiate informal conversations.** Like all partnerships, the collaboration begins with discussions between prospective partners to explore common goals and interests in working together to offer a program. Often a partnership will begin through other forms of relationships, such as instructors teaching at both institutions or previous joint projects, which give each group insight into the partner's suitability for the collaboration.
- 2. Establish a formal partnership agreement.** The partner institutions should draft and sign a formal partnership agreement specifying the responsibilities and expectations of each institution. Such an agreement provides administrative backing as it is usually signed by senior administrative officers at each institution. This gives the program stability even if members of the team change, as the commitment is between institutions rather than specific individuals. Elements to include in this agreement include:
 - a. Purpose of agreement.** Define the purpose of the agreement and the nature of the

- program offered by the two institutions.
- b. **Collaborative effort.** Outline the collaborative effort required by each institution in order to successfully design and offer the program. This should include the deliverables and timelines.
 - c. **Governance and decision making.** Describe the governance and decision-making process for the project.
 - d. **Responsibilities.** Define the responsibilities of each institution in terms of staffing, resources, and administrative duties related to the program.
 - e. **Financial arrangements.** Determine how costs, profits, and other resources will be allocated. This includes tuition fees, grants, costs, or other payments.
 - f. **Liability.** Describe the liability of each institution for any program-related losses (e.g., if the program incurs financial losses), as well as any claims or damages that may arise from the program.
 - g. **Conflict resolution.** Establish a process for addressing and resolving any disputes or disagreements that may arise between the institutions.
 - h. **Termination.** Define the conditions under which the agreement may be terminated. This could include that the agreement automatically renews each year unless either party notifies the other by a certain date that they wish to terminate the partnership.
 - i. **Signatories.** List the name, title, and signature of the person authorized to sign on behalf of each institution.

The Continuing Education and Training Association of British Columbia (CETABC) website provides many examples of service contract agreements from B.C. post-secondary institutions that could be adapted for this purpose. The Legal/Contractual webpage (<https://cetabc.org/content/legal-contractual>) provides access to these documents.

3. **Establish a forum for regular communication.** The institutions should agree on a forum to exchange frequent communication. This will first be used to coordinate on the design of the curriculum and later to review operational issues as they arise. The forum should include members from each institution. Consider including individuals with a range of expertise including instructors as well as administrators to ensure that there is broad knowledge of the program from multiple perspectives and effective problem-solving. The meetings should be frequent so that issues can be resolved quickly.

Vancouver Community College is currently developing a model for curriculum sharing across institutions. This project will create and evaluate a common partnership agreement and a repository of program resources. If successful, these resources should reduce the need to establish bi-lateral agreements and it should streamline the collaboration process between B.C. post-secondary institutions.

What Are the Challenges of Collaborating on a Micro-credential?

While there are many benefits to developing a micro-credential in partnership with another institution, it can be challenging to do so. Working with a partner adds layers of complexity and requires extensive communication between partners. Here are some of the challenges that must be addressed in the collaboration:

- **Securing adequate funding.** Creating a new micro-credential can be costly and institutions should work together to secure adequate funding for program development. The partners should clarify their expectations for the division of funds between them if successful with their application.
- **Coordinating administrative procedures.** For the new program to be successful, it is necessary to coordinate the administrative procedures of each institution involved. Notably, some of the logistical processes that will need to be addressed include:
 - How do learners register for the program? For instance, can they register using the website of one of the institutions or both institutions? Are the courses listed under one institution, and learners need to use both institutions' registration websites to register for all courses, or is there a new website created specifically for this program's registration?
 - How will tuition fees be collected and distributed between institutions?
 - Which institution can claim the registrations as part of their full-time equivalency (FTE) reporting?
 - How are costs and revenues shared between the partners? How are the funds transferred between institutions? Who monitors and has authority over the program budget?
 - How do institutions share risks and liabilities (e.g., in the event that a course must be canceled)?
 - How is the micro-credential approved by each institution?

See *Stories from the B.C. Post-secondary Sector: UBCV and BCIT's Collaboration to Offer Curriculum Not Possible at One Institution* for an example of how two institutions navigated these decisions.

- **Maintaining consistent standards of quality.** Two institutions collaborating to create a new micro-credential must ensure that their standards of quality are compatible and that the program meets the same level of excellence across both institutions.
- **Developing a unified curriculum.** The curriculum for the micro-credential must be coordinated across both institutions so that learners can achieve the program's learning outcomes or competencies. This will require extensive conversations to ensure that the curriculum is well articulated across courses or components. The partners should also agree on a consistent method for evaluating the courses across institutions. There may be some challenges if the

two institutions use different learning management systems. Learners may need to become proficient at using both technology ecosystems, and require support to do so.

- **Credentialing.** There should be a conversation about which institution will issue the credential upon successful completion of the program. Monitoring completion of the micro-credential requires coordination across the registration systems of both institutions if learners registered for courses at both schools. Each institution may use different digital badging systems and their compatibilities must be examined. Some digital badge systems may only be able to issue a badge from a single institution. Solutions will need to be developed to address these concerns.

Stories from the B.C. Post-secondary Sector

CETABC's Collaboration Across Four Institutions to Develop Harmonized Curriculum

The Continuing Education and Training Association of British Columbia (CETABC) (<https://cetabc.org/>) brings together 15 colleges and universities across the province. Representatives from member institutions' continuing education and contract training unit meet several times a year, share knowledge and expertise, and collaborate to address workforce training needs across the province. Here, CETABC president Claire Sauvé (associate director of continuing studies at Vancouver Community College (VCC)) and Nancy Hamilton (manager of continuing education and contract services at Vancouver Island University (VIU)) describe a collaboration of four CETABC institutions to develop a uniform curriculum for building service workers across the province (the program is now offered at VCC (<https://continuingstudies.vcc.ca/search/publicCourseSearchDetails.do?method=load&courseId=1021250&selectedProgramAreaId=1027704&selectedProgramStreamId=1027719>), VIU (<https://pdt.viu.ca/building-service-worker>), Okanagan College (<https://www.okanagan.bc.ca/building-service-worker-certificate>), University of the Fraser Valley (<https://www.ufv.ca/trades/programs/building-services-worker/>), Selkirk College (<https://selkirk.ca/building-service-worker>), North Island College (<https://www.nic.bc.ca/programs/programs/continuing-education-and-training/building-service-worker.html>), Camosun College (<https://prosit.camosun.ca/search/publicCourseSearchDetails.do?method=load&courseId=1520971&selectedProgramAreaId=18075&selectedProgramStreamId=1920491>), and Coast Mountain College (<https://www.coastmountaincollege.ca/programs/discover/continuing-studies/service-hospitality>)).

What motivated CETABC to collaborate on the development of the building service workers program?

Sauvé: "It was a combination of factors. Each of our institutions already offered building service worker training, some of which was proprietary curriculum. We had heard from employers that they wanted a harmonized curriculum across the province. With each institution having its own curriculum, which covered different competencies and varied in length and scope, it was difficult for employers to interpret the credential. When prospective employees applied for a position, it was unclear what skill they had, because it varied based on where they were trained. There was a need to create a uniform curriculum across the province."

Hamilton: "There was another driver as well, which was the COVID pandemic. That required new knowledge about how to clean safely and about how to disinfect appropriately. It was the right time to update the curriculum, to keep everyone safer, including the workers."

Sauvé: "Our desire to work together also came from our long history of collaborating. CETABC's mandate is to support such dialogues and collaborations. We meet regularly so we know each other well. We have developed our own funding to support inter-institutional collaborations, where we identify a training or research need, work together on a gap analysis or to develop curriculum, and then anyone in the association can access the research and use the curriculum. We also respond to outside calls for funding together. We all operate on a cost recovery model, and I think that also helps, because we understand each other's business context and we share values, for example wanting to keep the cost of training as accessible as possible for learners. That history of knowing how to collaborate with each other, the trust that comes with it, and the similarity in vision and goals across members, were key to the success of this collaboration."

How did the partnership work in practice?

Sauvé: "One institution steps up to be the lead. This is usually based on interest and whoever has the capacity to support the collaboration. In our case, one institution initially took the lead and put together a funding proposal — which was eventually successful. However, they had to step back when it was time to implement it. That's when VIU found

that they had available resources — staff time — to lead the charge and coordinate the project.”

Hamilton: “We started with a project charter to clarify every team member’s role and responsibilities. We met weekly. Each institution contributed subject matter experts to engage in a conversation about the competencies that are essential for a building service worker. We used the Developing a Curriculum (DACUM) (<https://prezi.com/ca0q383ouhj7/designing-a-curriculum-dacum/>) approach to identify the competencies needed in the workplace. There were a lot of tough conversations during those discussions, because we had to identify what are core competencies, from what are not, and participants’ views were influenced by their experience of their institution’s curriculum.

“We used consensus-based decision making. If someone could not make a meeting, it didn’t mean that they did not have something to contribute to the meeting’s conversation. It’s important to provide multiple forms of engagement and opportunities to contribute (for example, having meeting minutes and allowing people who missed the meeting to add their input) to ensure everyone’s voice is heard.

“The funding for this program was used to support a project manager, to compensate the time of the subject matter experts, and to produce some of the instructional materials.”

What are the outcomes of this collaboration?

Sauvé: “We now have a harmonized curriculum, and a harmonized name for the curriculum, across institutions in the province. That way, employers recognize the credential and know what it contains. The curriculum has also been updated to include COVID cleaning protocols. The deliverables include lesson plans, SCORM files that can be uploaded into any learning management system for online delivery, and even professionally produced videos to deliver some content. The curriculum is for an online course. Any CETABC member can access this curriculum, free of charge. They can then offer the program independently, collecting registrations and tuition, and hiring instructors, on their own.

“Developing a curriculum from scratch, including all of the learning materials, is resource intensive. Before, we were duplicating efforts across the province. Also, some institutions didn’t have the resources to develop their own, so they licensed it from other institutions who had a curriculum. With this collaboration, we have a harmonized curriculum, that is of high quality, that every member has access to without any licensing fee, and we combined our efforts to create it so there is no duplication. The funds were necessary to make it happen, but in return the province gained an economy of scale.”

Hamilton: “We wanted to encourage institutions to differentiate themselves and to respond to local needs — for example, specializing in cleaning protocols for a particular industry like

hospitals — and we agreed that this would be called Level 2 of the building worker training. Level 1 gives participants the core skills and are uniform across the province, and Level 2 is specialized and each institution can create its own."

What's next for this collaboration?

Hamilton: "We would like learners to be able to transfer between institutions – to take the Level 1 course at one institution, and then go take Level 2 at another institution if that institution is closer to them geographically or perhaps if it offers a specialization they need. We haven't worked out this sort of transfer agreement yet. It would be easy to do with digital badges. However, it hasn't been done yet. That's the next step."

Top Tips from CETABC's Experience

1. **Build on existing relationships.** CETABC's mission and activities means that member institutions (schools of continuing education and contract training across the province) routinely work together. Working together is hard, since each institution has different priorities and processes. Prior experience of working together and knowing each other facilitates inter-institutional collaboration to ensure its success.
2. **Foster trust.** Foster a culture of trust, where everyone's voice is valued (even when they miss a meeting!), and where tough but productive conversations can occur. People coming together from across institutions will have different ways of operating and different perspectives about how to do things. The team leader should ensure that everyone stays focused on the shared goal, commitment, and values.
3. **Hire a project manager.** Coordinating multiple team members across institutions is challenging. Have a dedicated project manager who can communicate with everyone and remind them of action items and deadlines.
4. **Follow the DACUM process.** Use someone with knowledge of competency-based education, and of the DACUM process in particular, to guide the conversations with all subject matter experts. This curriculum design strategy was created to facilitate the input of several stakeholders.
5. **Provide means for institutions to specialize.** Even when building harmonized training across the province, each institution will need to respond to local needs and opportunities. Therefore, when developing harmonized or shared curriculum, build

ways in which each institution can integrate its own area of specialization into the curriculum.

UBCV and BCIT's Collaboration to Offer Curriculum Not Possible at One Institution

Anubhav Pratap-Singh is an assistant professor of food processing in the faculty of land and food systems at the University of British Columbia Vancouver campus (UBCV), where he holds the Endowed Professorship in Food and Beverage Innovation. He initiated a collaboration with the British Columbia Institute of Technology (BCIT) to offer the Micro-certificate in Food Safety Management (<https://www.landfood.ubc.ca/certificate/food-safety-management/>). By January 2023, the program had been delivered successfully to two cohorts, with plans to expand the program. Below, Pratap-Singh describes his experience of partnering with another institution to provide such programming.

Interview

Tell us about the structure of the micro-certificate in food safety management.

"To earn the micro-certificate, learners must complete four online courses. Three are mandatory and one is an elective.

"Of the three mandatory courses, two are offered through UBCV and one is offered at BCIT. With this structure, all learners are exposed to the approaches and expertise of instructors at each institution.

"The elective course gives learners the opportunity to pursue a topic of interest in more depth. Each institution currently offers one course, with plans to develop more offerings in the future."

Why did you decide to collaborate with BCIT to offer this program?

"A few years ago, the B.C. Ministry of Agriculture and Food conducted a survey with food industry employers to learn about their challenges and labour market gaps. BCIT and UBCV were both involved in collecting the data. Two findings from that report motivated the decision to move ahead with this micro-certificate. First, the B.C. food industry felt that there

was a gap in food safety management training. Second, they brought up the impact of geographical barriers to educating their workforce. This is one of the biggest problems in Canada generally, but it is particularly acute in agriculture and food production because they take place in rural areas whereas post-secondary institutions tend to be in urban regions. The food production sites are also decentralized, so there isn't one easily identified region where we could offer training that would address this issue across the province.

"BCIT and UBCV are the only two institutions that have expertise in food safety. We each have our own niche area of expertise. UBCV is more academic and global in its outlook; while BCIT is very well connected in the province — they already work with employers and are familiar with the provincial regulations that regulate practice in B.C.

"There were already connections between the two institutions. For example, some instructors teach in both institutions. But this was going to be a new type of relationship. I reached out to BCIT to inquire about their interest in collaborating on a micro-certificate and there was interest. I then applied for seed funding to develop the courses. We received the funding as part of the province's pilot micro-credentials funding call. Since the funding was meant to support the development of new courses, we split the funds between the institutions in a proportion that matched the number of new courses offered by each."

How did you implement the collaboration?

"We decided to keep things as simple as possible. Each institution has its own policies and procedures for putting together a new program. For example, each has its own approval processes. We decided to create a program structure that exposed learners to the two institutions' expertise and approaches, while minimizing the administrative overlap. BCIT handled their own student registrations, scheduling, hiring of instructors, and course delivery, and we did the same on our end.

"Of course, this doesn't take care of everything. There needs to be constant communication between the two institutions to ensure a smooth, integrated program. For this we created a small working group of about five people that met bi-weekly. It was composed of individuals from each institution, including faculty and members from the teaching and learning centre of each institution. We solved problems together as they arose. For example, learners started to report that one core course didn't prepare them adequately to take the next course at the other institution. We had to investigate the curriculum and ensure that the two courses coordinated more smoothly. Another example is that each institution used a different badging system to recognize the completion of each course, and we had to devise a solution to ensure that when learners complete the program, they are granted the micro-certificate.

"Before this work began, we signed a service agreement contract. This is an important step

because it gives both parties clarity about their roles, obligations, and how the funds will be allocated between them. This is where we clarified that each institution would be responsible for the costs of their own courses. It also addressed whether we intend the program to renew. In ours, we have an auto-renew clause that basically says that the service agreement is extended in perpetuity, so that we can continue to offer the program to more cohorts each year, until one of the two parties gives notice that they want a change. This is a legal agreement. It's important to set it in place, because let's say one of the coordinators cannot devote time to the program one year, unless that agreement is in place, the program could fall apart. Having a legal agreement means that it has been reviewed and supported by administrators at each institution and that provides a measure of stability and sustainability."

What are some of the benefits of this partnership?

"There are several. First, it gives our learners exposure and knowledge to a range of specializations and expertise that neither institution would be able to offer alone. It created something new that benefits learners.

"I think students also appreciate obtaining the recognition from both institutions. There is a certain cachet to having a credential from both UBCV and BCIT. Each one carries different values and connotations about what the learner can do. That's valuable.

"The fact that we created an online program also responded to the need expressed by the food industry and made the learning accessible across the province."

What were/are some of the challenges of offering a program through multiple institutions?

"One challenge is that there were no policies or guides helping us move ahead. No one had done this before. We had to figure this out for ourselves. At UBCV, we didn't even have a policy governing micro-credentials, though one is coming, and that should help in the future. For example, this work is currently not recognized as part of my teaching load as a faculty at UBCV. I take on the work because I believe in it, but the system is not set up for it. The newness of it all, and the lack of systems and policy to support it, makes it harder to do.

"Engaging in inter-institutional collaboration is not easy. Our systems are not built with a lot of incentives to make it happen. Without the B.C. Ministry of Post-secondary Education and Future Skills micro-credential funding, this partnership would not be possible. If, as a community, we decide that we value this, it will be important to create funding opportunities that incentivizes it (i.e., micro-credential funding that make inter-institutional collaborations a criterion for applications)."

1. **Identify the unique expertise of each institution.** If two institutions have similar specializations, there may not be significant benefit in collaborating on a new program. The key is to identify a partner with a related but distinct area of expertise. That way you can combine your knowledge and unique approaches to create something new that neither institution could offer alone.
2. **Ensure there is a champion at each institution.** Whenever you create something new, there will be procedural hoops to jump through. In a program involving two institutions, you need someone who can navigate the policies and procedures of each institution's systems. For this reason, you need a champion at each institution who is committed to the program's success.
3. **Hold frequent meetings.** Unanticipated issues will arise during the delivery of a new program. It is critical to have a forum to address these issues with representatives from both institutions. In the UBCV-BCIT partnership, they held a meeting every two weeks, a frequency that was effective for them given that their courses are each four weeks long.
4. **Have an agreement in place.** Once both partners agree to a partnership to offer a new program, it's time to formalize that agreement with a signed contract. This will ensure that both institutions are clear about their roles and responsibilities, and that the parameters of the partnership are understood by both parties.
5. **Keep it simple.** Collaborating across institutional boundaries presents some challenges. However, there are ways to improve and streamline the process. For example, you might decide to create one registration system for learners in the program rather than sending them to each institution to register for each course. However, implementing such a system is not without its challenges. It raises many questions, such as how to distribute the tuition to each institution, how to count student registrations, who administers the system, etc. This will require bridging institutional policies, which will take time and may impede the core objective of educating learners. To overcome this, try adopting a rapid prototyping approach. Create something that works. Offer it. Then iterate and improve.

BCIT's Collaboration with UNBC to Access Funding and Enhance Programming

Eric Saczuk is the head of remotely piloted aircraft systems (RPAS; also known as drones) operations at the British Columbia Institute of Technology (BCIT). He developed and launched the micro-credential Introduction to Forest Health Quantification with RPAS (<https://www.bcit.ca/programs/introduction-to-forest-health-quantification-with-rpas-microcredential-part-time-0817cm/>), now in its third offering, as well as several related programs that use drones for remote sensing. Below, he describes how a collaboration with the University of Northern British Columbia (UNBC) was instrumental in moving the initial micro-credential forward.

Interview

What sparked the development of this micro-credential?

"The idea for this micro-credential came out of a Mitacs (<https://www.mitacs.ca/en>)-funded research project between BCIT and Stinson Aerial Services Inc. This company had recently consulted with the Huu-ay-aht First Nations on Vancouver Island. The Huu-ay-aht First Nations had just acquired a 51 per cent share of a local timber forestry licence, and they were looking at different technologies and tools to manage their land's resources. Drones are a great way to do that. Stinson connected BCIT and the Huu-ay-aht First Nations and this made us aware of a need for training.

"When the opportunity to develop a micro-credential came up, it was a perfect fit. The past conversations between BCIT and the Huu-ay-aht First Nations had identified a training need: How to operate this equipment, extract data from it, and analyze it to manage their forest resources. When it comes to giving people in-demand, employable skills, RPAS operation is a no-brainer. The first offering of this micro-credential had 12 seats assigned to the Huu-ay-aht First Nations and we filled them all.

"We explored the best format for the program. We settled on each course taking place over three weekday mornings online, followed by Saturday in-person in Port Alberni doing hands-on training with the drones. The micro-credential consists of four of these courses."

Why did you partner with another post-secondary institution to offer this training?

"We had two sources of funding for this micro-credential. One of them was from the

Cascadia Innovation Corridor (<https://connectcascadia.com/>), which is an organization that promotes the economic development of the Pacific Northwest. BCIT is a member organization. The application criterion for the funding required a collaboration with at least one other member of the consortium. By reaching out to colleagues across forestry departments at several institutions, I determined that UNBC was the best fit in terms of talent, willingness to collaborate on this project, and timing.

"BCIT led the partnership, and the program was offered through BCIT (i.e., students registered through BCIT and earned a BCIT credential). UNBC collaborated on the development and offering of the curriculum.

"The discussion between institutions was eye opening. We learned about structural differences in the job description of faculty at each institution. While building in funding for the faculty to conduct research and collect data was an incentive to participate in this project at BCIT, it was not for UNBC faculty because that is already a part of their job description. We had to find other incentives and ways to compensate for the work of members of the UNBC forestry department on the project.

"The solution was to hire a UNBC graduate student to contribute his expertise. He traveled to Port Alberni to teach the hands-on portion of the program for two out of the four Saturdays. He created the content and graded the assignments related to those two sessions. This allowed us to contribute and combine our different expertise in the development and delivery of the micro-credential. It also allowed us to spread the travel and workload between instructors and made the program easier to offer. Students seeing institutions work with each other is beneficial as well."

To what do you attribute the success of the collaboration with UNBC?

"We signed an agreement between the two institutions to ensure that the funds were distributed equitably. It also clarified the roles and expectations for each partner in the development and offering of the program.

"The two institutions enjoyed great communication and a willingness to be flexible in the collaboration to make it happen. I can't emphasize enough how important this is.

"There is no real framework in place for these kinds of collaborations, so we took a 'make-it-up-as-you-go-along' approach, which of course has its challenges. Just trying to set up the agreements and establish a structure for 'who's doing what and when' takes time and a lot of open communication."

Would you do it again?

"Absolutely! The opportunity to collaborate across institutional boundaries is not the type of thing that happens on a regular basis. Academia is inherently siloed, and we have a

tendency to keep to ourselves, simply because it's easier that way. However, there is so much to learn from these types of partnerships that I can honestly say that all the effort we invested to make it happen was worth it."

Suggested Resources

Systems Thinking

In this provocative article, the authors argue that in this challenging environment, post-secondary institutions should take a systems approach to their mission rather than trying to maximize their own operation. Operating "for the good of the B.S. post-secondary system" maximizes efficiencies and facilitates a collaborative, rather than competitive, mindset.

Minassians, H. P., & Roy, R. (2017). *Meeting the complex challenges facing public higher education will require moving from silos to systems* (https://evollution.com/managing-institution/operations_efficiency/meeting-the-complex-challenges-facing-public-higher-education-will-require-moving-from-silos-to-systems/). The Evollution. https://evollution.com/managing-institution/operations_efficiency/meeting-the-complex-challenges-facing-public-higher-education-will-require-moving-from-silos-to-systems/

This article explores why the University of Nebraska Online Worldwide (<https://online.nebraska.edu/>) — an online aggregator of courses offered by several institutions within the University of Nebraska system — has been a successful example of post-secondary institutions working together to offer programming.

Niemiec, M., Keel, L., & Barber, M. (2015). *Collaboration critical for system-level online aggregators* (<https://evollution.com/opinions/collaboration-critical-system-level-online-aggregators/>). The Evollution. <https://evollution.com/opinions/collaboration-critical-system-level-online-aggregators/>

Partnership Development

This article presents a model for successful educational partnerships that includes five elements: commitment to partnerships, curriculum and learning, quality and risk management, geographic and economic setting, and change management.

Chou, D. C. (2012). Building a successful partnership in higher education institutions (<https://dx.doi.org/10.1504/IJISCM.2012.050350>). *International Journal of Information Systems and Change Management*, 6(1), 84–97. <https://dx.doi.org/10.1504/IJISCM.2012.050350>

This article promotes the value of planning before two institutions engage in a partnership. The instructions for the plan could be used in the development of a partnership agreement. The article also provides questions that could be used to assess the success of the partnership as the project progresses.

Hilliard, A. (2012). Sharing resources: Benefits of university partnerships to improve teaching, learning, and research (<https://doi.org/10.19030/jier.v8i1.6697>). *Journal of International Education Research*, 8(1), 63–70. <https://doi.org/10.19030/jier.v8i1.6697>

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Learners

Learners can engage with a micro-credential beyond being the recipients of training. This chapter explains how to leverage their participation to improve programs.

Chapter Audience:



Program Managers



Faculty

What Are “Students as Partners”?

Learners are sometimes thought of as mere recipients of training. However, an increasing number of institutions are viewing them as partners rather than as just end-users. As a reflection of this, the term “students as partners” is now used extensively in the education literature (Cook-Sather *et al.*, 2018; Mercer-Mapstone *et al.*, 2017), and McMaster University has created the *International Journal for Students as Partners* (<https://mulpress.mcmaster.ca/ij sap/index>) dedicated to exploring this topic.

In their book *Engaging Students as Partners in Learning and Teaching: A Guide for Faculty*, Cook-Sather, Bovill, and Felten describe the learner-staff partnership as “a collaborative, reciprocal process through which all participants have the opportunity to contribute equally, although not necessarily in the same ways, to curricular or pedagogical conceptualization, decision-making, implementation, investigation, or analysis” (2014, pp. 6-7).

Why Collaborate with Learners

The many reasons for engaging learners as partners are described in the literature. Some are values-based, citing the desire to break down hierarchies and reduce power imbalances at the institution (Matthews *et al.*, 2018). There is evidence that institutions that engage in the practice of “students as partners” can foster a greater sense of community, with increased trust between

learners, and between learners and staff (Mercer-Mapstone *et al.*, 2017). While some have cautioned that the movement to view learners as partners is based on a neoliberal perspective on the role of post-secondary education (i.e., seeing learners as customers) (Matthews *et al.*, 2019), research suggests that institutions that engage in this practice do so to reflect their democratic ideologies (i.e., learners' and staff's desire for more transparent communication and understanding) (Gravett *et al.*, 2020).

Engaging learners as partners is also seen as a way to disrupt the system, bring about cultural reform, and facilitate change (Matthews *et al.*, 2018). Indeed, there is evidence that engaging in "students as partners" practices can transform faculty thinking about teaching and learning, opening their understanding to the views of learners (Harrington *et al.*, 2014).

Some institutions use a "students as partners" strategy to promote the growth of their learners. There is evidence that serving as partners can boost learners' confidence, develop their sense of self-efficacy, and improve their motivation to learn as well as their learning outcomes (Harrington *et al.*, 2014; Kuh, 2008).

Finally, learners are often consulted with a more pragmatic goal: To probe their perspectives and knowledge to improve a program. Learners' perspectives can inform a wide range of topics, from improving the curriculum and/or teaching, to linking institutions with work and employers, to addressing diversity and inclusion issues in the program (Bovill, 2019; Bovill *et al.*, 2011; Felten *et al.*, 2014; Healey *et al.*, 2016).

Consulting with learners to improve the design of a program reflects a design thinking approach, also known as human-centred design (Interaction Design Foundation, n.d.). Proponents of design thinking emphasize the importance of involving end-users throughout the design of new products and services. No matter how well intentioned they are, designers risk relying on erroneous assumptions in their work. Hence the need to collect data to understand the user perspective. Designers are encouraged to talk to prospective users to identify the pain points that lead them to seek the product or service. This approach helps designers prioritize what's most important to users. Then, having identified and defined the problem from the user's perspective, designers brainstorm different ways to address these pain points and prototype a few options. Finally, designers observe users engaging with a prototype to learn how users are engaging with the product or service, which may differ from the designers' intended or anticipated interaction. Adopting a design thinking approach and involving users throughout the design and development stages maximizes the chances that the final product will match user needs and expectations, leading to a successful outcome.

What Roles Can Learners Play in a Micro-credential?

Prospective, current, and past learners can provide valuable information about their needs and expectations for the training, including their response to proposed curriculum or curriculum changes, the choice of employer partner, the learning management system, instructors, and the program's marketing plan. Consulting with learners can ensure that the program meets their need.

Learners can also play a role in mentoring the next cohort, promoting the program, bridging relationships with new employer groups, educating employers about micro-credentials, and even serving as future instructors. Involving learners in various ways has the added benefit of creating a sense of community and establishing networks that can support the ongoing success of the program.

Here is a list of some of the roles to consider for learners during a micro-credential project.

Curriculum Design

- Participate in focus groups to identify learning and employment needs.
- Inform the design phase of the curriculum.
- Provide feedback on a prototype course and its learning materials.
- Run a survey or focus group during the evaluation stage.

Program Marketing

- Survey prospective learners to identify an appropriate price point for the program.
- Ask prospective learners about the channels that would be most likely to reach this audience and the messages that will capture their attention.
- Solicit testimonials from past learners who find the micro-credential useful.
- Create learner case studies that showcase the journey and success of past learners.

Community Development

- Foster connections between past, present, and future cohorts. Create working spaces (virtual or physical) for making those connections.
- Encourage past learners to introduce micro-credentials to their employer, serving to educate employers, and become advocates for the credential.
- Ask learners to solicit feedback from their employers about how the training impacted their performance in the workplace, as well as areas where further improvement may be needed.
- Ask learners whether anyone in their work environment might make a good instructor for the micro-credential.

- Recruit instructors from past learners.

Credential Ownership

- Ask learners to share their micro-credential on LinkedIn and other social media.
- Show learners how to curate the presentation of the micro-credential record so it tells a compelling story to employers who may not be familiar with micro-credentials.

How to Collaborate with Learners

The literature seems in agreement with Cook-Sather, Bovill, and Felten's (2014)'s proposal that three values should underpin the development of learner-staff partnerships:

- Respect;
- Responsibility;
- Reciprocity¹.

Matthews (2017) (<https://mulpress.mcmaster.ca/ijsap/article/view/3315>) used past research to guide her proposal of best practices in treating "students as partners." According to her work, practitioners should espouse the following principles:

1. Foster inclusive partnerships;
2. Nurture power-sharing relationships through dialogue and reflection;
3. Accept partnership as a process with uncertain outcomes;
4. Engage in ethical partnerships;
5. Enact partnership for transformation.

To plan learner partnerships and make clear the roles and responsibilities, Bovill (2017) suggests developing a participation matrix to summarize the nature of learner engagement in each phase of a project. Drawing from a scale of participant engagement used in international development, Bovill categorizes participation in one of four categories: Inform, Consult, Participate, and Partnership. These engagement levels are defined in the following manner (adapted from Last, 2019):

- **Inform.** Provide learners with balanced and objective information about the project, the problem, and possible solutions. (There is no opportunity for learner input or decision-making.)

1. Bovill (2017) later revised this and argued that reciprocity is not always possible or even desirable in a learner-staff partnership.

- **Consult.** Gather feedback on the information provided. Level of input can range from minimal interaction (such as online surveys) to more extensive. Engagement can be a one-time opportunity or an ongoing/iterative process in which learners' input is incorporated into the decision-making process.)
- **Participate.** Work directly with learners during the process to ensure that their concerns and desired outcomes are fully understood and factored in at each stage. Final decisions are still made by the institution, but input from learners is carefully considered.
- **Partnership.** Partner with learners at each stage of the decision-making, including developing alternative solutions and choosing the preferred solution together. Goal is to achieve consensus regarding decisions.

Bovill then creates a table that lists each phase of a project and clarifies learner involvement at each stage, with a final column specifying who has control of each phase. An example is provided in Table 1.

Table 1. Example of how the Bovill (2017) framework can be used to plan learner participation in a micro-credential. Modified from Bovill (2017), CC BY.

Stages of Micro-credential Project	Level of Involvement				
	Inform	Consult	Participate	Partnership	Control
Needs Assessment		Focus group (n=6)			
Curriculum Design				Member of design team (n=2)	
Curriculum Development			Pilot testers (n=2)		
Marketing and Promotion		Surveys (n=25)			Institution
Learning Recognition		Focus group (n=6)			
Alumni Community	All learners			Alumni and institution design and administer an alumni community together	Co-led

Bovill has also created a learner participation framework that is specific to learner engagement in

curriculum design (Bovill & Bulley, 2011). This model proposes levels of participation based on Arnstein's "eight rungs on a ladder of participation" (1969), which range from having no voice in the curriculum (bottom levels) to taking ownership of the curriculum (top levels). Using this model, instructional designers can choose the appropriate level of involvement of learners, employers, and others in curriculum design for their context. The eight levels are:

1. Learners in control of the curriculum.
2. Learners co-create the curriculum in partnership with instructor.
3. Learners control some areas of choice.
4. Learners control prescribed areas of choice.
5. Learners have many choices from a set of prescribed options.
6. Learners have limited choice from a set of prescribed options.
7. Participation is claimed, but the instructor is in control.
8. The curriculum is dictated by the instructor (i.e., no interaction).

Often, learners are consulted as part of a group process with other stakeholders. The methods used to involve learners will depend on the goals of the engagement (Bovill, 2019). Some utilize large groups, others use small groups, some may be a one-time consultation, while others may put learners in charge of making decisions.

Several toolkits can guide the process of soliciting input from diverse stakeholder groups. These toolkits provide structure for the engagement. Two are suggested below (additional resources for these two toolkits are provided in the *Suggested Resources* section).

- Liberating Structures (<https://www.liberatingstructures.com/>) is a popular, open-access collection of 33 techniques for engaging groups of people. It values distributed control of the conversation and ensures that all the voices are heard and considered.
- The design thinking community is very active in creating and sharing techniques to engage end-users and collect their feedback throughout the design of a new product or service. Two such toolkits are shared in the *Suggested Resources* section, including the freely accessible DesignKit by IDEO.org (<https://www.designkit.org/resources/1.html>).

Suggested Resources

Learner Perspectives on Micro-credentials

This short article provides a glimpse into learners' perspectives on micro-credentials – what they hope the sector will provide to meet their needs.

Oxley, K., & van Rooyen, T. (2021). Making micro-credentials work: A student perspective. *Journal of*

Teaching and Learning for Graduate Employability,12(1), 44–47. <https://ojs.deakin.edu.au/index.php/jtlge/article/view/1321/1376>

Liberating Structures

The Liberating Structures toolkit is a widely used repository of 33 techniques for engaging groups in conversation and tapping into their collective expertise to solve problems. The toolkit is available as a hard copy, but all of the techniques are also described online as an open-access, user-friendly website.

Lipmanowicz, H., & McCandless, K. (2014). *The surprising power of Liberating Structures: Simple rules to unleash a culture of innovation*. Liberating Structures Press.
<https://www.liberatingstructures.com/>

This article provides a thorough overview of Liberating Structures. It can serve as a good introduction to their use.

Gill, L. (2017). *What are Liberating Structures?* Medium. <https://reimaginaire.medium.com/what-are-liberating-structures-de6f6d14c2c8>

Design Thinking

This easy-to-read book uses storytelling from years of experience implementing design thinking to demonstrate how to apply the approach and its benefits. The two authors cofounded IDEO and the d.school at Stanford University and are experts in the practice of design thinking.

Kelley, T., & Kelley, D. (2015). *Creative confidence: Unleashing the creative potential within us all*. William Collins.

The following article in *Slate* magazine is an abbreviated version of the book, written by the authors.

Kelley, T., & Kelley, D. (2013). Kids were terrified of getting MRIs. Then one man figured out a better way. *Slate*. <https://slate.com/human-interest/2013/10/creative-confidence-a-new-book-from-ideo-s-tom-and-david-kelley.html>

Written by the leading institution of design thinking, the DesignKit toolkit of over 50 techniques that can be applied to all five phases of design thinking. Each technique is described briefly in a single page. The book can be purchased in hard copy format, but can also be downloaded for free in PDF format from the IDEO website.

IDEO.org (2015). *The field guide to human centered design: A step-by-step guide that will get you solving problems like a designer*. DesignKit. <https://www.designkit.org/resources/1.html>

This well-structured book provides over 100 methods that can be used when adopting a design thinking approach. Each is described in one to two pages in a step-by-step fashion.

Kumar, V. (2013). *101 design methods: A structured approach for driving innovation in your organization*. John Wiley & Sons, Inc.

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DESIGN

Design Considerations: Practical Guide

Micro-credentials typically differ from traditional post-secondary programs in terms of their audience, goals, approach, and involvement of multiple stakeholders. This chapter provides an overview of some of these key factors to consider when designing such programs.

Chapter Audience:



Program Managers



Faculty

Design Cycle

Creating a new micro-credential program involves the input of several stakeholders, such as employers, subject matter experts, learners, media designers, instructional designers, ICT support staff, and possibly other institutions. This introduces more complexity than in the development of traditional post-secondary programs and it must be managed. While there are many instructional design models that a team can use to guide the creation of a new program, ADDIE and SAM are the most common.

ADDIE

The most commonly used instructional design model is ADDIE, composed of the following steps:

1. **Analysis.**

This step involves conducting a needs assessment and environmental scan, as well as identifying the resources needed to implement the program. How to conduct a needs assessment was described in the chapter *Financial Matters*. Consider also consulting van

Vulpen (2020).

2. **Design.**

This is where the blueprint of the program is sketched out. This means identifying the program's learning outcomes, assessments, structure, format, and activities. In short, this is where the syllabus is created. For micro-credentials, this planning is often done as a team effort in order to incorporate the expertise and perspectives of employers, subject matter experts, and instructional designers.

3. **Development.**

At this stage, the learning materials are created. This means producing the videos, readings, lesson plans, activities, assignments, assessments, and online course contents. This is typically assigned to a subject matter expert, who works in conjunction with an instructional designer and a media specialist. Employers can provide input in the form of sample problems and case studies from the workplace or feedback on the content's relevance.

4. **Implementation.**

This is where the course is launched and offered. Instructors use the lesson plans to deliver the content, while learners participate in the course and engage with the materials.

5. **Evaluation.**

Although placed last, data collection for the evaluation of a program happens at every step. However, after running through one round of the pilot offering, it may be worth assembling the whole team to review the data and plan for improvements for the next offering of the program.

Figure 1 shows the ADDIE instructional design process. For more information on this approach, including its benefits and limitations, see Chapter 4.3 The ADDIE Model in Tony Bates's book *Teaching in a Digital Age* (<https://pressbooks.bccampus.ca/teachinginadigitalagev3m/>) (2022).

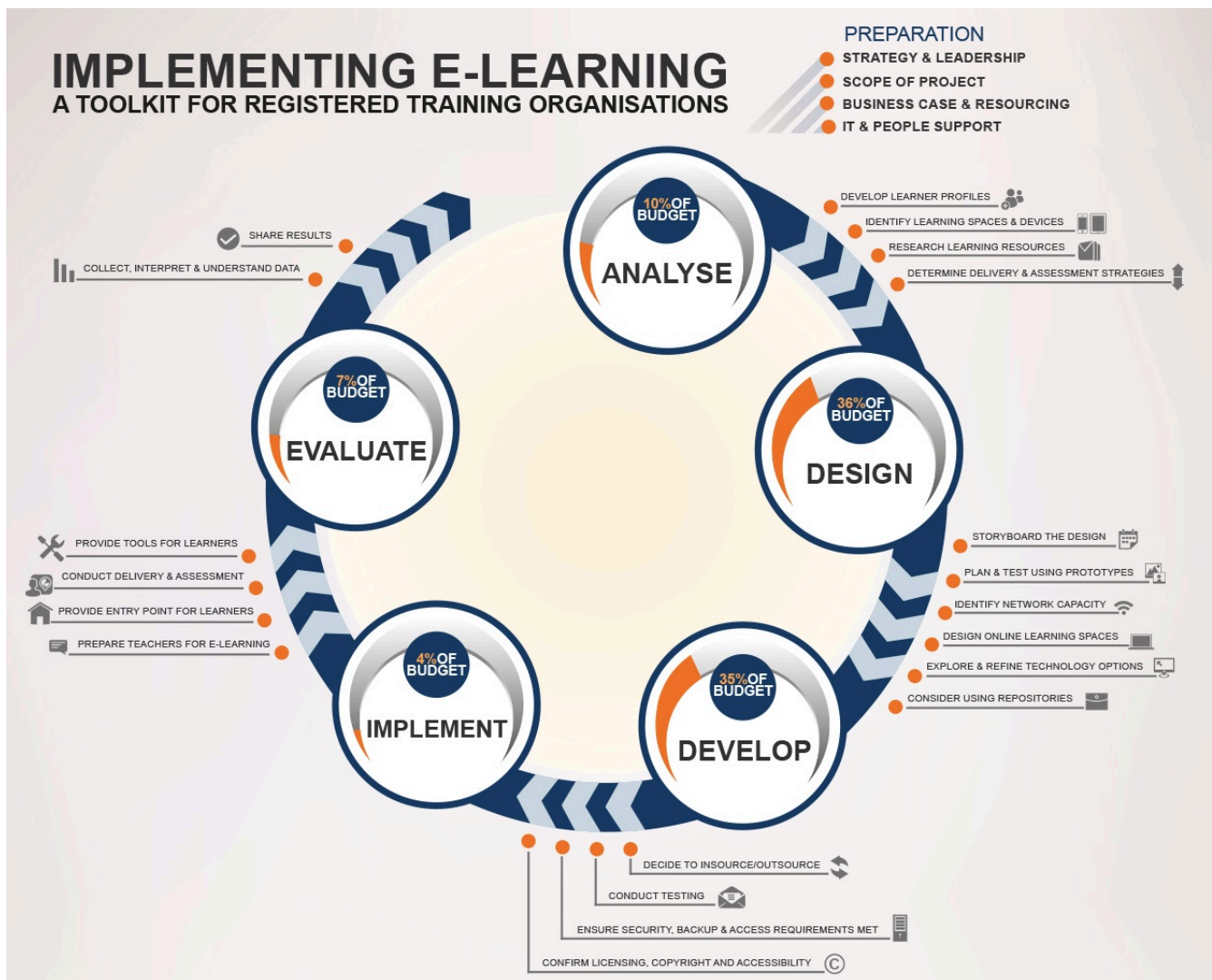


Figure 1. The ADDIE instructional design model. *[Image description]*

SAM

Another popular approach is the successive approximation model (SAM). Figure 2 is a diagram showing the stages of this process. SAM applies principles of agile project management to instructional design. As such, it is a cyclical model that is based on the idea that instructional design is an ongoing process of successive refinement. Rather than creating a whole course and launching it (as prescribed by ADDIE), this approach builds the micro-credential in stages and pilots each one in turn. In other words, the ADDIE steps of Design, Development, and Evaluation are applied to smaller, usable chunks of the complete program such as one module or the online course structure. By giving learners an opportunity to provide feedback at these early stages, and acting on that feedback, the final product is more likely to meet their needs than when using the ADDIE

approach. Adopting this instructional design model requires having a pool of learners to test the nascent program at each round of iteration.

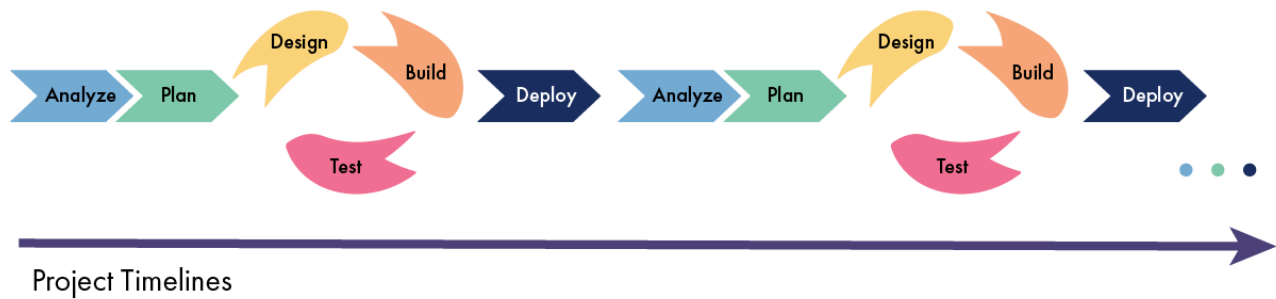


Figure 2. The successive approximation model (SAM) of instructional design is an agile project management approach that uses iterative cycles to produce functional units of the final product, one at a time.

Other Instructional Design Models

Although these are the most popular instructional design models, there are several others to pick from. The InstructionalDesign.org (<https://www.instructionaldesign.org/>) website (Kearsley & Culatta, 2023) provides a list of dozens of other models along with a description of each one.

Team Design Process

Team Member Roles

The involvement of many stakeholders in the creation of a micro-credential may require the articulation of clear roles and responsibilities for each contributor. While each team will have its unique set of contributors, common roles include:

- **Instructional designer.** This person often serves two roles. As project manager, they facilitate the contribution of each team member and lead the project toward completion. They also apply their instructional design expertise to guide the creation of an educationally effective learning experience. They facilitate conversations to identify learning outcomes, choose the most appropriate course structure, guide the creation of its content, and ensure effective use of the learning management system.
- **Subject matter experts (SME).** These people have expert knowledge of the topic. They may be faculty and may also be working professionals. Often, the input of more than one subject matter expert is included in the creation of a micro-credential. Subject matter experts can help in designing the program, developing its content, and even delivering it as instructors.

- **External stakeholders.** Micro-credentials serve the needs of external stakeholders, such as employers, community partners, and Indigenous communities. As such, their input should be solicited and included at several stages of the program's creation. For example, employers may inform the needs assessment, could provide materials such as case studies and authentic assignments taken from the workplace, and can validate the curriculum to ensure that it is relevant and meets their needs.
- **Media specialist.** Courses developed for an adult audience often require a higher level of production than those intended for traditional post-secondary learners. Such courses may include original images and videos that show workplace settings. A media specialist who can design graphics, take photographs, and produce short videos tailored to the course can help elevate the course's overall quality and enhance its appeal to adult learners.
- **Learners.** The input of learners should be sought throughout the development of the program to ensure that what is developed meets their needs and expectations.

In the companion chapter *Design Considerations: Stories from the B.C. Post-secondary Sector*, one instructional designer describes her role in coordinating the input of over 20 stakeholders to create a coherent and instructionally effective micro-credential (see the section *An Instructional Designer's Role in Creating FILMBA (CapU's Experience)*).

Facilitation Tools

Many approaches can be used to solicit the input of each stakeholder and incorporate it into the design of the curriculum. Some to consider include:

- **ABC Learning Design** (<https://abc-ld.org/>) is a collaborative, workshop approach to rapidly designing a new course. Originally developed at University College London, ABC has been adopted by several organizations (including the Chang school of continuing education at Toronto Metropolitan University) to help multiple subject matter experts come together to create a course. All of the materials to conduct each stage of the workshop are available on the ABC website for re-use under a CC BY NC SA 4.0 license (Young & Perović, 2015).
- **Developing a Curriculum (DACUM)** (<https://web.archive.org/web/20221108101236/https://dacum.org/>) is an approach commonly used to design competency-based programs such as vocational and trades training. It is implemented during the initial stages of program design and involves people who work in an occupation, rather than leaders or educators, to identify the essential tasks associated with the profession. It is described in more detail in the *Developing a Curriculum (DACUM)* section below.
- **Rapid Development Studio** (<https://journals.sagepub.com/doi/10.1177/21582440211047574>) (Mei *et al.*, 2021) is a collaborative approach to designing online courses over a rapid, two-week period.

- **Collaborative Mapping Model** (<https://olj.onlinelearningconsortium.org/index.php/olj/article/view/2058>) (Drysdale, 2019) was developed by an instructional designer to help faculty understand the role of each member of a team in a collaborative curriculum design project.
- **Design Thinking** is an approach to designing a product or service that meets the needs of end users. Though not specifically created for instructional design, its principles can be applied to this process. The approach involves five steps (Friis Dam, 2023 (<https://www.interaction-design.org/literature/article/5-stages-in-the-design-thinking-process>)):
 - Empathize, where the designer tries to understand the end-user's needs and preferences;
 - Define, where the designer identifies and articulates the goals of the project;
 - Ideate, which is the brainstorming stage during which various ideas are generated;
 - Prototype, where a few of the most promising ideas are transformed into models and tested; and,
 - Test, where the most viable model is chosen and tested with end-users.

A series of tools facilitate each step (IDEO.org, 2015 (<https://www.designkit.org/>)).

- **Liberating Structures** (<https://www.liberatingstructures.com/>) (Lipmanowicz & McCandless, 2015) is an approach to facilitating group conversations that ensures everyone is given a voice. While the set of 35 tools was not created to facilitate curriculum development, the tools can be used for that purpose. For example, the tool "25-10" could be an effective way to help a group of stakeholders prioritize and reach consensus about a program's learning outcomes. The tools are licensed under CC BY NC.

The *Suggested Resources* section provides links to additional resources for instructional design including tools to develop content.

Adult Learners and Andragogy

Characteristics

Micro-credentials typically target adult learners. As popularized by Malcolm Knowles in the 1980s, adult learners come to the learning experience with distinct characteristics that differentiate them from traditional learners entering post-secondary from high school (Pappas, 2013a). Adult learners often have work experience, are more purposeful in their training goals, want to connect what they are learning to their lives, and have competing demands on their time (e.g., family and/or work in addition to education). Here are some of the common expectations that adult learners bring to their learning (Anders, 2023; ELM Learning, 2022a; Hepburn, 2023; Mahon, 2021; Pappas, 2013b; Rosario, 2023):

1. **Flexibility.**

Adult learners often have busy lives with work and family responsibilities. They want their education to be flexible, allowing them to study at their own pace and on their own schedule.

2. **Relevance.**

Adult learners have a utilitarian mindset and are pragmatic in their learning goals. They want to acquire knowledge and skills that are immediately applicable to their lives and careers. They generally do not value theory and prefer practical knowledge. They seek to boost their confidence and reach their career goals through tangible skills development.

3. **Self-directed.**

Adult learners take responsibility for their own learning. They want to have a say in what they learn, how they apply it, and how they can demonstrate their abilities. They also appreciate self-assessment to gauge their learning. Finally, they view their instructor as a peer.

4. **Recognition of prior learning.**

Adults are not empty vessels; they come to education with a wealth of experiences and knowledge that they want validated and valued. They want to interact with other learners, instructors, and professionals in their field to network, collaborate, and learn from each other's experiences.

5. **High expectations.**

Adult learners are returning to education by choice. They have often been exposed to high-quality professional development materials in their workplace and through private providers. For these reasons, they adopt a client mentality. They expect customized service and high-quality experiences that generate immediate results.

Distinction Between Andragogy and Pedagogy

The teaching of adult learners and its practices is called andragogy. The teaching of younger learners and its practices is called pedagogy. Table 1 captures some of the ways in which andragogy and pedagogy impact the design of instruction (ELM Learning, 2022b; Nebel, 2022; UIS, 2022; WGU, 2022).

Table 1. Comparison of andragogy and pedagogy practices.

	Andragogy	Pedagogy
Definition	Approaches to teaching adult learners.	Approaches to teaching younger learners.
Goal Orientation	Applying knowledge to real-world situations. Utilitarian focus.	Knowledge acquisition. Focused on learning facts and includes a lot of theories.
Motivation	Intrinsic motivation drives learning, such as self-determination and personal goals.	Extrinsic motivations to encourage learning, such as grades.
Learner's Prior Experience	Valued. Recognizes that learners have existing knowledge and professional experience to bear on the topic.	Ignored. Learners are assumed to be "empty vessels," with no prior knowledge or experience of the topic.
Role of Instructor	Facilitator.	Lecturer.
Learner Orientation	Learner-centred with the learner taking responsibility for their learning.	Instructor-centred, with the instructor directing the process.
Learning Resources	Learners exercise choice in selecting resources.	Instructor selects a set of common resources for all learners.
Curriculum	Flexible.	Rigid.
Learning Pace	Self-paces.	Instructor-led.
Assessments	Renewable assignments (i.e., assignments that have a real-world utility, such as a formulating a budget that learners can use in their job).	Disposable assignments (i.e., assignments completed only for purpose of assessing skills and abilities).

Recommended Approaches

In some contexts, pedagogy will be the best approach for adult learners. Consider, for example, programs for adults who are changing careers and have no prior experience with the new topic, or for programs where there is a need to assess learners in a standardized, industry-specified manner (e.g., to prepare for industry licensing exams). In such instances, pedagogy (or a blend of pedagogy and andragogy) might be the best approach.

In instances where learners expect to be self-directed and have prior knowledge or experience with the topic, an andragogical approach is the better choice. Program designers will need to consider ways to address the learners' needs and expectations, as described in the Characteristics section above. Here are some recommendations for addressing them:

1. **Treat them like adults.**

Many of the recommendations boil down to this. Treating someone as an adult means valuing what they contribute to the learning environment in terms of their knowledge and expertise, trusting their autonomy and allowing them to reach their individual goals by giving them choice, and respecting their time. It also means that the instructor should treat them as peers, not pupils.

2. **Provide flexible formats.**

To accommodate the busy schedules and commitments of adult learners, offer flexible learning options, such as online or hybrid courses or programs offered on the weekend.

3. **Prioritize relevance.**

As explained by Becker (2022), as self-driven learners, adults need to understand the “why” of each learning activity. Becker suggests writing explicit rationales for each assignment or activity. Adult learners also need to see the connection between the content they are learning and their lives and work. The course design should use real-world examples, case studies, and project-based learning opportunities and ask learners to apply what they learn to their work context.

4. **Allow choice.**

Each adult learner has different goals in taking a training program. Help them meet those goals by providing them with flexibility in selecting their resources, assignments, and assessments. This could include offering an assortment of readings and videos, allowing learners to select those that are most relevant to their goals, and providing opportunities for learners to apply their learning to their own work contexts, such as creating a communication plan for their workplace. This practice aligns with the Universal Design for Learning's recommendations to provide multiple means of engagement, representation, and action and expression (CAST, 2018).

5. **Foster collaboration.**

Adult learners benefit from collaborating with peers. It gives them a chance to share what they know, build on past learning, and analyze it in a new light. Course design should provide opportunities for learners to work together and learn from each other. Crockford (2021) suggests a few formats to facilitate this, such as discussion forums, social media tasks, and a “question of the week” exercise. The instructor's task is to foster a safe and respectful learning environment where adult learners feel safe to share their ideas, experience, and perspectives.

6. **Include reflective activities.**

Kolb (1984), drawing on Dewey (1938), emphasized the importance of experience and reflection in learning. According to these education research pioneers, people continually develop hypotheses about the way that the world works, use observations to test them out, and then reflect to reassess their models. For this reason, adult learners need periods of reflection to articulate how new learning and experiences align, as they build revised models of how things work.

7. Provide timely feedback.

Adult learners need ways to gauge whether they are meeting their goals and identify what needs to be corrected. The instructional design should include ways for learners to self-evaluate, to integrate peer feedback, and for instructors to provide timely and constructive feedback on learners' progress and performance.

8. Respect different learning speeds.

Adult learners may proceed at different learning speeds due to their prior knowledge or, more pragmatically, because of the amount of time they can devote to learning due to other commitments. Instructors should be flexible in pacing and provide additional support when needed.

The *Suggested Resources* section suggests articles that share best practices for designing programs for adult learners.

Competency-Based Education

The Micro-credential Framework for B.C. Public Post-secondary Education System (2021) (https://www2.gov.bc.ca/assets/gov/education/post-secondary-education/micro-credentials/mc_framework.pdf) offers the following definition for micro-credentials in this province.

Micro-credentials recognize stand-alone, short duration learning experiences that are competency-based, align with industry, employer, community and/or Indigenous community needs and can be assessed and recognized for employment or learning purposes.

According to this definition, one of the features of micro-credential training is that it is competency-based. This section describes what that is and how to design it.

What is a Competency?

In familiar language, *competence* is the ability to do something successfully and efficiently. Competency, in the context of education, is more specific, and this definition will be explored in this section.

Lena Patterson, program director of micro-credentials and business development at the Chang school of continuing education at Toronto Metropolitan University, and a thought leader in micro-

credentials, offers the following definition of competencies (see the *Suggested Resources* for more on Patterson's definition of competencies). Competencies are...

- Composed of three elements:
 - **Knowledge**, which is the foundation upon which a learner can act;
 - **Skill**, which is the application of that knowledge;
 - **Attributes**, which are the values that are essential to the performance;
- Performed in specific contexts;
- Dynamic and associated with frequent renewal.

To illustrate the three elements of a competency, Patterson uses the example of learning to drive a car. When a person learns to drive a car, they must first pass a knowledge exam, showing that they know the rules of the road (e.g., how to enter and exit a modern roundabout). Then they practice on the road under the supervision of a family member or friend. This is where they apply their knowledge and rehearse the skills. They learn to parallel park, translating the knowledge of how to do it into a skill. This includes adopting some attitudinal behaviours, such as being respectful of others who share the road. Once they feel they are competent, learners take a road test, which a professional assesses. During this practical test, the learner must show their ability to perform each skill to certain standards.

Once they pass this exam, they are deemed competent to operate a vehicle. Note that this competency is context dependent. If a person moves from B.C. to the U.K., their competencies may no longer be relevant to driving a car and the person may need to acquire new knowledge and develop new skills, such as driving on the left-hand side of the road. Moreover, a competency is only indicative of an individual's abilities at a particular moment in time. They may need to be reassessed, and there may be an expiry date that necessitates periodic re-evaluation of a person's competencies.

Another thought leader in this field, Dennis Green, co-wrote the *eCampusOntario Open Competency Toolkit* (<https://ecampusontario.pressbooks.pub/competencytoolkit/>). He defines competency as the specific and measurable combination of knowledge, skills, and attributes that result in the performance of an activity or task to a defined level of expectation or performance standards (see the *Suggested Resources* for more on Green's conceptualization of competencies). These performance standards can be used to design assessments.

Green emphasizes that being competent also means having the ability to handle unexpected circumstances and select an alternative path forward when things go wrong (see Figure 3).

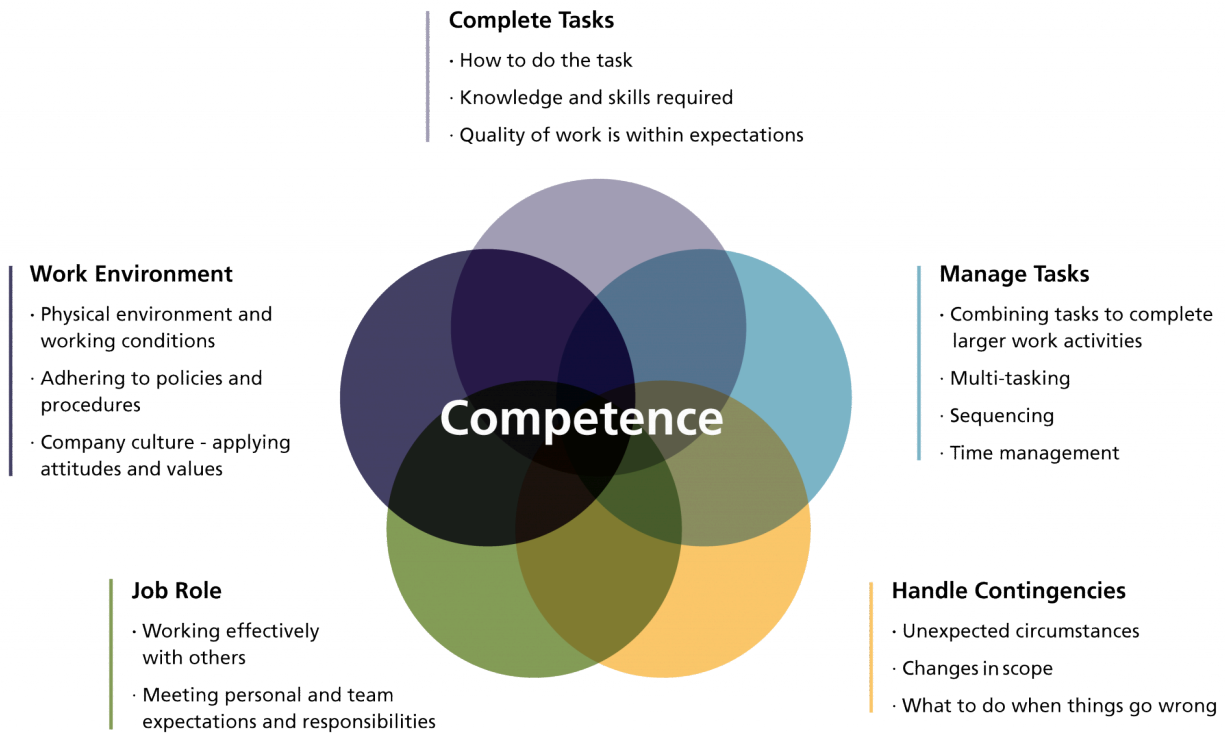


Figure 3. Being competent means the ability to perform an activity consistently over time and in different situations. [Image description]

Green also emphasizes the distinction between activities and competencies. One way to think about the distinction is to consider a job posting or job description. What is typically listed under the heading “responsibilities” constitutes the list of activities that a person in this role will be required to do. What’s listed under “qualifications” usually consists of a mix of competencies and required education.

For example, in preparing a meal, a cook will be required to engage in the following activities: find a recipe, gather the ingredients, prepare the dish, set the table, serve the food, clear the table, and clean up the kitchen.

Each of these activities depends on a set of about five competencies that are necessary to carry out any cooking activity (whether barbecuing meat or baking a cake). These food preparation competencies include using recipes to prepare food, handling kitchen tools and equipment, applying various cooking and baking methods, adhering to safe work practices, and following safe food handling procedures.

The construction of a competency statement is similar to that of a learning outcome. It is composed of three elements:

- **Action:** What the person is expected to do. The statement always begins with a concrete action-oriented verb (e.g., manage, handle, clean);
- **Context:** The situation or environment in which the action is to be demonstrated;
- **Criteria:** The standards or requirements that the action must meet to be deemed satisfactory.

Green provides the following example of a competency statement:

Handle [action] — hazardous materials [context] — according to Occupational Health and Safety regulations and workplace requirements [criteria/standards].

This is usually accompanied by a performance criterion. In the above example, the performance criterion would define what "handling" means — in this example, "selecting, using, and storing appropriately."

Many competencies are similar across occupations and what varies is the context in which they are applied.

Readers are directed to the companion chapter *Educational Pathways* for ideas on how to integrate competencies into a degree program (see the section *Role of Competency-Based Education in Undergraduate Courses*).

Competency Frameworks

Competencies don't stand alone. They are often interrelated to one another and grouped together, particularly in the context of an occupation. An organized collection of competencies required to complete an activity is called a competency framework.

A competency framework can be used to identify and assess the skills of employees, improve the hiring and promotion process, provide guidance for the development of training, and evaluate the effectiveness of that training.

Many organizations develop competency frameworks. Places to look for existing occupation competency frameworks include:

- Professional associations or regulators;

- Industry;
- Governments (especially in the European Union, but the Government of Canada is beginning to develop such frameworks);
- Large organizations, such as UNESCO.

Here are some examples of competency frameworks for diverse occupations:

- K-12 teachers (Government of Quebec, 2021 (https://cdn-contenu.quebec.ca/cdn-contenu/adm/min/education/publications-adm/devenir-enseignant/reference_framework_professionnelle_competencies_teacher.pdf));
- Staff working at the Canada Revenue Agency (CRA, 2016 (<https://www.canada.ca/en/revenue-agency/corporate/careers-cra/information-moved/cra-competencies-standardized-assessment-tools/canada-revenue-agency-competencies-april-2016.html>));
- Career development professional (Canadian Career Development Foundation, 2021 (<https://ccdp-pcdc.ca/en/cdp-competency-framework>));
- Climate adaptation specialization (Adaptation Learning Network, 2021 (https://pressbooks.bccampus.ca/adaptationlearningnetworkfinal/wp-content/uploads/sites/1649/2022/03/ALN-Climate-Adaptation-Micro-credential-Strategy_2021_Final.pdf));
- Educator, ICT specialization (UNESCO, 2018 (<https://unesdoc.unesco.org/ark:/48223/pf0000265721>));
- Educator, OER specialization (UNESCO, 2016 (<https://unesdoc.unesco.org/ark:/48223/pf0000266161>));
- Health informatics professional (Canada's Health Informatics Association, 2012 (<https://digitalhealthcanada.com/wp-content/uploads/2019/07/Health-Informatics-Core-Competencies.pdf>));
- Instructional designer (University of South Florida, 2023 (<https://www.usf.edu/education/areas-of-study/instructional-technology/programs/educational-specialist/comps-skills-for-instructional-designers.aspx>));
- Nurse practitioner (Canadian Nurses Association, 2010 (https://www.cno.org/globalassets/for/nrec/pdf/competencyframework_en.pdf));
- Plumber (Ontario College of Trades, n.d. (<https://www.ugdsb.ca/oyap/wp-content/uploads/sites/101/2019/11/TSS-Plumber.pdf>));
- Public servant, data competency specialization (Government of Canada, 2023 (<https://www.csp-s-efpc.gc.ca/tools/jobaids/data-competency-framework-eng.aspx>));
- Registrar (Archives and Records Association, n.d. (<https://archivesandrecords.smapply.io/res/p/competencies/>));
- University administrator (Niewiesk & Garrity-Rokous, 2021 (<https://doi.org/10.1002/joe.22083>)).

If there are no existing, or accessible, competency frameworks for the occupation of interest, then it might be necessary to create one. To create a competency framework, you must first identify the

core competencies that are necessary for each job in the organization, such as problem-solving, communication, teamwork, and leadership. Once the core competencies have been identified, you can create a set of specific, measurable activities that demonstrate each competency. Although there are no set rules, most competency frameworks contain between 10 to 50 competencies. See the *Suggested Resources* section below for support.

There is a movement to create open competency frameworks. The Open Skills Network (<https://www.openskillsnetwork.org/>) is one such effort that brings together industry leaders with representatives from the education sector. The goal is to create an open skills library that is publicly available. This movement comes out of a recognition that many organizations are duplicating their efforts. For example, if one company creates a competency framework for a software analyst role, it is likely to be very similar to the competency framework created by another organization for the same job. An open competency framework would provide a common language and set of standards for assessing and developing competencies that can be applied across different contexts and organizations.

In addition, there is a desire to develop a standardized model for storing competency data digitally. This will facilitate interoperability between computer systems involved in the labour market (for example, LinkedIn) and an organization's job posting, so that the system can automatically recognize competencies in an applicant and match them to a job. To achieve this goal, there needs to be standards for the way in which competencies and competency frameworks are described, and how the information is organized and stored. This will make them machine-readable and allow the transfer of information between post-secondary institutions and employers. Eventually, open competency frameworks will provide the infrastructure to connect and link micro-credential holders with employers.

What is Competency-Based Education?

In his book *Teaching in a Digital Age* (2022) (<https://pressbooks.bccampus.ca/teachinginadigitalagev3m/>), Tony Bates provides the following description of competency-based education:

Competency-based learning begins by identifying specific competencies or skills, and enables learners to develop mastery of each competency or skill at their own pace, usually working with a mentor. [...] The value of competency-based learning for developing practical or vocational skills or competencies is more obvious, but increasingly competency-based learning is being used for education requiring more

abstract or academic skills development, sometimes combined with other cohort-based courses or programs.

Chapter 4.5 Competency-Based Learning

Competency-based education is an approach to learning that emphasizes the acquisition of skills or abilities (i.e., competencies) rather than simply the amount of time spent in a course or the memorization of a list of concepts. It considers that learning has been achieved when the learner can demonstrate the application of their knowledge in specific contexts and to certain standards. As such, it tends to use instrumental learning, in which feedback is used to strengthen or weaken behaviours, thereby leading to improved performance.

The focus on demonstrated skill rather than on time spent learning is a shift to learner-centered learning. In contrast, the traditional post-secondary system tends to focus on defining course scope in terms of the amount of time spent learning, which primarily serves the needs of program administrators (e.g., for resource allocation such as instructor compensation and classroom scheduling). However, this approach does not necessarily serve the needs of adult learners who often come to a course with different backgrounds (which may have exposed them to some of the course contents) and who learn at different pace. Therefore, assigning a fixed number of hours, such as 40 hours, to a program is not a learner-centered way of describing a micro-credential.

Table 2 provides a comparison of key features between competency-based education and the traditional approach used in post-secondary education.

Table 2. A comparison of competency-based education with the traditional model used in most post-secondary institutions and programs.

	Competency-Based Education	Traditional Education
Goals	Emphasizes mastery of specific competencies that are relevant to real-world contexts.	Emphasizes the acquisition of knowledge and a focus on the learning process.
Assessments	Frequent, ongoing assessments to provide feedback to learners as a means of improving their performance. Often uses authentic assessments where learners demonstrate that they can apply their knowledge in real-world situations. Uses criterion-referenced assessments, which have a predetermined standard or goal.	Focused on the completion of coursework and uses summative assessment at the end of a unit. Learners take tests and exams to demonstrate they have comprehended the materials. Frequent use of norm-referenced assessment (e.g., bell curve grading where learners are assessed against one another).
Time and Pace	Schedule allows learners to proceed at their own pace and complete assignments and assessments when they are ready.	Fixed schedule where learners progress through a curriculum at a common predetermined pace.
Curriculum	More individualized curriculum depending on learner's existing knowledge and skills (i.e., learner may "test out" of certain modules if they can demonstrate existing competencies). Usually streamlined and focused on specific skills and competencies.	Set curriculum for all learners. Often covers a range of topics and subject areas.
Instructional Methods	Include individualized instruction (tutor supports a learner through the course), project-based learning, and other approaches that encourage learners to apply their knowledge in real-world situations.	Often focused on content delivery that takes the form of lectures and other instructor-centered approaches.
Admission Requirements	Generally, less stringent, with learners being assessed on their skills and knowledge.	Generally, more stringent, with learners being assessed on their academic records.

Why Adopt Competency-Based Education?

As asserted by Bates (2022), competency-based education is not new. It has been a hallmark of the trades, continuing education, and health professional education for decades. Western Governors

University (<https://www.wgu.edu/student-experience/learning/how.html>) in the United States offers degrees based entirely on this model.

The recent and broader interest in competency-based education comes from many sources, notably in the recognition of the "60-year curriculum" (Richards & Dede, 2020), which is the idea that people are now in the workforce for 60 or more years and that the training they received at the beginning of their career will not sustain them throughout their entire work life. People need to be retrained, upskilled, and retooled, whether they stay in the same occupation or change jobs.

This close connection between education and work requires some "translation" between the two cultures. In post-secondary education, achievements are captured in a transcript, which lists the courses that the learner took and the grades they obtained. This doesn't translate well outside of academia. To a hiring manager, a grade of "A" in the course *20th Century Literature* doesn't explain what the learner can do. That's where competencies can serve as a common language between the two worlds. Articulating that in the course the learner demonstrated the ability to find evidence, persuade others, exercise critical thinking through analysis, and write cogently can serve the needs of both academic institutions and employers.

Most competency-based programs identify the competencies for a program in partnership with employers. This ensures that the competencies in a program match those needed by the workforce. Competency-based education is the preferred approach for micro-credentials because it allows learners to demonstrate mastery of concepts and skills to employers, an important element when using the training to upskill or retool in their careers.

Bates (2022) notes that competency-based education is particularly suited to adult learners because the format allows learners to customize their education. It establishes a set of competencies that the learner must demonstrate to earn recognition for successfully completing the program. A learner who comes in with prior experience with a particular competency can opt to proceed directly to the assessment stage, saving themselves the time that a traditional program would force them to take to (re)learn the material. Learners can then allocate their time to learning new skills. It's a form of individualized learning. It also motivates learners by asking them to self-monitor their learning, resulting in a greater sense of ownership and investment in the learning experience.

Competency-based education has been found in several studies to be effective at improving student learning outcomes (Chen *et al.*, 2022; Rivers & Sebesta, 2017).

Developing a Curriculum (DACUM)

Earlier in this chapter, several approaches to weaving the input of several experts in the development of curriculum were presented. One approach is often used when creating

competency-based curriculum, particularly if it is aligned with a specific occupation. This approach is called developing a curriculum (DACUM). It is a job analysis process created at the University of British Columbia and it is now used around the world (Joyner, 1996). During the DACUM process, a group of subject matter experts (SMEs) work together for a couple of days to identify the competencies required for successful performance in a particular occupation. DACUM is often used in vocational and workforce development programs to ensure that the training created is relevant to the needs of employers and industry.

The DACUM process typically involves the following steps:

1. **Define the occupation to be analyzed.**

This involves identifying the job title, job description, and any other relevant information about the occupation.

2. **Select a panel of subject matter experts (SMEs).**

The panel should consist of five to 12 individuals who are knowledgeable and experienced in the occupation.

3. **Brainstorm the competencies.**

The SMEs participate in a brainstorming session to identify the key competencies required for successful performance in the job. The facilitator uses a variety of techniques to solicit ideas and encourage discussion.

4. **Cluster competencies and tasks.**

The competencies identified in the brainstorming session are grouped into functional areas or clusters. This organizes the information and can help to identify any gaps and redundancies in the analysis. Typically, the competencies are organized into a DACUM chart (i.e., a storyboard for the course) that shows how the competencies build upon one another to be successful in the chosen occupation. The DACUM chart can serve as a basis to conduct a needs assessment, develop curriculum, or evaluate worker performance.

5. **Validate the analysis.**

The analysis should be reviewed by additional SMEs or industry representatives. This step is important to ensure that the competencies and skills identified in the analysis are relevant and accurate.

6. **Develop a competency-based curriculum.**

Based on the results of the analysis, a competency-based curriculum can be developed. This curriculum should identify the specific competencies and skills that trainees should master in order to successfully perform the job.

7. **Implement and evaluate the curriculum.**

The curriculum should be implemented and evaluated to determine its effectiveness in preparing learners for work.

The *Suggested Resources* section contains links to handbooks with instructions for implementing the DACUM process as well as examples of DACUM charts.

There are several reasons why the DACUM process is used to design job-specific and competency-based curriculum. Here are key benefits:

1. **Efficient, time-saving process.**

DACUM is conducted over a couple of days rather than the weeks it can take to conduct a similar analysis using other approaches.

2. **Alignment with industry needs.**

The process involves the participation of industry representatives and subject matter experts, which helps to ensure that the resulting curriculum is relevant and aligned with industry needs. It also maximizes buy-in from workers and employers.

3. **Focus on competencies and skills.**

By identifying the specific competencies and skills required for successful performance in a job or occupation, the DACUM process helps to ensure that the resulting curriculum is targeted and effective.

4. **Customization to specific jobs and occupations.**

The process can be tailored to specific jobs and occupations, which helps to ensure that the resulting curriculum is job-specific and meets the unique needs of the occupation.

5. **Consensus building.**

Unlike other methods of collecting this data such as surveys, the process requires that subject matter expert discuss the competencies and reach consensus. This compensates for the biases that might be introduced by collecting individual inputs and builds a stronger product.

6. **Use of a structured process.**

The process provides a structured approach to curriculum development, which helps to ensure that all relevant competencies are identified and addressed in the curriculum.

While the DACUM approach is an effective method for developing job-specific and competency-based curriculum in many contexts, here are situations where it may not be appropriate:

1. **Lack of facilitation skills.**

The approach requires that a person trained in its approach and skilled at facilitating a group leads the process.

2. **Lack of subject matter expertise.**

The process relies heavily on the participation of subject matter experts, so if there is a lack of expertise in the area being developed, the resulting curriculum may not be effective. Similarly, if there is limited employer involvement, the resulting curriculum may not be relevant or responsive to industry needs.

3. **Lack of flexibility.**

The process can be inflexible, with a strong focus on identifying specific competencies and skills required for a job or occupation. If there is a need for more flexibility or adaptability in the curriculum, this approach may not be the best fit.

4. **Inappropriate for academic disciplines.**

The DACUM approach is typically used in vocational or technical education settings, where there is a focus on job-specific skills and competencies. It may not be appropriate for academic disciplines, where the focus is on broader theoretical knowledge and critical thinking skills.

Assessment of Learners

The assessment of learners is an essential component of a micro-credential (Oliver, 2021). In the Micro-credential Framework for B.C. Public Post-secondary Education System (2021), assessment is included in the definition of a micro-credential and this aspect is expanded upon in the framework:

Assessment

Assessment of a student's learning is required to ensure learners have achieved the intended competency. Assessment should be relevant to how employers recognize a competency has been obtained.

Micro-credential Framework for B.C. Public Post-secondary Education System (2021)

Assessments should align with the stated learning objectives or competencies of the micro-credential and measure whether the learner has successfully mastered a specific skill. Assessment is essential to establish confidence that the micro-credential has achieved its purpose (Chaktsiris *et al.*, 2021).

Resources on designing assessments are included in the *Suggested Resources* section under the heading *Learner assessment resources*. Note that Angelo and Cross (1993) (for in-person courses) and Conrad and Openo (2018) (for online courses) come highly recommended.

One of the ways in which micro-credentials differ from many non-credit continuing education programs is in their formal assessment of learners against established standards. In the companion chapter *Design Considerations: Stories from the B.C. Post-secondary Sector*, the story of RRU's *Transformation of Existing Courses into Micro-credentials* illustrates how institutions may be able to create new micro-credentials by modifying existing continuing education programs instead of developing them from scratch.

Validation by Employers

An important factor in designing assessments for micro-credentials is to ensure that they are employer-informed (Bigelow *et al.*, 2022). The assessment should be accepted and trusted by employers as an indicator that a learner has met the competency requirements and is able to use the acquired skills in a work setting. This links naturally to the next section...

Authentic Assessment

Authentic assessments are an emerging high-impact practice for micro-credentials (Gooch *et al.*, 2022). Authentic assessments ask learners to demonstrate their understanding of concepts in a real-world context (Wiggins, 2006). They are designed to simulate the tasks or problems that learners might encounter in their careers or in their everyday lives. The goal of authentic assessment is to provide a more accurate and comprehensive picture of what learners know and can do.

Authentic assessments differ from traditional assessments such as multiple-choice tests in that they typically involve open-ended questions or tasks. They present complex, context-rich scenarios that don't have a "right answer" and ask learners to make decisions and compromises as they propose a solution. Thus, authentic assessments, while they can be formative or summative, also help learners to develop important skills such as critical thinking, problem-solving, creativity, communication, and collaboration.

Some authentic assessments are "renewable assignments" that have a real-world utility, compared to their more traditional "disposable" counterparts, where learners complete a task, submit it for a grade, and that's the end goal (Veletsianos, 2017). Such renewable assignments are more motivating for learners to complete.

Authentic assessments may take many forms, including:

- Creating a video of the learner performing a task and asking them to explain some of the key considerations for effectively executing the task as they perform it;
- Analyzing a real-world case study and developing recommendations for a solution;
- Creating a business plan for the learner's company;
- Conducting a scientific experiment and presenting the results at a conference;
- Creating artwork, to be included in a portfolio;
- Conducting a needs assessment for a community or organization and presenting the findings;
- Performing a musical piece in front of an audience;
- Developing a website or mobile app that addresses a real-world problem;
- Conducting a field study of the climate change adaptation preparedness of a town and

presenting the findings at a council meeting;

- Designing and implementing a community service project;
- Designing and implementing a social media marketing campaign for a real organization;
- Producing a video documentary on a social issue or historical event;
- Designing and building a prototype of a new product;
- Conducting an audit of an organization's financial statements and presenting the findings;
- Creating an infographic or data visualization to communicate complex information;
- Developing and delivering a professional development workshop or training session on a relevant topic;
- Writing a grant proposal for a community project or initiative.

Rubrics

Rubrics are often used in authentic assessment (Conrad & Openo, 2018; Reddy & Andrade, 2010). A rubric helps learners to better understand what is expected of them and what criteria they must meet to be successful. However, it is important to note that rubrics are not always required for assessments, especially if the instructions and criteria of the assessment are clearly explained and learners know what they need to do to reach a specific benchmark (e.g., a grade of 80% or higher). Rubrics do, however, provide learners with instructions and guidance on how to complete an assessment effectively.

Micro-credential Assessment Framework

The eCampusOntario's Micro-credential Framework provides the following guide to help instructional designers develop appropriate assessment methods. The guide is reproduced in Table 3.

Table 3. Micro-credential authentic assessment framework. Adapted from Bigelow et al., (2022).

<p>PURPOSE</p> <p>When developing an assessment for a micro-credential, start with two simple but complex questions:</p>	<ul style="list-style-type: none"> • What should a learner be able to do or know by the end of the micro-credential? • How will the learner know they are able to do or know this?
<p>RELEVANCE</p> <p>Once the purpose of the micro-credential has been set, next comes the work to identify the specific contexts where learners will be expected to "do" the skill targeted by the micro-credential:</p>	<ul style="list-style-type: none"> • How do you know that the assessment is relevant? Consult with employers and learners to co-create this sense of relevance. • Working together, explore possibilities for assessments that are relevant to the work or social context where the learner will be expected to use the skill being assessed. For example, how might learners demonstrate their learning in ways that meet their expectations, but also those of the employer and educational partners? • What evidence could a learner present that demonstrates they have mastered the competency targeted by the micro-credential?
<p>CHOICE</p> <p>Offer flexibility through assessment design. Learners can demonstrate competency or mastery in a variety of ways (Acree, 2016). After collaborating to identify how learners can demonstrate their mastery of a competency, consider how they might choose to share their learning in a variety of formats (or multiple means of representation and engagement) (UDL On Campus, n.d.):</p>	<ul style="list-style-type: none"> • How is the assessment relevant to "doing" the skill targeted by the micro-credential (UDL On Campus, n.d.)? • How can learners demonstrate they have met the goals of the micro-credential? Consider brainstorming this question with micro-credential partners, including learners. • It is likely that there are several ways for learners to demonstrate they mastered the purpose of the micro-credential. Can this variety of demonstration be leveraged to create options for the ways in which learners will be assessed? Can learners choose their preferred means of showing their competencies? • How do flexible assessment options align to the purpose of the micro-credential and support learner diversity (CAST, 2020)? • Create assessment tools (rubrics, checklists, criteria lists) focused on learning goals that can be used across multiple learning contexts or assessments (White, 2020).

<p>CONNECTION</p> <p>Connection between learners and instructors is a high-impact teaching practice known to increase learning (University of Waterloo, n.d.). Building connection between micro-credential partners through assessment offers a powerful opportunity for a micro-credential to meet its outlined purpose: to fit a clearly identified need for a competency. To facilitate connection through assessment, consider:</p>	<ul style="list-style-type: none"> • How can the assessment invite opportunities for learners to connect to each other, to instructors, and to employers? • Can learners be included in smaller groups throughout the term providing opportunities for them to get to know one another and build social connections? • How does the assessment connect learners to the work or knowledge they will be expected to do once the micro-credential is completed?
<p>FEEDBACK</p> <p>Providing meaningful feedback to learners throughout the micro-credential invites reflection on the core competency targeted by the micro-credential offering. The purpose of any assessment is feedback (Wiggins, 2006). To provide meaningful formative assessment and feedback within a micro-credential offering, consider:</p>	<ul style="list-style-type: none"> • How can learners access low-stakes opportunities for them to reflect on their own learning and identify gaps (such as regular quizzes, journaling, group exercises, or demonstration of a task)? • How does feedback relate to authentic and effective assessment, where employers might watch videos or view other evidence of performance through a learner's e-portfolio (Contact North, 2021)? • Are there clear expectations so learners know how they will be assessed (e.g., by rubric, checklist), and why this assessment is important to the purpose of the micro-credential? • When is feedback provided to learners? Consider offering feedback throughout the micro-credential rather than only at the end of an offering through a summative assessment and providing opportunities for learners to engage in peer-review feedback opportunities.
<p>ITERATIVE DESIGN</p> <p>To incorporate perspectives of all members of the micro-credential ecosystem, adopting a flexible and iterative design approach provides opportunities to evaluate and revise offerings in a cycle of evaluation, analysis, and revision (Mei et al., 2021). Adopting an iterative design and evidence-based approach to micro-credential projects might look like:</p>	<ul style="list-style-type: none"> • Identifying which member of the micro-credential ecosystem, educational institution, or employer will lead the team to create and evaluate the micro-credential. • Co-creating core aspects of the offering, including content, delivery, and assessment through an iterative design cycle with regular feedback. • Developing plans to evaluate and rework the micro-credential after each offering every time a micro-credential is offered so that more will be learned about its high points and pain points.

Delivery Format

In-person, Online, and Hybrid Delivery

Some of the considerations for the delivery format (i.e., whether the training will be offered in-person, online, or in a hybrid mode) have already been addressed in the section on *Adult Learners and Andragogy*. The key is to consider the format that is best suited to achieve the learning outcomes or competencies, as well as address the needs of adult learners. Some administrative and design considerations are also listed in Table 4.

Table 4. Considerations in selecting an in-person, hybrid (some online and some in-person components), or online format for a micro-credential.

Criteria	In-Person	Hybrid	Online
Flexibility	Less flexible due to set schedules and location.	Intermediate flexibility.	Highly flexible. Learners can complete coursework at their own pace and schedule.
Individualized Learning	Few opportunities, as the course is set by the instructor and is the same for all learners in a cohort.	Intermediate opportunities, with some set content for the in-person classes, and some choice for the content in the online component.	More opportunities to customize the experience for each learner, by choosing a preferred path and specialization through branched pathways in the online course.
Costs	Generally, more expensive to offer, due to instructor time. The fixed costs of an instructor are the same, whether there are few or many learners in the course. This means that the break-even costs can be high, and a course will not be offered unless the demand for it is high (many learners register for the course).	Costs vary depending on the amount of face-to-face and online instruction. Generally, the break-even costs will match those of an in-person course, since an instructor must attend every class, regardless of the number of learners who are registered.	Less expensive due to scaling opportunities (i.e., once built, the course can be repeatedly offered with fewer costs). Often, the instructor is paid on a "per learner" basis to answer learner questions and grade assignments, which can decrease the fixed costs of offering the program. This means the breakeven costs are low and a course can be offered even if there is one learner, making it possible to respond to low demand for a course.

Criteria	In-Person	Hybrid	Online
Interaction	High level of face-to-face interaction with instructors and peers can be engaging.	Moderate interaction with instructors and peers.	Limited interaction with instructors and peers can be less motivating for some learners.
Access to Resources	Access to on-campus resources such as libraries, labs, specialized software, and equipment. More opportunities to make a connection with guest speakers and become known to them (i.e., for learners to build their network).	Access to some on-campus resources but mostly online resources.	Access to online resources, such as ebooks, articles, and videos. Easier access to a broader range of guest speakers who can connect with learners via a conferencing platform.
Technology	Limited reliance on technology, though some courses may use technology for instruction or assignments.	Moderate reliance on technology, learners are expected to have access to computers and the internet.	Moderate reliance on technology, learners are expected to have access to computers and the internet. High reliance on technology, learners need a reliable internet connection and access to a computer.
Learning Style	Best suited for students who learn best through peer interactions.	Can accommodate different learning styles with a mix of face-to-face and online instruction.	Best suited for learners who are self-directed and comfortable learning independently.

Scheduling

In terms of scheduling, there are two approaches to adult programming. One approach is to create intense (bootcamp) training, where learners are engaged in the program on a full-time basis for a short time, usually a few days or weeks. The benefit of this approach is that working professionals can take time off work (either as vacation or because they are sponsored to attend the training by their employer) and complete the training in a short period. It gives learners the opportunity to focus on their learning. This type of scheduling is possible when prospective learners have sufficient time to plan their attendance (e.g., requesting vacation time or professional development support from their employer, which is sometimes planned a year in advance).

The other approach is to organize the training on a more traditional schedule such as once a week for three-hours. This type of training takes longer to complete and is usually preferred by adult

learners who are not supported by their employers to complete the training. They do it on their own time, usually on weekends or in the evenings. This type of scheduling can make it easier for adults to organize their lives around other commitments such as finding child care.

The evidence suggests that in terms of achieving learning outcomes, intensive and traditional courses are equivalent (Scott, 2003).

Work-Integrated Learning

Given the close connection between micro-credentials and the world of work, another key consideration is the setting in which the micro-credential takes place: whether in a traditional classroom or in the workplace. The *Suggested Resources* section contains information about projects that combine work-integrated learning and micro-credentials.

Seet and Jones (2021) refer to work-integrated learning micro-credentials as "micro-apprenticeships." In their article, the authors argue that this type of learning can help newcomers rapidly gain short, but authentic, workplace experiences that can help them find jobs in their new country.

LMS Considerations

When choosing a learning management system (LMS) for adult learners, there are several factors to consider. The article by Braunston (2018) explains some of the administrative factors, such as costs, licensing, and internal capabilities to maintain the system. In terms of learning design, here are five important factors to consider:

1. **User-friendly interface.**

Adult learners are typically busy and may not have the time or inclination to navigate a complicated or confusing interface. The LMS should have a simple and intuitive interface that makes it easy for users to access and complete their courses.

2. **Customizability of learner experience.**

In competency-based learning, adults proceed at their own pace, repeating a module until they have mastered the competency. An LMS that allows for customization, such as the ability to personalize learning paths or choose different modes of delivery (e.g., self-paced vs. instructor-led) may be important for a micro-credential.

3. **Mobile compatibility.**

Many adult learners are on-the-go and may prefer to access their courses on mobile devices. An LMS that is mobile-compatible and can be accessed from smartphones and tablets can provide the flexibility that adult learners need.

4. **Analytics and reporting.**

When learners are proceeding at their own pace, it's important to track progress and measure success. An LMS that provides analytics and reporting features, such as the ability to track progress and monitor learner performance, can help instructors and administrators identify areas for improvement and optimize the learning experience.

5. **Support and resources.**

Adult learners may not be familiar with the use of an LMS or with your institution's organization of courses on this platform. It is therefore imperative to consider designing a short orientation course that helps learners become proficient in its tools and structures.

6. **Export capability.**

Sharable Content Object Reference Model (SCORM) is a file format for an online course package that can be transferred between LMS systems. Not all LMS use this format to make this possible. As described in the companion chapter *Design Considerations: Stories from the B.C. Post-secondary Sector* (in the section *VCC's Exploration of LMS Options for Micro-credentials*), this could be an important factor to consider when choosing an LMS for a micro-credential.

For additional information about how to create effective and engaging online learning environments, as well as a model for choosing the right technology, readers are directed to Tony Bates's pressbook *Teaching in a Digital Age* (2022).

Micro-credential Program Structure

Some micro-credentials are composed of several courses. There are several ways to structure the learner's progression through the program. These options are depicted in Figure 4 and described below:

- **Cluster structure.**

This approach allows learners to complete a set of courses in any order, which is useful when the goal is to expose learners to breadth in a field and the courses do not build on each other. An example is the British Columbia Institute of Technology's Applied Circular Economy: Zero Waste Buildings micro-credential, which requires learners to complete three courses in any order.

- **Sequential structure.**

In this type of program, each course builds upon the previous one, and learners must complete them in a specified order. This is the structure to choose when the goal of the micro-credential is to achieve depth of learning. A curriculum map is particularly helpful when designing this type of program to ensure that the program goals are progressively developed during the sequence of courses. An example is the Capilano University's Award of Achievement in Data Analysis (<https://cs.capilanou.ca/courses--programs/programs/data-analysis/?tab=tab-program-requirements>), where learners must first complete the introduction

course, then an intermediate and then an advanced course, and finally a capstone project.

- Structure with electives.

This structure requires learners to complete a set of mandatory courses, either in a cluster or sequentially, followed by a prescribed number of courses from a larger pool that gives learners choice in creating their program. An example is the Climate Adaptation Fundamentals Micro-credential (<https://pcs.royalroads.ca/climate-adaptation-fundamentals-micro-credential>) offered by Royal Roads University, where learners must complete two core courses (in any order), followed by any two of eight electives.

- Combination of achievement types.

In cases where some learners are expected to have prior experience related to the micro-credential, it is possible to unbundle the program and create a flexible program structure that matches the learner's background and training needs. In this case, prior learning and assessment recognition, credit bank, or direct assessments (see the chapter on Educational Pathways) can help a learner meet some of the program's learning objectives and the learner achieves the remaining ones through formal education.

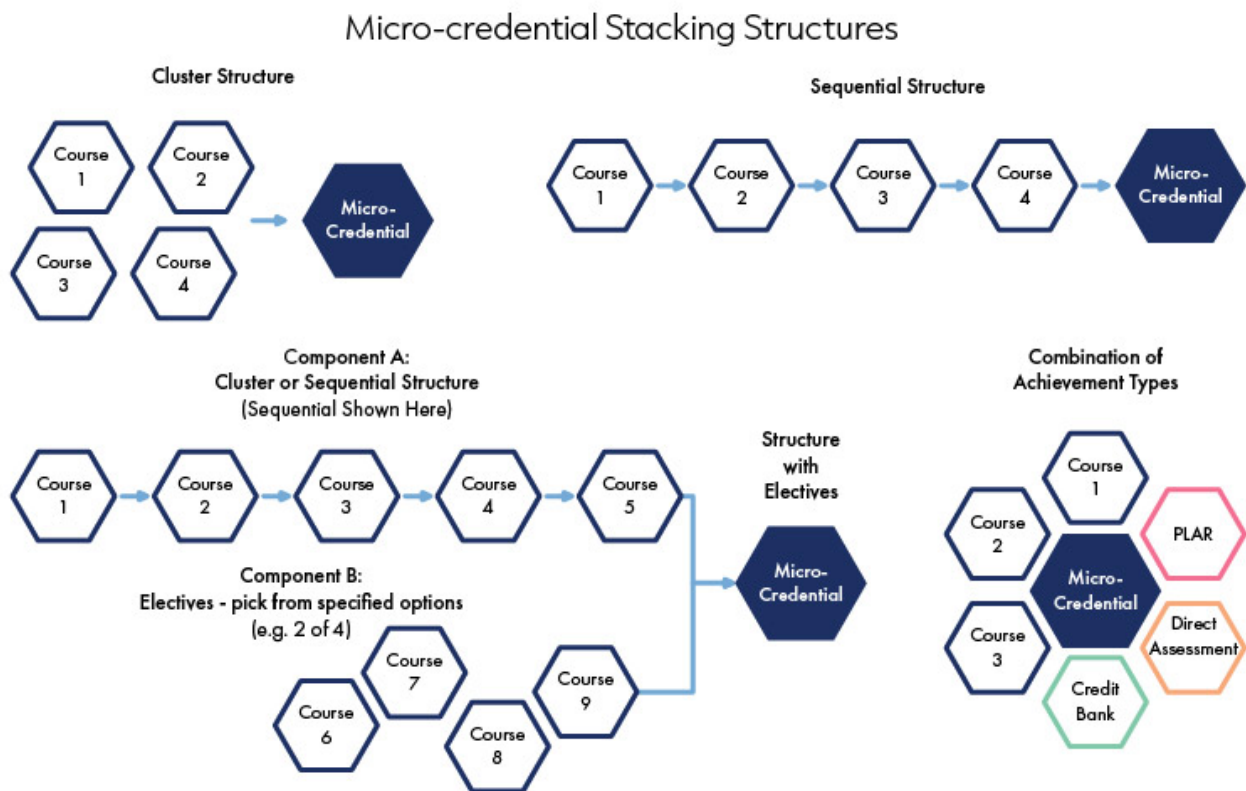


Figure 4. Alternative means of structuring a micro-credential program. Adapted from Pathways View by CanCred that is licensed under a CC BY licence (<https://creativecommons.org/licenses/by/4.0/>).

The course path through a micro-credential is one element of the program design structure. The other to consider is the scope or size of the micro-credential. For example, in Figure 4, it is assumed that a micro-credential is composed of individual courses. However, it is also possible to stack micro-credentials to create a larger one, which is sometimes called a “milestone micro-credential.”

Some institutions have their own micro-credential framework that specifies different levels of achievement and articulates how one micro-credential might lead to the larger one. For example, Figure 5 shows Capilano University’s micro-credential framework for non-credit offerings, where the different levels of micro-credentials can stack toward the larger ones, making it more accessible for learners.



DIVERSE RANGE OF COURSES

Continuing Studies offers a wide range of courses that once registered, can be applied to a program specific area.



SEAL OF PROFICIENCY

The Seal of Proficiency is an official acknowledgment that you have successfully completed 30-45 hours (2-3 courses) in a specialized study area.



AWARD OF ACHIEVEMENT

The Award of Achievement is an official acknowledgment that you have successfully completed 60-105 hours (4-7 courses) in a specific area.



OR



OR



CERTIFICATE OF COMPLETION

The Certificate of Completion is an official acknowledgment that you have successfully completed at least 135 hours (9+ courses) in a select topic area. This is our most time-intensive program type.



OR



OR



Figure 5. Capilano University's non-credit credential framework, showing how smaller credentials can stack to fulfill the requirements of the larger micro-credentials. [Image description]

Curriculum Mapping

When a program is composed of several courses (or when a milestone micro-credential is composed of several smaller micro-credentials), it is important to ensure that by completing each of the constituent courses a learner will achieve the program's learning outcomes. Ideally, there will also be a progression of skills, with each course helping learners move one step closer to the program's target goals and competencies.

A curriculum map is a visual tool that captures this information. The data is usually captured in the form of a table where the program competencies are listed as rows and each course is listed as columns. Then, in each cell, the level of achievement expected for each competency for each course is indicated. Typically, the levels are **novice**, **developing**, and **mastery**, or similar terms to indicate progression. Using this chart, it is easy to spot that each competency is achieved by completing all of the courses in the program, and that learners have an opportunity to progress in their skills from the beginning to the end of the program. An example of a curriculum map is provided in Table 2 of the chapter *Quality Assurance*. Quick guides for creating curriculum maps are available from Dyjur *et al.* (2019) and McCartin and Tocco (2020). Note that in these guides, the information contained in the rows and columns are switched from what's described above (i.e., rows list the courses in a program, and the columns list the competencies — either means of displaying the information is acceptable).

The University of British Columbia Okanagan has created an online tool to develop curriculum maps and ensure the design integrity of a program. Curriculum MAP (<https://curriculum.ok.ubc.ca/>) is accessible to anyone in the B.C. public post-secondary sector. An overview of the tool was presented at a BCcampus event and is accessible through the *Suggested Resources* section.

Evaluation of the Micro-credential

The ADDIE process concludes by evaluating a micro-credential and using the data to improve the next offering of the program. There are two types of data to draw from in evaluating a program: those pertaining to learning design and effectiveness, and those that pertain to the administration of the program.

Kirkpatrick (1998)'s four level model is a standard for assessing the effectiveness of professional development training (Mind Tools, n.d. a). Kirkpatrick outlined how educational interventions can be assessed at any of four levels, which are described below in order of increasing impact, but also of increasing level of difficulty in assessing them.

1. **Level 1: Reaction.**

This level gauges how learners feel about the educational experience. While not an

assessment of learning *per se*, engagement is a prerequisite of learning. Assessing this factor thus serves to diagnose whether there is a foundation for learning. Kirkpatrick was also mindful that employee reaction to a program was often critical in a manager's decision to continue or discontinue a training program. It is therefore important to collect this data.

2. **Level 2: Learning.**

This level assesses whether learners have acquired new knowledge. It does not assess whether they can apply that information. Kirkpatrick recognized that in order to be able to perform a new task, a person must first know — cognitively — how to do it. This is what this step measures.

3. **Level 3: Behaviour.**

This level is about demonstrating a competency in context. Can learners translate their knowledge into practice? Can they recognize contexts where and when the new concepts should be applied and use them appropriately? Can they resolve unexpected problems as they try to apply their competencies? This is the focus of competency-based education.

4. **Level 4: Result.**

In professional development, the goal of training is usually set at the level of the organization, for example, to improve efficiencies and cut costs. This is what this final level measures. Is the organization operating more efficiently as a result of the training? Is it cutting costs, and if so, by how much? This is the data that provides support that the training was worth the effort.

When engaging in evaluation activity at any of the four levels, there are several potential sources of information to consult:

- The published literature for evidence about best practices;
- Registration and enrollment data to evaluate demand, satisfaction, and persistence;
- Learners can be queried about their experience;
- Instructors can reflect on their observations and offer suggestions;
- Subject matter experts and employers can provide input about the continued relevance and validity of the materials;
- Artefacts submitted by learners, such as assignments, assessments, and grades, can be used to identify what may be clear and/or challenging in the course;
- Learner analytics (i.e., data from the LMS on learner engagement, progress, and performance in the online course) can provide insights into learner behaviour that can be used to improve the course;
- Peers (educators from other departments or institutions) can conduct a review of the course materials (including syllabus, activities, learner artefacts, etc.);
- Educators (such as professionals from the institution's teaching and learning centre) can conduct a classroom observation, using a classroom observation protocols developed in-house or one that is published (e.g., the Reformed Teaching Observation Protocol (RTOP) to

measure teaching effectiveness (Sawada *et al.*, 2000) or the Decibel Analysis for Research in Teaching (DART) to record and automatically categorize the time spent on different activities in a class (Owens *et al.* (2017)) and to assess the effectiveness of course delivery using established criteria;

- Kirkpatrick's Level 4: Results can be evaluated through various learner outcomes, including professional accreditation exams, workplace performance, employer satisfaction with newly trained employees, job search success rate, career advancement, etc.

To evaluate the management of a micro-credential, consult staff who administered the program, including those in your unit and those who interacted with your unit in the delivery of the program. Learners may also be able to provide feedback about their experience of navigating program registration, orientation to the course resources, the ease with which they received and used the digital credential awarded, etc. This information can be used to make improvements to the next micro-credential offering.

The *Suggested Resources* section contains excellent resources for planning the assessment of a micro-credential program.

Suggested Resources

Andragogy Best Practices

Becker, K. L. (2022). *Why the "why" matters to adult learners*. Faculty Focus.

<https://www.facultyfocus.com/articles/course-design-ideas/why-the-why-matters-to-adult-learners/>

Caffarella, R. S., & Ratcliff Daffron, S. (2013). *Planning programs for adult Learners: A practical guide* (3rd ed.). Jossey-Bass.

Crockford, J. (2021). *Five tips to creating a more engaging online course for adult learners*. Faculty Focus. <https://www.facultyfocus.com/articles/online-education/online-student-engagement/five-tips-to-creating-a-more-engaging-online-course-for-adult-learners/>

Doherty, B. (2012). *Tips for teaching adult students*. Faculty Focus. <https://www.facultyfocus.com/articles/effective-teaching-strategies/tips-for-teaching-adult-students/>

Gutierrez, K. (2021). *3 Adult learning theories every e-Learning designer must know*. Association for Talent Development. <https://www.td.org/insights/3-adult-learning-theories-every-e-learning-designer-must-know>

Sedlak, W. (2021). *How to reach adult students? For starters, talk to them like adults*. Lumina

Foundation. <https://www.luminafoundation.org/news-and-views/insightful-study-shows-how-to-engage-and-enroll-adult-learners/>

Sockalingam, N. (2012). *Understanding adult learners' needs*. Faculty Focus. <https://www.facultyfocus.com/articles/teaching-and-learning/understanding-adult-learners-needs/>

Team-Based Design Approaches

The following resources describe ways to facilitate a team's input toward the collaborative design of a curriculum.

IDEO.org. (2015). *The field guide to human-centered design*. DesignKit. <https://www.designkit.org/>

Drysdale, J. T. (2019). *The collaborative mapping model: Relationship-centered design for higher education*. *Online Learning*, 23(3): 2019 OLC Conference Special Issue. DOI: <https://doi.org/10.24059/olj.v23i3.2058>

Friis Dam, R. (2023). *The 5 stages in the design thinking process*. Interactive Design Foundation. <https://www.interaction-design.org/literature/article/5-stages-in-the-design-thinking-process>

Lipmanowicz, H., and McCandless, K. (2019). *Liberating structures including and unleashing everyone*. <https://www.liberatingstructures.com/>

Mei, B., May, L., Heap, R., Ellis, D., Tickner, S., Thornley, J., Denton, J., & Durham, R. (2021). *Rapid Development Studio: An intensive, iterative approach to designing online learning*. *SAGE Open*, 11(3). <https://doi.org/10.1177/21582440211047574>

Rossiter, D., & Tynan, B. (2019). *Designing and implementing micro-credentials: A guide for practitioners*. Commonwealth of Learning. <http://hdl.handle.net/11599/3279>

Young, C., & Perović, N. (2015). *ABC learning design method*. <https://abc-ld.org/>

Here are approaches to analyzing the learning outcomes for a course or program to ensure that they cover the complexity of desired outcomes.

University at Buffalo. (2023). *Bloom's revised taxonomy*. Curriculum, Assessment and Teaching Transformation. <https://www.buffalo.edu/catt/develop/design/learning-outcomes/blooms.html>

University at Buffalo. (2023). *Fink's significant learning outcomes*. Curriculum, Assessment and Teaching Transformation. <https://www.buffalo.edu/catt/develop/design/learning-outcomes/finks.html>

DACUM (Guides)

The following handbooks and articles provide instructions for implementing the DACUM process.

Bhattarai, S. (2023). *Training manual on DACUM*. Colombo Plan Staff College for Human Resources Development in Asia and the Pacific Region. <https://pub.cpsctech.org/tm-dacum/pdf.pdf>

DeOnna, J. (2002). *DACUM: A versatile competency-based framework for staff development*. *Journal for Nurses in Professional Development*, 18(1), 5–11. DOI: 10.1097/00124645-200201000-00001

Norton, R. E. (1997). *DACUM handbook* (2nd ed.). Center on Education and Training for Employment. Leadership Training Series No. 67. Ohio State University. <https://files.eric.ed.gov/fulltext/ED401483.pdf>

Norton, R. E. (2009). *Competency-based education via the DACUM and SCID process: An overview*. Center on Education and Training for Employment, The Ohio State University. https://unevoc.unesco.org/e-forum/CBE_DACUM_SCID-article.pdf

DACUM (Examples)

Some examples of DACUM charts can be found in the following sources:

- Halbrooks (2003) (<https://journals.ashs.org/horttech/view/journals/horttech/13/3/article-p569.xml>) used DACUM to create the skills profile for horticultural technology workers. This information was used to revamp Kent State University's associate degree program.
- Johnson (2010) (https://www.geotechcenter.org/uploads/2/4/8/8/24886299/gistech_andsup_purisajournalvol22issue2.pdf) describes the use of DACUM to develop a curriculum for GIS technicians. The article contains data obtained from each step in the DACUM process.
- Nickbeen *et al.* (2017) (https://www.researchgate.net/publication/317725373_THE_DACUM_PROCESS_TO_DEVELOP_AN_INDUSTRY-DIRECTED_CONSTRUCTION_EDUCATION_CURRICULUMTYPE) used the DACUM process to address the knowledge and skills needed to engage in green construction, a competency gap identified by the construction industry.
- Ohio State University's Center on Education and Training for Employment is the home of the DACUM International Training Center (<https://cete.osu.edu/programs/dacum-international-training-center/>). For a modest fee, curriculum developers can access over 65 DACUM charts produced for a range of occupations. These charts can serve as examples or as a starting point for developing a curriculum (though the competencies and tasks in the chart should be locally validated). The Types and Application of DACUM Sample Charts (<https://cete.osu.edu/types-and-application-of-dacum/>) webpage has a selection of examples, including DACUM charts in the areas of:

- bioenergy conversion technology (<https://cete.osu.edu/wp-content/uploads/2021/07/DACUM-Conceptual-Analysis-Bioenergy-Conversion-Technology.pdf>);
- train-the-trainer (<https://cete.osu.edu/wp-content/uploads/2021/07/DACUM-Functional-Analysis-Train-the-Trainer-Function.pdf>);
- aerial sensing data analyst (<https://cete.osu.edu/wp-content/uploads/2021/07/DACUM-Job-Analysis-Aerial-Sensing-Data-Analyst.pdf>);
- brewing technology (<https://cete.osu.edu/wp-content/uploads/2021/07/DACUM-Occupational-Analysis-Brewing-Technology.pdf>); and
- product changeover process (<https://cete.osu.edu/wp-content/uploads/2021/07/DACUM-Process-Analysis-Product-Changeover-Process.pdf>).

Resources to Develop Lesson Plans, Activities, and Online Courses

Barkley, E. F., & Major, C. H. (2020). *Student engagement techniques: A handbook for college faculty* (2nd ed.). Jossey-Bass.

Barkley, E. F., & Major, C. H., Cross, K. P., (2014). *Collaborative learning techniques: A handbook for college faculty* (2nd edition). Jossey-Bass.

Bates, A. W. (Tony) (2022). *Teaching in a digital age* (3rd ed.). Tony Bates Associates Ltd.
<https://pressbooks.bccampus.ca/teachinginadigitalagev3m/>

BCIT. (n.d.). *Designing a course*. Learning & Teaching Centre. <https://www.bcit.ca/learning-teaching-centre/resources/>

Brookfield, S. D., & Preskill, S. (2016). *The discussion book: 50 great ways to get people talking*. Jossey-Bass.

Darby, F., & Lang, J. M. (2019). *Small teaching online: Applying learning science in online classes*. Jossey-Bass.

Lang, J. M. (2021). *Small teaching: everyday lessons from the science of learning* (2nd ed.). Jossey-Bass.

Mayer, R. E. (2021). *Multimedia Learning* (3rd ed.). Cambridge University Press.

Wall Kimmerer, K. (2015). *Braiding sweetgrass: Indigenous wisdom, scientific knowledge and the teachings of plants*. Milkweed Editions.

Competency-Based Education

As part of its capacity-building efforts to support micro-credentials development, BCcampus conducted an online workshop titled *Micro-credentials: Competencies at the Core* (<https://bccampus.ca/event/micro-credentials-competencies-at-the-core/>) on February 22, 2023. Those who are new to the field of competency-based education are encouraged to view the recordings of this event to familiarize themselves with the concepts. The following two keynote sessions are especially recommended:

- Lena Patterson, program director of micro-credentials and business development at the Chang school of continuing education at Toronto Metropolitan University, delivered a 45-minute session entitled *Why are competencies at the core of micro-credentials?* in which she defined competencies in a clear and straightforward manner.
- Dennis Green, co-author of the *eCampusOntario Open Competency Toolkit* (<https://ecampusontario.pressbooks.pub/competencytoolkit/>), presented a 45-minute session titled *What are competencies and competency frameworks?*, which picked up where Dr. Patterson's presentation left off, with a focus on groups of competencies that are necessary to perform a job successfully.

The recommended guide for writing competency statements and creating competency frameworks is the eCampusOntario open toolkit.

Green, D., & Levy, C. (2021). *eCampusOntario Open Competency Toolkit*.
<https://ecampusontario.pressbooks.pub/competencytoolkit/>

The next three resources can help write competency statements.

Braxton, S. (2022). *Back to basics: Defining a digital badge taxonomy using cognitive learning and competency frameworks*. The Evollution. <https://evollution.com/programming/credentials/back-to-basics-defining-a-digital-badger-taxonomy-using-cognitive-learning-and-competency-frameworks/>

The British Columbia Institute of Technology has developed the following guide to writing competency statements (<https://www.bcit.ca/files/ltc/pdf/competencies.pdf>).

University of Victoria. (n.d.) *Using competencies. Action verbs*. Career Services. <https://www.uvic.ca/career-services/build-your-career/using-competencies/action-verb-list/index.php#ipn-action-verbs>

This article describes how to develop a competency framework in a step-by-step fashion.

Mind Tools (n.d. b). *Developing a competency framework*. <https://www.mindtools.com/ad66dk2/developing-a-competency-framework>

This chapter presents a good overview of competency-based education, including how to design it, how to train faculty, and some administrative challenges of implementing this model of education.

Pluff, M. C., & Weiss, V. (2022). Competency-based education: The future of higher education. In *New models of higher education: Unbundled, rebundled, customized, and DIY* (pp. 200-218). IGI Global. <https://doi.org/10.4018/978-1-6684-3809-1.ch010>

The following three papers used different approaches to collect the knowledge and expertise of competency-based education practitioners. The findings are principles of effective practice.

Cunningham, J., Key, E., & Capron, R. (2016). An evaluation of competency-based education programs: A study of the development process of competency-based programs. *The Journal of Competency-Based Education*, 1(3), 130–139. <https://doi.org/10.1002/cbe2.1025>

Johnstone, S. M., & Soares, L. (2014). Principles for developing competency-based education programs. *Change: The Magazine of Higher Learning*, 46(2), 12–19. <https://doi.org/10.1080/00091383.2014.896705>

McIntyre-Hite, L. (2016). A Delphi study of effective practices for developing competency-based learning models in higher education. *The Journal of Competency-Based Education*, 1(4), 157–166. <https://doi.org/10.1002/cbe2.1029>

In this article, the authors explore the relationship between short-term training and competency-based education. One reason to read this article is that it provides concrete examples, in the form of screen captures, of the student view of an online competency-based course. It conveys how achieving each skill leads to a sense of progression in a course.

Zhang, J., & West, R. E. (2020). Designing microlearning instruction for professional development through a competency based approach. *TechTrends* 64, 310–318. <https://doi.org/10.1007/s11528-019-00449-4>

Connecting Competency Communities (C3) (<https://www.linkedin.com/groups/13926066/>) is a LinkedIn group that brings together people interested in the creation and management of competency frameworks. The U.S. Chamber of Commerce hosts a monthly webinar series on the latest developments in competency frameworks worldwide. It is a good place to make connections with others engaged in this work.

The following three articles share the experiences of practitioners of competency-based education.

Roth, A. (2015). Competency-based education: What we learned from experience. *EDUCAUSE*

Review. <https://er.educause.edu/blogs/2015/7/competencybased-education-what-we-learned-from-experience>

Sonnenschein, N. (2016). Balancing pedagogy and assessment in competency-based education. *EDUCAUSE Review*. <https://er.educause.edu/articles/2016/10/balancing-pedagogy-and-assessment-in-competency-based-education>

Weise, M. (2014). Got skills? Why online competency-based education is the disruptive innovation for higher education. *EDUCAUSE Review*. <https://er.educause.edu/articles/2014/11/got-skills-why-online-competencybased-education-is-the-disruptive-innovation-for-higher-education>

This white paper argues for the creation of a national system of competency frameworks, like those developed in other countries.

Lane, J., & Griffiths, J. (2017). Matchup: A case for pan-Canadian competency frameworks. Canada West Foundation, Human Capital Centre. <https://cwf.ca/research/publications/matchup-a-case-for-pan-canadian-competency-frameworks/>

Learner Assessment Resources

The following resources are focused on learner assessments and provide ideas and instructions for designing an assessment plan that aligns with learning outcomes of competencies.

Angelo, T. M., & Cross, K. P. (1993). *Classroom assessment techniques: A handbook for college teachers* (2nd edition). Jossey-Bass.

Center for Standards, Assessment, & Accountability. (2023). *Assessment design toolkit*. WestEd. <https://csaa.wested.org/spotlight/assessment-design-toolkit/>

Conrad, D., & Openo, J. (2018). *Assessment strategies for online learning: Engagement and authenticity*. AU Press. https://www.aupress.ca/app/uploads/120279_99Z_Conrad_Openo_2018-Assessment_Strategies_for_Online_Learning.pdf

In September 2021, BCcampus held an FLO Workshop titled *Rubrics Rubrics Rubrics!* The three-hour online event described different types of rubric formats and guidance in selecting an appropriate one for a learning activity and purpose. The recording of the event is available on the BCcampus website along with access to resources provided during the workshop.

Harrison, J. (2021, September 1). *FLO workshop: Rubrics rubrics rubrics*. BCcampus. [Recorded workshop and resources]. <https://bccampus.ca/event/flo-workshop-rubrics-rubrics-rubrics/>

Work-Integrated Learning

Anne-Marie Fannon, director of the professional development program at the University of Waterloo, is an innovator in combining work-integrated learning (WIL) and micro-credentials. In 2019, her team piloted a program where employers evaluated learners' performance in the workplace. These micro-credentials were endorsed by employers as proof of the learners' ability to work in their environment.

Here are some resources to learn more about Fannon's project:

- In February 2021, BCcampus hosted a webinar with Fannon titled *ACE-WIL Town Hall: Work Integrated Learning and Micro-credentials* (https://bccampus.ca/event/ace-wil-town-hall-work-integrated-learning-and-microcredentials/?instance_id=3201). You can watch the 30-minute recording of the event.
- In March 2021, BCcampus's Helena Prins wrote a blog post providing an update on Fannon's work called *Micro-credentials and Work-Integrated Learning: A Natural Alignment* (<https://bccampus.ca/2021/03/16/micro-credentials-and-work-integrated-learning-a-natural-alignment/>).
- Fannon also co-wrote an article describing how WIL and micro-credentials fit together (Ashcroft *et al.*, 2021 (<https://files.eric.ed.gov/fulltext/EJ1313479.pdf>)).

Curriculum Mapping

The University of British Columbia Okanagan (UBCO) developed a tool called Curriculum Map to help faculty and administrators engage in curriculum mapping in a guided fashion. The tool is accessible to anyone in the public B.C. post-secondary sector. BCcampus hosted a number of events to help spread the word about this tool and to offer training in its use and capabilities.

- Access to the Curriculum MAP (<https://curriculum.ok.ubc.ca/>) tool on the UBCO website. Registration and access to the tool is free for people with an email address from a B.C. post-secondary institution.
- The 90-minute webinar showcasing the Curriculum Map (<https://bccampus.ca/event/curriculum-map-demo-for-instructors-and-professionals-in-higher-ed/>) was recorded in August 2022 and is available on the BCcampus website.
- Gwen Nguyen (2022) of BCcampus wrote a blog post highlighting key take-aways (<https://bccampus.ca/2022/09/20/curriculum-map-a-tool-for-mapping-analysis-and-planning/>) from the webinar

Dyjur, P., Grant, K., & Kalu, F. (2019). *Curriculum review: Curriculum Mapping*. Taylor Institute for Teaching and Learning, Curriculum Review Series #4. University of Calgary.

<https://taylorinstitute.ucalgary.ca/sites/default/files/Curriculum/Curriculum%20Mapping%20UPDATED%202019.pdf>

McCartin, L., & Tocco, A. (2020). *Quick guide to program curriculum mapping*. University of Northern Colorado. Center for the Enhancement of Teaching & Learning. <https://www.unco.edu/center-enhancement-teaching-learning/pdf/assessment/program-curriculum-mapping-quick-guide.pdf>

Assessment of Curriculum and Instruction

Berk, R. A. (2005). Survey of 12 strategies to measure teaching effectiveness. *International Journal of Teaching and Learning in Higher Education*, 17(1), 48–62.

This article reviews various sources of evidence for instructor effectiveness, ranging from student ratings of instruction to teaching portfolios. Each of the 12 strategies are followed by a "bottom line" section that summarizes the important points, making it a quick resource to consult. Although the article is behind a paywall, many copies can be found online for easy access.

Blumberg, P. (2014). *Assessing and improving your teaching: Strategies and rubrics for faculty growth and student learning*. Jossey-Bass.

McGahan, S. J. (2018). Reflective course review and revision: An overview of a process to improve course pedagogy and structure. *Journal of Educators Online*, 15(3). <https://files.eric.ed.gov/fulltext/EJ1199111.pdf>

This article provides step-by-step instructions for conducting either a full course review or a spotlight revision (with a particular focus, such as to improve equity or accessibility in a course) and suggests a structure to guide each of these reviews. While the guide was created for academic university courses developed by a single educator, it could easily be adapted for micro-credential programs designed or taught by a team.

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Image Descriptions

Figure 1. The ADDIE instructional design model.

Stages of the ADDIE model from Implementing eLearning – A Toolkit for Registered Training Organisations

- Preparation
 - Strategy & leadership
 - Scope of project
 - Business case & resourcing
 - IT & people support
- Analysis (10% of budget)
 - Develop learning profile
 - Identify learning spaces & devices
 - Research learning resources
 - Determine delivery & assessment strategies
- Design (36% of budget)
 - Storyboard the design
 - Plan & test using prototypes
 - Identify network capacity
 - Design online learning spaces
 - Explore & refine technology options
 - Consider using repositories
- Develop (35% of budget)
 - Decide to insource/outsource
 - Conduct testing
 - Ensure security, backup & access requirements met
 - Confirm licensing, copyright, and accessibility
- Implement (4% of budget)
 - Provide tools for learners
 - Conduct delivery & assessment
 - Provide entry point for learners
 - Prepare teachers for e-learning
- Evaluate (7% of budget)
 - Share results
 - Collect, interpret & understand data

[Return to Figure 1]

Figure 3. Competence

- Complete Tasks
 - How to do the task
 - Knowledge and skills required
 - Quality of work is within expectations
- Manage Tasks
 - Combining tasks to complete larger work activities
 - Multi-tasking
 - Sequencing
 - Time management
- Handle Contingencies
 - Unexpected circumstances
 - Changes in scope
 - What to do when things go wrong
- Job Role
 - Working effectively with others

- Meeting personal and team expectations and responsibilities
- Work Environment
 - Physical environment and working conditions
 - Adhering to policies and procedures
 - Company culture – applying attitudes and values

[Return to Figure 3]

Figure 5. Capilano University's non-credit credential framework

- Diverse range of courses
 - Continuing Studies offers a wide range of courses that once registered, can be applied to a program specific area.
- Seal of Proficiency
 - The Seal of Proficiency is an official acknowledgement that you have successfully completed 30-45 hours (203 courses) in a specialized study area.
- Award of Achievement
 - The Award of Achievement is an official acknowledgement that you have successfully completed 60-105 hours (4-7 courses) in a specific area.
- Certificate of Completion
 - The Certificate of Completion is an official acknowledgement that you have successfully completed at least 135 hours (9+ courses) in a select topic area. This is our most time-intensive program type.

[Return to Figure 5]

Media Attributions

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- Figure 5. Capilano University's non-credit credential framework by CapU Continuing Studies (2023) (<https://cs.capilanou.ca/courses--programs/program-types/stackable-recognition/>), used with permission.

Design Considerations: Stories from the B.C. Post-secondary Sector

This chapter shares some of the experiences of B.C. institutions in designing micro-credential programs.

Chapter Audience:



Program Managers



Faculty

An Instructional Designer's Role in Creating FILMBA (CapU's Experience)

Yi Cui served as a program developer in continuing studies at Capilano University (CapU). In 2021, she coordinated the development and delivery of the micro-credential Filmmakers in Indigenous Leadership and Management Business Affairs (FILMBA) (<https://www.capilanou.ca/programs--courses/capu-for-you/indigenous-digital-accelerator/ida-workshops/filmmakers-in-indigenous-leadership--management-business-affairs-filmba/>). Below, she describes the role of an instructional designer in putting together this program.

Interview

Let's start with FILMBA. What is this micro-credential?

"FILMBA was the brainchild of Doreen Manuel, the director of the BOSA Centre for film and animation and a founding member of CapU's Indigenous digital accelerator. Working with people in the sector, she identified that there was a gap in supporting mid-career Indigenous filmmakers. Many are quite successful at producing independent films, but to reach the next level of production — to help them get to the multimillion budget level in two or three years — they need knowledge about the business aspect of filmmaking. This includes training in funding models, contract negotiations, financial management, and intellectual property law and distribution. Manuel also recognized the importance of networking and wanted these Indigenous filmmakers to build their industry connections.

"She sought funding to support this training and found it from several sources, including TD Bank, the Indigenous Screen Office, TELUS's Storyhive, Creative BC, Warner Bros. Discovery Access Canada, and Western Economic Diversification Canada. This allowed her to develop this program and sponsor a cohort of twenty Indigenous filmmakers from around North America.

"In terms of the format, Manuel envisioned a program where a small group of experienced Indigenous filmmakers would meet online with industry leaders every couple of weekends. Each weekend workshop would be taught by one or two different instructors, someone who is an expert at finance, or fundraising, or law, etc. She used her connections to enlist the help of these industry leaders. After each weekend workshop, learners would be required to apply what they learned on a project-based assignment, where they would be putting together plans for their own production. The program also made provision for individual mentorship opportunities between the leaders and learners."

What was your role in this project, as the program developer/instructional designer?

"Someone needed to take Manuel's vision and turn it into a reality. That was my job. I did it through two different roles.

"First, due to the large number of people involved in offering this program, there was a need for project management. There were 21 subject matter experts and five guest speakers in this program. Each had to be scheduled at the right time in the program and needed reminders about deliverables. There was also a program coordinator (a graduate teaching assistant) who attended every class and provided continuity for the learners, and I worked with her to ensure she knew what was coming next. The program was offered through continuing studies, so I used my knowledge of its processes to ensure that we collected and submitted the right information at the right time (e.g., putting together information for the registration webpage, coordinating the marketing plan, coordinating with CapU contract services for instructor contracts, reviewing applications, and ensuring learners received all of the required information to access online tools, etc.). I also monitored the budget,

managed funds, and collected data to support Manuel to meet the funders' reporting requirements.

"The other aspect of my role was more as an instructional designer. I have a PhD in education and am an expert at how to design effective educational experiences. Many of the subject matter experts who participated in this workshop had never designed a lesson, never taught, and needed guidance about how to design a successful weekend workshop. I guided that work. I met with each subject matter expert ahead of their workshop, discussed what they wanted to achieve, proposed activities to help learners achieve these objectives, and discussed appropriate ways to assess whether learners had achieved them. I also made sure that each workshop aligned with the overarching program goals. With each instructor, we reviewed effective teaching strategies so that they would facilitate good online sessions, and after each weekend workshop I collected and shared learner feedback and provided suggestions. I used the learner feedback, together with my analysis of trends in learner activities (e.g., assignment submission behaviour and sign-ups for mentoring sessions), to inform later workshops.

"I didn't ask the instructors to create the online course component because I wanted all workshop modules to have a consistent look and because it didn't make sense to teach them how to use our learning management system since they would only use the tool for a short period. I just took care of that myself. I created the online course component in Moodle based on what the subject matter experts were planning to do in their workshop.

"That said, the instructors did use Moodle to provide feedback on each assignment, so I created a brief online tutorial to teach them how to do it. I also created an online orientation course for learners, to teach them how to use our learning management system (e.g., how to post in the discussion forums, how to submit an assignment, how to book a mentoring session) and how to use Zoom. These orientation courses saved us a lot of time later.

"Finally, I worked with the program coordinator to collect data about each learner's performance on assignments and issued a digital badge for those who had met the criteria for passing the micro-credential."

How was working on this project different to your typical role in continuing studies?

"In some respects, FILMBA wasn't different to any other program I have coordinated in continuing studies. In my role, I work with subject matter experts to help them design and teach a course for adult learners and I project manage each program.

"Perhaps one difference is that we were working with Manuel, who is a faculty member at CapU, and this program was really under her leadership. Manuel came to us to offer the program because there were no systems in place to offer such non-credit, short-term

training provided by industry experts as part of the regular offerings at CapU. Continuing studies had them in place. So, we formed a collaboration and worked under her leadership to create this program. That was different. Usually, continuing studies directs its own activities and is insulated from the activities of the rest of the institution. We did have to work out a few things, because the system wasn't built to facilitate collaboration between continuing studies and academic departments (e.g., we had to figure out how to transfer funds between departments). Overall, it was nice to make connections and work alongside colleagues at our institution."

Top Tips from CapU

1. **Budget for a project manager.** FILMBA, and similar programs that enlist the help of multiple stakeholders, require the coordination of many people and resources to make them a reality. A project manager is a critical resource to budget for when developing multi-stakeholder micro-credentials.
2. **Budget for an instructional designer.** Micro-credentials often rely on subject matter experts to develop and teach a program. While experts in their field, they may not have requisite educational experience or knowledge. An instructional designer can help non-educators create effective, high-quality curriculum. Factor the work of an instructional designer into the budget. Note that many instructional designers are effective project managers, so the two roles could be performed by the same person.
3. **Budget for a teaching assistant.** In programs like FILMBA, which consist of individual workshops facilitated by different subject matter experts, it is important to add an educator to the project who will provide continuity for the learners. This person can develop relationships with learners, answer questions about the program, and point out connections between the various workshops. This ensures that the program is coherent and provides connection for the learners.
4. **Clarify roles and responsibilities.** As in any team-based project, establishing well-defined roles and responsibilities for each team member is essential. This may be particularly important in roles that involve instructional designers working in collaboration with faculty, as some faculty may not have prior experience working with a curriculum expert and may be unclear about the division of labour between

themselves and the instructional designer.

RRU's Transformation of Existing Courses into Micro-credentials

Zoë MacLeod is associate vice president of professional and continuing studies at Royal Roads University (RRU). In partnership with CanAdapt (<https://can-adapt.ca/>), her unit developed the micro-credential in Climate Adaptation Fundamentals (<https://pcs.royalroads.ca/climate-adaptation-fundamentals-micro-credential>). Below, she shares how she was able to repurpose existing curriculum to rapidly create a new, rigorous micro-credential.

Interview

How did this micro-credential get its start?

"It begins with the Adaptation Learning Network (ALN) (now CanAdapt), led by Robin Cox, professor and director of the Resilience by Design Lab at Royal Roads University. ALN was a climate-adaptation capacity-building project funded by Natural Resources Canada, the B.C. Ministry of Environment and Climate Change Strategy, and the B.C. Ministry of Post-secondary Education and Future Skills. The ALN project included consultation with national and international climate adaptation experts to produce a climate adaptation competency framework (https://web.archive.org/web/20230609151251/https://can-adapt.ca/sites/weadapt.org/files/aln-competencyframework_2021_1.pdf) that describes the knowledge and skillset needed by professionals in diverse fields to engage in climate change adaptation. Using these competencies as a guide for developing both learning outcomes and content domains, the ALN team worked with six B.C. universities to design and deliver 11 professional development courses. RRU was one of these institutions. Climate change curriculum is an area of strength for RRU, so it was natural that experts in our institution designed some of these courses.

"Then the Ministry's call for proposals to fund pilot micro-credentials came out. That's when my unit, professional and continuing studies, became involved. It was clear from the call for proposals that the province was interested in pathways from non-credit to credit programs."

How did you structure the micro-credential?

"We set about exploring how to transform what we already had developed as stand-alone courses for working professionals into a multi-course micro-credential. For that, we referred back to the climate adaptation competency framework. Aligning a micro-credential's learning outcomes to a recognized competency framework is emerging as a key characteristic of micro-credentials in Canada and internationally.

"When we did this, we realized that what we needed to do was to expose learners to two foundational areas of knowledge: fundamentals of climate adaptation, and Indigenous perspectives and knowledge on climate change. These became the two core courses in our micro-credential. We had some content on these topics in existing courses, but mostly these courses had to be developed from scratch.

"We also wanted to give learners the opportunity to explore areas of interest and decided that they could pick two electives as part of their micro-credential. Many of the existing courses could be retrofitted for this purpose. We used the content, reworked them a bit, and included assessments, since that is a distinction between stand-alone professional development courses and micro-credentials.

"Together, the two required courses plus an additional two courses on topics relevant to the learner's needs help learners acquire the competencies listed in the climate adaptation competency framework."

What was the process of designing assessments for this micro-credential?

"Each of the climate adaptation courses created as part of the ALN project was online, non-credit, and provided about 20 hours of instruction. None of the courses were designed with embedded assessment activities to validate the competencies developed through the learning experience. That was something we had to add.

"We examined different ways of assessing the competencies of the competency framework throughout the micro-credential. For example, we considered whether each of the four courses in the micro-credential needed to have its own assessment, or whether the micro-credential as a whole could have an assessment. For this micro-credential, since it was foundational training, we decided that the best option was to assess learners in each course. However, the idea of assessing learners outside of individual courses, to encourage learners to integrate learning across courses, is something that we are interested in pursuing in future micro-credentials.

"The other thing we considered was the most suitable assessment format. For this micro-credential, tests were not suitable. While tests might be a good way to demonstrate technical competencies, our courses were in the area of social sciences. It was more about

demonstrating that learners understood the content. We worked with employers and professional associations to assure that the assessments were relevant to them. We built in applied assessments where learners are asked to use what they learned in the course and apply it in their work. For example, they might develop an action plan for their organization. There were also a few case studies."

Will you be reproducing this model (or adapting existing curriculum) to create new micro-credentials?

"Yes. We recently partnered with the Climate Risk Institute (<https://www.royalroads.ca/news/rru-teams-climate-risk-institute-slate-critical-courses>) (CRI), a non-profit organization that delivers training on climate risk assessment, adaptation planning, and adaptation policy. They have years of experience in offering professional development training in this field and access to subject matter experts in climate adaptation. They want to reach a broader audience, and RRU can help them do that. RRU will use its instructional design expertise to transform CRI's training into robust online courses, and that includes adding assessments. This is another example of not reinventing the wheel — we are taking the training content they already have, adding rigorous assessments, and offering it as high-quality professional development training."

Adding assessment in a program opens up the possibility of laddering into other education. Are you capitalizing on this?

"The micro-credential in Climate Adaptation Fundamentals requires learners to engage in about 100 hours of work. That's equivalent to a three-credit course at RRU. We have worked out an agreement where, upon successful completion of the micro-credential, the program can be used as one course (three credits) in the Master of Arts in Climate Action Leadership (<https://www.royalroads.ca/programs/master-arts-climate-action-leadership>). It makes this master's program more accessible for those who gained an appetite for this topic through the micro-credential.

"The other thing that we have been thinking about is that assessing learners outside of individual courses in a program opens a pathway linking non-credit and credit programs. For example, say a learner is completing a non-credit program composed of several non-assessed courses, and they are interested in continuing on at RRU in a credit program. As one of their electives, they might take a course where they work with an adviser to create a portfolio that captures and demonstrates their learning in the program. I should note that there should be some flexibility in how knowledge is demonstrated — it could be a portfolio, but it might also be a conversation with the instructor, or a paper, or a presentation — it just has to be a documented demonstration of learning. We might call this an 'integrated assessment,' and this assessment can be used as a form of prior learning and

assessment recognition (PLAR) to ladder into an academic, credit-based program. This idea of including out-of-course assessment might have more than one use..."

Top Tips from RRU

1. **Don't reinvent the wheel.** Explore whether there is existing content that could be repurposed and transformed into a micro-credential. Consider who has a piece of the puzzle already. This includes reaching out to faculty at your institution as well as partnering with outside organizations.
2. **Align the learning outcomes to a competency framework.** Align the micro-credential's learning outcomes to a recognized competency framework. This is emerging as a micro-credential best practice globally and can help with the design of assessment.
3. **Be relevant to industry.** Repurposing course content, and transforming it into a micro-credential, requires a conversation with industry, employers, and professional associations. This will ensure that the selected competency framework is valid for your target audience and can help identify assessments that are recognized by industry for those competencies.
4. **Consider when to assess.** Depending on the goals of the micro-credential, consider whether it is more appropriate to assess a learner at the end of each course, or whether it would be more telling of their abilities if the assessment took place upon completion of the program where they could integrate learning across several courses of the micro-credential.
5. **Build in flexibility.** Be sure that the assessments, while rigorous, are flexible for adult learners and do not introduce barriers. For example, consider whether assessment should be optional, where completing the assessment leads to award of the micro-credential, and not finishing an assessment results in a letter of completion. Also consider whether a learner has the flexibility to change their mind later and have their learning recognized. Are there on-ramps or pathways they can use to have their learning assessed and recognized later, such as through an "integrated assessment" pathway?
6. **Assessment should create pathways.** Assessments provide stakeholders with confidence that learners have met the intended learning outcomes or have

demonstrated the target competencies. Consider how this can be leveraged to open up opportunities for learners who wish to pursue further training in this field.

VCC's Exploration of LMS Options for Micro-credentials

Adrian Lipsett is dean of continuing studies at Vancouver Community College (VCC). The institution recently launched an Award of Achievement in Production for Animation and VFX (<http://www.vcc.ca/cs/animation-vfx/>). As part of the development of this micro-credential, his team explored a non-traditional learning management system (LMS) option.

Interview

What led you to explore an online delivery option other than your institution's LMS?

"What sparked the comparison of different learning management systems is a questioning about our brand. We asked ourselves: what do we want to be known for in terms of online student experience. We wanted to establish quality norms. Among other things, we wanted the student experience to go very smoothly, whether they were accessing the platform on a laptop or on their mobile device. We didn't want them to have to open a PDF file in order to access a URL that sends them to another page. We wanted to consciously manufacture that student experience into the learning platform.

"At our institution, we use Moodle. Moodle offers lots of tools, but the look and feel of certain versions do not meet the polished online experience that adult learners come to expect from our competitors. For example, I had used Thinkific as a learner in a program. I knew that it and other platforms like Udemy offer a smooth student experience.

"We did a comparison of several LMS options. We considered the student experience, number of tools, and pricing. We ended up giving Thinkific (<https://www.thinkific.com/>) a try as part of a pilot."

What has been your experience so far?

"The student experience has been great! Students get their account and they just move through the online curriculum in an effortless manner. It's intuitive and it looks like a polished

product. Students participate in discussions using a simple but effective tool. Whether accessed on a mobile device or a computer, it's beautiful and seamless.

"We did a privacy impact assessment of Thinkific. To abide by privacy regulations within the scope of the pilot, we had to do student registration manually, and that turned out to be a lot of work. The platform is great for entrepreneurs who handle a small number of students and register them manually; for larger institutions, we need a more automated system. While Thinkific does offer a higher tier subscription that would enable Banner integration [Banner is VCC's student records system], we opted for a lower tier option for budgetary reasons.

"Another thing to think about is that the scope of assessments is limited. The options (at least at our subscription tier) are multiple choice and true or false test items. It's also important to note that you cannot export any materials you upload to build a course. Once you are on that platform, you are committed and cannot export it back to Moodle in a SCORM package."

What else did you do to meet learner expectations for a quality online experience?

"We wanted to integrate some professionally produced videos into the course. The videos were mostly interviews with key industry players that show the workplace. It is expensive. We budgeted several thousand dollars for a few three-minute videos. That money goes toward a video crew that is booked for the whole day; they bring equipment like a microphone, tripod, and front and back light, and of course the video camera. They shot a ton of footage, edited it, submitted it for our review, did more edits, and we got the final product. The video turned out awesome and students have noted as much.

"The talent at the companies donated their time to be interviewed. They let us film in their workplace. Our students got to see what it was really like to work at these places.

"Many public post-secondary institutions have in-house services for this type of video work, but they often do not have the capacity to do it. We want to see our competition as LinkedIn Learning, where this quality of video is the norm. If students are going online to learn, their experience cannot just be words and click-through, click-through, click-through. Students need to readily see value built into the LMS."

1. **Choose an LMS that creates a smooth online learning experience.** Many of the LMS used in post-secondary institutions offer powerful tools with customization options. However, they are rarely as user friendly as online professional development training platforms that students are familiar with such as LinkedIn Learning, Coursera, and Udemy. Consider how to deliver a seamless online experience for learners, regardless of how they access the course content (i.e., on a laptop or a mobile device).
2. **Pick a platform that allows you to retain control over your content.** Try out various platforms to assess their strengths and weaknesses. However, it is important that the online course can be easily exported to another platform, in the event you choose to change platforms. Be sure to include this feature as one of the criteria when comparing different LMS options.
3. **Choose a platform that integrates with your systems.** Post-secondary institutions can process a large number of student registrations for a course. While it may be possible to register students manually in the LMS, consider options that integrate with your system or find ways to automate the registration process.
4. **Create an online experience brand.** For each program, think of the online experience that you want students to have. What will students associate with your brand through this experience? Start by defining your brand and then integrate it consistently throughout the online course.
5. **Consider professionally produced videos.** Some online course providers use professionally produced videos. Students come to expect this sort of quality product in their online courses. Consider whether videos would support the learning and whether production value is an important element of your brand and of student expectations. If you decide to create professional videos, be sure to allocate sufficient budget for their production.

Educational Pathways

The short duration of micro-credentials makes learning more accessible. By integrating these programs into credential frameworks, learners will have easier pathways to return to education and/or gain access to advanced standing in larger programs.

Chapter Audience:



Administrators



Program Managers



Faculty

What Are Educational Pathways for Micro-credentials?

Educational pathways are about creating access to education. In the context of micro-credentials, it's about using these short programs as on-ramps to more learning, preparing undergraduates for the world of work by giving them skills that are recognized and sought by employers, and updating the knowledge and skillset of alumni in response to their changing work environment. To create such access, micro-credentials must be integrated into the existing credential ecosystem so that they are not isolated educational experiences. Thus, educational pathways are about integrating lifelong learning into the academic system.

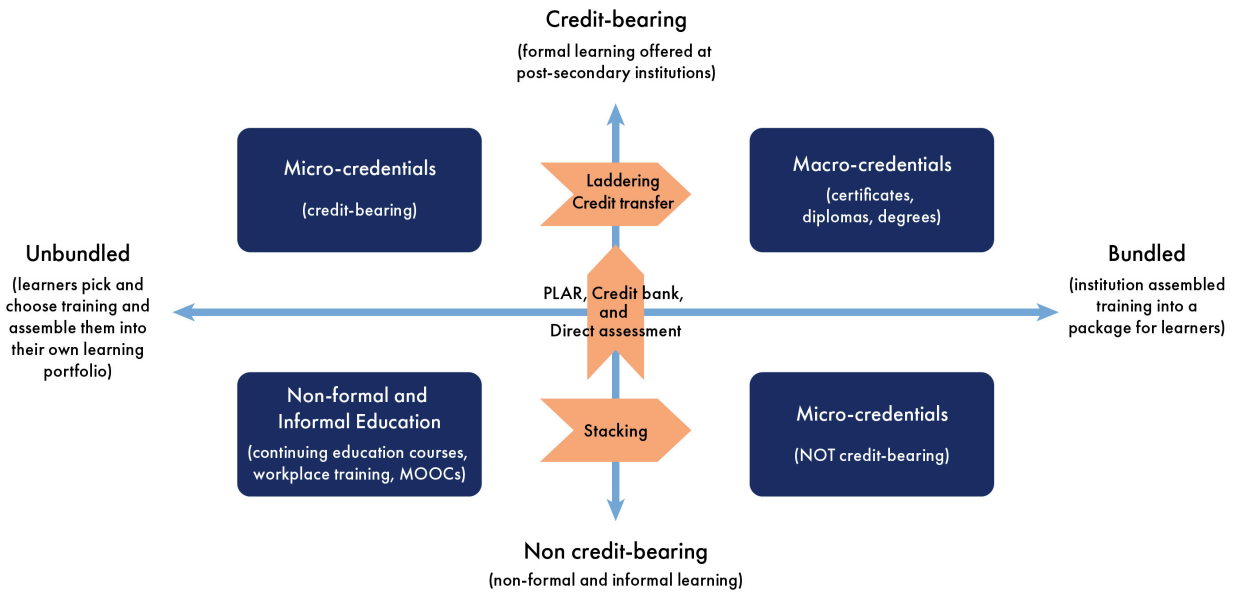
The term "educational pathways" covers a range of connections in the credential ecosystem. These terms are explained below:

- **Stacking.** Stacking usually refers to non-credit programs. It describes how larger educational experiences are built from smaller, individually recognized ones. Usually what's stacked are individual courses that together form a micro-credential; or alternatively, smaller micro-credentials are stacked into a larger one that recognizes a coherent set of skills or

competencies. For example, a learner who successfully completes a micro-credential in photography, a micro-credential in graphic design, and a micro-credential in Adobe Photoshop could be recognized with a "mega micro-credential" in visual communication whose learning outcomes combine elements from each of the smaller micro-credentials. The chapter *Design Considerations: Practical Guide* provides information about the different ways to stack a program in the section *Micro-credential Program Structure*.

- **Laddering.** Laddering is similar to stacking in the sense that it uses smaller programs as building blocks toward a larger one. However, the term is usually reserved for credit-bearing micro-credentials that provide on-ramps to larger academic programs. For example, completion of a micro-credential could give learners advance standing when entering a degree program, allowing them to enter in the second year of the program (i.e., the micro-credential is recognized as equivalent to the courses normally taken during the first year). Laddering is a connector between smaller units of training and larger programs. See *BCIT Ladders Micro-credentials into Associate Certificate* for an example.
- **Credit transfer.** Credit transfers are similar to laddering in that completion of a small training experience entitles the learner to gain advanced standing in a larger program, but at another institution. An example would be where a credit-bearing micro-credential completed at one post-secondary institution is recognized and provides advanced standing for admission to a larger academic program at another institution.
- **Prior learning assessment and recognition (PLAR).** This usually refers to the translation of informal or non-formal learning experiences into credit-bearing recognition. Academics assess the merit of the learning that took place outside of a post-secondary environment and award credits that correspond to credit-bearing offerings at the institution, as appropriate. See the section *Prior Learning Assessment and Recognition* for more information.
- **Credit bank.** Credit banks are a form of PLAR where instead of assessing a learner's knowledge and skills obtained through non-formal means, the non-formal program itself is assessed. If the non-formal program is deemed worthy of post-secondary recognition, then PLAR credits for the non-formal program are granted. This enables learners who have completed the non-formal training to receive credits without having to provide evidence of learning beyond completion of the program. See the section *Credit Bank* for more details about the TRU credit bank and the possibility of a province-wide credit bank to recognize and translate micro-credential learning into credits.
- **Direct assessment.** Direct assessments are like challenge examinations. They allow adults who have acquired knowledge and skills through informal and non-formal experiences (such as on-the-job training) to be recognized with a micro-credential without having to complete the program. See the section *Direct Assessment* for more details.

Figure 1, shown below, depicts how these terms link different types of credentials offered in and out of post-secondary institutions.



Adapted from The New Credential Ecology CC BY SA Brown et al, 2020

Figure 1. Representation of the learning ecosystem and of educational pathways between different types of learning experiences. The types of learning are categorized according to two scales. The vertical (y) axis shows learning that is either formally recognized by post-secondary institutions (usually in the form of academic credits) or learning that is obtained through informal or non-formal sources (such as workplace training and industry-created certificates). The horizontal (x) axis shows learning that learners pick and choose and assemble into their learning portfolio on the left-hand side and learning that is packaged by the educational provider on the right-hand side. There are opportunities to translate some of the learning into other categories through stacking, laddering and credit transfer, PLAR, credit banks, and direct assessment.

As explained in more depth in the section *KPU's Approach to Micro-credential Laddering*, opening up educational pathways between micro-credentials and other credentials makes learning more accessible. However, it must be done in a thoughtful way to ensure that the larger program's learning outcomes are not jeopardized in the process.

Why Create Educational Pathways?

The short duration of micro-credentials makes them achievable and this makes them accessible to adult learners, whose other commitments may make traditional macro-credentials (certificates, diplomas, and degrees) daunting if not impossible to undertake. At the same time, completing a micro-credential gives adult learners a head start if they wish to continue with further training. In this way, a micro-credential can serve as a gateway for further education.

In a 2020 study sponsored by the B.C. Council on Admissions & Transfers (BCCAT) (Duklas, 2020), 74

per cent of the Canadian post-secondary institutions who participated in a survey reported that their main reason for developing micro-credentials was to provide access to further education and 42 per cent said their top goal was to scaffold learning opportunities. Thus, Canadian institutions realize the importance of forging educational pathways between micro-credentials and the rest of their credential ecosystem.

The importance of educational pathways is reflected in the Micro-credential Framework for B.C. Public Post-secondary Education System (2021) (https://www2.gov.bc.ca/assets/gov/education/post-secondary-education/micro-credentials/mc_framework.pdf) where three of the nine elements refer to ways in which micro-credentials should fit with other learning opportunities at a post-secondary institution.

Learning Pathways

Micro-credentials may be credit or non-credit bearing, and this should be made explicit to learners prior to enrolment. In order to create meaningful learner pathways, micro-credentials should be developed in a manner that shows how they:

- relate to other credit and non-credit bearing opportunities,
- connect with existing larger units of learning, and,
- remove barriers and create clear and varied pathways for learning.

Post-secondary institutions are encouraged to collaborate internally and with other post-secondary institutions in developing micro-credentials to increase opportunities for transfer, laddering or stackability.

Prior Learning Assessment and Recognition

Prior learning assessment and recognition (PLAR) should be considered when offering micro-credentials.

Post-secondary System Recognition & Transfer

Micro-credentials should facilitate learner mobility across institutions, industries, and credentials, and not introduce barriers to learning, transfer or labour market participation.

Micro-credentials, where possible, will integrate with existing credit transfer processes.

Micro-credential Framework for B.C. Public Post-secondary Education System (2021).

How to forge pathways between informal and non-formal training, micro-credentials and larger credentials is an active area of research. In a recent systematic review of the literature on micro-

credentials, three-quarters of the studies explored the integration of micro-credentials into the curriculum (Tamoliune, 2023). What's more, the review reported that half of the studies published between 2015 and 2022 explored the stackability of credits and qualifications and the role of PLAR. In other words, this is a rapidly evolving field. There are no clear standards and practices; most institutions are experimenting with ways to facilitate the process that makes sense in their context.

Relationship Between Micro-credentials and Larger Programs

The relationship between micro-credentials and larger programs like diplomas, certificates, and degrees deserves its own exploration. Often, micro-credentials are thought of as separate from these traditional offerings. However, micro-credentials can serve as on-ramps to larger credentials, can supplement them, and can help alumni maintain their professional edge.

Micro-credentials and larger credentials provide distinct benefits to learners. Micro-credentials are viewed as more achievable and less daunting. They allow learners to build their credential portfolio, and with it, confidence in their abilities. If life events interrupt a learner's studies, the modular nature of micro-credentials ensures that learners still receive recognition for the accomplishments they have achieved so far. This differs from larger programs where failing to complete just one course results in no recognition of the learner's achievements (Hope, 2022; Perea, 2020).

Conversely, degrees are more established, better known, and better recognized by employers. They represent a sustained level of engagement with a topic, and therefore depth of learning and expertise. Their development focuses on quality, and while they can be slow to respond to community needs, this approach ensures that they focus on sustained needs rather than follow ephemeral trends. This stability helps these larger programs become reputable.

Combining micro-credentials and larger programs maximizes the benefits of both. There is more than one way in which micro-credentials can complement a macro-credential such as a degree. Some of the connections include:

- **On-ramps.** Micro-credentials can prepare learners for a larger academic program without necessarily laddering into it. For example, a micro-credential can provide a "taste" of the larger program to help learners decide whether the larger program is the right one for them. Alternatively, it may help a learner acquire some of the knowledge or competencies they need to apply to a larger program, such as opportunities to build an artist's portfolio before applying to a Bachelor of Fine Arts program.
- **Laddering, PLAR, credit bank.** Micro-credentials can also serve to give learners advanced standing if they choose to continue in the larger program. By completing the micro-credential, the learner acquires many of the same skills and knowledge as they would in the larger

program, and the institution recognizes this by awarding credits toward the larger program. This can be done through laddering (if the micro-credential is credit-bearing), or through PLAR or credit-bank arrangements (if the micro-credential is non-credit bearing). This allows learners to give a topic a try, with minimal risk. If it's not right for them, the learner loses only a small amount of time and money (less than the full program), and they leave with some credential recognizing their learning. If it is right for them, their short-term investment is not wasted, since the educational pathways recognize their completed micro-credential toward the pursuit of the larger program. See *BCIT Ladders Micro-credentials into Associate Certificate* for an example.

- **Micro-credentials embedded in a larger credential.** Micro-credentials, as small units of applied learning, can complement the learning that takes place during a larger program. There are several ways in which this may be done. Micro-credentials can use industry certification programs to give learners work-ready skills that employers recognize, such as a software certification (McCaffery *et al.*, 2020). A micro-credential can serve to articulate and recognize individual skills learned as part of a larger course (Cook, 2021). This could be important to convey if employers want to know about a person's ability to competently perform some of these skills. See *Role of Competency-based Education in Undergraduate Courses* for more details about this option. Micro-credentials can also offer different options and learning journeys resulting in different skillsets as part of a larger program (Cook, 2021). Micro-credentials can serve to recognize the different applied skillset chosen by each learner, despite each receiving the same macro-credential. See *UBCO Embeds Micro-credentials in a Freshmen BFA Course* for an example of this practice. Another example with similar aims (presenting options for undergraduates) is provided in the chapter *Campus Collaborations* in the section *UFV's Partnership Between the College of Arts and Continuing Education*.
- **Post-graduate micro-credentials.** Finally, micro-credentials offered to alumni of a larger academic program can serve several purposes. It can be a way to foster lifelong learning and support graduates in maintaining their professional knowledge, develop their expertise, and update their knowledge of emerging trends in their field. It can also be a way to make further education accessible for working professionals. For example, a post-graduate micro-credential could be recognized for advanced placement into a graduate program.

Figure 2 shows the different ways to connect micro-credentials and macro-credentials (particularly a degree).

Possible Relationships between Micro-credentials and Degrees

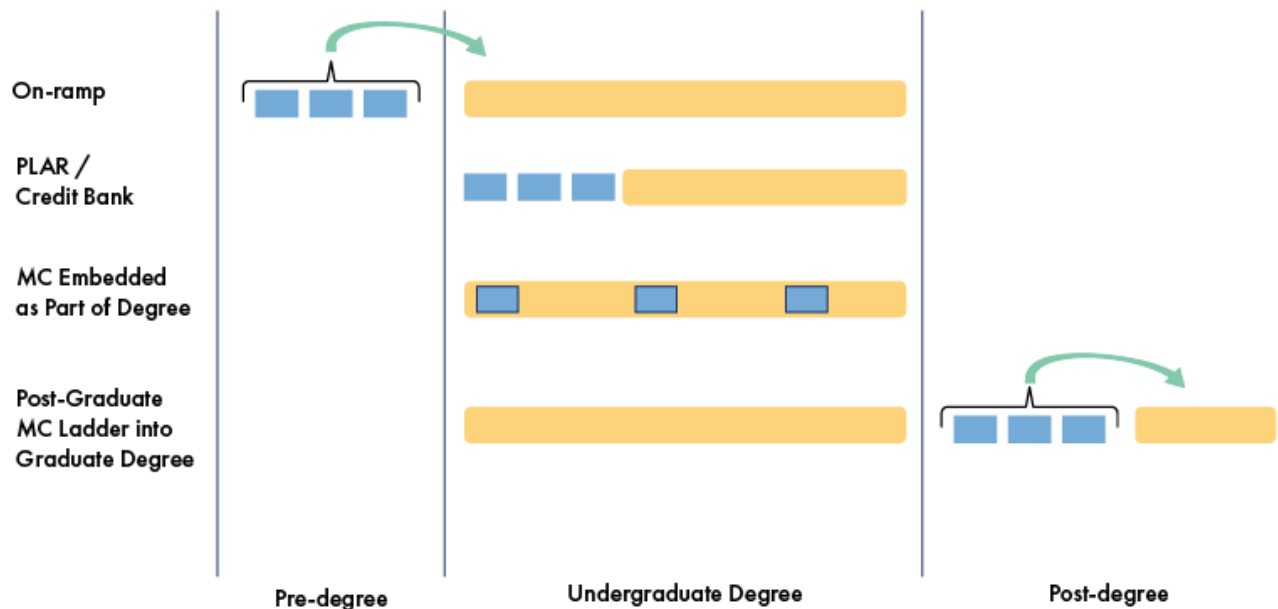


Figure 2. Connections between micro-credentials (represented with blue blocks) and larger academic programs like certificates, diplomas, and degrees (shown as yellow bars). Based on Quality Compass (https://www.qaa.ac.uk/docs/qaa/news/quality-compass-which-way-for-micro-credentials.pdf?sfvrsn=25c6d481_8) by Quality Assurance Agency for Higher Education (QAA), (2021)

Incremental credentialing (sometimes called "Credential As You Go") is an idea that is gaining traction in some circles. It proposes that a degree can be "unbundled" into smaller chunks (micro-credentials) that learners can complete separately and then combine to earn the degree. In 2021, David Leaser, an executive at IBM, co-authored an article where he outlined eight benefits of this practice from an employer's point of view (Leaser & Zanville, 2021). He explains that this approach to obtaining a degree helps people enter the job market and get experience faster than traditional degree programs. This can ensure that they do not invest four years in a degree only to realize once they enter the workplace that it is not for them. It also gives them remuneration since they are working while going to school and this can help to pay for further education. Leaser & Zanville argue that smaller credentials are easier for employers to interpret, making it easier to align a prospective candidate's qualifications with the requirements of a job. It makes learning more accessible to diverse learners and, in doing so, broadens the diversity of people in some fields. It provides just-in-time learning, when people are more likely to recognize the value and need for the learning, and therefore increases their motivation to learn. It also fosters a culture of lifelong learning, since workers continually return to education throughout their career.

Prior Learning Assessment and Recognition

Learning can happen in many contexts. It can occur in a school or post-secondary institution, but it can also happen “on the job” through hard-earned experience or through educational opportunities that do not result in credit-bearing recognition. It’s worth disambiguating these different types of learning (Johnson & Majewska, 2022; OECD, n.d (https://www.oecd.org/en/publications/2010/04/recognising-non-formal-and-informal-learning_g1ghaff6.html)).

- **Formal learning** is learning that takes place in an organized and structured fashion, guided by explicitly stated learning outcomes, which usually takes place in a course at a school or post-secondary institution. Formal learning is recognized by these institutions through credits and leads to formal recognition of qualifications (e.g., a diploma, certificate, or degree).
- **Informal learning** is learning that happens throughout life, outside of the classroom environment. It occurs without having a structured plan or even intentional goals. Examples include visiting a museum, reading information in a book, magazine, or online, talking to others, being mentored to do a task, attending talks and conferences, watching videos, or doing background research to be able to accomplish a task at work. The learning is unorganized and does not have explicit learning outcomes, yet it results in the growth of knowledge and abilities.
- **Non-formal learning** is somewhere in between formal and informal learning. The learning can be somewhat structured and have learning outcomes, but they are softer, often not assessed, and not recognized in academic environments with credits. This includes taking a workshop offered by your local library, completing a non-credit continuing education course, registering for a massive open online course (MOOC), participating in professional development training at work, etc.

Prior learning assessment and recognition (PLAR) is a way to forge pathways between informal or non-formal education (i.e., non-credit) and formal (i.e., credit) education. It’s a way to translate the experience and knowledge that adult learners have gained outside of a post-secondary institution and to formally recognize their equivalency in an academic setting.

In the context of micro-credentials, there are two ways in which PLAR can come into play:

- To facilitate the recognition of the learning achieved as part of a non-credit micro-credential and count it toward the completion of an academic (for-credit) program.
- To recognize work experience, or other non-formal or informal learning, and count it toward the completion of a credit-bearing micro-credential.

Good PLAR processes ensure that the outcomes are academically defensible and trusted. See the section *Brief History of PLAR and the Credit Bank in B.C.* for information on the three pillars of a good PLAR system (transparency, consistency, and rigour).

In B.C., PLAR is practiced at the institutional level. The institution sets its own policies and processes for what evidence it will collect and review, what criteria it will use to analyze that data, who will evaluate it, and what are the possible outcomes.

As described in the section *TRU's Experience with PLAR*, a 2019 survey of B.C. post-secondary institutions conducted by the B.C. Prior Learning Action Network (BCPLAN) finds that institutions vary widely in their existing knowledge and resources to support PLAR. That same survey also found that PLAR is an active area of development, with most institutions expanding their activities and resources in this realm.

Finding ways to link non-credit and credit experiences is proving to be one of the toughest challenges to solve for micro-credentials, with 76 per cent of respondents at 190 North American schools of continuing education indicating that institutional barriers to such translations are the greatest hurdle (Modern Campus, 2023).

Note that PLAR does not have to be done at the institutional level. PLAR could be done by an outside organization that uses a robust PLAR process to review common experiences that learners are likely to request for PLAR, such as professional development training offered by government departments, the military, and non-profit organizations, as well as massive open online courses (MOOCs). The organization could then make a recommendation for PLAR credits for each program, which institutions would be free to accept or ignore. This approach would reduce the duplication of effort across the system, ensure that all institutions have access to PLAR even if they do not have in-house resources, provide consistency and transparency for learners about their PLAR opportunities, and enable system-wide transferability of informal experiences into academic programs.

In the United States, the American Council on Education (ACE) (<https://www.acenet.edu/Pages/default.aspx>) provides such a PLAR service. ACE reviews common informal educational experiences using a transparent, consistent, and rigorous process. Educational experiences deemed worthy of academic credit are included in the ACE National Guide (<https://www.acenet.edu/National-Guide/Pages/default.aspx>), which serves as a database of credit recommendations for institutions. Institutions have the option to accept or disregard the recommendations provided by ACE.

The *Suggested Resources* section contains references to numerous articles and reports on PLAR and its best practices, including a proposed national framework.

Credit Bank

As may have been inferred from the previous section, PLAR can be practiced at two levels:

- **Individual learner**, where each learner provides detailed evidence of their prior learning, which

the institution reviews. This is the most common type of PLAR practiced at B.C. post-secondary institutions.

- **Pre-assessed program**, where common non-formal learning experiences are assessed by the institution to determine whether they are eligible for PLAR credit. This is then made public so that learners can know, ahead of time, whether their experiences will be given credit. This form of PLAR does not require individual learner assessment; if a learner provides evidence that they have successfully completed the training, they are automatically granted credits. Such a PLAR system is called a credit bank. Thompson Rivers University (<https://www.tru.ca/distance/plar-ol/creditbank.html>) (TRU) has maintained such a database for over a decade.

For information about the inception of the TRU credit bank, see the section *Brief History of PLAR and the Credit Bank in B.C.*

For information about how the TRU credit bank operates and about a pilot project aimed at establishing a province-wide credit bank for micro-credentials, see the section *TRU's Experience with the Credit Bank*.

Direct Assessment

Direct assessment is like a challenge examination but is used to demonstrate competencies. In competency-based education models, what matters is not how long a person spent learning a skill in a formal educational setting (or indeed where they learned the skill), but rather that they have mastered and can demonstrate those skills (Brower, 2014). A person could conceivably take a course, skip the training, and go straight to the assessment. If they can demonstrate their abilities at the level required for the course, they pass the course.

Taking this idea further, a question to consider is whether learners need to register in a course at all. What if they are confident that they can demonstrate the skills for a course and need the certification, perhaps as a requirement for hiring or promotion or because their formal credentials are from another country and they are having a difficult time having those credentials recognized by employers in Canada. Should learners spend time in a course when they know they are prepared to take the assessment?

That's the idea behind direct assessment. Adult learners skip the course and go straight to the assessment. If they are successful, they earn the micro-credential. This micro-credential is identical to the one earned by learners who took the course. In these situations, the post-secondary institution is not a content provider (i.e., a provider of learning), but rather an assessor and certifier of qualifications and competencies (ContactNorth, 2016).

The Northern Alberta Institute of Technology (NAIT) is a leading innovator of this form of

assessment and credentialing pathway in Canada. See the section *NAIT Innovates with Direct Assessment to Offer Micro-credentials* for a fuller description of their work.

Stories from the B.C. Post-secondary Sector

KPU's Approach to Micro-credential Laddering

David Burns is associate vice president academic at Kwantlen Polytechnic University (KPU). He was involved in the development of his institution's policy governing micro-credentials. Below, he shares his thoughts on the importance of balancing flexible pathways for learners and creating coherent educational pathways.

Interview

What is at stake in creating new educational pathways for learners with micro-credentials?

"One of the challenges of micro-credentials is the potential for accidental change. Let us say, for example, that a learner completes a series of micro-credentials dealing with discrete, short-term learning outcomes. Suppose also that we establish a credit system for micro-credentials that allows these to add up to substantial credit. Those credits are transferable and, to the extent the program ladders or transfers, so too is the credential they would receive. This is, in value terms, great — we want flexible degree pathways and student choice.

"It is, at the same time, a way that programming can change in fundamental ways without anyone planning out that change to ensure it is responsible, coherent, sustainable, or in the interest of students. Like any new tool, micro-credentials are powerful and exciting to the extent we know how to use them.

"At KPU we want to use micro-credentials to open up possibilities for learners and make education more accessible. The most meaningful innovation will be found in using micro-credentials to challenge how we think about other credentials, and in challenging micro-credentials to meet the high standards of the rest of our programming.

"It isn't yet clear whether we can use these tools to change how we think about post-

secondary education. It is clear that we need to try, and that our efforts to do so need to embody both our ambition and our responsibility.”

BCIT Ladders Micro-credentials into Associate Certificate

The British Columbia Institute of Technology (BCIT) developed a micro-credential with the intention to ladder the training into a larger program. Laurie Therrien, manager of corporate training and industry services in the school of construction and the environment, shares how she built a new micro-credential in Introductory Studies in Mass Timber Construction while keeping laddering in mind.

Interview

Describe how your micro-credential ladders into other BCIT offerings.

“When we consulted with the mass timber industry about their educational needs, we learned that they wanted two things. They wanted a general introduction to mass timber, which we developed into the micro-credential in Introductory Studies in Mass Timber Construction. They also wanted to train workers in a specialized area of mass timber, which is assembling. Mass timber is a maturing industry and companies can't find workers with this training since there is no formal program for it. We developed an Associate Certificate in Construction of Mass Timber Structures (<https://www.bcit.ca/programs/construction-of-mass-timber-structures-associate-certificate-part-time-5225acert/>) to address that gap.

“In effect, the two programs – the micro-credential and the associate certificate – were planned at the same time. I had a progressive credentialing model in my mind, where we started with the design and launch of the micro-credential and, if that was successful, then we would build from there. Once the micro-credential was offered, industry confirmed that they needed more training. The idea for the associate certificate was there from the beginning, but we built it in a staged fashion.

“We built the associate certificate so that part of it overlapped with the micro-credential. Courses in both programs have gone through quality approval at our institution and have credits attached to them. It was therefore relatively easy to work out a pathway where

people who have taken the micro-credential get 2.5 credits toward their 15 credits required for the Associate Certificate in Construction of Mass Timber Structures.

"It's to the benefit of learners. We tell them, 'if you're not sure if you want to do the associate certificate, take the micro-credential, and if you enjoy it, then apply for the associate certificate.' It's less daunting, there is less risk for them. It gives them a taste. If they decide to pursue the larger program, it gives them a discount on tuition and they start the program with advanced standing."

Do learners take advantage of this educational pathway?

"The associate certificate is new — we piloted it last year and we have just completed the first post-pilot offering. We have had 41 people register in the program. Out of those, I would say probably 30 of them had done the micro-credential. The micro-credential is a huge feeder pool for the associate certificate."

Role of Competency-based Education in Undergraduate Courses

David Burns is associate vice president academic at Kwantlen Polytechnic University (KPU). He is a strong advocate of competency-based education. He shares some of his thoughts on the opportunities that micro-credentials represent for undergraduate learners.

Interview

How might micro-credentials supplement undergraduate education?

"I anticipate that micro-credentials will be very helpful for students in certain disciplines. Consider a student enrolled in a health care program. Right now, if they take Health 201, they get a transcript that says that they passed Health 201. But imagine a situation where there are 12 fine-grained performances that students are expected to master in this course. Say one of them is the ability to make an arm splint. Once a student has demonstrated the ability to do an arm splint, they earn the micro-credential for it. What happens now is that by the time the student finishes the course, in addition to a transcript that says that they passed Health 201 with a B+, they have an official record (perhaps captured in a series of

digital badges) of the performances or competencies they have mastered and demonstrated that they can do. The health system could utilize that kind of granular information to hire the right candidate for a role. It's almost like certifying that the student has successfully mastered individual learning outcomes from the course.

"It won't work for every course or discipline, but there are all kinds of discrete performance outcomes that will work. It works well in something like health care where you have dozens and dozens of fine-grained performances you need to master. You can imagine that this recognition of individual skills would allow students to articulate their achievements more precisely.

"Arguably, this could be a more rigorous way to capture achievements. At the moment, when a student gets a grade of B+ in a course, they may have failed some components of the course and done really well on others. The B+ on their transcript doesn't reveal that. A B+ is an abstract concept created by blending lots of different assignments. An employer may not care about a graduate's ability to do most of these things. They just want to know that a potential hire can do something like regression analysis or making an arm splint. Recognizing each skill or learning outcome in a course with a micro-credential or badge will give a fine-grained picture of what the student can and cannot do after taking a course."

UBCO Embeds Micro-credentials in a Freshmen BFA Course

Myron Campbell is associate professor of teaching in creative studies, media studies, and visual arts at the University of British Columbia Okanagan campus (UBCO). He has embedded digital badges into his first-year course that recognize the skills that students develop as part of their term project. Below, he explains the nature of his innovation.

Interview

Your undergraduate students are awarded digital badges as part of their coursework. Tell us about it.

"Students enrolled in the Bachelor of Media Studies and the Bachelor of Fine Arts must take *Introduction to Digital Media* in their first year. In this course, students learn to use digital tools to create visual media such as videos and 3D animations.

"In the lecture portion of the course, all students are exposed to the same curriculum. This includes things like how to take a project from ideation to completion, as well as foundations of composition and colour theory.

"Students also meet with their teaching assistant in smaller groups for studio time, which is a computer lab. This is where their educational journeys branch off. There are eight specializations for students to choose from. Students may focus on digital design, video production, visual effects, 2D animation, 3D animation, experimental moving image, computational art, or a generalist stream. Their choice sends them down a different curriculum path for the studio portion of the course. Each curriculum is offered online on the Canvas LMS. Students learn the basics of a digital tool and then use the tool to create their term project.

"While each stream teaches students different digital tools and skills, some of the skills are common across streams. For example, most streams require students to create sound as part of their project. For one stream it might be atmospheric sounds while for another it might be recorded dialogue for a film. To maximize the opportunities for student interactions and peer learning across projects, I lined up the project deliverables so that similar aspects of the project, requiring similar skills like sound are due at the same time during the semester. Students largely proceed at their own pace, but they must submit their work on these due dates, so that their work can be critiqued by peers. There are four such deliverables throughout their project.

"I created a visual capture of the different streams and their deliverables. It looks like a complex London Underground system where the streams meet up at some of the common deliverables (see Figures 3 and 4)."

How is the completion of the projects recognized?

"Once a student successfully completes the course, they receive a grade on their transcript. They also receive a digital badge that provides a fuller description of the specific skills they applied and demonstrated as part of their specialization. There are eight different badges. The badges are awarded by the centre for teaching and learning and are validated as official UBCO digital badges. In this way, students leave the course with a recognition of the skillsets they developed, which could be different to those of their peers. These digital badges can be used in job searches because they provide more detailed information about what the student can do than a transcript."

Why did you create this curriculum model?

"One of the challenges that I faced as an instructor in this course is that students come in with varied backgrounds. Some already know how to use Adobe Photoshop, others know

how to do music editing, and others have some 2D animation experience. With a set curriculum, I found it difficult to cater to all backgrounds.

"I also wanted to give them an opportunity to explore a career of interest, as part of their first-year experience. The freshmen curriculum can be quite general and does not provide many opportunities to pursue hands-on experience in a discipline of interest.

"The thing about these tools is that once you learn to use one, you develop a digital literacy that transfers to using other tools. In a way, it does not matter which tool we teach them, because they develop digital literacy and learn to find solutions when they encounter problems. This is a transferable skill in our industry."

What have been some of the successes in this program?

"Giving students agency over their learning is motivating. They invest themselves and create outstanding projects. They love it. When I first started doing this, I feared that some students might want to switch halfway through a specialization. So far, there have only been three students out of about 150 that have chosen to do so, and all request to transfer have occurred before the first deliverable. Students commit to their specialization because it was their choice.

"I am upfront with them from the beginning that some streams require more work than others. It's the nature of the different fields. I expected that students might complain about the imbalance of it, but that never happened. Again, I think it's because they have agency in selecting their specialization, and it allows them to choose the level of difficulty that's right for them."

What have been some of the challenges?

"As you can imagine, this is a lot of upfront work for the course designer — I am effectively designing several different courses.

"The other challenge has been integrating this into Canvas, our LMS. Once a student selects a specialization, we have to manually load it into Canvas for the student. We found a workaround but it is not the most elegant solution. Canvas was not set up for this."

What comes next?

"There are a few things that we want to explore. For example, a student could conceivably want to re-take the course and pursue a different specialization. At the moment, the degree requirements would not allow a student to do this.

"We are exploring exporting this component of the course to an outside audience, to offer it as a micro-credential. Nothing would need to be changed, including the online course

materials and the digital badges used to recognize the demonstrated skills. It's already a micro-credential that's embedded in a first-year undergraduate course."

VIDEO MODULE PATHWAYS

VISA 108: INTRODUCTION TO DIGITAL MEDIA II

Each box represents a module that culminates with a finished project. There are 4 projects in each pathway.

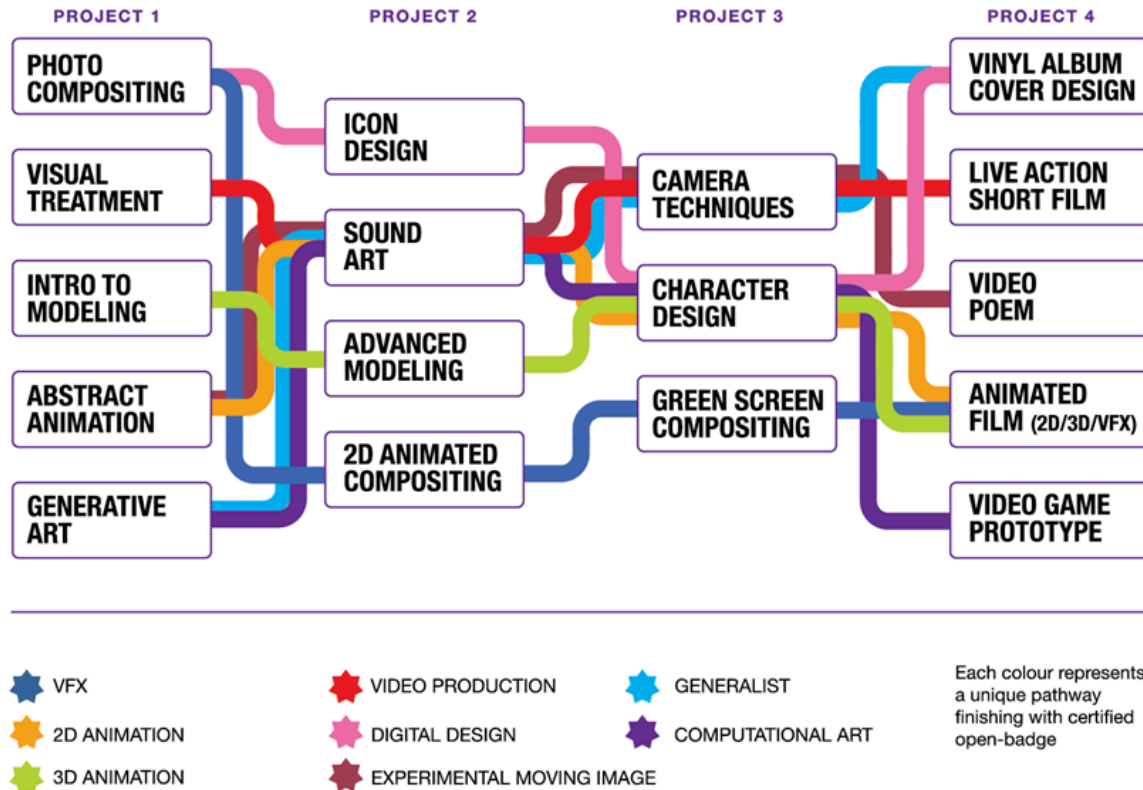


Figure 3. Overview of the eight streams, each leading to a different digital badge, offered as part of UBCO's undergraduate course Introduction to Digital Media. The coloured lines depict the pathway for each stream through the course's four deliverables, referred to as "Projects" in the figure. Image source: Myron Campbell, UBCO.

PATHWAY BADGE COMPLETION EXAMPLE

COMPUTATIONAL ART

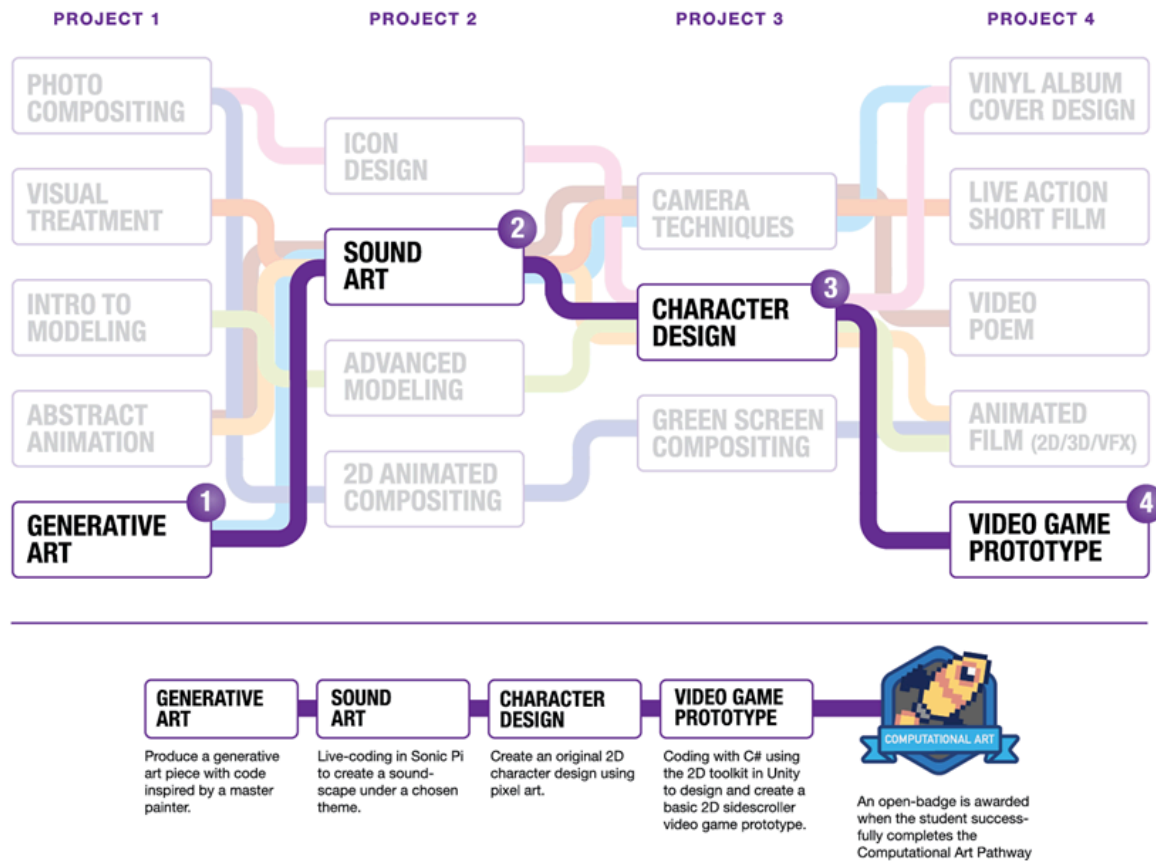


Figure 4. Overview of the computational arts specialization of UBCO's undergraduate course Introduction to Digital Media. This figure is identical to Figure 3 with the exception that one of the digital badges has been highlighted for ease of viewing. For example, of the five possibilities for the first deliverable, students who are completing this specialization will submit a "generative art" deliverable as the first of four towards their final project. Image source: Myron Campbell, UBCO.

Brief History of PLAR and the Credit Bank in B.C.

Don Poirier is associate vice president of open learning at Thompson Rivers University. He joined TRU in 2007, shortly after it was established and it was given the responsibility for open learning in the province. Below, he shares his recollections of the credit bank's inception and how TRU became a leader in PLAR, as well as recommendations for ensuring that PLAR is trusted at an institution and in the system.

What is the history of the credit bank?

"Between 1978 and 2005, B.C. had an open learning post-secondary institution that delivered distance education. Its name changed over time, but most people today remember it as the British Columbia Open University (BCOU). Government leaders realized that the geography of this province — with mountain chains and many island communities — could present a challenge for people to access post-secondary education. If people couldn't travel easily to education, the government would bring education to them, through distance education. Open learning was initially about economic and community development.

"In time, open access evolved into a broader concept. BCOU recognized that adult learners had often taken courses at other institutions, and they wanted this learning validated. This was at a time when each institution was siloed from the others and before the creation of the B.C. Council on Admissions & Transfers (BCCAT). In effect, open access started to address credit transfer within the B.C. post-secondary system and facilitated it for learners. By recognizing learning that took place at other B.C. post-secondary institutions and by awarding credit on a BCOU transcript for it (which could be used towards the completion of a BCOU degree), BCOU made post-secondary education more accessible for adults.

"This was the birth of the credit bank, as it was defined then. I have a picture of the BCOU calendar from the 1988-89 year that describes the credit bank (Figure 5). The idea was that you can take these bits of learning from other B.C. public institutions and perhaps even other providers and put them in your educational 'bank account' and apply them toward your credential at BCOU. It's like someone's individual savings account at the bank. You accumulate learning from formal or informal sources and experiences, and you bank them, to use them when you make a big purchase — in this case your degree or credential.

"In 2005, Thompson Rivers University (TRU) was created and assumed responsibility for open learning in British Columbia. The Thompson Rivers University Act (https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/05017_01) legislates that TRU will be responsible for promoting it and to 'serve the open learning needs of British Columbia.'

"What does that mean? You may have picked up that the original concept of the credit bank was about two things: transfer credits (for courses offered at other B.C. post-secondary

institutions) and PLAR (for informal experiences and courses taken outside of the B.C. post-secondary system). BCCAT was created in 1989, and by the time TRU took over the mandate for open education, BCCAT was working well to manage the transfer credit system in B.C. The credit bank couldn't be about transfer credit, as it would only duplicate BCCAT's efforts. That left PLAR.

"That's the focus that TRU adopted in continuing to develop the credit bank. The TRU credit bank is now focused on nonformal training."

What are important elements of a well functioning PLAR system?

"In the past, PLAR was a four-letter word for some people. It was mistrusted. That's because some people feared that it was not a rigorous process — that the decisions were based on the whims of a person. But that's not what PLAR is.

"PLAR is an exercise in translation. You translate learning that took place outside of the B.C. post-secondary system into something that you recognize as equivalent in the B.C. post-secondary system. To do this, you need to accumulate proof. PLAR is proof. That proof needs to be defensible — academically defensible. You need evidence that meets the requirements of the post-secondary system.

"To achieve trust in PLAR, there are three necessary ingredients.

"First, the PLAR process must be transparent. How is this exercise in translation being done? What is being evaluated? Who is evaluating it? By what criteria? This information needs to be made available to anyone in the system who wants to see it. It demystifies the process.

"The second ingredient is consistency. The way in which the assessment is being done, and the judgment that results from it, should be the same today as it will be a week from now. It cannot be because the assessor was feeling good that day or because they liked the students who requested a PLAR assessment. It needs to result in a predictable and repeatable outcome.

"Finally, the process must have rigour. It is about documenting evidence. It is about following a detailed and defensible process. This is the responsibility of a PLAR director. This person does not have the authority for making the final (academic) decision on a PLAR evaluation. Rather, they are responsible for building a robust process for collecting evidence, for determining who will evaluate the evidence, and the criteria by which they will reach a decision. They are responsible for quality assurance.

"These three ingredients — transparency, consistency, and rigour — instill understanding, trust, and ultimately acceptance in the final PLAR decision.

"Within a North American context, the American Council on Education (ACE) (<https://www.a>

cenet.edu/Programs-Services/Pages/Credit-Transcripts/Credit-Transcripts.aspx) and their credit recommendation service is the gold standard for PLAR of non-credit training. They have an established list of criteria (<https://web.archive.org/web/20240120161617/https://www.acenet.edu/Programs-Services/Pages/Credit-Transcripts/CREDIT-Evaluation-Eligibility-and-Standards.aspx>) that they use when reviewing a program for PLAR credit recommendation. They have been doing PLAR assessment for over 100 years. Dozens, if not 100s of institutions, accept their recommendations for credit. That's because their processes are transparent, consistent, and rigorous. At TRU, we built our processes for our credit bank based on the ACE processes."

Top Tips for Building a Trusted PLAR Process

1. **Make it transparent.** Ensure transparency in the review process and criteria by making them accessible to the academic community, both in general and for each individual evaluation.
2. **Make is consistent.** Ensure that the process is repeatable and that reviewers have clear sets of standards to use when reviewing a program.
3. **Make it rigorous.** Develop a process that collects the right set of data to make an informed decision and document the evidence for every review. This is the quality assurance piece.

Give Yourself Credit

What is the Credit Bank?

Everything you have learned, and all the courses you've taken, may apply towards your degree, thanks to an innovative new service offered by the Open University.

The **credit bank** allows you to accumulate credit for any university-level courses that you have completed satisfactorily, provided that you took them at accredited institutions. It doesn't matter where you took them, or how long ago, provided they are recognized as being university-level work.

You may be awarded credit for courses and programs that are not usually granted university transfer credit. This is the case with a growing number of technical and business diplomas awarded by the colleges and institutes of British Columbia. These have been evaluated and awarded credit on a block transfer basis. You gain credits toward a degree and may be excused from some of the degree requirements.

Details of the block transfer arrangements presently in place can be obtained by contacting the Open University Registrar's Office at the Richmond centre (see inside front cover for address and phone numbers).

Details of how to obtain a credit assessment can be found in section 5 of this calendar under the heading "Transfer Credit".

You Might Have a Head Start

You probably already have a head start on your degree! You may be eligible for credit for skills you have gained through training and experience. These could include language skills, knowledge of computer programming or the ability to play an instrument, etc.

As you might expect, getting credit for your skills is more complicated than simply transferring credit for courses taken elsewhere. You may have to take an exam or demonstrate your skill and knowledge in some other way. But receiving credit for your skills will give you a head start on the route to your degree or certificate.

What the Credit Bank Gives You

From the credit bank you will receive an official transcript listing all credit granted. You can use this document to apply to your future educational and employment goals.

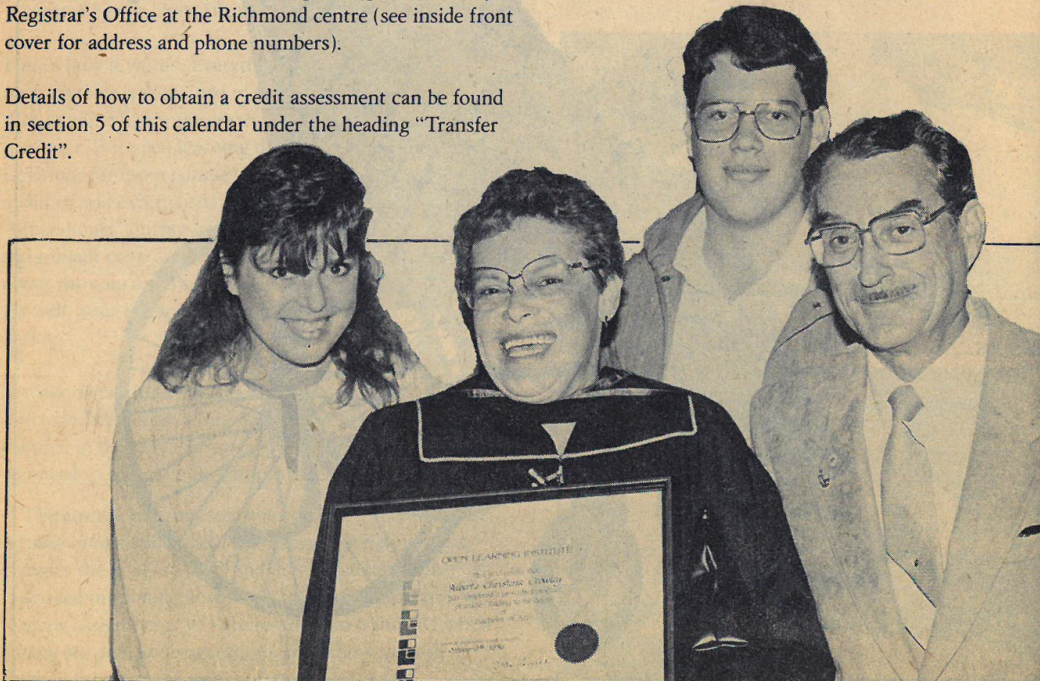


Figure 5. Scan of page 4 of the 1988-89 academic calendar from the B.C. Open University describing the credit bank.

TRU's Experience with PLAR

Susan Forseille is director of prior learning and assessment recognition (PLAR) at Thompson Rivers University (TRU). She is also the chair of the board of directors of the British Columbia's Prior Learning Action Network (BCPLAN) (<https://bcplan.ca>), a network of organizations that promotes increased access to B.C. post-secondary credentials through informed recognition of adults' past experiences, as well as a member of the board of the Canadian Association for Prior Learning Assessment (CAPLA) (<http://capla.ca/>). She is currently completing her PhD on the impacts of PLAR on career development. Below, she shares her knowledge about the state of PLAR in B.C. and the process TRU developed to support adult learners.

Interview

How do you define PLAR?

"PLAR stands for prior learning assessment and recognition. It is a process used to evaluate and recognize the knowledge, skills, and abilities that a person has acquired outside of post-secondary education. The PLAR process involves assessing a student's previous learning experiences such as work, volunteer, and/or self-directed study, to determine if they meet the requirements for academic credits or recognition."

Why is there renewed interest in PLAR?

"When I first started in PLAR I was told that in the 1990s, institutions received funding to develop PLAR from the provincial government. This funding stimulated innovation and interest in recognizing the prior learning that adults bring to their studies. However, when the funding stopped, institutions turned to other priorities. In the past few years there has been another growth of interest of PLAR."

"I think the revived interest that we are observing comes primarily from two sources. The first is the labour market. The labour market has never changed as rapidly as it is changing right now, nor has it ever been as unpredictable. We are seeing larger changes than during the post World War II era. The profound restructuring of the labour forces is not just a result of the pandemic, it is from the demographic changes we are going through. Currently in Canada there are over a million vacant positions. As our population ages we don't have enough people of working age to fill these positions, and projections are that the continued aging of our population will see increasing struggles to fill positions."

"Compounding this is the quickly changing skillset needed for the emerging labour market. This is being fueled by advances in technology, the need for more health care professionals, and climate change. Another level of complexity is how individuals view their careers. We have seen significant changes in our career expectations. We have moved from work being seen primarily as a means to a pay cheque to increasingly also desiring fulfilment, the need to make a difference, and enhanced work-life balance.

"These changes in the labour market, and our career expectations, are fueling a need for career resiliency. This means that we must give workers the tools to upskill and retool quickly. Large corporations are very aware of this. For example, Google has created Google Career Certificates and IBM SkillsBuild plans to have 30 million learners go through their platform by 2030. These are examples of employers providing the specific skills and knowledge they need to maintain and/or grow their businesses. They are no longer relying on hiring recent graduates from post-secondary institutions. This is also an example of employers providing just-in-time delivery of specific learning they require and an understanding that this learning is life wide and long, no longer predominantly at the beginning of one's adult life.

"The second reason there is revived interest in PLAR is more pragmatic. Many B.C. institutions are struggling with domestic enrollment rates. The group that we are struggling to attract the most are adult learners. At the same time, there is an increase in adult learners wanting to reskill, upskill, or have their non-formal and informal learning assessed for possible credit and recognition. We need to build more on-ramps for these learners to make post-secondary education more accessible for them. This will help institutions meet their enrollment targets, but just as importantly, create a more equitable and diverse post-secondary system."

What are the benefits of devoting resources to PLAR for learners and for the institution?

"There's the obvious answer that earning credit for prior informal and non-formal learning allows a learner to complete a program faster. We have clear data – from TRU and from the study of 230,000 adult learners in the USA (<https://www.cael.org/news-and-resources/new-research-from-cael-and-wiche-on-prior-learning-assessment-and-adult-student-outcomes>) — that when learners receive PLAR credit, they have increased completion rates compared to other learners and they tend to earn higher GPAs. There is also growing research that PLAR students are quite successful in other ways. I think it is because when learners receive credits for their experience, it makes them feel validated and valued. It increases their sense of self-efficacy and self-worth and this positively impacts their career development and life in general.

"The benefit for institutions is also strong. PLAR creates accessible pathways for non-

traditional learners into post-secondary education. This promotes equity for all learners, and it recognizes and values diversity. It's a way to practice what we often say we value in our institutions. More pragmatically, it's a way to attract new learners. Since PLAR credits count toward the institution's full-time equivalency (FTE), it can also help to meet enrollment targets. And, since these students typically have greater completion rates, it's a way to address program attrition."

What is the current state of PLAR in British Columbia?

"In 2019, BCPLAN received funding from the British Columbia Council on Admissions & Transfer (BCCAT) to investigate the current state of PLAR at 25 B.C. post-secondary institutions. BCPLAN made the full report (<https://bcplan.ca/resources/Documents/Report%203-BCPLAN%20Website.pdf>) and the findings about each institution (<https://bcplan.ca/PLAR-Options-Processes-and-Credit-Allowances-in-BC>) available on their website. You can also watch a 12-minute overview of the key findings (<https://bcplan.ca/Presentations>). I'll provide an infographics summarizing the findings below (Figure 6).

"What we discovered is that many schools are looking to get into the space. In fact, 15 of the 25 institutions had shown growth in the development and allocation of resources for PLAR. That said, it is still not a well-developed area, with many institutions still offering PLAR 'off the side of staff's desks.' In comparison, TRU has had a dedicated PLAR department since 2007. The College of the Rockies and North Island College also have PLAR offices. KPU and Camosun are in the process of setting up an office. RRU, VCC, and UFV have at least one person assigned to PLAR. UBCO just formed a committee to explore PLAR."

Who are the exemplars for PLAR that institutions can look to as they develop their own approaches?

"One of the most common questions we get at BCPLAN (<https://bcplan.ca/>) and at CAPLA (<http://capla.ca/>) is how to set up PLAR at an institution. These two organizations' websites provide a ton of resources to begin their research. The other advice I would have is to look at proven practice — what others who have engaged in this have learned through experience.

"PLAR is currently in a state of rapid development. There are pockets of good practice throughout B.C. and Canada. However, there is no government oversight and no recognized standards. It feels like we are in the beginning stages of innovation.

"One of the better developed systems is in Quebec. All *Collèges d'enseignement général et professionnel* (CEGEP) obtain their policies and tools for engaging in PLAR through a central organization (funded by the government) called the Centre of Expertise for the Recognition of Acquired Competencies (CERAC) (<https://ceraccegeps.ca/>) Inote that the linked website

is in French]. All CEGEPs use the same system for PLAR. This benefits learners because they can feel confident that if one school recognizes their experience, it will be recognized across the system. The funding model is also different. When a student applies for PLAR and enters the process, the institution receives a certain amount from the province to engage with the learner in the process. About halfway through, more funds are released. Once a learner completes the PLAR process, the institution receives the whole amount. As a result of this model, there is an incentive for institutions to offer PLAR, to support learners throughout the PLAR process, and to do it well.

"The other exemplar is Ireland. Ireland is also faced with a growing labour shortage. The country needs to help people acquire the training they need rapidly to fill skilled jobs. They are working on a national framework for PLAR (<https://priorlearning.ie/>), including developing national policies. The government is providing resources to support inter-institutional conversations and ensure that the agreed upon solution will satisfy all institutions and that it is rigorous. The organization that they contracted to lead the project is called the Technological Higher Education Association (<https://www.thea.ie/rpl/>) and their website is full of links and resources to the project.

"Another exemplar, guiding much of our PLAR processes at TRU — our values, philosophy, and tools — is the Council for Adult and Experiential Learning (<https://www.cael.org/>) (CAEL). They conduct a lot of research and it's a valued go-to resource for information on PLAR.

"The tool that we use for our credit bank, which I will talk about later, was inspired by the American Council on Education (<https://www.acenet.edu/Pages/default.aspx>) (ACE). ACE has developed rigorous processes and tools to assess the merit of non-credit training for PLAR credit (they call the process 'learning evaluations (<https://www.acenet.edu/Programs-Services/Pages/Credit-Transcripts/Credit-Transcripts.aspx>)'). These non-credit trainings are programs like MOOCs offered by Coursera and online courses offered by Google Career Certificates and IBM SkillsBuilder. It conducts the assessments and has built a database (<https://www.acenet.edu/National-Guide/Pages/default.aspx>) over time. It makes its findings available as credit recommendation. In other words, institutions do not have to accept the PLAR credit for a certain training, but the institution can inform its decision on transparent information and recommendations that are trusted in the sector. This respects institutional autonomy while ensuring that institutions that do not have the resources to conduct PLAR assessments can access this service and data. It's a gold standard in the PLAR field."

How does TRU conduct a PLAR assessment? What's involved?

"At TRU, we have been doing PLAR since 2007, so we have had the chance to test out a

variety of approaches. We currently offer four PLAR pathways (<https://www.tru.ca/distance/plar-ol/plar-process.html>). I will describe each of them in turn.

“Challenge exam. This is probably the process that’s most familiar. It’s similar to the process used in professional organizations, where it does not matter where you took your training, everyone takes the same exam to show their knowledge and competencies. We don’t have challenge exams for every course, but we have many for our language courses.

“Competency-based. This is a personalized and labour intensive PLAR assessment designed around TRU’s Institutional Learning Outcomes (<https://www.tru.ca/current/enrolment-services/course-registration/institutional-learning-outcomes.html>). Learners develop a portfolio to document and show evidence of their ability to achieve a set of eight competencies. This can easily be four or five pages per competency, not including evidence of their learning claims. These portfolios can be over 80 pages. In the portfolio, the learner presents how they came to learn each competency. A PLAR advisor works with each student to guide them through the process. Two subject matter experts (faculty) assess the portfolio using a rubric. Sometimes, they may interview the learner to fill in the blanks. Everything is documented. This is typically only used for elective credits. Depending on the program, the rigour of their portfolio, and their prior learning, there is a wide range of credits that can be awarded, from six to as many as 75. A student could skip first and second year through this process, so it is worth their while. Few institutions are doing it — I think it’s just Athabasca University in Alberta, KPU, and TRU.

“Course-based. As the name implies, this is course-specific, with the course learning objectives guiding what is assessed. The instructor for the course decides what constitute evidence that the learner has met the course learning outcomes through other experiences. It could be a combination of examinations and portfolio. If it’s a portfolio, the instructor typically wants to see that the learner can weave theory through their applied experience. Sometimes it includes interviews, a demonstration of skills, letters of reference from employers, or learning journals.

“Credit bank. This is a database of educational programs that are not part of the BCCAT system (often they are non-credit training), whose programs we have rigorously evaluated and deemed to be equivalent to, and eligible for, TRU credits. We offer a listing of agreements (<https://www.tru.ca/distance/plar-ol/creditbank.html>) on our website so current and potential students can quickly review who we have agreements with. About two thirds of our PLAR credits are awarded through the credit bank pathway. It’s a popular option for learners because it’s simple for them and it’s transparent.

“When a learner contacts us to inquire about PLAR, we discuss their prior experience and their goals, and we direct them to the most appropriate pathway.

How does PLAR work for Indigenous learners?

"TRU is deep into decolonization work. One of the areas that we have been exploring is how to do PLAR assessment in a way that recognizes Indigenous ways of knowing. In 2019, we completed a study asking whether Indigenous students felt safe including their Indigenous ways of knowing in their portfolio. Most said that they felt safe, but when I looked at the contents of their portfolios, I didn't see much evidence of its inclusion, suggesting that there might be a gap.

"PLAR assessment is a very colonial process. It depends on written documentation. It is highly regulated. It also compartmentalizes learning and does not allow a learner to show their holistic integration of knowledge, a hallmark of Indigenous ways of knowing.

"We have been working with Indigenous communities to find paths for Indigenous learners to articulate what they know and how they know it. Elders and Knowledge Keepers have also shared with us that they want their traditional knowledge to be formally recognized by post-secondary institutions. We have been examining oral storytelling and holistic approaches to capturing knowledge.

"Recently we worked with an Indigenous student who was very knowledgeable and had the prior experience but he struggled to articulate it in a way that fit the existing PLAR structures. We asked him what might help him show us what he knows. He said that conversations were helpful. We considered this and considered also our requirement to document the evidence of his knowledge, providing an audit trail. In the end, he did three videos of his lived experiences. It showed him interacting with others in his work and demonstrating his abilities and knowledge in action. Also, instead of doing the compartmentalized PLAR approach of showing each competency individually, the videos showcased many integrated competencies. He supplemented the videos with a map showing when each of the competency was demonstrated in the video.

"It took dozens, perhaps even hundreds of hours to devise this decolonized PLAR process that fit his Indigenous ways of knowing and our need to document his knowledge. There were so many people that contributed their time, wisdom, insight, and knowledge into creating this path.

"Indigenous learners are not the only ones who will benefit from this decolonized work. We are taking what we have learned from this experience and other decolonization learning to build a more flexible PLAR process. Any learner who uses different modalities or ways of thinking or expressing themselves will have access to an opened-up PLAR process. We are grateful for the Indigenous student for being patient with us and teaching us how to do this. We still have much to do and learn, but we walked the path, and are still walking the path, together."

Note: On June 7, 2023, TRU put out a press release (<https://inside.tru.ca/2023/06/07/indigenizing-plar/>), featuring interviews with Forseille and the Indigenous student mentioned above, describing the launch of a new Indigenized PLAR process at TRU.

Top Tips from TRU's Experience in Setting Up a PLAR Process

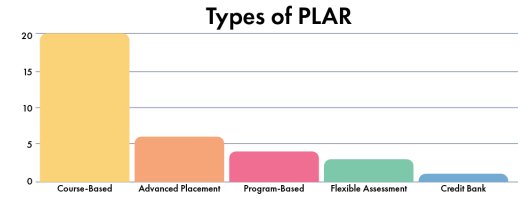
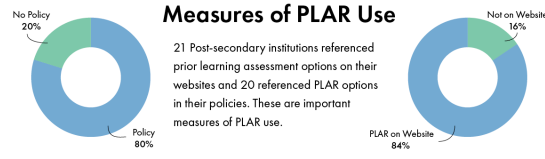
1. **Develop policies to support PLAR.** One of the reasons that PLAR is an efficient and effective process at TRU is because the roles, responsibilities, and steps have been clearly and transparently established through policies and procedures. Consider developing such governance-approved documents to ensure that the PLAR process is supported.
2. **Use top-down and bottom-up approaches.** When creating a new PLAR process at an institution, consider using input from those who will be affected by it (e.g., faculty) as well as those who will administer it (e.g., senior leaders). The buy-in and support of both groups will be needed for the system to operate successfully.
3. **Explore what others have done.** Talk to others who engage in PLAR to learn from their experience. Look not only for "best practices," but also "proven practices."
4. **Give yourself room for learning.** Learn from your successes and mistakes. There will be mistakes; the key thing is to be transparent and to learn from them.
5. **Decolonize the PLAR process.** Engage in conversation with Indigenous communities about ways to recognize the knowledge of Indigenous learners whose knowledge and processes may not easily conform to the PLAR process. How can you invite and recognize their learning and collect evidence of it? And how can you make what you learn from this modified PLAR process benefit all learners?
6. **Marketing and communication.** PLAR is perhaps one of the best kept secrets in the province. Few members of the public know about it, yet many could benefit from it and it might even motivate them to return to education. A study at TRU found that 58 per cent of students who requested PLAR credit had learned about PLAR through their own research. Be sure to devote resources to let your current and prospective learners know of this opportunity to count their past experiences toward formal credit.

Prior Learning Assessment and Recognition

Credit for Experiential Learning

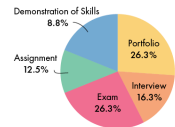
Prior Learning Assessment and Recognition (PLAR) is an internationally recognized, structured method of assessing prior learning gained through experience for formal credit recognition.

Students often pursue PLAR due to potential cost and time savings. However, PLAR also provides a critical component in the process of individual development and workforce adjustment, assisting individuals to further their education.



Types of PLAR are ways credit is awarded towards a course or program. All are based on learning gained through prior experience.

- Advanced Placement - awarded advanced standing in a program
- Course-based - measured against the learning outcomes of specific courses
- Flexible Assessment - waiving prerequisites for a course or program
- Program-based - awarded a block of credits towards a program; often based on the graduate competencies of the school or program
- Credit Bank - allows you to receive credit for pre-assessed training from selected employers, private training organizations and Continuing Studies programs.

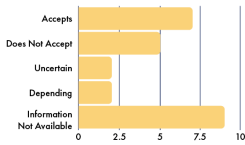
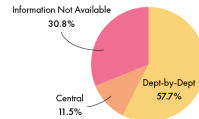


Assessment Methods

These are the methods with which the institution assesses and measure the student's prior knowledge in the prior learning assessment process. These assessment methods can be combined for a more thorough evaluation.

Centralized & Decentralized

The structure of Prior Learning Assessment within BC post-secondary institutions varies. Ranging from a centralized model, with an entire department dedicated to PLAR, to a model where all assessments and guidelines are determined departmentally.

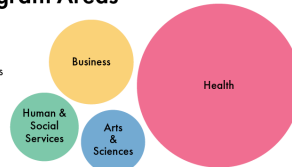


Credit Transfer

The transfer of PLAR credits varies between post-secondary institutions. Only 44% of those that indicated accept other institutions' PLAR credits with certainty.

Top Program Areas

In the 2017/2018 Fiscal year the BC Post-Secondary Central Data Warehouse reported that 1073 prior learning assessments were completed within Health programs, 343 in Business & Management programs, 279 in Human & Social Services and 274 assessments in Arts & Sciences.



Numbers based on a research project conducted by BCPLAN. The full report and sources can be found on our website: www.bcplan.ca.

Figure 6. Infographics summarizing the findings from a 2019 study by BCPLAN of the state of PLAR practices at B.C. post-secondary institutions. The full report (<https://bcplan.ca/resources/Documents/Report%203-BCPLAN%20Website.pdf>) is available on the BCPLAN website. [Click to view image full size]

TRU's Experience with the Credit Bank

Susan Forseille is director of prior learning and assessment recognition (PLAR) at Thompson Rivers University (TRU). In this role, she is responsible for administering the TRU credit bank. Below, she shares how TRU evaluates programs for the credit bank and talks about a pilot provincial credit bank for micro-credentials.

Interview

What is the credit bank?

"The credit bank is a type of PLAR. It is a database of educational programs that are not part of the BCCAT system (often they are non-credit training) that TRU has rigorously evaluated and deemed to be worthy of TRU credit."

What programs are part of the credit bank?

"There are many training providers out there. Think, for example, of the training a person would get if they worked as a dental hygienist or massage therapist. Or of the management training they might receive if they worked for an insurance organization. Or, a First Nations group that is offering excellent training in band administration. Or, of the training received by completing the Canadian Association of Medical Radiology Technologist certification. Increasingly we have students asking about training offered through a MOOC on Coursera. These are all worthwhile training and we wanted to find a way to rigorously assess them and determine whether they might be recognized as PLAR credits."

How does a program come to be in the credit bank?

"The process typically begins with the organization approaching us. For them, it can be an advantage to promote their program and say that upon successful completion, the program will ladder into a TRU Bachelor of Health, for example."

"Once we agree to review a provider's training program, they pay a fee to cover the expenses of the review. This fee does not guarantee that their program will be awarded PLAR credit. We are upfront and transparent about this, and it is important to maintain the legitimacy and integrity of the process."

Which aspects of these programs do you review?

"We have developed a tool, inspired by the American Council on Education (<https://www.ac>

enet.edu/Pages/default.aspx) (ACE) process. We ask to see what they are teaching. How are they teaching it? What is the textbook they use? Who are the teachers and what are their qualifications? We want to know how they are assessing the learning, because we want to have confidence that students are learning the content. How many hours are spent in the classroom? If there is a practicum, what does it look like? What is the feedback from learners? Is the program accredited? Does it grant PLAR for the program and, if so, how? We also want to know about learner outcomes. If there is a professional qualification exam, how are their students performing on this exam compared to students at other institutions? It's a huge amount of information.

"As part of this review agreement, they agree to provide us with all the documentation and information that we request."

Who conducts the review?

"We contract two subject matter experts to review the information. These are TRU faculty with subject matter expertise in the topic. If we do not have in-house expertise, we hire two TRU faculty to provide knowledge of TRU programs, TRU standards, and of our PLAR process, and another person, from outside of TRU, who is an academic and has expertise to review the content. Note that this review is not part of the faculty's job description, so they do this for additional pay. It doesn't pay a lot, and it can sometimes be a challenge to find faculty reviewers.

"The subject matter experts review all materials and they evaluate whether the training is equivalent to what TRU offers. They write a report. In it, they make a recommendation about the number of PLAR credits that should be awarded for the training, if any. They also make recommendations on the level of the credits (e.g., First year? Second year? Third year?), and the type of PLAR credit (e.g., block credit, equivalent to a specific course or courses? Applied study credit?)."

Once the SME recommend a program for PLAR credit, what happens next?

"The recommendations are first reviewed and approved by the dean of the appropriate unit, next by the registrar, then it goes to legal council, and finally to the provost.

"We draft and sign an articulated agreement with the provider. This is necessary because the legal document stipulates, for example, that if the provider changes the curriculum, we need to be alerted, and this could impact the PLAR credits. It's one of our risk management processes.

"Once the articulated agreement is signed by both parties, the program is entered into our TRU credit bank (<https://www.tru.ca/distance/plar-ol/creditbank.html>). It's basically a database of training programs that have been pre-approved for PLAR credit. If a student has

completed one of these programs, in the timeframe where the agreement was in place (so that we have confidence that it was the program we assessed), then they can look up what sort of PLAR credits they are entitled to receive.

"Our credit bank assessment process is very rigorous. It must be trusted and defensible. Everything is documented, so that it provides an audit trail. This is important for quality assurance."

Are there variations on the theme of how you conduct the credit bank review?

"Yes. This is the formal credit bank, which is what I have described so far. Then, there is also an informal credit bank. Let's say a student comes to us and they have done paramedics training in the Armed Forces. We do not have a formal agreement with the Armed Forces for this program.

"What we might do, if we have the resources, is a modified 'credit bank-like' review. We ask the learner to assemble all the resources that we normally would request during a credit bank assessment. Only one subject matter expert reviews it. If they approve the training for PLAR credit, a dean or dean designate reviews and approves it, and the student receives PLAR credit.

"In this case, because the arrangement is with the student and not the organization, the student pays a modest fee for the assessment (rather than the organization in the case of a true credit bank assessment). It does not cover the costs of the review, but it discourages frivolous requests.

"For the next three years, we keep that information in our informal credit bank files, meaning that if another student comes to us with that training, we automatically grant them the PLAR credits. They do not need to collect all of the information and undergo another program review."

What's the connection between the credit bank and micro-credentials?

"Micro-credentials represent an interesting space to explore for the credit bank. Micro-credentials are subject to their institution's quality assurance processes, but they are not part of the BCCAT transfer system. They fit the criteria for inclusion in the credit bank.

"TRU is leading a pilot project, started in December 2022, to explore the prospect of using a PLAR process to assess the micro-credentials that were funded in the first two rounds of government funding. Our group wants to investigate whether these micro-credentials could be considered for academic credit. This would allow learners to use their completed micro-credential as a springboard for further education. It aligns with the Micro-credential Framework for B.C. Public Post-secondary Education System (2021)'s special consideration for laddering micro-credentials into other educational opportunities.

"The advisory committee for this project includes representatives from RRU, VCC, KPU, UBCO, BCCAT and TRU. As a first step, we assessed ten micro-credentials that were funded as part of the initial two rounds of funding by the Ministry of Post-secondary Education and Future Skills. We used the TRU credit bank evaluation tool, which we modified with some things we learned along the way from New Zealand, Australia, and the Open University in the U.K.

"There is interest in developing a provincial credit bank for micro-credentials. Such a credit bank would mean that PLAR credits are accepted across institutions. To develop this, it's clear that there must be rigour and transparency in the evaluation process. The evaluation tools that we are using ensure this.

"Our group is also asking where and how micro-credentials could be housed in a provincial credit bank.

"There are some big questions in all this. Do we need a provincial credit bank? Would all post-secondary institutions accept a centralized credit bank? How would we develop and regulate a provincial credit bank? How do we resource it? There are so many questions to consider...

"Our pilot project is having vigorous discussions about how to create a framework for the micro-credential credit bank, and we are testing them at several institutions. Based on our experience, we will make recommendations to the province about how to move forward with both the future assessment of micro-credentials and the possible building of a provincial credit bank."

Top Tips from TRU's Experience with the Credit Bank

1. **Develop policies.** Develop policies and transparent procedures to provide clarity and promote trust about the credit bank at your institution. Ensure that everyone is aware of them and that the policies are followed in a consistent manner.
2. **Promote the credit bank internally.** Help faculty and administrators understand the value of a credit bank for recruitment, student retention and success, and funding.
3. **Promote the credit bank externally.** Devote resources to ensure that adult learners and prospective learners are aware of this pathway for their educational journey.

4. **Resource the credit bank.** Ensure there are adequate resources (staff and time) to carry out the credit bank process. This is very difficult for faculty and administrators to do off the side of their desks.
5. **Centralize the credit bank.** The credit bank could be housed at one central location in the institution, or each academic department could host its own. TRU recommends a centralized location for the credit bank offerings to ensure consistency in practice and rigour, time savings by pooling resources, and to make the opportunities easier for students to find.
6. **Adopt a growth mindset.** Credit banks are an emerging area of PLAR practice that aligns with the needs of adult learners in their career transitions. Dedicate resources to researching emerging practices and patterns in what and how adults are learning and be ready to pivot as these changes continue.

NAIT Innovates with Direct Assessment to Offer Micro-credentials

Patrick Weinmayr is former director of new product and Cindy Ough is the new products manager at the Northern Alberta Institute of Technology (NAIT) in Edmonton, Alberta. At the behest of NAIT's president Laura Jo Gunter, Weinmayr and Ough have been developing a new educational pathway for experienced learners called direct (<https://web.archive.org/web/20230329225921/https://www.nait.ca/nait/marketing/nait-direct-credentials>) assessment (Note: Initially, this option was called a 'direct credential' but the name has been changed to reflect the activity rather than the attestation of learning). Below, they describe what they have developed and how it might help adult learners in their career journey.

Interview

What is direct assessment?

Weinmayr: "It's a way for NAIT to certify that a person has certain competencies without requiring them to take a course.

"We started from a mindset that adults already have knowledge and competencies, which they picked up through work experiences, formal education, or that they taught

themselves. They have these competencies, but they are not formally recognized by an accredited Canadian post-secondary institution. Sometimes a person needs that recognition. Perhaps they are applying for a job that wants evidence that they have these skills, or they want to apply for further education but first need to show they have a certain level of abilities.

"Normally, these people have one option. They sign up for a course or program that lines up with these competencies, complete it, and a few months later they receive the credential that certifies they have that competency. If you think about it, that's not very efficient. They already had those competencies at the start. Direct assessment allows them to bypass the course.

"In practice, what happens is that they come to our website. We have developed a pre-assessment tool to help them decide whether they already have the competencies that align with a specific micro-credential. It's a simple online survey with 15 to 30 questions (our pilot program for the Workers Compensation Board will be visible on our website sometime in the summer 2023). Once they complete it, they get a recommendation. Based on their answers, we tell them whether they should be taking the micro-credential program (the course-based pathway) or if they are a good candidate for the direct assessment pathway. The tool is just meant to help learners make a decision about which path to choose to earn the micro-credential.

"If they choose to go down the course-based path, then it's what you would expect. They register for a program, take the courses, successfully complete the assessment, and they earn the micro-credential.

"If they choose the direct assessment route, they skip the course and take the assessment. If they successfully pass, then within a week or so, they earn the micro-credential. NAIT will have validated that they have those competencies.

"On their NAIT transcript and on their digital badge, the two options for earning the micro-credential — course-based or direct assessment — are indistinguishable. We have entered the two in our systems so that they are the same course, but what's different is simply the delivery mode. To an employer looking at the credential, the two look identical."

"We have found that this list of options and processes can be difficult for learners to navigate, so we have created a flowchart that shows the different pathways (Figure 7)."

Tell us about the assessment performed in a direct assessment.

Ough: "I should start by noting that the assessment method used for all of our micro-credentials — whether course-based or direct — are authentic assessments. They are not traditional assessments that assess theory and consist of a multiple-choice test with some

short answer items. Rather, these are simulations. Learners are asked to demonstrate their skills through real-world scenarios.

"For example, let's say the competency that you have to demonstrate is in using Excel to a certain level of proficiency. The authentic assessment is done online. Students get a screen that looks like Excel. They are not actually using Excel — we use a third-party software that mimics that environment and allows us to monitor the students' activities on the software. Then we give them a scenario. It can be something like, here's a spreadsheet with some data in it. Your manager asks you to clean up the data and show it in a graph with the following requirements. What do you do? The software monitors what the students do — how they get to the final product.

"In some cases, the demonstration of skills doesn't involve a computer. For example, for a baking micro-credential, learners must demonstrate that they can use the right techniques to obtain a light and flaky crust. In this case, we have a software that learners can use to monitor themselves in their environment, performing the skill and filming it. The software allows them to record their performance from different perspectives, so they might set up a camera on their head, another pointing at the stove, and another at the inside of a mixing bowl. They can narrate as they perform the task, which can be helpful if they make a mistake during their demonstration, but catch it, and then problem solve around their mistake.

"We hire subject matter experts to review these assessments. They use rubrics, which we have developed, to assess the performance. This is important, because we want to standardize the assessment, so that all assessors will look for the same things. We are still debating whether we will assign grades or make it pass/fail, but right now we are leaning towards a pass/fail assessment outcome."

Are the authentic assessments the same for the course-based and direct assessment micro-credentials?

Weinmayr: "No, they are not.

"The assessments we use for the course-based and the direct assessment evaluate the same competencies, so they are similar. However, one thing we found is that in a course, an instructor gets to know each learner and so by the time the student engages in the assessment, the instructor has more than the performance that's being demonstrated right in front of them to assess whether the student can perform the task well.

"For a direct assessment, assessors do not have this data to draw from. The assessment must do a little more to convince us that the student can do the skill. It's not that the

assessments are harder, but we are going to make doubly sure that the person can do those skills. For us, this is a way to manage our reputational risks.

"We are still researching the market value of these direct assessments, but right now we are thinking that they should be priced higher than the micro-credentials obtained through the course route. Learners are sometimes surprised by this. Then we explain that in a course there is a cohort receiving instruction from an instructor. In a direct assessment, we must hire an instructor to look at just one student's assessment. That's costly. When we explain the value — that this saves students weeks or sometimes months of training time and allows them to directly use the credential to get a job — people seem willing to pay the additional fee."

Who seems to be interested in direct assessment?

Weinmayr: "One market that is emerging are newcomers to Canada. These people are highly skilled and have degrees. However, their credentials are from foreign institutions, and Canadian employers are not sure how to evaluate them. Often that's why newcomers go back to school once they get here — to get a Canadian credential that employers will recognize. A direct credential provides a validation of their abilities, from an institution that employers in the region know and trust. And, people can get it quickly.

"For example, consider someone who is arriving from India with a degree in computer science. Employers are not sure if the person can program well in the programming language Python based on that credential. But then that person completes the direct assessment for a NAIT micro-credential that requires advanced usage of Python. Now that they have this micro-credential, the employer is convinced that the person can code well using Python. In a way, the direct assessment from NAIT has quickly validated their entire degree earned in another country.

"We don't have to limit ourselves to people who are here and who are trying to find jobs once they have entered the country. Think of people who already have their visa. What if we could do a direct assessment for them while they are still abroad. That way, by the time they arrive in Canada, they already have a credential from a recognized Canadian institution, and they can start looking for jobs with that in hand from Day 1."

What have you learned from this project?

Ough: "One of the biggest challenges we encountered was how to fit direct assessment into our existing system. If you think about it, with direct assessments, students can complete micro-credentials whenever they want in the term. There isn't a cohort of students. How do you fit this into the student registration system? It challenges the way in which our systems are set up. We had to think of innovative ways around it. One solution has been to think of

direct assessment as simply a mode of delivery for the micro-credential. That helped with some of the logistics.

"We are now examining how to provide this sort of service for corporate clients and how to invoice them. Again, our systems were not set up for this, so we are having to find solutions."

Who else is doing direct assessment?

Weinmayr: "The idea is very well developed in Australia. In Canada, the only other organization we know of that does something like this is Bow Valley College in Calgary. We really are at the forefront of innovation in this area in this country."

Top Tips from NAIT on Setting up Direct Assessments

1. **Use different assessments for direct and course-based micro-credentials.** Consider developing distinct assessments for direct and course-based micro-credentials. While the two methods will assess the same competencies, the learner coming through the direct assessment path has had no prior contact with the institution, no other opportunity to demonstrate their skills. The institution should therefore be especially diligent in ensuring that these learners really have the skills before they validate them to employers and other organizations.
2. **Use authentic assessments.** Micro-credentials are not like most other post-secondary courses in that they are competency-based. The evaluation of competencies involves not only assessing the learner's ability to perform a skill, but also when and how to use it in a real-world situation, as well as the ability to problem solve around mistakes and to adapt when faced with unexpected situations. The assessments should mimic as much as possible both the tasks and the work environment in which the skills will be used.
3. **Supervise the assessment.** If the institution will attest that the learner can do certain skills and they do the assessment at a distance, it is particularly important to put in place a rigorous method of checking that the person can do the task independently. NAIT has learned from professional organizations that it can take 45 minutes simply to set up the conference call between the assessor and student before beginning the assessment in order to ensure this.

4. **Create clear communications.** Direct credentials are new, and learners and employers will need to be educated about them. This includes explaining not only what direct assessment is, but also how it relates to course-based micro-credentials. Develop clear communication materials and engage with prospective stakeholders. Visuals help.
5. **Explore implementation solutions.** The systems used by post-secondary institutions to manage courses were not set up to handle learners earning credentials independently, on their own schedule, and outside of the traditional course structures. You will likely need to have conversations with colleagues across your institution as you find ways to enter direct assessments into your systems.

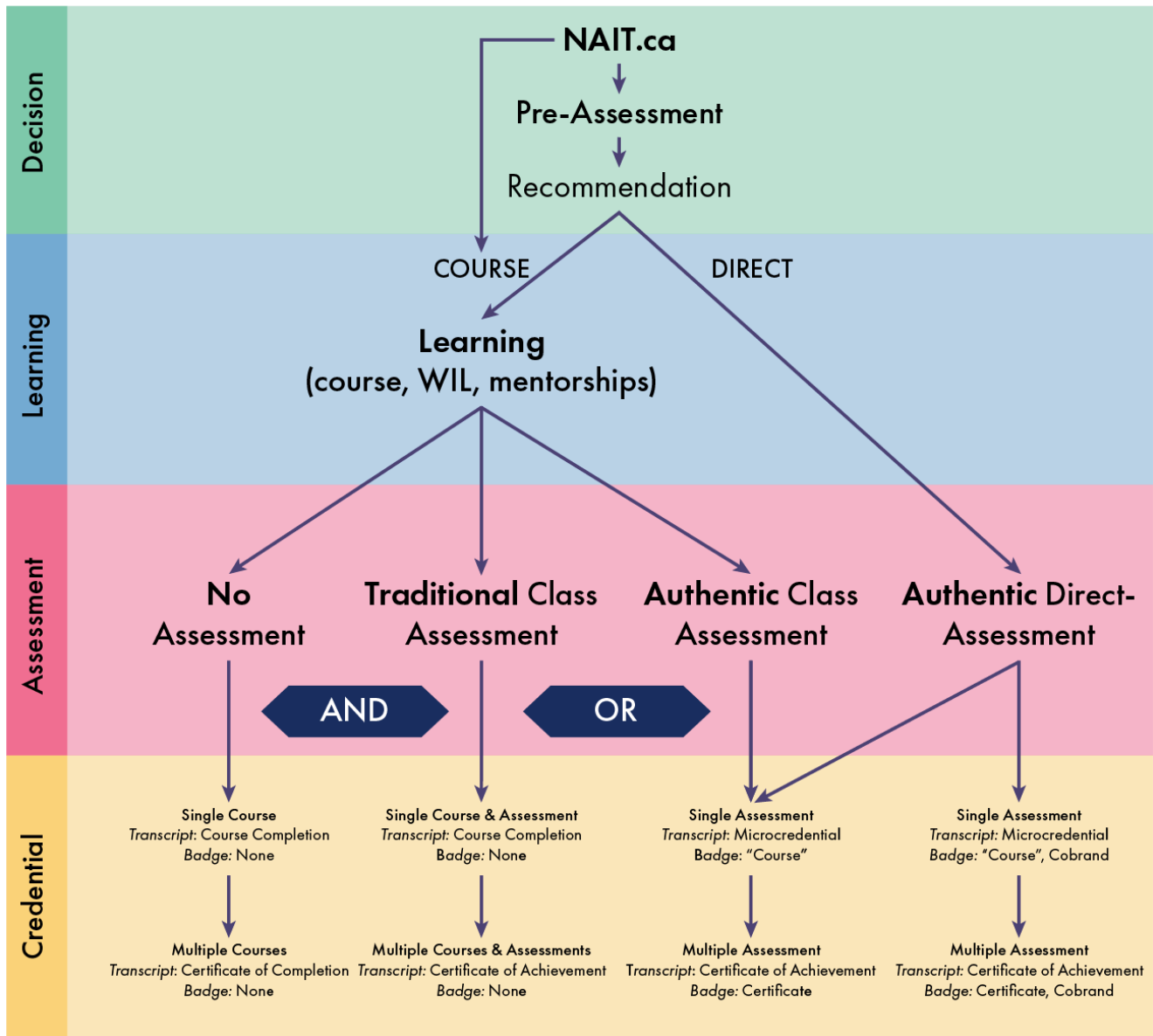


Figure 7. NAIT's flowchart to communicate the decision process and its impact in choosing between a course-based or direct assessment micro-credential. The illustration also shows the NAIT credential framework for short-term training.

Suggested Resources

Education Pathways

The following collection of articles, written by micro-credential practitioners and leaders throughout Canada and the United States, tackle different aspects of connecting micro-credentials with the larger credential ecosystem.

- Covelli, B. (2020). *Bringing stackable credentials into graduate degree programs*. The Evolllution. <https://evolllution.com/programming/credentials/bringing-stackable-credentials-into-graduate-degree-programs-2/>
- Duke-Benfield, A. E., & Zanville, H. (2021). *The importance of incremental credentialing: State policy organization view*. The Evolllution. <https://evolllution.com/programming/credentials/the-importance-of-incremental-credentialing-state-policy-organization-view/>
- Ferguson, K. (2019). *Save the degree from irrelevance: Rethinking on-ramps to higher education*. The Evolllution. <https://evolllution.com/programming/credentials/save-the-degree-from-irrelevance-rethinking-on-ramps-to-higher-education/>
- Karbhari, V. (2021). *Embedding & integrating certifications in degrees*. The Evolllution. <https://evolllution.com/programming/credentials/embedding-integrating-certifications-in-degrees/>
- Keegan, T. (2022). *How stackable credentials will change the way Bachelor's degree programs operate*. The Evolllution. <https://evolllution.com/programming/credentials/how-stackable-credentials-will-change-the-way-bachelors-degree-programs-operate/>
- Leaser, D., & Zanville, H. (2021). *The importance of incremental credentialing: An employer's view*. The Evolllution. <https://evolllution.com/programming/credentials/the-importance-of-incremental-credentialing-an-employers-view/>
- Miller, D. (2018). *With the growth in the number of short-term credential programs, why is stackability and employer engagement critical?* The Evolllution. <https://evolllution.com/programming/credentials/with-the-growth-in-the-number-of-short-term-credential-programs-why-is-stackability-and-employer-engagement-critical/>
- Newman, K. (2022). *Stackable, trackable & packable: Students need moveable credentials that mean something now*. The Evolllution. <https://evolllution.com/programming/credentials/stackable-trackable-packable-students-need-moveable-credentials-that-mean-something-now/>
- Oldham, T. (2020). *Start stacking: A conscious approach to addressing skills gaps*. The Evolllution. <https://evolllution.com/programming/credentials/start-stacking-a-conscious-approach-to-addressing-skills-gaps/>
- Philpotts, A. (2021). *Setting up for success: The 60-year curriculum vision*. The Evolllution. https://evolllution.com/revenue-streams/extending_lifelong_learning/setting-up-for-success-the-60-year-curriculum-vision-2/
- Richardson, D. (2018). *Working cross-campus to build a flexible and responsive educational ecosystem*.

The Evollution. <https://evollution.com/programming/credentials/working-cross-campus-to-build-a-flexible-and-responsive-educational-ecosystem/>

Rhodes, R. (2022). *Walk the walk: How continuing ed can build re-enrollment pathways for returning learners*. The Evollution. <https://evollution.com/attracting-students/retention/walk-the-walk-how-continuing-ed-can-build-re-enrollment-pathways-for-returning-learners/>

Tyre, P. (2020). *Horizontal stacking of credentials: Framework and success considerations*. The Evollution. <https://evollution.com/programming/credentials/horizontal-stacking-of-credentials-framework-and-success-considerations/>

Zanville, H., & Pichette, J. (2021). *How do microcredentials stack up? Part 2*. The Evollution. <https://evollution.com/programming/credentials/how-do-microcredentials-stack-up-part-2/>

PLAR

Colleges and Institutes Canada (CICan) has proposed a national framework for PLAR to align the practices of institutions across the country.

The Cégep Marie-Victorin – Collège Boréal Consortium (2022). *Prior Learning Assessment and Recognition (PLAR) Reference Framework in Canada*. Report for Colleges and Institutes Canada. <https://collegesinstitutes.sharepoint.com/:b:/g/extcollab/EXdm87ueCbpAv6Z9B17XQG4BOu2tkEj3mQX8YsjafDMThnQ?e=Duk8uL>

A summary is available. Prior Learning Assessment and Recognition (PLAR) Reference Framework in Canada: Summary (<https://collegesinstitutes.sharepoint.com/:b:/g/extcollab/EYA-vy6p3egAi6GfaFVY5HIB056q04nCW-N2z4LclD7uuA?e=DmeuJ4>)

A press release explains the aims of this framework. New national PLAR framework will support lifelong learning and help individuals enter the workforce faster (<https://www.collegesinstitutes.ca/news-release/new-national-plar-framework-will-support-lifelong-learning-and-help-individuals-enter-the-workforce-faster/>)

The following three organizations can provide resources and connections with peer practitioners.

BCPLAN (B.C. Prior Learning Action Network). (<https://bcplan.ca/>)

This association brings together post-secondary professionals across the province who are interested in PLAR. They share knowledge and resources, commission studies, and promote the practice. Note the PLAR Podcast (<https://bcplan.ca/plar-podcast>), which shares expertise across B.C. and beyond.

CAPLA (Canadian Association for Prior Learning Assessment) (<http://capla.ca/>).

Similar to BCPLAN, CAPLA brings together PLAR practitioners from across Canada to share best practices and resources. The organization recently published a PLAR Quality Assurance Manual (<http://capla.ca/rpl-qa-manual/>), which can be purchased for a modest fee. You can also find links to the UNESCO Guidelines for the Recognition, Validation, and Accreditation of the Outcomes of Non-formal and Informal Learning. (<http://capla.ca/unesco-guidelines-for-rva/>)

CAEL (Council for Adult Experiential Learning) (<https://www.cael.org/>).

This non-profit organization based in the United States supports connections between employment and education. Among its resources, the website provides recommendations for evidence-based best practices (<https://www.cael.org/news-and-resources/adult-learning-lit-review-framework-findings-and-next-steps>) as well as research findings on the impact of PLAR recognition on 230,000 adult learners (<https://www.cael.org/news-and-resources/new-research-from-cael-and-wiche-on-prior-learning-assessment-and-adult-student-outcomes>) (spoiler alert: these learners went on to complete 17 per cent more course credits at their institution and had 22 per cent higher degree completion rates than adults who did not receive PLAR recognition).

Some relevant resources on PLAR and micro-credentials.

Conrad, D. (2022). Accreditation and recognition of prior learning in higher education. In O. Zawacki-Richter & I. Jung (Eds.), *Handbook of open, distance and digital education* (pp. 1–17). Springer. https://doi.org/10.1007/978-981-19-0351-9_44-1

Martinez-Marroquin, E., & Male, S. (2021). Micro-credentials for recognition of workplace learning: Provocation. *Journal of Teaching and Learning for Graduate Employability*, 12(1), 52–57. <https://ojs.deakin.edu.au/index.php/jtlge/article/view/1513>

Souto-Otero, M. (2021). Validation of non-formal and informal learning in formal education: Covert and overt. *European Journal of Education*, 56(3), 365–379. <https://doi.org/10.1111/ejed.12464>

Villalba-García, E. (2021). Validation of non-formal and informal learning: The hero with a thousand faces? *European Journal of Education*, 56(3), 351–364. <https://doi.org/10.1111/ejed.12468>

Woods, L., Skapenkp, A. (n.d.). Micro-credentials and PLAR: The Dynamic Duo of upskilling and credential advancement. BCPLAN. <https://bcplan.ca/Micro-credentials-and-PLAR-The-Dynamic-Duo-of-upskilling-and-credential-advancement>

Direct Assessment

In the United States, the *Tear the Paper Ceiling* campaign has been endorsed by nearly 50 large employers who advocate for skills-based hiring as an alternative to degree-based hiring. The

campaign refers to people with existing skills as STARS — Skilled Through Alternative Routes. Could direct assessment be a way to recognize these workers' abilities?

Ad Council. (2022). *Coalition of nearly 50 organizations launches 'Tear the Paper Ceiling' campaign to raise awareness around the 70+ million workers in the U.S. Skilled Through Alternative Routes (STARS)* [Press release]. Cision PR Newswire. <https://www.prnewswire.com/news-releases/coalition-of-nearly-50-organizations-launches-tear-the-paper-ceiling-campaign-to-raise-awareness-around-the-70-million-workers-in-the-us-skilled-through-alternative-routes-stars-301630110.html>

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Brown, M., Nic Giolla Mhichíl, M., Beirne, E., & Mac Lochlainn, C. (2021). The global micro-credential landscape: Charting a new credential ecology for lifelong learning. *Journal of Learning for Development*, 8(2), 228–254. <https://doi.org/10.56059/jl4d.v8i2.525>

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Cook, E. (2021). Practice-based engineering: Mathematical competencies and micro-credentials. *International Journal of Research in Undergraduate Mathematics Education*, 7, 284–305. <https://doi.org/10.1007/s40753-020-00128-3>

Duklas, J. (2020). *Micro-credentials: Trends in credit transfer and credentialing*. Report prepared for BCCAT. <https://www.bccat.ca/intro/MicroCredentialsReport>

Hope, J. (2022). Consider how 'credential as you go' options help students. *The Successful Registrar*, 21, 1-11. <https://doi.org/10.1002/tsr.30923>

Johnson, M., & Majewska, D. (2022). *Formal, non-formal, and informal learning: What are they, and how can we research them?* Cambridge University Press & Assessment Research Report. <https://www.cambridgeassessment.org.uk/Images/665425-formal-non-formal-and-informal-learning-what-are-they-and-how-can-we-research-them-.pdf>

McCaffery, R. N., Backus, L., & Maxwell, N. (2020). Embedding Industry Certifications into Community College Programs. *New Directions for Community Colleges*, 2020(189), 53–66. <https://doi.org/10.1002/cc.20397>

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- Tamoliune, G., Greenspon, R., Tereseviciene, M., Volungeviciene, A., Trepule, E., & Dauksiene, E. (2023). Exploring the potential of micro-credentials: A systematic review of the literature. *Frontiers in Education, 7*, 1006811. <https://doi.org/10.3389/feduc.2022.1006811>

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Recognition of Learning

Learners need an attestation of learning that they can share with employers and other stakeholders as evidence of their abilities. This chapter explores options beyond the transcript, focusing on open digital badges.

Chapter Audience:



Program Managers



Faculty

How Micro-credentials Recognize Achievements

When thinking about an official recognition of learning, most people think of the college or university transcript. This is an official document, owned, controlled, and issued by the post-secondary institution, that lists each of the courses taken, and includes one summative assessment of performance for each course (i.e., a letter or percentage grade). Alternatively, people think of the parchment, the printed document that attests that a learner has completed a program at an institution and that describes the date when the program was completed but provides no information on what learning outcomes were achieved or to what degree.

While the completion of some micro-credentials is documented in this way, many record the achievement in an alternative format: a digital badge. Why are many micro-credential achievements documented with a badge rather than (or in addition to) a transcript or parchment?

The first reason is that transcripts and parchments don't really communicate what a person can do — an important goal of a competency-based micro-credential. A key stakeholder in micro-credential training are employers, and they have a challenging time translating a summative grade for a course (such as a B+) into a meaningful assessment of a prospective employee's practical skills and capabilities (see the story *Role of Competency-based Education in Undergraduate Courses* in the chapter *Educational Pathways*). Employers want a document that describes, in a concrete way, the

things that the person has a demonstrated ability to accomplish (Goger & Laniyan, 2022). Ideally, they would also like these competencies recorded in a standardized, machine-readable format, so that software can sift through job applications to identify potential candidates with the desired skills (Barabas & Schmidt, 2016).

There are other reasons for using digital badges to recognize micro-credential achievements. Transcripts may not conform to the needs and expectations of today's learners, especially when it comes to modularized learning. Learners increasingly want greater control over their education, including how, with whom, and when they share their achievements (Hope, 2019; West *et al.*, 2020). Learners are used to a culture where services are customized to each person's needs. They curate their own music and video playlists, collating them from several different providers. They want to do the same with their education, customizing their learning journey by taking offerings from different training organizations, curating them in a personalized portfolio, and controlling how they share those portfolios (for example, curating a collection of achievements that showcase a particular expertise) with the people and venues they choose (ContactNorth, 2016; Institute-Wide Task Force on the Future of MIT Education, 2014, p. 13, Moroder, 2014).

Connected to this, and as mentioned in the chapter *Educational Pathways*, there is increasing interest in recognizing the experience that adult learners bring to their educational journey, which often comes from outside of formal education — in on-the-job training and from non-formal educational providers like massive open online courses (MOOCs) or industry courses such as those offered by IBM, Microsoft, Cisco, and others (Brown & Kurzweil, 2017; Gibson *et al.*, 2016; Jones-Schenk, 2018; Leaser *et al.*, 2020; Lumina Foundation, 2015). These types of educational experiences are not usually captured on a post-secondary transcript, but they could be recognized by a digital badge that is included in a person's personalized online training portfolio.

Finally, educators may want a more granular way of capturing what learners can do than a summative grade for a course (West *et al.*, 2020). Having the ability to recognize individual skills as they are attained can serve as a pedagogical and motivational tool in the classroom, helping learners see their own progress (Fedock *et al.*, 2016; Iwata *et al.*, 2017). It can also help educators recognize the individualized paths that learners take through a course (see the story *UBCO Embeds Micro-credentials in a Freshmen BFA Course* in the chapter *Educational Pathways*). And it can eliminate the need for writing personalized letters of reference to describe a learner's skills attained in a course, since it could be documented in a record that tracks the achievement of individual skills as a learner progresses through a course.

For all these reasons — the need to capture specific competencies and document learning from formal, informal, and non-formal sources and multiple providers, to make that learning machine readable, and to give control of the collecting and sharing of those competencies to learners — there is vigorous interest and research in identifying alternative forms of learning recognition. The

ultimate goal is to provide a deeper understanding of a person's abilities and learning journey beyond what is captured in a traditional transcript or parchment.

Many formats are emerging to address these issues. Duklas and Bridge (2017) list e-portfolios, comprehensive learner records, complementary records, co-curricular records, and digital badges as some of the alternative credentials currently awarded. Of the range of possible alternative credentials, digital badges are the most popular to capture the achievements of micro-credentials. This is likely because micro-credentials are issued by a range of providers (some that are not post-secondary institutions and do not have ready access to formats like complementary records or co-curricular records), and because their focus on competencies and the ability for learners to control them make them suitable for job applications. According to a 2016 survey, 94 per cent of 190 American post-secondary institutions were already offering alternative credentials, with one in five institution offering digital badges (Fong *et al.*, 2016). Given the explosion of interest in this field, it is likely that this number is even higher today.

Figure 1 shows the relationship between different types of learning recognition. The ones on the left in blue are the ones typically provided at the end of a formal educational experience. They are issued upon successful completion of rigorous assessments and consist of institution-controlled documents like transcripts. The learning shown on the right in yellow, which typically results from informal or non-formal learning experiences, uses less rigorous assessments, such as attendance and completion. The recognition is awarded through digital badges that the learner controls. Micro-credential programs are earned through a formal assessment process (like academic credentials), but the attestation of learning is more similar to that awarded for informal or non-formal learning experiences. This chapter will describe what a digital badge is, how an open digital badge is a subset of this format, and how micro-credentials are recognized through a format that is itself a subset of open digital badges.

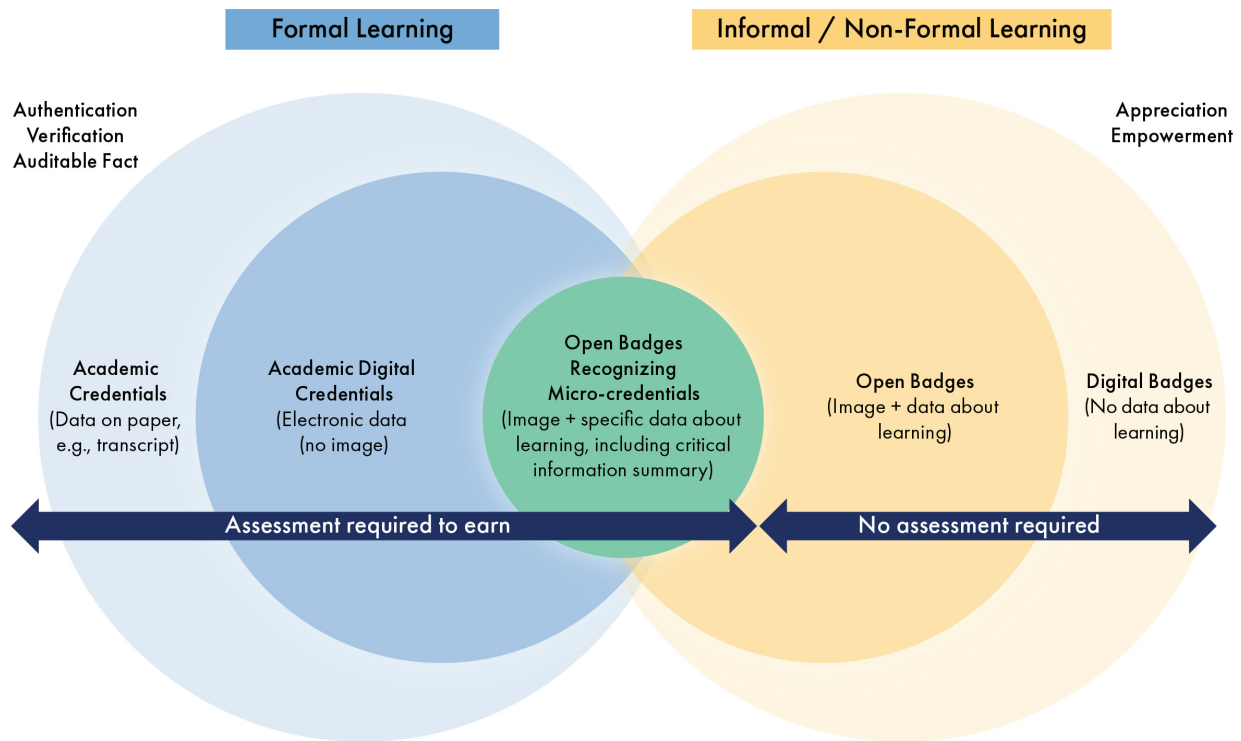


Figure 1. This Venn diagram shows that open badges are a subset of digital badges, and that the recognition awarded upon successful completion of a micro-credential is a specific type of open badge. While there is currently little overlap between academic credentials and digital badges, the attestation of learning for micro-credential programs use elements of each. Adapted from Don Presant, who had himself adapted the image from Doug Belshaw (<https://scope.bccampus.ca/mod/book/view.php?id=17471&chapterid=3850>) which is under a CC BY licence (<https://creativecommons.org/licenses/by/4.0/>).

What Is a Digital Badge?

It's worth beginning this section with an acknowledgement that some of the terms used in this field are still in flux and their definition is under discussion (Weaver, 2021). Notably, in some contexts, and in some resources, the term "digital badge" is used synonymously with "micro-credential." However, a distinction is emerging, and this is the one that is adopted in this toolkit (University at Buffalo, n.d.; see *UBCO's Development of a New Micro-credential Policy* and *UFV's Development of a New Micro-credential Policy*).

A micro-credential is the program.

The **digital badge** is what's awarded to learners who have successfully completed the micro-credential as evidence of that achievement.

Another way of stating this distinction is to say that a digital badge is to a micro-credential what a transcript is to a degree. The digital badge and transcript are evidence of accomplishments, not the activities that led to earning them.

A digital badge, as the name implies, is digital. It lives online. It is an indicator of achievement or skill that is composed of two elements: an image and its accompanying structured information (its meta-data).

The image is usually a design that conveys visual information about the micro-credential and sometimes the organization that issued it, although there is no standard or rule about the image's content. Examples from two B.C. institutions are shared in Figures 2 and 3.



Figure 2. Examples of the image component of a digital badge, as issued by Capilano University's school of continuing studies. The institution has developed an internal standard for the way to represent each of the levels of achievement in its non-credit credential framework. The digital badge on the left recognizes achievement of a seal of proficiency (the smallest credential in CapU's non-credit credential framework, representing 30 to 45 hours of learning). Each micro-credential of this type is red and uses this logo but the name at the bottom identifies the specific micro-credential, here "Presentation." The second image is awarded for learners who complete an award of achievement, a non-credit credential representing 60 to 105 hours of learning. The logo for all such micro-credentials is blue and uses this design, but vary in the name of the micro-credential, which is captured at the bottom (here "Bookkeeping for Small Business"). The third image is for the largest non-credit credential, the certificate of completion, totaling 135 hours of learning. As with the others, the digital badges recognizing micro-credentials of this type vary in their name, shown at the bottom of the circle, here "Leadership." Note that the designer of these three images consciously built on the design so that as the level of achievement grows, more details are added to the figure. This was meant to represent the investment required to earn each micro-credential, their hierarchy, and how they may stack. The last image was created especially for a micro-credential targeted at Indigenous learners and was designed by an Indigenous artist. The FILMBA program was described in the chapter *Design Considerations: Stories from the B.C. Post-secondary Sector* in the section *An Instructional Designer's Role in Creating FILMBA (CapU's Experience)*.

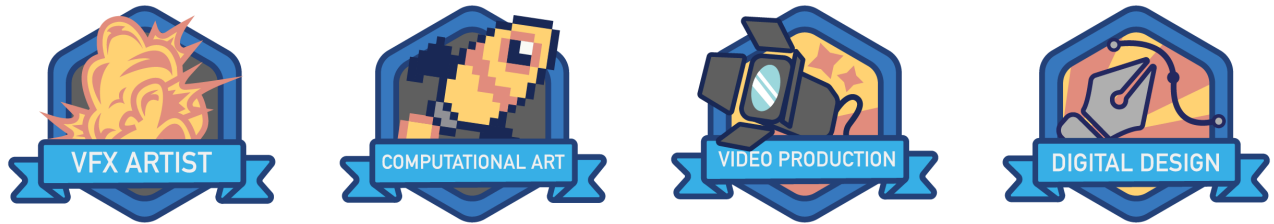


Figure 3. Example of four digital badges that learners in the UBCO course *Introduction to Digital Media* can earn, depending on the curriculum option they choose to pursue. The micro-credential that results in the issuance of these digital badges is described in the chapter *Educational Pathways* in the section *UBCO Embeds Micro-credentials in a Freshmen BFA Course*.

The meta-data attached to the digital badge provides information about the micro-credential. It describes the organization that issued the badge and the criteria for earning the badge, and it confirms the information about the person who earned it. The information is embedded in the image itself, but it can be extracted and displayed on a webpage for ease of viewing.

A digital badge “can be displayed, accessed, and verified online” (lafrate, 2017). To have value, a digital badge needs to be trusted and understood by all stakeholders in the community. Some characteristics are emerging as important to their uptake:

- **Portability.** Badges need to be transferred and exchanged between institutions and learners. They need to be independent of the platform on which they are stored or viewed. One way to think about it is that it is a file format. In the same way that a PDF is a type of file that can be interpreted and opened by several software, a digital badge is a file type that can be interpreted by many badge platforms.
- **Validity and reliability.** How does a program demonstrate that it successfully achieves its goals – that its graduates can do the things that the program sets out to teach them? Traditionally, post-secondary institutions have relied on academic accreditation and their reputation to provide evidence of this alignment. However, micro-credentials, with their link to employment, may require more transparency and an external evaluator to confirm the program's merits (that its goals are relevant to the workplace and its graduates are competent in job settings). Endorsement by employers and professional organizations may become a means of validating a program (Everhart *et al.*, 2016). Such endorsement can be made public and shared as part of a digital badge's meta-data.
- **Data security.** To be trusted by the community, digital badges need a means of protecting the integrity and authenticity of the information they contain. This includes protecting against unauthorized access, modification, or duplication of the badge or the data associated with it. Different sorts of badge will lend themselves to different levels of data security, depending on

the sensitivity of the information they contain. This can range from ways of authenticating the meta-data (to confirm the identity of the institution, recipient, and badge) to methods for encrypting the data (to prevent unauthorized access or interception).

Who Are the Digital Badge Stakeholders?

There are always several stakeholders in the certification of learning, but these are perhaps more involved in digital badges due to the close alignment of the certification and the world of work, their digital (online) nature, and the de-centralized ownership of the certification itself. Here is the nomenclature used to describe some of the badge stakeholders and their roles (Everhart *et al.*, 2016; Milligan & Kennedy, 2017).

- **Badger earner.** This is the person who has completed training and/or successfully demonstrated their abilities to meet the requirements for a micro-credential and has earned a digital badge. Once a badge is issued to them, they own the badge and control with whom they would like to share it. Badge earners claim a badge, collect all their badges in a portfolio (also referred to as a backpack or wallet,) and share them with other stakeholders.
- **Badge issuer.** This is the organization that defined the requirements for earning a micro-credential and assessed each learner's abilities to meet those requirements. Digital badges make public the contents of a program and the way in which learners are assessed, creating a greater level of transparency for post-secondary institutions than traditional credentials (Jorre de St Jorre, 2020). In issuing a digital badge, they are putting their reputation behind the learner and stating, publicly, that the learner can do the things listed in the digital badge.
- **Badge provider.** This is an organization that provides the technology infrastructure, knowledge, and support to badge issuers. They create tools to issue, display, and host badges, design online systems that can verify the information contained in a badge, track usage, and create templates that badge issuers can use to create badges that comply with standard badge formats. Often such services are purchased by the badge issuer to host the badges that it creates and issues.
- **Badge verifier.** This is usually a third party in the learning experience — typically an employer, professional or industry association, other training organization, educator, community or Indigenous partner, or other interested person who would like information about the badge and what it certifies that a person can do. They want to understand the earner's abilities and need to trust that the badge provides valid information. There is evidence that most employers are currently unaware of digital badges and may need to be educated about them (Perkins & Pryor, 2021).
- **Badge endorser.** This stakeholder is optional but can lend credibility to a badge. It is a third-party organization that validates that the badge earner, or the badge issuer, or the badge itself, are meaningful and align with their organization's values. Note here that there are three

possible levels of endorsement: the badge, the earner, or the issuing organization. Badge formats and platforms often allow for such granularity of endorsement. This external attestation lends credibility and helps a badge, or a badge earner or badge issuer, gain currency and trust in the community. A badge endorser is putting their reputation behind a badge, earner, or issuer in stating, publicly, that they value and trust the information contained in the badge.

It is worth noting that the badge issuer, particularly in the context of a post-secondary institution, may involve several units or groups in the organization. For example, it may involve collaboration between the registrar's office, centre for teaching and learning, school of continuing education, information technology department, marketing team, or other units. Those wanting to issue digital badges should investigate their institution's policy and procedures for issuing them, which may provide details about the internal stakeholders to contact.

Digital Badge Platforms

Digital badge platforms are cloud-based software that can create, issue, display, curate, share, and authenticate digital badges. Users will interact with digital badge platforms in different ways — using them for different purposes. All users may use the same digital badge platform provider, but the portability of digital badges means that they have the option to use different ones that better suit their needs. Below are the uses and considerations of each of the digital badge stakeholders in using a platform.

Badge Issuers

As badge issuers, institutions need the ability to create badges, store the information contained in them on a platform, and issue them to deserving learners. They can also collect certain metrics, such as the percentage of issued badges that are claimed and displayed. Once a badge is issued and claimed by a badge earner, the institution no longer has control of the badge (i.e., there are no opportunities to fix a typo or change the information). It now belongs to the earner and is under their control. There are many providers to choose from, each offering different features and options. A number of publications explore the range and usefulness of these features and summarize them to help others select the one that best meets their needs (see, for example, Hanafy, 2020; Kiiskilä *et al.*, 2022; and Dimitrijević *et al.*, 2016). In B.C., one of the considerations in choosing a badge platform is that it complies with the Freedom of Information and Protection of Privacy Act (https://www.bclaw.s.gov.bc.ca/civix/document/id/complete/statreg/96165_00) (FIPPA). Depending on the level of data security required, it is possible to protect the information through block chain technology and give badge verifiers confidence that the data they view has not been altered (Chukowry *et al.*, 2021; Johnson, 2017).

Badge Earners

Badge earners use a badge platform to claim a badge, collect them in a digital portfolio (also called a backpack, passport, or digital wallet), curate and share them with others through digital means such as on social media sites or in a resumé or email. Many social media organizations, such as LinkedIn and Twitter, enable badge earners to disseminate their badges on their sites. Once a badge has been claimed, it resides in the learner's backpack and is independent of the institution that issued it. Some learning management systems (e.g., Moodle) can serve as a learner's backpack, though there are also badge-specific options outside of an institution's learning management system. Many badge platform providers that sell their services to institutions provide access to the student backpack free of charge.

Badge Verifiers

Badge verifiers, like employers, need to access the badging platform to validate and verify the credentials.

What Is the Open Badge Format?

Learners want to be able to curate their learning from multiple providers, be they different post-secondary institutions, massive open online course providers, or industry training. If each institution creates their own method of encoding digital information for a digital badge, learners will have a hard time assembling the different formats. Imagine if a learner tried to assemble a PDF, a Word document, and an Excel spreadsheet, each containing different information. It would be difficult to showcase it all on one platform and in a way that is relatively uniform.

At the same time, learners want to be able to select the platform they will use to collect, curate, display, and share their digital badges — their preferred backpack or data wallet platform. This also requires that the platform “speak the same language” as each of the organizations that issued the badges.

Finally, an employer or verifier will want to view and verify that the badge is legitimate. They will also need a platform that cross talks with the issuers' platform and the badge earners' wallet.

In order to enable learners to collect and curate digital badges from any issuer, showcase them on a platform of their choice, and allow reviewers to view and validate the information, a standard format was created to ensure interoperability. It's called the **open badge format**. It's the common way of packaging information about a digital badge that all platforms use to ensure that the information is readable across all systems (i.e., that the badge issuer, badge earner, and badge verifier platforms all “talk” the same language).

The open badge standard is free to use and is the most widely used digital badge format. It was developed as a community effort by Peer 2 Peer University, the Mozilla Foundation, and the MacArthur Foundation in 2011 (https://wiki.mozilla.org/images/f/f3/OpenBadges_--_Working_Badge_Paper.pdf). As interest in the open badge format grew, the Mozilla team founded the Badge Alliance in 2014 as a way to foster discussion within the community of users. In 2017, the IMS Global Learning Consortium took over responsibility for continuing the development of the open badge format (IMS Global Learning Consortium, 2022 (<https://openbadges.org/>)). Note that the open badge format continues to evolve, with new categories of information added based on the needs of the community. In 2018, for example, the version Open Badges 2.0 (<https://openbadges.org/>) made it possible to add external endorsement to the open badge meta-data.

Some fields in the open badge format are machine readable, meaning that its possible input are restricted. This makes it possible for the information to be readily scanned by a computer when an employer is searching for a particular type of applicant. Other fields are not machine readable; they are human readable. The format of the information in these fields is not as tightly defined. Often these fields consist of a URL, which are links to another webpage where the information can take on any format. This gives badge issuers more flexibility in the information they add to the badge. The flip side is that this data, by not conforming to a standard, cannot be searched and indexed by a computer as easily. Thus employers are less likely to use these fields in automatically assessing a large pool of applicants.

The open badge format requires that a badge have information on three things (Crytzer & Gance, 2018; Everhart *et al.*, 2016):

1. Badge issuer

This is the organization that awarded the badge to a learner. To satisfy the requirements of the open badge format, this category includes:

- Name of the issuing organization;
- Unique internationalized resource identifier (IRI) for the organization;
- URL of the organization;
- Information about the type of organization;
- Description of the organization;
- Optional information includes:
 - Image (such as the logo) representing the organization;
 - Email of a contact at the organization;
 - Endorsement by another organization (here the endorsement refers to the post-secondary institution as a whole, not a specific badge).

2. Badge class

The section defines a particular badge (i.e., the recognition for successfully completing a specific micro-credential program). It is linked to the information above about the badge issuer. It can be awarded to more than one badge earner. It includes the following information:

- Badge name;
- Short description of what the badge represents;
- Unique internationalized resource identifier (IRI) for the badge;
- Information about the type of badge;
- Badge image, listed as a URL to the image;
- Criteria for earning the badge, provided as a URL to a webpage. The information on that webpage is human readable, not machine readable, and allows a badge verifier to see more information about what was done to earn the badge.
- Optional information includes:
 - Alignment, provided as a URL to a webpage. This information resides on another webpage and is meant to be human readable, not machine readable. It could contain information about the standards that the badge aligns to, such as a specific competency framework.
 - Tags that describe the badge and the type of learning it represents (think of a hashtag used to categorize information and make it searchable);
 - Endorsement by another organization (here the endorsement refers to the specific badge).

3. Badge assertion

This section is specific to the learner who earned the badge. The information in this section is linked to the above two. This section contains the following information:

- Recipient — name of the badge earner;
- Date on which the badge was issued;
- Information that allows the badge consumer to authenticate the information;
- Optional information includes:
 - Evidence of the work done by this learner to earn the badge, provided as a URL to a webpage. This could be, for example, a link to the badge earner's ePortfolio or digital product such as a video they created as part of their coursework. This information resides on a separate webpage, is human readable (not machine readable), and gives concrete examples of the learner's abilities.
 - Expiry date for the badge, if the skills need to be refreshed or new competency standards are expected to come into effect on a certain date;
 - Endorsement by another organization (here the endorsement refers to the learner, not the badge or post-secondary institution).

An overview of the endorsement function added to the Open Badge 2.0 version can be found in an article by Hickey (2017).

The development of the open badge format achieved four main objectives:

- **Interoperability.** As outlined above, when different internet tools and platforms use a common format for a digital badge, they can exchange information and cross-talk. This means that dedicated badge platforms can share information with learning management systems, social media platforms, and blogs, and each system knows how to interpret the information contained in the badge file.
- **Portability.** This feature is related to interoperability but focuses on the ability to move data easily between one platform to another — a critical component of digital badges since they move from the control of the institution to the control of the earner, who can then share the badge with others on digital platforms.
- **Verification.** To trust digital badges, employers and other badge verifiers want the information that they obtain in a digital badge to be accurate. They want a system that automatically checks that the digital badge is still valid (i.e., it has not expired or been revoked), that it was issued by the expected organization (i.e., that a person is not claiming a fake badge), and that the person claiming it was the person who earned it. The open badge format provides some of this authentication. The verification happens when a badge earner claims a badge and imports it into their digital wallet and when a badge verifier calls up the information of a badge. It's not a perfect system. For example, the system might not pick up a situation where the badge issuer, creator, and earner are the same entity, but future developments of the format might address such loopholes.
- **Common usage.** Adopting a common format — a set of basic information that all digital badges contain, formatted in an agreed upon manner — ensures that members of the learning and training community have a shared language and can quickly access, understand, and verify the information that digital badges contain.

Critical Information Summary (Meta-Data Manifest)

The open badge format provides guidance and consistency in terms of what information to include in a digital badge and how to structure it. This ensures that each badge contains at least the minimum amount of information that users need to vet a badge.

However, some of the fields give badge issuers greater flexibility in what they choose to share and how they share it. This is especially true of the human readable fields. For example, the open badge field that captures the criteria for earning a badge is simply a link to a webpage where badge issuers can provide additional information in a format of their choosing. The open badge format does not specify how such details should be shared. Remember that the open digital badge format

is meant to be used for more purposes than simply recognizing the completion of a micro-credential. It could be used to recognize any form of accomplishment with varying degrees of formality and assessment. A badge could be awarded, for example, for simply attending a webinar. This is why the open format is not prescriptive for the fields describing a program's content.

Micro-credentials are a more rigorous form of education, and as such, they demand more details about the learning that took place, its delivery format, the learning outcomes it targeted, the competencies achieved, as well as how they were assessed. There is a need to create a standardized way to display the micro-credential's information. This will help users understand the information more easily. Without it, there will be a degree of inconsistency in how a micro-credential is defined in an open badge format. For example, Lau (2021) describes the different ways in which six Ontario post-secondary institutions embed their micro-credential information in the badges' meta-data.

There is currently no standard way to capture and display this micro-credential-specific information in an open digital badge. The global micro-credential community has recognized this and it is an active area of work. The first attempt at creating a standard for the Criteria section of the open badge format was made by noted micro-credential scholar Beverley Oliver (2019) (see Table 3 of that document), who called it a **critical information summary** (sometimes called a meta-data manifest). Soon after Oliver suggested this structure for the Criteria field, several other organizations built on it, adopting it as the standard in their jurisdiction (e.g., the Australian Government's National Microcredentials Framework (2022, p. 3); the European Union's standard elements (Orr *et al.*, 2020; European Commission, 2021; Council of the European Union, 2022)). The eCampusOntario Micro-credential Toolkit (2022) suggests including a set of critical information in the badge of a micro-credential that aligns with this information. And on his blog, Don Presant (2023) has collated information from several sources to propose a model for the Criteria field of the open badge format that also aligns with this model. Thus, while there is no international standard, there is clear alignment and most thinkers agree on the information to include in the Criteria section of the open badge format.

While there is no formally accepted critical information summary standard in B.C., one is emerging. A group of B.C. institutions are piloting a credit bank for Ministry-funded micro-credentials that would allow learners who earn these credentials to have their learning recognized as PLAR credit at other institutions (see *TRU's Experience with the Credit Bank* in the chapter *Educational Pathways*.) As part of this pilot, the workgroup developed a critical information summary inspired by Oliver's (2019) work that would contain the information required to inform inter-institutional micro-credential recognition and transfers. A draft of the emerging B.C. micro-credential critical information summary is shown in Table 1a and 1b.

Using the critical information summary developed for the pilot micro-credential credit bank

advisory group is likely to result in the province-wide adoption of a model that allows for easier communication across institutions.

To ensure consistency across all digital badges issued by an institution, each institution may wish to establish other (institution-specific) standards such as criteria for the design of the digital badge visual (i.e., guidelines to ensure brand identity, possibly provided through a template).

Table 1a and 1b The critical information summary developed by the advisory committee for the pilot provincial micro-credential credit bank. This data standard is inspired by Beverley Oliver’s critical information summary (Oliver, 2019 (<https://dteach.deakin.edu.au/wp-content/uploads/sites/103/2019/08/Making-micro-credentials-work-Oliver-Deakin-2019-full-report.pdf>)) and matches widely accepted data requirements for the description of a micro-credential in a digital badge. This proposed standard includes mandatory fields that all credentials should include, as well as optional ones. Given that several B.C. institutions have collaborated on it (the advisory committee is composed of representatives from RRU, VCC, KPU, UBCO, TRU, and BCCAT), this format is likely to become adopted as the B.C. standard. However, note that this proposed standard is currently under development and will likely evolve as it is implemented and tested.

Table 1a. The Critical Information Summary – Core Fields

Core Field	Description
Institution	The institution or organization issuing the micro-credential.
Title	The title of the micro-credential.
Description	Description of the structure of the micro-credential and a summary of the content (key topics) that will be taught.
Delivery Mode	The method of delivery of a micro-credential, e.g., on site, online or a combination of both, and whether the micro-credential requires synchronous engagement or is asynchronous.
Learner Effort (estimated hours)	The commitment/ effort (volume of learning) required of learners. This estimate of hours should include: <ul style="list-style-type: none"> • # of hours of in person face-to-face contact with instructional staff. • # of hours of peer-to-peer engagement and its mode. • # of hours of asynchronous online content and reading/ viewing of audiovisual material, etc. • # of hours spent on assessment.
Pre-requisites (if applicable)	List any pre-requisites required before taking the micro-credential course or program.
Learning Outcomes	The knowledge, skills or competencies the learner will acquire upon completing a micro-credential, course, program, and credential assessment.

Core Field	Description
Assessment Method	The method and type of assessment (competency versus proficiency).
Credit/Other recognition	Credit towards other credit courses, credit towards vendor/ industry certifications, pathways or other recognition that can be given upon completion of a micro-credential.
Learner Pathways (stacking/ laddering)	Any other micro-credentials that a micro-credential combines with that lead to an overall certification being awarded upon completion (stacking), or entry into a further credit course or program (laddering).
Quality Assurance Statement	The assurance that micro-credentials are developed and delivered in an educationally sound manner for learners. If there is a review cycle for the micro-credential, please specify.

Table 1b. The Critical Information Summary – Optional Fields

Optional Field	Description
Department	The department within the institution that developed and delivers the micro-credential.
Level	Intended level of learning for micro-credential. (e.g., 1st year, 2nd year, 3rd year, 4th year, graduate level).
Endorsement	The assurance that micro-credentials meet an industry need and reflect skills sought by employers. For example, a statement of support from industry.
Instructor Qualifications	The academic and/or industry certification required to teach the micro-credential.
Further information	Additional comments might include a statement about depth of learning, learner resources, linkages to an industry competency framework, or regulatory body for the micro-credential as non-credit for non-specified credit.

Suggested Resources

Open Digital Badges

A few primers on open digital badges.

Clements, K., West, R., & Hunsaker, E. (2020). Getting started with open badges and open microcredentials. *International Review of Research in Open and Distributed Learning*, 21(1), 154–172. <https://doi.org/10.19173/irrodl.v21i1.4529>

ContactNorth. (2019). *Ten facts about open digital badges*. <https://teachonline.ca/fr/node/101329>

Alternative and digital credentials and badges

Don Presant (<https://donpresant.ca/>), a Canadian authority on digital badges, maintains a blog that provides insightful commentaries on various aspects of digital badges. Notably, the blog features numerous figures and charts to help people understand and visualize important concepts, which are available for re-use and sharing under a Creative Commons licence.

The following edited book contains chapters on several aspects of micro-credentials and digital badges.

Ifenthaler, D., Bellin-Mularski, N., & Mah, D. K. (2016). *Foundation of digital badges and micro-credentials*. Springer International Publishing. <https://link.springer.com/content/pdf/10.1007/978-3-319-15425-1.pdf>

An excellent report providing an overview of alternative digital credentials with recommendations.

ICDE Working Group. (2019). *The present and future of alternative digital credentials (ADCs)*. The International Council for Open and Distance Education. <https://www.icde.org/publication/the-present-and-future-of-alternative-digital-credentials/>

A summary of principles for creating successful digital badging programs based on examples.

Smith, S. R. (2015). *10 lessons learned from an award-winning digital badging program*. <https://www.nextgenlearning.org/articles/10-lessons-learned-from-an-award-winning-digital-badging-program>

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Media Attributions

- Figure 1. This Venn diagram was adapted from Don Present, who had himself adapted the image from Doug Belshaw (<https://scope.bccampus.ca/mod/book/view.php?id=17471&chapterid=3850>) which is under a CC BY licence (<https://creativecommons.org/licenses/by/4.0/>).
- Figure 2. Examples of the image component of a digital badge, as issued by Capilano University's school of continuing studies by Capilano University's continuing studies, used with permission.
- Figure 3. Example of four digital badges that learners in the UBCO course Introduction to Digital Media can earn by Myron Campbell, UBCO, used with permission.

CONCLUSION

Outlook

Which areas are currently under development for micro-credentials in B.C. post-secondary institutions? What comes next?

Chapter Audience:



Administrators



Program Managers



Faculty

We created this toolkit to meet the needs of B.C. post-secondary institutions as they develop and integrate micro-credentials into their ecosystem. We captured stories from colleagues who devised solutions to common challenges and hope they inspire your work.

Some aspects of micro-credentials in B.C. are still unknown. For example, what examples of financially sustainable business models for micro-credential programs can be easily replicated across institutions? What is the place of continuing education in offering micro-credentials? How can post-secondary institutions ensure rigorous quality assurance processes without affecting their ability to be responsive and flexible? What are best practices for engaging Indigenous communities to create micro-credentials that meet Indigenous and broader societal needs? Will B.C. follow Ontario's lead and make micro-credential programs eligible for student aid?

The field is rapidly evolving. Several institutions, led by TRU – Online Learning, are designing and piloting a rigorous process, aligned with international best practices, for recognizing micro-credential learning across institutions. VCC is developing an inter-institutional partnership framework to help institutions work together to offer micro-credentials. EducationPlannerBC (<http://www.educationplannerbc.ca/search/microcredentials>) now allows learners to search micro-credentials offered in the province – effectively serving as the provincial repository of micro-

credentials, not unlike the eCampusOntario Micro-credentials Portal (<https://microlearnontario.ca/>) and the New Zealand Register (<https://www.nzqa.govt.nz/nzqf/search/microcredentials.do>).

As this toolkit went into production, several new resources were published. This is the challenge of an emerging field: the pace of innovation and development is rapid. This document will no doubt need to be updated not too long after its launch.

If you have resources to contribute — a story of success or struggle with its lessons learned, a template you created, a resource you found helpful — please share them with us (<mailto:projects@bccampus.ca>). Together we can compile a resource that evolves and continues to meet the needs of the community.

Versioning History

This page provides a record of edits and changes made to this book since its initial publication. Whenever edits or updates are made in the text, we provide a record and description of those changes here. If the change is minor, the version number increases by 0.01. If the edits involve substantial updates, the version number increases to the next full number.

The files posted by this book always reflect the most recent version. If you find an error in this book, please fill out the Report an Error (<https://collection.bccampus.ca/report-error>) form.

Version	Date	Change	Details
1.00	September 7, 2023	Book published.	
1.01	September 18, 2023	Error corrections.	Corrected typos. Removed quote in Education Pathway. Corrected attribution for Figure 4 in Design Considerations: Practical Guide.
1.02	December 6, 2023	Link removed.	Removed invalid link in Design Considerations: Practical Guide – Suggested Resources under "DACUM (Guides)".