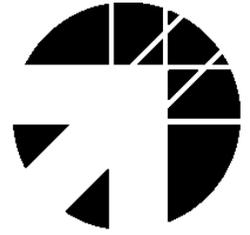


# Higher Education Quality Council of Ontario



*An agency of the Government of Ontario*



## **Making Sense of Microcredentials**

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## Table of Contents

List of Figures.....	v
List of Tables.....	v
Executive Summary .....	1
Introduction .....	3
Methodology .....	4
What is a Microcredential? .....	5
How Do Employers Perceive Microcredentials? .....	9
How Do Canadians Perceive Microcredentials? .....	11
How are Colleges and Universities Approaching Microcredentials? .....	13
Discussion .....	15
References .....	19
Appendix 1: Methodology.....	21
Interviews .....	21
Surveys .....	23
Survey of Prospective Students .....	23
Survey of Canadian Postsecondary Institutions .....	23
Survey of Canadian Employers.....	23
Appendix 2: Accessible Versions of Report Graphics.....	26

## List of Figures

Figure 1: Defining Features of a Microcredential .....	5
Figure 2: Common Microcredential Features .....	6
Figure 3: HEQCO's Microcredential Definition.....	6
Figure 4: Microcredential Typology .....	8
Figure 5: Employer Survey: Imagine you came across a microcredential on the application of a job candidate. How favourably would you consider the following features of that microcredential? (n= 151) .....	9
Figure 6: Employer Survey: Imagine that your organization is considering offering microcredentials for internal staff training/development. How favourably would you consider the following possible features of a microcredential? (n=143) .....	10
Figure 7: Employer Survey: Thinking about the past three years, how much would you say your organization has invested on average, per employee, per year, in professional development or learning activities? (n=144) .....	11
Figure 8: Survey of Canadians: Would you be interested in microcredentials for... (n=2000)....	12
Figure 9. Survey of Canadians: When making a decision as to whether or not you should obtain a microcredential, would any of the following be a concern? (n=2000) .....	12
Figure 10: Survey of Canadians: How important are each of the following potential characteristics of a microcredential? .....	13
Figure 11: Postsecondary Survey: How favourably would you rate the following features of a microcredential?.....	14
Figure 12: Microcredential Quality Markers for Postsecondary Institutions .....	16
Figure 13: Who is the (Microcredential) Learner?.....	17

## List of Tables

Appendix Table 1: Interview Participants.....	22
Appendix Table 2: Interviewee Affiliations .....	23
Appendix Table 3: Methodology .....	25
Appendix Table 4: Accessible Version of Figure 4: Microcredential Typology .....	26
Appendix Table 5: Accessible Version of Figure 12: Microcredential Quality Markers for Postsecondary .....	27
Appendix Table 6: Accessible Version of Figure 13: Who is the (Microcredential) Learner?.....	27

## Executive Summary

The Ontario government's 2020 budget committed almost \$60 million to a microcredential strategy for employment-related upskilling. To help optimize use of this funding, researchers at the Higher Education Quality Council of Ontario (HEQCO) sought to:

- Develop a common definition for advancing innovation and effective communication about microcredentials.
- Offer insight into the perceived and potential value of microcredentials by engaging end users (employers and prospective students) across Canada.

HEQCO conducted a multi-phase, mixed-methods research project including a literature review, interviews (44), and surveys of Canadian employers (201), prospective students (2,000 Canadian adults) and postsecondary institutions (105).

Our research findings highlight an awareness gap, among Canadians and Canadian employers, about what microcredentials are and who they serve. Even among postsecondary institutions, the term is used inconsistently. Drawing from international definitions and the advice of the experts we interviewed, we offer a definition that is intentionally simple and inclusive, with room for adaptations and variation. Our definition identifies the narrow scope and short duration of microcredentials as essential features. By using the word “program,” the definition also implies an intentional learning experience or pedagogy, differentiating microcredentials from digital badges:<sup>1</sup>

A microcredential is a representation of learning, awarded for completion of a short program that is focused on a discrete set of competencies (i.e., skills, knowledge, attributes), and is sometimes related to other credentials.

When provided with a definition, the employers and prospective students who responded to our surveys showed interest in microcredentials. Results from our prospective student survey suggested that Canadians care that microcredentials are affordable and that employers see value in them. Employers favour microcredentials that are competency-based and respond to industry or community needs.

Postsecondary institutions can drive interest in microcredentials among prospective students and employers by using a simple, consistent definition. Being transparent about key “quality markers,” (i.e., features that key stakeholders see value in) will also increase the appeal of microcredentials. Specifically, institutions should be clear about whether and how a microcredential is: relevant (to industry and community), flexible, assessed, accredited, standardized and stackable. We encourage postsecondary institutions to reflect these quality markers in their programs where it makes sense to do so, though we caution against pursuing stackability at the expense of the credential's independent value. In our view, colleges and universities should concentrate less on deconstructing existing curricula for stackability purposes, and more on designing innovative, focused content that serves a new market of students.

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<sup>1</sup> Digital badges are used to indicate skills, knowledge or interest developed at any time and through any means and “may or may not be related to an academic programme of study”, according to the OECD(Kato et. Al., 2020).

Microcredentials stand to serve important functions, both as part of an effective lifelong learning system, and as a way of efficiently responding to emerging social and economic needs. Our findings indicate that institutions and governments should focus their microcredential strategies on upskilling adult learners with specific training needs, whose prior learning and experience has already provided a strong foundation of knowledge and transferable skills. Secondary markets for microcredentials may include current postsecondary students looking to develop additional transferable skills, or recent graduates keen to explore specific career paths. Microcredential strategies should not seek to replace traditional programs or address the comprehensive reskilling needs of learners; we encourage governments and institutions to consider competency-based education programs for the latter.

As postsecondary institutions continue to innovate and offer new microcredentials, HEQCO will turn our focus to matters of quality. Ongoing evaluation of microcredential programs and their outcomes will ensure Ontario learners are served most effectively.

## Introduction

The COVID-19 pandemic has been hugely impactful on the Canadian economy and labour market, causing record high long-term unemployment (Statistics Canada, 2021). In the past, Canadians have seen improved employment outcomes when they pursue postsecondary education following job loss (Pichette et. al, 2020). As the pandemic continues to affect both job security and job requirements, Canadians will undoubtedly look to our postsecondary institutions for their evolving education needs.

Even prior to the pandemic, technological changes, globalization and demographic shifts were disrupting the labour force at an unprecedented pace, creating a need for a more effective lifelong learning system. In May of 2020, HEQCO called for flexible postsecondary training programs that would allow Canadians to adapt and thrive in times of job loss or change (Pichette et. al). The ongoing disruption caused by the global COVID-19 pandemic has only strengthened this need.

Postsecondary institutions and governments are responding by experimenting with training programs geared to adult learners. These programs include microcredentials which have emerged in recent years as a complement to traditional credentials. These shorter learning programs offer targeted opportunities to upgrade skills and transition or advance in the workforce. Governments around the world are taking an interest and offering support for program development (Cirlan & Loukkola, 2020a).

The Ontario government's 2020 budget announced nearly \$60 million for a microcredential strategy, including new programs, an online portal and a public awareness campaign. The funding is also being used to expand the eligibility of Ontario student loans for those enrolled in “ministry-approved, quality-assured microcredentials programs” (Government of Ontario, 2020a). The 2021 Ontario budget announced an additional \$2 million for the development of a virtual skills passport. Other Canadian provinces, such as Manitoba and British Columbia, are also urging postsecondary institutions to develop and offer a range of microcredentials ( Canadian Press, 2021; Province of Manitoba, 2020).

As is often the case with innovation, the microcredential work in Canada is happening quickly and without much precedent or evidence. It is also happening without a consistent interpretation of what the word “microcredential” means (Pichette & Rizk, 2020). HEQCO set out to inform the strategic development of microcredentials in Ontario and other Canadian provinces. Specifically, we sought to:

- Develop a common definition for advancing innovation and effective communication about microcredentials;
- Offer insight into the perceived and potential value of microcredentials by engaging end users (employers and prospective students) and postsecondary institutions across Canada.

To this end, HEQCO conducted a multi-phase, mixed methods research project. While our findings are informed by stakeholders from across Canada and other countries, the focus of our work is Ontario’s postsecondary sector. We are also mindful that industry and non-profit organizations are also experimenting with the design and delivery of microcredentials and hope this research will benefit their work as well.

## Methodology

Our methodologies included a literature review, interviews and three surveys. In addition to reviewing existing literature on microcredentials, we engaged international experts and stakeholders in semi-structured interviews. Our interviewees included individuals in management and training roles in both the private and not-for-profit sectors, and in senior leadership positions such as president, provost and registrar at colleges and universities. In total, we conducted 44 interviews between February 2020 and March 2021.

With support from the Business + Higher Education Roundtable (BHER)<sup>2</sup>, we administered surveys to Canadian employers, representatives from Canadian postsecondary institutions and prospective students (i.e., adults, aged 18–64 not currently enrolled in a postsecondary program). The surveys of employers and prospective students gauged awareness of and interest in microcredentials as a means of upskilling. The survey of postsecondary institutions, which was conducted with additional support and input from Colleges and Institutes Canada (CICan),<sup>3</sup> examined how stakeholder interests align with existing and planned microcredential offerings at postsecondary institutions. In total, 201 Canadian employers, 2,000 prospective students, and 161 representatives from 105 postsecondary institutions responded to our surveys — all of which were administered online between September 2020 and January 2021.<sup>4</sup> Details of our research methods are contained in Appendix 1.

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<sup>2</sup> BHER is a non-partisan, not-for-profit organization that brings together some of Canada's largest companies and leading postsecondary institutions to drive collaboration and build opportunities for students.

<sup>3</sup> CICan is the national, voluntary membership organization representing publicly supported colleges, institutes, cegeps and polytechnics in Canada and internationally.

<sup>4</sup> The employer and postsecondary surveys were voluntary, non-representative and non-random. These surveys were conducted by HEQCO using SimpleSurvey. Our analysis was limited to descriptive statistics. The prospective student survey was conducted by Abacus Data and drew from a random sample of panelists. The data was weighted according to census data to ensure that the sample matched Canada's working age population according to age, gender, educational attainment and region. The margin of error for a comparable probability-based random sample of the same size is +/- 2.1%, 19 times out of 20.

## What is a Microcredential?

The term “microcredential” is being used to describe a variety of educational experiences offered by diverse providers. Colleges, universities, employers (e.g., Google, IBM and Salesforce), speciality providers (e.g., FutureLearn, Udacity and EdX), and non-profit organizations are all using variations of the term to describe their unique programs (Fain, 2020; Shah, 2020). Meanwhile, some of these providers and other international organizations are proposing definitions and frameworks for understanding how microcredentials differ from traditional programs. While there is no single, universal definition of “microcredential,” there are some consistent themes.

Nearly all microcredential definitions highlight two distinguishing features:

Figure 1: Defining Features of a Microcredential



**Narrow scope:** Microcredentials focus on developing a discrete set of competencies. In contrast, traditional credentials focus on a comprehensive set of interrelated competencies.



**Short completion time:** A narrow scope of learning allows students to obtain microcredentials faster than most traditional credentials.

UNESCO describes how these features are inter-related: “micro-credentials focus on modules of learning much smaller than those covered in conventional academic awards, which often allow learners to complete the requisite work over a shorter period” (Borhene & Keevy, 2018). The definition adopted by Australia’s Expert Panel for their Qualifications Framework is even more succinct, defining a microcredential as “less than a formal qualification” (Oliver, 2019).

eCampusOntario<sup>5</sup> has embraced a definition put forward by the Royal Melbourne Institute of Technology (RMIT) in Australia. This definition also highlights a narrow scope and short completion time:

Micro-credentials are used to certify an individual’s achievements in specific skills and differ from traditional education credentials, such as degrees and diplomas, in that they are shorter, can be personalised, and provide distinctive value and relevance in the changing world of work’ (eCampusOntario, 2019a).

RMIT specifies that in addition to a narrow scope and short completion time, microcredentials are personalized and relevant. Features like relevance, stackability, flexibility and assessment appear in some international definitions of the term, though inconsistently. Figure 2 describes these features with examples.

<sup>5</sup> “eCampusOntario is a provincially funded centre of excellence in technology-enabled teaching and learning. eCampusOntario leads a consortium of 46 publicly funded Ontario colleges, universities, and one Indigenous Institute to develop and test online learning tools to advance the use of education technology and digital learning environments. With funding from the government of Ontario, eCampusOntario has so far facilitated 36 pilots at Ontario colleges and universities” (Ontario Ministry of Colleges and Universities, 2021).

Figure 2: Common Microcredential Features

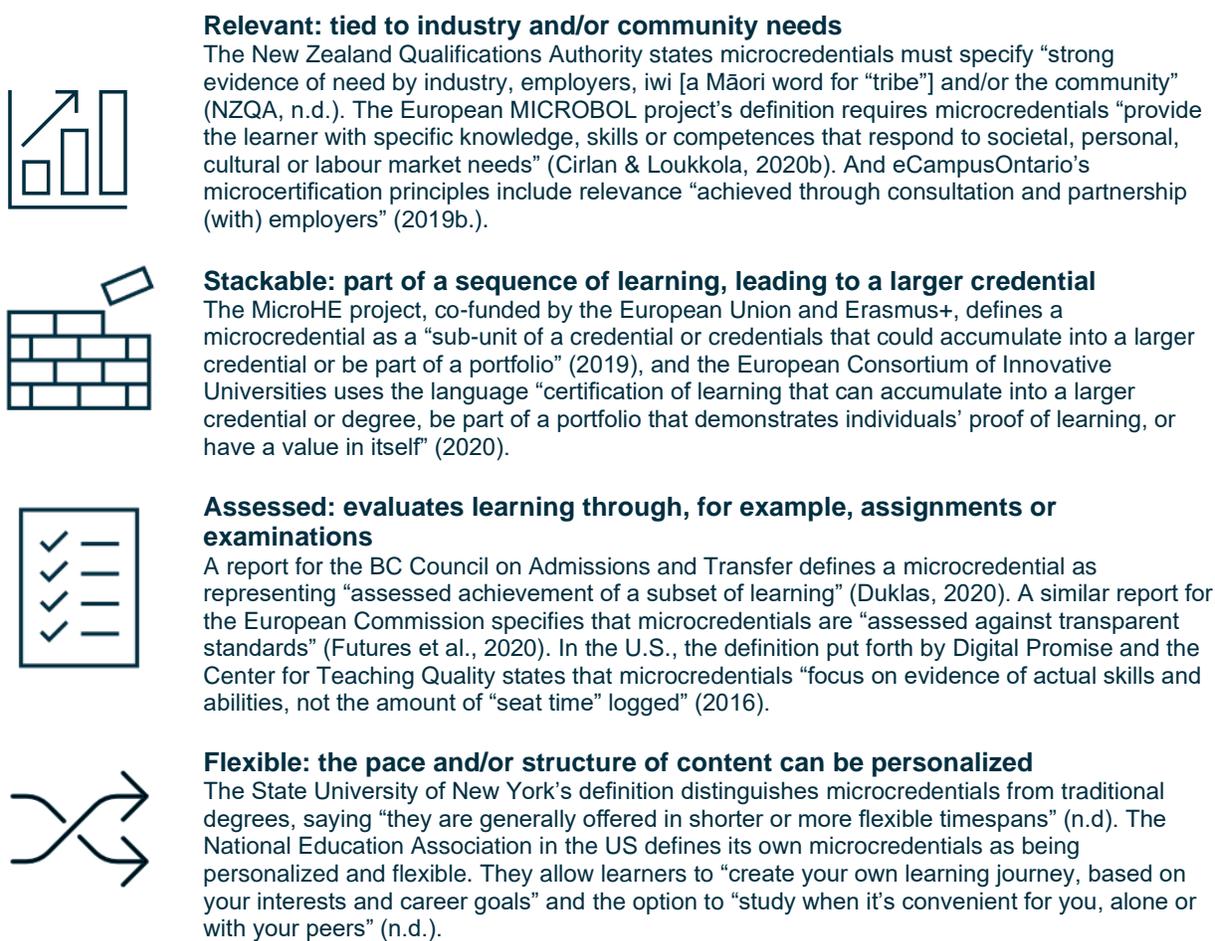


Figure 3: HEQCO's Microcredential Definition

**“A microcredential is a representation of learning, awarded for completion of a short program that is focused on a discrete set of competencies (i.e., skills, knowledge, attributes), and is sometimes related to other credentials.”**

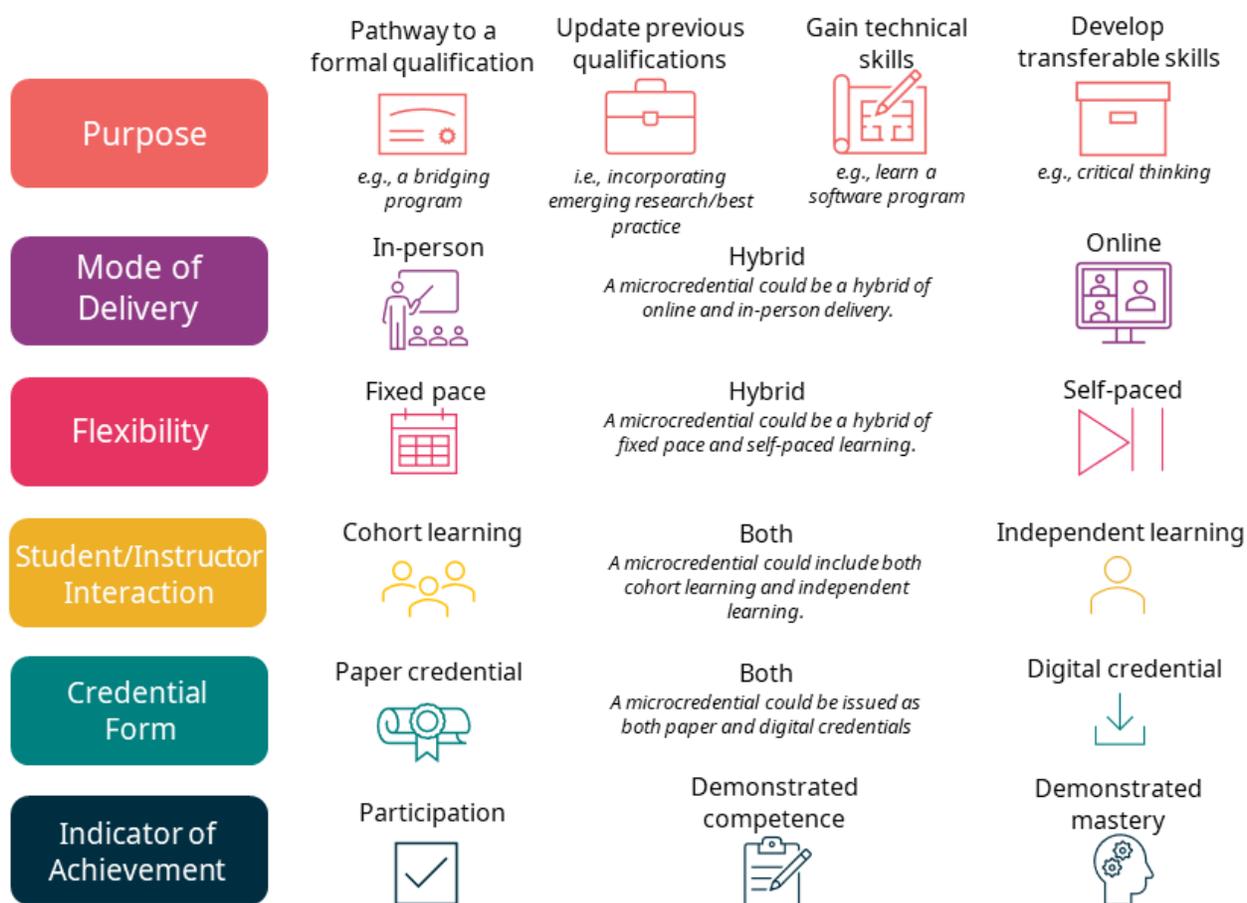
There are some important things to highlight about our definition:

- Like most international definitions, ours identifies the narrow scope and short duration of microcredentials as essential features.

- By using the term “program” we imply that there is an intentional learning experience or pedagogy associated with the credential. In this way, microcredentials are distinct from digital badges which are used to indicate skills, knowledge or interest developed at any time and through any means and “may or may not be related to an academic programme of study” (Kato et al., 2020).
- We define “competencies” as skills, knowledge and attributes, in alignment with the United States government (Committee on Education and the Workforce, 2017) and our previous work on competency-based education (Pichette & Watkins, 2018).
- We note the potential relationship between microcredentials and other credentials. For example, there may be a prerequisite to participate in a particular microcredential, or microcredentials could serve as pathways to other credentials. That said, these relationships are not integral, and microcredentials should be valuable to the learner on their own.
- Our definition uses “microcredential” as an umbrella term. Governments and other funding bodies, as well as institutions themselves, may use more specific definitions (which fit within ours) to advance their unique aims. eCampusOntario, for example, has principles for a specific type of microcredential, a micro-certification, that funding recipients must reflect (2019b.).
- We do not attach a time span or limit, though governments and other funding bodies may set parameters to serve their interests. For example, to be eligible for Ontario Student Assistant Program (OSAP), the Government of Ontario has indicated that microcredentials must not exceed 12 weeks of study (2020b).

In Figure 4, we illustrate how our definition can lead to variation in practice, and indeed, how the microcredentials currently being offered across Canada do vary. Our goal with this graphic is to help address some conflation of terms and misguided assumptions about microcredentials (e.g., that they are all offered online). To some extent this same graphic could be applied to most other credentials offered by postsecondary institutions.

Figure 4: Microcredential Typology



Microcredentials can vary in terms of the purpose they serve for the learner, or the way the credential is stored and shared — in some cases, microcredential earners receive a digital badge embedded with metadata about the issuing institution, while others obtain a traditional paper credential. Microcredentials may recognize a student’s participation in a program (i.e., attendance), or their demonstrated competence on assignments or exams (i.e., that they passed). In some cases, microcredentials may be awarded only when mastery — a higher benchmark than competence — is achieved. For example, the learner may be required to retake assessments until they achieve a grade of 90%.<sup>6</sup>

Having offered a framework for understanding what microcredentials are, the following sections explore the questions of who they serve and how. Below we offer insight into stakeholder perceptions of microcredentials and help illustrate why the definition and typology above are needed.

<sup>6</sup> For more details about mastery-based learning, see HEQCO’s 2018 report [Competency-based Education: Driving the Skills-measurement Agenda](#).

## How Do Employers Perceive Microcredentials?

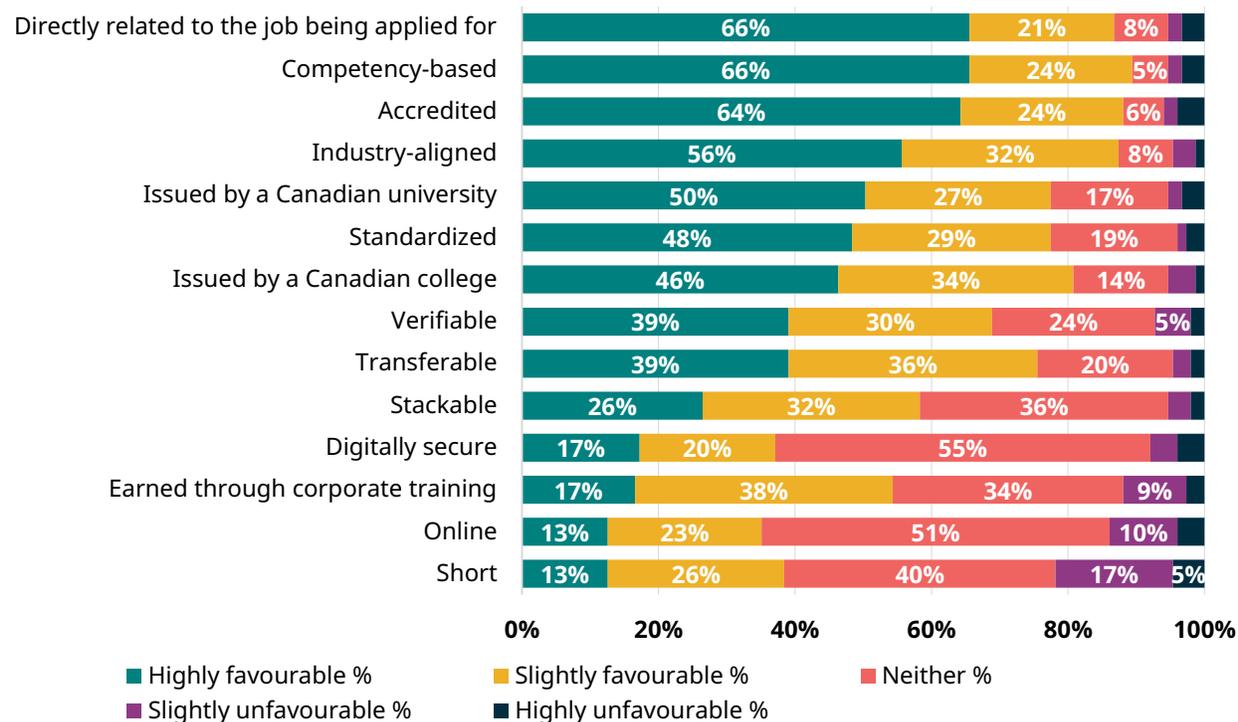
With the support of BHER, we surveyed 201 Canadian employers between December 12, 2020 and January 18, 2021. Respondents represented organizations from a range of industries and of various sizes; 35% had fewer than 50 employees while 18% had 10,000 or more. Most respondents were based in Alberta (66%), followed by Ontario (23%), though all provinces were present in the sample. We also interviewed employers who expressed interest via the survey or responded to outreach from BHER. We include relevant insights from interviews alongside the survey results.

Most of the employers we interviewed were unclear about the meaning of the word “microcredential,” which was borne out in the survey results — 59% of respondents were “not familiar at all” with the term, and only 10% indicated they had a good understanding. Respondents were even less familiar with synonymous terms like micro-certification, nanodegree and Nexus degree.

Once provided with a definition, we asked respondents how they would react to seeing a microcredential on the application of a job candidate (

Figure 5). About 60% of respondents indicated microcredentials would increase their confidence in a prospective employee’s skills. About two-thirds said they would see a microcredential as highly favourable if it were directly related to the job at hand, competency-based and/or accredited. Survey respondents were less enthusiastic about the “short” aspect of microcredentials from a hiring perspective.

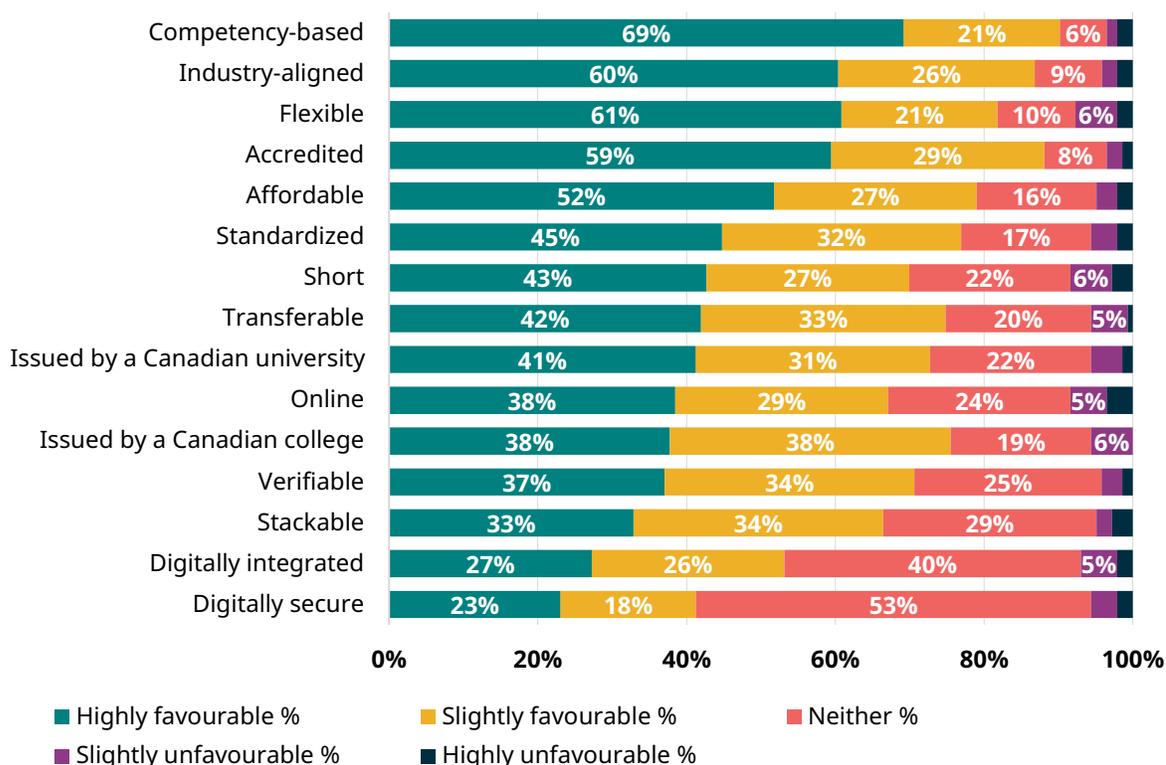
Figure 5: Employer Survey: Imagine you came across a microcredential on the application of a job candidate. How favourably would you consider the following features of that microcredential? (n= 151)



Respondents had a slightly different take when asked to think about microcredentials for the purpose of internal staff training and development (

Figure 6). In this context, nearly 70% said that they would have a highly favourable view of microcredentials that were competency-based. Alignment with industry and flexibility were the next most favourable features. In this case, respondents had a relatively positive view of the shorter length of a microcredential.

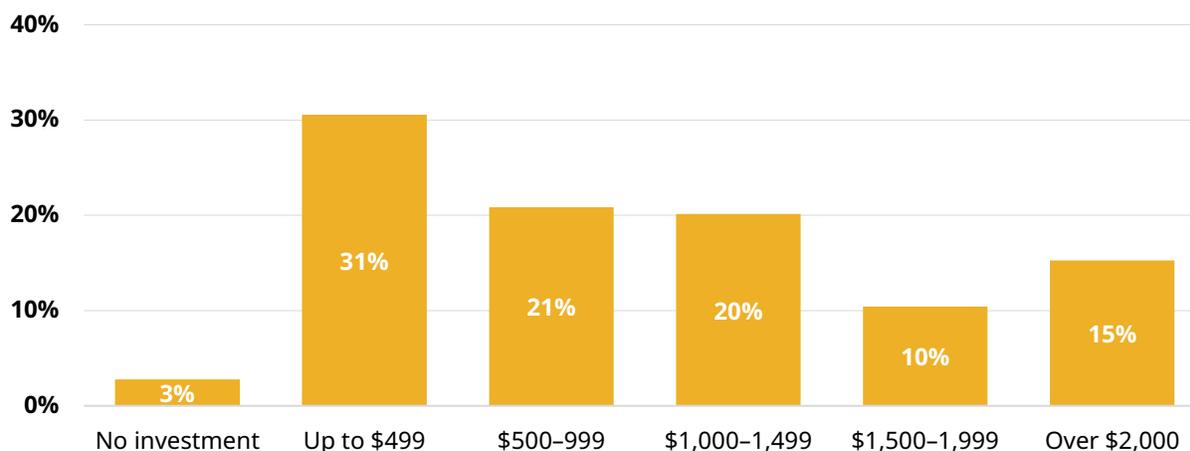
Figure 6: Employer Survey: Imagine that your organization is considering offering microcredentials for internal staff training/development. How favourably would you consider the following possible features of a microcredential? (n=143)



Most employer respondents (70%) indicated that microcredentials could facilitate employee retention. About 60% thought it would make sense to develop and offer microcredentials in house for their employees, and 54% were open to working with postsecondary partners to deliver them.

Most employers indicated that staff professional development has been a priority, with 86% saying their organization offered development and/or learning opportunities in the last three years. On average over the same time span, about half (52%) reported spending \$1,000 or less per employee (Figure 7).

Figure 7: Employer Survey: Thinking about the past three years, how much would you say your organization has invested on average, per employee, per year, in professional development or learning activities? (n=144)



Overall, the employers who participated in our survey see potential for microcredentials to play an important role in lifelong learning: 69% see microcredentials as meeting a need for upskilling adults without previous postsecondary experience, and 73% said the same for adults with previous postsecondary experience. Some of the employers we interviewed also shared that microcredentials could hold value early in an educational journey as a way of introducing learners to a field of interest before they commit. For example, a microcredential could serve as a precursor to an apprenticeship program, or as a way of demonstrating interest/commitment to a prospective employer.

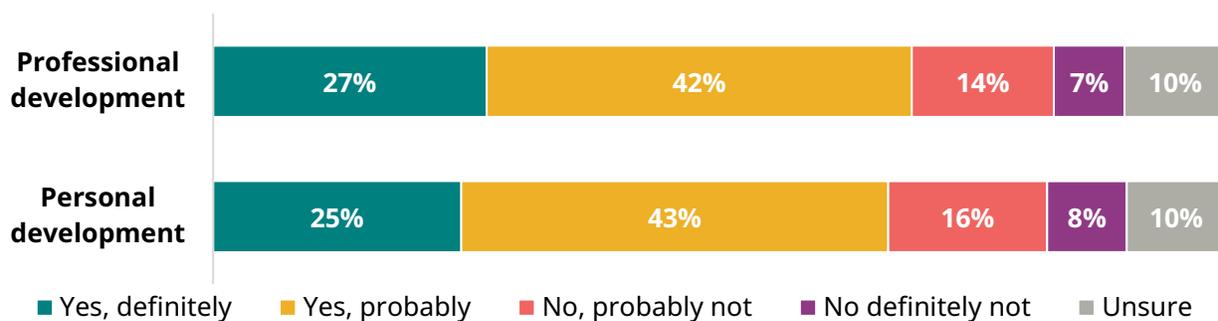
## How Do Canadians Perceive Microcredentials?

Working with Abacus Data, we surveyed 2,000 Canadian residents, aged 18–64, between September 1 and 5, 2020. We refer to this group as “prospective students” as they were not enrolled in postsecondary programs at the time of the survey.

Only one-quarter of the Canadians surveyed had heard of microcredentials, and fewer (19%) could provide some kind of definition. Survey results indicate awareness of the term was higher among younger, working-age Canadians; those with greater household incomes, and those with a university education.

Once survey respondents were provided with a definition, their interest in microcredentials was high: 74% of working age Canadians demonstrated interest in microcredentials for either professional development, personal development or both (Figure 8). Survey respondents recognized the value of short, focused programs today and in the future, with 78% saying upskilling and continual education will be important for “future-proofing” their careers. In particular, respondents expressed a demand for upskilling related to transferable skills like critical thinking, communications and leadership.

Figure 8: Survey of Canadians: Would you be interested in microcredentials for... (n=2000)

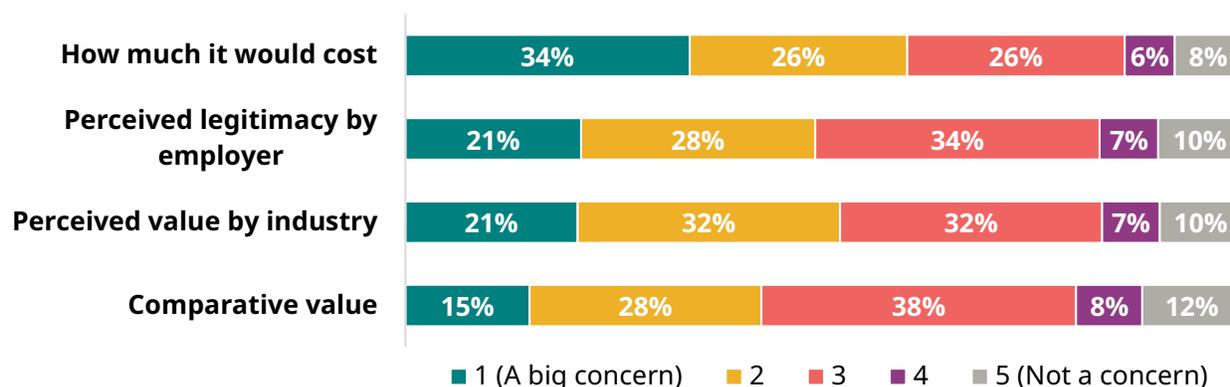


Interest in career change may be driving part of the appeal; 42% of employed respondents expressed interest in either changing employers or careers. The pandemic is also having an effect; 68% of respondents experienced some kind of disruption to their work as a result of COVID-19, including, for 32% of employed respondents, having to learn new skills on the job. Of unemployed respondents, 57% were interested in returning to the workforce in an entirely new field. Among employed respondents, increased earnings and interest in learning something new or acquiring new skills are other key drivers of interest.

Cost and perceived value by industry were the biggest concerns about microcredentials voiced by respondents. That said, cost is generally a bigger concern for those who are less interested in microcredentials overall (e.g., older Canadians who live in lower income households). There is also a noticeable uptick in concern about costs for those in IT/business/finance/professional services. Those in healthcare, education and IT/business/finance/professional services are the most concerned about the perceived value by employers within their respective industries.

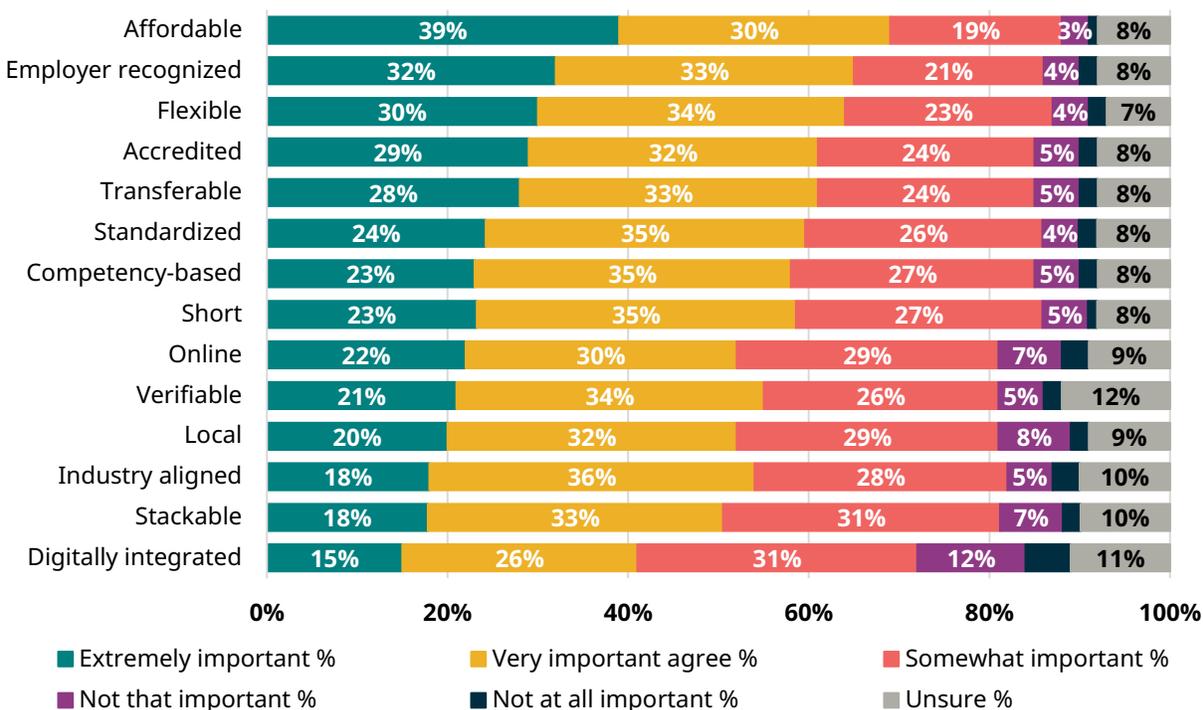
Our survey suggests Canadians who are interested in microcredentials for personal and professional development show similar price sensitivities (Figure 9). Only about 25% of respondents said they would pay more than \$250 of their own money for a hypothetical microcredential. That said, a third of respondents indicated they have access to financial support for professional learning through their employer. One-quarter indicated they have an internal microcredential program at their place of work.

Figure 9. Survey of Canadians: When making a decision as to whether or not you should obtain a microcredential, would any of the following be a concern? (n=2000)



The Canadians surveyed were given a list of potential microcredential features, like the ones presented to employers. After “affordable” and “employer recognized,” respondents indicated that whether a microcredential is “flexible” is most important (Figure 10).

Figure 10: Survey of Canadians: How important are each of the following potential characteristics of a microcredential?



Lastly, about 70% of the Canadians surveyed indicated that the lack of a widely used definition makes it difficult to understand the value of microcredentials. Standardizing use of the term will help address concerns working-age Canadians have about microcredentials, especially for those already showing interest.

## How are Colleges and Universities Approaching Microcredentials?

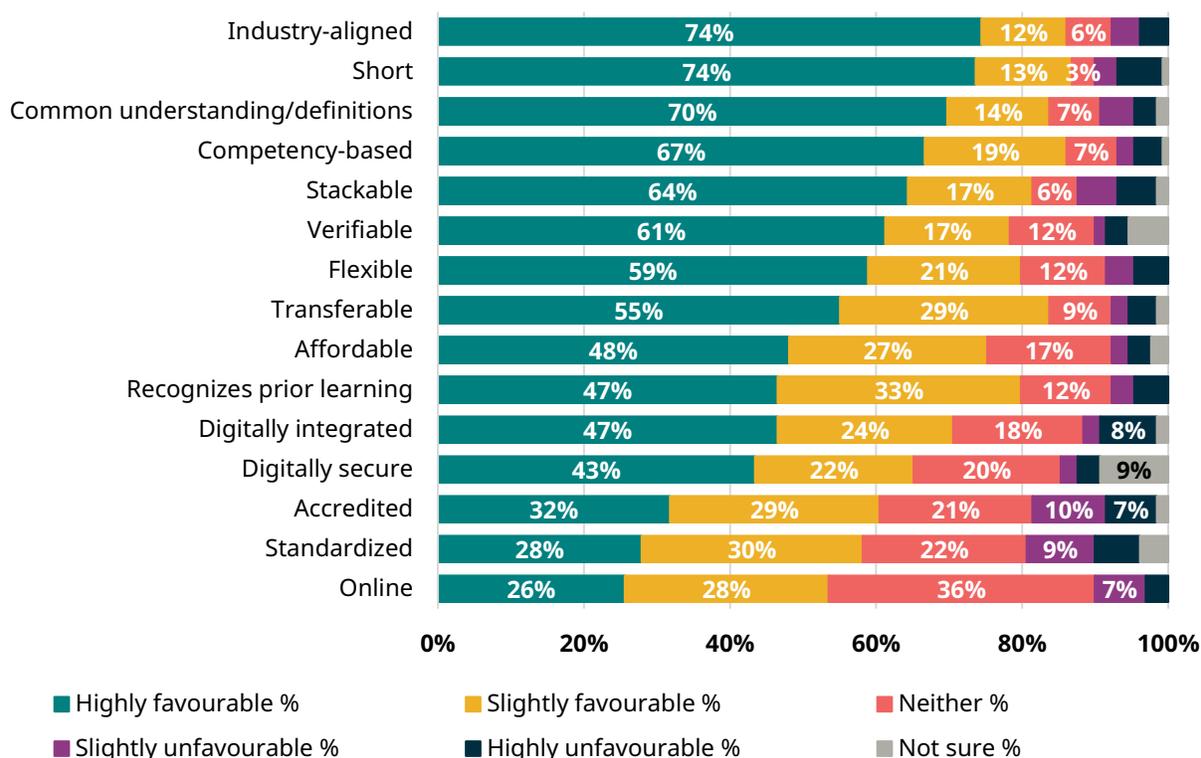
In partnership with BHER and CIGan, we surveyed publicly assisted colleges (including polytechnics and CÉGEPs) and universities across Canada between November 11 and December 15, 2020. In total, 161 representatives responded on behalf of 105 institutions; 67% of them were CIGan members. Most respondents were in leadership roles at their institution (e.g., dean, department chair or vice-provost).

Most institutions represented in the survey were either already offering microcredentials or planning to do so in the future. Most of those already offering microcredentials indicated doing so as stand-alone credentials (89%) or as part of corporate training (73%), and some are offering stackable microcredentials that can be combined (39%). Respondents indicated that by and large, postsecondary institutions are targeting working adults who are looking to change

their occupation (92%) and employees/potential employees of industry partners (91%) for their microcredential programming. Most respondents see microcredentials as a way of accessing a new market of students.

College and university respondents were well-aligned in terms of what they think are the most favourable features of microcredentials. Respondents rated relevance and industry-alignment as the most favourable;<sup>7</sup> being short and bearing a common understanding/definition were ranked second and third ( Figure 11). Notably, 36% of respondents were indifferent about whether a microcredential should be offered online.

Figure 11: Postsecondary Survey: How favourably would you rate the following features of a microcredential?



Most respondents thought microcredentials could help address transferable (86%) and technical (81%) skills gaps. And many reported that the COVID-19 pandemic has accelerated the need for these sorts of programs. It is not surprising then, that 83% of the representatives taking our survey report their institutional leadership is encouraging the development of microcredentials (though less than 40% claim to have a framework or strategy to guide them).

We conducted followup interviews with survey respondents who expressed interest and others identified by snowball sampling; we completed 17 postsecondary interviews in total. Our interviews with postsecondary representatives reinforced the findings described above and explored some ideas about what form microcredentials should take. For example, several interviewees raised the question of how to define “short.” Should the length of a microcredential

<sup>7</sup> Relatedly, 90% of respondents said their institution is open to working with industry/community partners around microcredentials (e.g., to co-develop microcredentials, or to get advice or endorsement).

be prescribed, or would that stifle innovation in areas like mastery-based learning? With mastery-based learning, a student progresses at their own speed, based on their own demonstrated competence, and may earn a credential faster or slower than their peers depending on their prior learning and experience. Other lines of inquiry raised by interviewees include:

- 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 offerings to capitalize on economies of scale?
- Is there something essential lost in the modularization of learning (e.g., general education courses, interconnected skillsets)?

These are important questions for decision-makers to consider and explore further.

Nearly all postsecondary interviewees flagged the lack of clarity and consistency with which the word “microcredential” is used as a major challenge. Some interviewees expressed the difficulty of articulating the value of these new programs to employers and students without a common definition.

## Discussion

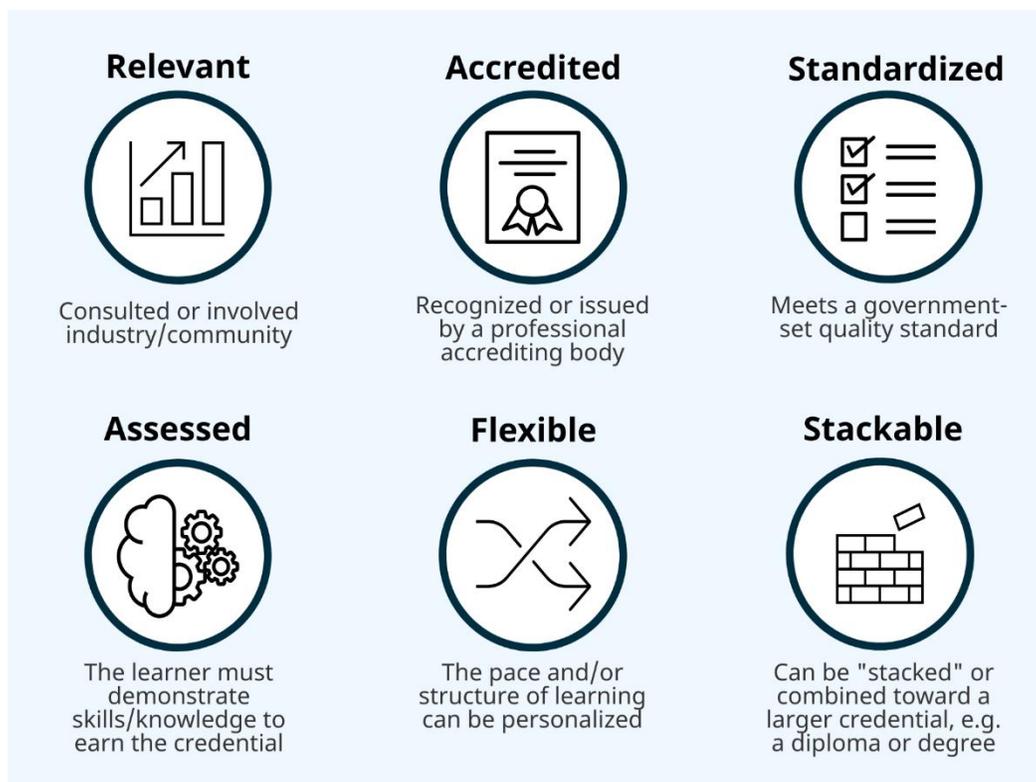
Our research highlights an awareness gap, among Canadians and Canadian employers, about what microcredentials are and who they serve. Canadians affected by economic disruptions should be aware of emerging opportunities for upskilling and employers should be primed to recognize them. By communicating that microcredentials are shorter, more focused offerings than traditional credentials, Ontario postsecondary institutions and government can help establish a common understanding from which to drive interest and uptake. Using a simple, inclusive definition like the one provided in Figure 3 will also leave room for variation and innovation, as institutions and governments can adapt our definition to serve their goals.

As postsecondary institutions approach the development of microcredentials, they should consider the perspectives of both employers and prospective students. Our prospective student survey suggests that above all else, Canadians care that microcredentials are affordable and valuable to employers. For employers to see value, microcredentials should be competency-based and industry-aligned. HEQCO’s research team translated these findings into what we are calling “quality markers.” The quality markers identified in Figure 11 are features that both end users (employers and Canadians) and postsecondary institutions view favourably.

We recommend postsecondary institutions strive to realize the quality markers identified in Figure 11 within their microcredential strategies and offerings, where it makes sense to do so. And in all cases, institutions should be transparent about whether and how quality markers are realized. One interviewee suggested institutions might develop something akin to a nutrition label to support transparency around these markers; this would allow institutions to let employers know for example how the microcredential responds to industry or community demands, whether it has been accredited, and whether or how learning was assessed to earn it. With verifiable digital credentials, this kind of information could be embedded in the credential’s

metadata<sup>8</sup> alongside information about the issuer and program. Being transparent about these markers will also facilitate transferability between institutions.

Figure 12: Microcredential Quality Markers for Postsecondary Institutions<sup>9</sup>



Whether and how a quality marker should be realized is context dependent. Stackability, for example, is a feature that institutions should always be transparent about — how does the microcredential relate to other (micro)credentials? — but that may not add value in all situations. Part of the appeal of microcredentials is that they may help postsecondary institutions respond, quickly and cost-effectively, to emerging social and economic needs; this will more often mean developing innovative new programs, rather than deconstructing existing curricula into shorter modules. We also note that while postsecondary survey respondents and interviewees saw stackability as favourable, employers and Canadians were less concerned with it. For learners, it is most important that microcredentials hold value independent of other credentials. Stacking or combining microcredentials should be done only to provide added benefit and should never come at the expense of a credential's independent value.

To support institutions with the work of realizing and communicating the quality markers, the Ontario government should work towards establishing a common framework for microcredentials. This process should leave room for innovation, including experimentation with mastery-based programs that focus more on measuring competency and less on seat-time. To assist with standardization, we encourage policy-makers to consider the work that groups like

<sup>8</sup> "Metadata" is data that describes other data. For example, an image may include metadata about its resolution.

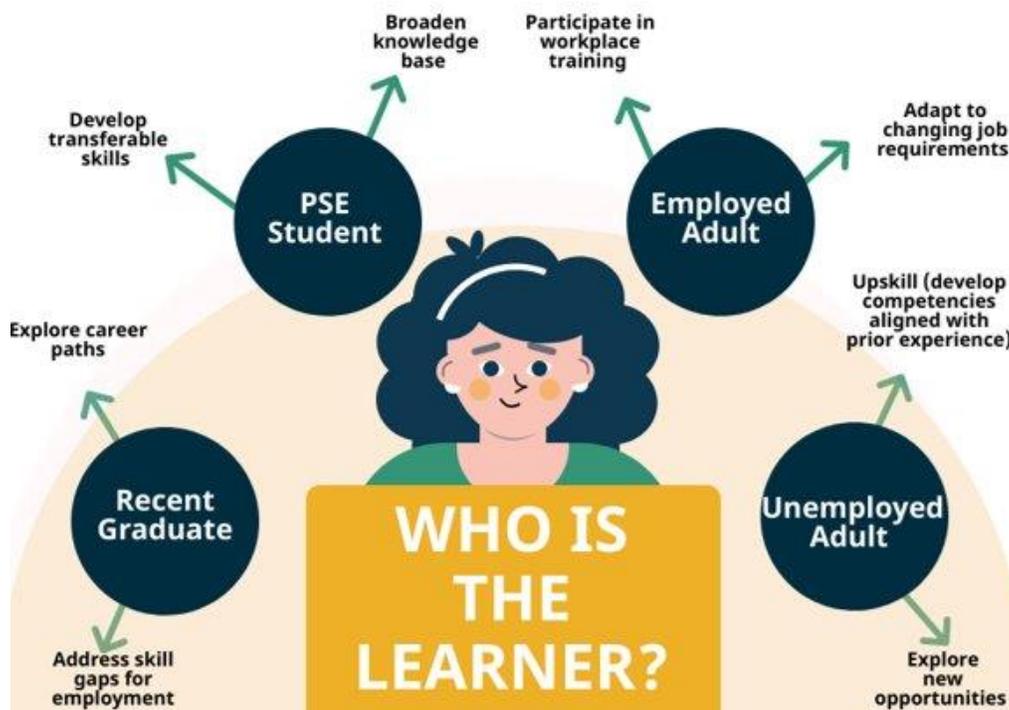
<sup>9</sup> This image was created using Piktochart software.

Credly have already done, establishing a common language around skills for digital credentials (Maggioncalda & Yacoub, 2020).

Lastly, our research reinforces that microcredentials are just one component of an effective lifelong learning system. They hold value primarily in their function as a complement to traditional education, not a replacement. Microcredentials should serve to upskill adult learners with specific training needs, and those whose prior learning and experience has already provided a strong foundation of knowledge and transferable skills. When thinking about learners entering the postsecondary system directly from high school, we see more value in teaching interconnected competency sets rather than the discrete competencies that microcredentials focus on. And for adults in need of reskilling (i.e., seeking entirely new competency sets), we view competency-based education (CBE) programs as more appropriate than microcredentials. CBE programs teach interconnected competencies and allow students with prior learning and experience to progress relatively quickly and cost-effectively (Pichette & Watkins, 2018).

Though not their primary purpose, microcredentials can also serve to prepare students to become lifelong learners. They might be designed to expose recent high school graduates, for example, to an area of study or employment (e.g., a trade) before committing. Or a recent postsecondary graduate might want to demonstrate to a prospective employer that they are committed to learning and growing in the field (e.g., they pursued an extra credential alongside or in addition to their diploma).

Figure 13: Who is the (Microcredential) Learner?<sup>10</sup>



<sup>10</sup> This image was created using Piktochart software.

In terms of next steps for research, HEQCO is interested in understanding more about quality in the context of microcredentials, and how it can be assured. This includes examining the labour market outcomes of learners who participate in microcredential programs — are they being well-served? Previous research suggests that when Canadians lose their jobs, they are better off economically when they pursue higher education before returning to the labour market (Pichette et. al, 2020). Is this the case with microcredentials? Are there different outcomes depending on the type of microcredential? Do students who have completed microcredentials feel the experience was worthwhile and resulted in more or better opportunities? These are just some of the related research questions we intend to pursue moving forward.

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## Appendix 1: Methodology

This report is informed by a mixed methods study that included a literature review, interviews and surveys. We provide more details on the interview and survey methodologies below.

### Interviews

HEQCO conducted a total of 44 in-depth, semi-structured interviews with 59 stakeholders. Representatives were affiliated with postsecondary institutions (17), employers/businesses (7), not-for-profit/NGOs (10), consultancies (5), government (4) and other (1).

Interviewees were primarily recruited through the surveys: We reached out to postsecondary representatives and employers who indicated that they were interested in being contacted for an interview. Our partners at BHER also recruited interviewees through their networks of employers and postsecondary institutions. We also used a snowball sampling approach, asking interviewees for recommendations about other people to speak with. Some interviews were conducted with small groups of individuals from the same organizations; the largest example was a focus group with 8 CAUCE members.

At least two HEQCO staff members joined each interview. All interviews occurred over Zoom and ranged between 30 and 60 minutes.

HEQCO staff used NVivo 12 software to code all interviews. Interview data was organized first by affiliations — postsecondary institution, government, employer/business, NGO/Not-for-profit and other. Data was then coded thematically.

A full list of the institutions from which we spoke with representatives can be found in Appendix Table 1.

*Appendix Table 1: Interview Participants*

*Algonquin College  
Canada's Digital Technology Supercluster  
Canadian Association for University  
Continuing Education (CAUCE) (x8)*

- McGill University*
- Simon Fraser University*
- University of Calgary*
- University of Guelph*
- University of New Brunswick*
- University of Toronto*
- York University*
- University of Waterloo*

*The Evollution  
Toronto Finance International  
UNI Financial Corporation  
University of Calgary (x2)  
University of California  
Western University  
York University*

*Canadian Council for Aboriginal Business  
CanCred by Learning Agents  
Commonwealth of Learning  
Confederation College  
Credential Engine  
Duklas Cornerstone Consulting Inc.  
eCampusOntario  
Economic Modeling  
EduBrief  
Emergence Bio-Incubator  
Enterprise Machine Intelligence & Learning  
Initiative  
Excellence in Manufacturing Consortium  
(x3)  
Fanshawe College (x2)  
George Brown College  
Higher Education Strategy Associates  
Humber College  
Independent Business Owner (construction  
industry)  
IBM (x2)  
Mohawk College  
New Zealand Qualifications Authority (x4)  
Northern College  
Ontario Centre of Innovation (x2)  
Ontario Tech Talent  
Ontario Tech University  
Ontario Universities Council on Quality  
Assurance (x2)  
Queen's University  
RBC  
Saskatchewan Chamber of Commerce  
Seneca College  
St. Clair College  
TECH NATION Canada  
Canadian Agricultural HR Council (CAHRC)*

Appendix Table 2: Interviewee Affiliations

Sector/Affiliation	Interviews
Postsecondary Institution	17
Employer/Business	7
Not-for-profit/NGO	10
Expert/Consultant	5
Government	4
Other	1
<b>Total</b>	<b>44</b>

## Surveys

### Survey of Prospective Students

Following a competitive process, the prospective student survey was developed and administered by Abacus Data. HEQCO and BHER provided input on the survey instrument. Abacus conducted the survey with 2,000 Canadian residents, aged 18–64, between September 1 and 5, 2020. A random sample of panelists were invited to complete the survey from a set of panels based on the Lucid exchange platform. The margin of error for a comparable probability-based random sample of the same size is +/- 2.1%, 19 times out of 20. The data was weighted according to census data to ensure that the sample matched Canada’s working age population according to age, gender, educational attainment and region.

### Survey of Canadian Postsecondary Institutions

The postsecondary survey was developed by HEQCO and CICan, and with input from the Canadian Association for Continuing Education (CAUCE). BHER, CICan and CAUCE shared the survey via email with their networks. The survey was administered online, in French and English, using the Simple Survey platform between November 11 and December 15, 2020. The sample was voluntary, non-representative and non-random, and so we limited our analysis to descriptive statistics. Analysis was conducted in STATA 16 and NVivo.

### Survey of Canadian Employers

The employer survey was developed by HEQCO and circulated by BHER via email to Canadian employers and employer groups. It was also shared over social media (LinkedIn and Twitter).

- 63% of all survey participants reported that they learned about the survey via email.
- 21% provided no response to the question of how they learned about the survey.
- 9.5% reported learning about the survey via social media (e.g., Twitter, Facebook, LinkedIn).
- 5.5% selected ‘Other, please specify’ and their responses included being invited by a business or industry association, including NAIT (2%) and being invited by an unspecified postsecondary institution (1.5%).

The survey was administered online, in French and English, using the Simple Survey platform between December 12, 2020 and January 18, 2021. The sample was voluntary, non-

representative and non-random, and so we limited our analysis to descriptive statistics. Analysis was conducted in STATA 16 and NVivo.

Appendix Table 3: Methodology

	Interviews	Prospective student survey	Canadian employer survey	Canadian PSI survey
<b>n</b>	n(interviews)=44; n(individuals)=59	n=2000	n=139	n=131
<b>Administrator</b>	Conducted by HEQCO	Conducted by Abacus Data.	Conducted by HEQCO.	Conducted by HEQCO.
<b>Recruitment</b>	Voluntary sample recruited through employer and PSI surveys, BHER, CAUCE and snowball sampling.	Random sample drawn from survey panels.	Voluntary sample recruited by BHER.	Voluntary sample recruited by BHER, CIGan and CAUCE.
<b>Target population</b>	Representatives of businesses/employers, postsecondary institutions and NGOs/not-for-profits; experts and consultants.	Canadian residents aged 18-64 not currently enrolled in PSE.	Representatives of Canadian employers.	Representatives of Canadian colleges, universities, institutes, polytechnics and CEGEPs.
<b>Sampling</b>	Non-random and not representative.	Weighted according to census data to ensure that the sample matched Canada's working age population according to age, gender, educational attainment, and region.	Non-random and not representative.	Non-random and not representative.
<b>Margin of error</b>	N/A	The margin of error for a comparable probability-based random sample of the same size is +/- 2.1%, 19 times out of 20.	N/A	N/A

## Appendix 2: Accessible Versions of Report Graphics

Appendix Table 4: Accessible Version of Figure 4: Microcredential Typology

<b>Category</b>	<b>Sub-Categories</b>
Purpose	<ul style="list-style-type: none"> <li>• Pathway to a formal qualification: e.g., a bridging program</li> <li>• Update previous qualifications: i.e., incorporating emerging research/best practice</li> <li>• Gain technical skills: e.g., learn a software program</li> <li>• Develop transferable skills: e.g., critical thinking</li> </ul>
Mode of Delivery	<ul style="list-style-type: none"> <li>• In-person</li> <li>• Online</li> <li>• Hybrid: A microcredential could be a hybrid of online and in-person delivery</li> </ul>
Flexibility	<ul style="list-style-type: none"> <li>• Fixed pace</li> <li>• Self-paced</li> <li>• Hybrid: A microcredential could be a hybrid of online and in-person delivery</li> </ul>
Student/Instructor Interaction	<ul style="list-style-type: none"> <li>• Cohort learning</li> <li>• Independent learning</li> <li>• Both: A microcredential could include both cohort learning and independent learning</li> </ul>
Credential Form	<ul style="list-style-type: none"> <li>• Paper credential</li> <li>• Digital credential</li> <li>• Both: A microcredential could be issued as both paper and digital credentials</li> </ul>
Indicator of Achievement	<ul style="list-style-type: none"> <li>• Participation</li> <li>• Demonstrated competence</li> <li>• Demonstrated mastery</li> </ul>

Appendix Table 5: Accessible Version of Figure 12: Microcredential Quality Markers for Postsecondary

<b>Marker</b>	<b>Description</b>
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 the 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

Appendix Table 6: Accessible Version of Figure 13: Who is the (Microcredential) Learner?

<b>Learner</b>	<b>Motivations</b>
Recent Graduate	<ul style="list-style-type: none"> <li>• Address skill gaps for employment</li> <li>• Explore career paths</li> </ul>
PSE Student	<ul style="list-style-type: none"> <li>• Develop transferable skills</li> <li>• Broaden knowledge base</li> </ul>
Employed Adult	<ul style="list-style-type: none"> <li>• Participate in workplace training</li> <li>• Adapt to changing job requirements</li> </ul>
Unemployed Adult	<ul style="list-style-type: none"> <li>• Upskill (develop competencies aligned with prior experience)</li> <li>• Explore new opportunities</li> </ul>