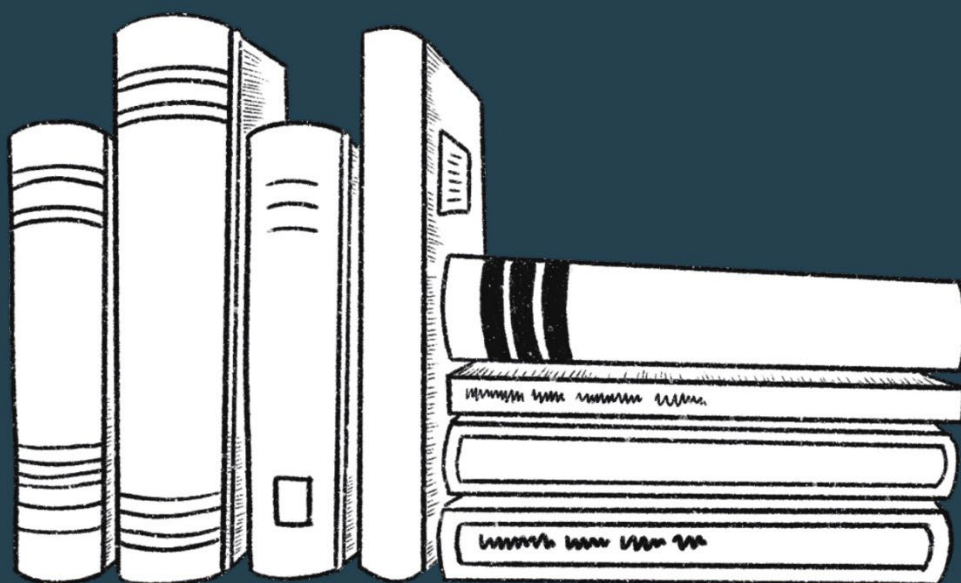# Higher Education Quality Council of Ontario

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Postsecondary-offered Microcredentials in Ontario: What does the Evidence Tell Us?

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Introduction

Educators and policymakers around the world are experimenting with microcredentials[1] as a way of meeting the evolving education and training needs of modern learners. Ontario established itself as an early leader in the microcredential space, making significant investments to support microcredential development, awareness and access before many other jurisdictions. To date, the province has funded more than 100 microcredential development projects,[2] an online microcredential portal, financial assistance to support microcredential access and a virtual passport for learners to carry their microcredentials (Ministry of Colleges and Universities [MCU], 2020).

Ontario's microcredential investments have so far prioritized efficient (i.e., 12 weeks or less) employment-focused training that complements learners' existing knowledge and skills (i.e., "upskilling") (MCU, 2021a; 2021b). This strategy aligns well with the recommendation from a 2019 HEQCO report, *Lifelong Learning in Ontario: Improved Options for Mid-career, Underserved Learners*, namely: to offer short, flexible training programs that position Ontarians to adapt and thrive in times of economic disruption (Pichette et al., 2019). The pandemic and the trends it accelerated, such as digitization and automation, added urgency to calls for an education and training system that supports learner adaptability (Côté & White, 2020; OECD, 2021a).

At the same time, educators and policymakers globally have been considering broader applications for microcredentials, envisioning them as "a sort of all-purpose solution for the problems confronting education, training and labour market systems" (OECD, 2023 p. 3). Three purposes or use-cases arise particularly often in the Ontario discourse about microcredentials: upskilling; reskilling or comprehensive training that positions a learner to change roles or industries; and expanding postsecondary access for historically marginalized learners by creating new pathways to credentials such as degrees or diplomas. The latter two use-cases, reskilling and expanding access, rely on microcredentials being stackable, i.e., laddering sequentially toward 'macrocredentials,'[3] sometimes through the modularization of existing programs (Chaktsiris et al., 2021).

The province is at a critical juncture as government reflects on the success of its strategic investments in microcredentials,[4] allocates newly announced funding for program development,[5] and considers the details of a proposed quality assurance framework for microcredentials.[6] Given the potential long-term implications of the policy and spending decisions government makes now, it is worth revisiting Ontario's strategic focus with consideration of the upskilling, reskilling and access purposes being discussed in the sector. To

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[1] Microcredentials are representations of focused learning that can be earned more quickly than other macrocredentials (Oliver, 2022; Pichette et al., 2021).

[2] Sixty-five were funded through the Challenge Fund, and another 36 were funded through eCampusOntario pilots.

[3] By "macrocredentials," we mean credentials such as degrees and diplomas, which "indicate learning achievement of a broad body of knowledge and technical proficiency and often take years to complete" (Oliver, 2022).

[4] In August 2023, HEQCO was invited to an interview as part of an evaluation of Ontario's microcredential strategy led by Cathexis Consulting on behalf of MCU. The two goals of the evaluation, as outlined in the invitation, were to determine if Ontario's microcredentials strategy is on track to meet its objectives and provide insight into which aspects of the strategy are working well and where improvements are needed.

[5] In November 2023, Ontario dedicated $5 million to support another round of microcredential development (MCU, 2023).

[6] After gathering feedback from the sector, the Postsecondary Education Quality Assessment Board (PEQAB) delivered its final recommendations to the government in November 2023 (PEQAB, 2023).

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that end, this review considers evidence of supply, demand and outcomes to inform institutional planning and government strategy for Ontario's postsecondary microcredential programming.

Our review focuses on microcredentials offered by publicly assisted postsecondary institutions in Ontario while acknowledging the range of other providers operating in this space. It draws from a broad body of literature and 16 semi-structured interviews with representatives from Ontario postsecondary institutions, research and quality assurance organizations, and governments and institutions from outside of Ontario. We also undertook a scan of microcredentials advertised on Ontario's portal (see the Appendix for details of our methodology). After summarizing evidence of institutional supply, learner demand and outcomes, we reflect on the implications for Ontario and offer recommendations for government and institutions as they consider strategic directions.

Available Evidence

Ontario has very little publicly available administrative data to understand whether and how various microcredential purposes or use-cases can serve learners. Gaps in available data include information pertaining to 1) institutional offerings (i.e., supply) [7]; 2) student interest and/or enrolments (i.e., learner demand); and 3) economic returns (i.e., learner outcomes). The sources we draw from to try and fill these gaps are neither perfect nor complete, but they offer a basis from which we can start to understand the roles microcredentials are best suited to within Ontario's postsecondary sector.

1) Institutional Offerings (Supply)

The evidence suggests Ontario postsecondary institutions are primarily supplying microcredentials to meet the upskilling needs of working adults. Interviewees described a range of microcredentials that position learners to adapt to changing job requirements, shift into similar roles or advance in their careers. We heard about, for example, microcredentials serving to enhance workers' digital skills in specific industries or filling targeted skills gaps for internationally trained professionals.

While the idea of supplying stackable microcredentials for access or reskilling purposes came up often in the literature and our interviews, we found little evidence that Ontario colleges, universities or Indigenous institutes are doing so in practice. Despite some examples of microcredentials in the portal that can be bundled together into *other* microcredentials or stacked into a certificate, no domestic interviewees and no listings analyzed in the portal described offerings that stack progressively[8] towards macrocredentials. This is consistent with international trends; the OECD (2021) found microcredentials are "primarily being developed within higher education institutions for the benefit of learners who already have a higher education and less as a means to support wider access to higher education" (p. 11).

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[7] Assessing where the opportunities for microcredentials lie in Ontario is complicated by the range of microcredential providers currently operating. These include public and private postsecondary institutions, private companies, non-profit organizations and professional associations (OECD, 2021b). Given HEQCO's focus on the public system, however, this commentary focuses on microcredentials offered by publicly assisted postsecondary institutions in Ontario.

[8] Bailey and Belfield (2017) distinguish between three types of stackable credential programs: progression stacks, which start with a short-term certificate and lead to a higher-level degree or credential; supplemental stacks, which add to a prior credential like a bachelor's degree to address skills gaps or job changes (i.e., for upskilling purposes); and independent stacks, which accumulate short credentials that do not ladder to higher-level credentials like degrees or diplomas (i.e., bundling).

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Interviewee comments and available literature suggest the United States is an exception to these supply trends, as it is home to a multitude of progressively stackable microcredentials. This appears to be driven by skepticism of macrocredentials among American learners. Declining domestic enrolments (Tough, 2023), [9] high non-completion rates and resulting loan debt (Munip & Klein-Collins, 2023; National Student Clearinghouse, 2023) are all prompting federal, state and philanthropic funders to develop incremental, i.e., stackable, credential pathways as an alternative to traditional ones (Zanville & Travers, 2023). Higher education providers in Ontario do not have the same motivation to supply stackable microcredential pathways; domestic enrolments in traditional programs as a percentage of the population remain high (Côté & White, 2020).

In addition to the upskilling, reskilling and access purposes we asked about, some interviewees highlighted microcredentials designed to expose learners to a field of study before they commit to a longer program. This style of microcredential acts as an informal stepping-stone for learners who may be unsure of their options. For example, a first-generation student considering whether to invest in postsecondary might pursue a microcredential to test out a pathway (OECD, 2023), or a recent graduate debating whether to pursue a master's degree in a specific field could enrol in a microcredential to confirm interest (Macdonald, 2022).

We also heard from one Ontario institution offering microcredentials that assess and validate prior learning and experiences, using a competency-based education[10] approach. An interviewee from another Ontario institution and some interviewees from other jurisdictions are considering this approach (setting up standards for assessment and validating students' skill level) as an area of opportunity for microcredentials. These interviewees noted, however, that deviating from established institutional procedures and information systems designed around seat-time would be complicated. Previous HEQCO research raises similar challenges and resource implications including upfront investments in faculty development and technology (Pichette & Watkins, 2018).

2) Learner Demand

Available evidence from Canada and international sources suggests demand for microcredentials is highest among learners who have already earned at least one postsecondary credential. These learners tend to be motivated to top up their prior learning for specific work-related purposes (Dobbs et al., 2023; Oliver, 2022). They also tend to be employed full time and have median or high incomes (Asthana et al., 2023; Kato et al., 2020). Interviewees echoed these findings, describing the main consumer base as adult learners with financial means (either their own savings or financial support from their employer). They sensed microcredentials are mostly being pursued to complement learners' previous education and work experiences in ways that advance their careers.

In general, interviewees did not see microcredentials as appealing to learners who want to develop entirely new skill sets (i.e., reskill), nor did they observe demand for microcredentials as

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a point of access to macrocredentials.[11] These observations align with experiences in other jurisdictions (outside of the United States, as noted). For example, a pilot in the United Kingdom found very low uptake of microcredentials designed as entry points into macrocredentials (Kernohan, 2023).

Regardless of a learner's training goals, some interviewees sensed there may be demand for credit-bearing microcredentials. These interviewees described how learners receiving credit for microcredentials might see that as a kind of 'bonus' to their upskilling function. Credit-bearing microcredentials could help reduce barriers for re-engagement should learners decide to return to the same postsecondary institution (for more upskilling, later, or having confirmed interest in a field of study through an introductory microcredential). Credit-bearing microcredentials may support mobility and transfer and provide confidence in credential quality. Some interviewees cautioned that not all microcredential earners are seeking credit, however, and described a lack of awareness among learners about credit weight and its implications for further study; most interviewees observed a primary interest in training (e.g., through non-credit continuing education) that responds quickly to societal needs and labour market opportunities as they arise. These learners may prioritize, for example, responsive programming that is co-developed with employers over credit.

Several interviewees also described demand for microcredentials as being tied to specific, marketable skills or knowledge. They observed higher demand when microcredentials are designed to fill specific labour force or community needs than when they develop general or transferable skills that might apply in a variety of contexts. Relatively low demand for more generalized microcredential programs, some interviewees suspected, may relate to the range of private providers, such as LinkedIn Learning and Coursera, offering opportunities to develop and display (via a digital badge) transferable skills at an affordable price point.

3) Economic Outcomes for Learners

It is simply not possible to accurately assess the return on investment for students pursuing microcredentials without more comprehensive data. For example, while completion rates tend to be lower for students in shorter programs relative to longer ones (Colyar et al., 2023), it is yet to be seen whether these data apply to microcredentials. Even with improved institution- and system- level data, assessing returns would be complicated: microcredentials are, by definition, short (Oliver, 2022; Pichette et al., 2021) and as noted above, they are primarily designed and pursued for upskilling. These characteristics make it challenging to isolate the added value of a microcredential from an earner's previous credential(s) using quantitative measures. In the absence of completion rates or economic outcomes data for microcredentials in Ontario, research on short programs and outcomes from other jurisdictions can provide useful insight.

Available literature suggests, first and foremost, that financial gains from short credentials tend to be highest for learners with previous postsecondary experience who are looking to upskill (Daugherty & Anderson, 2021; Daugherty et al., 2023; OECD, 2023). The OECD (2023) notes that "targeted and short-term credentials appear to work well when 'topping-up' existing higher education but have a mixed impact on those without a bachelor's degree" (p. 9). Aligning with this trend, a Canadian study found students who completed a short credential within six years of

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earning a bachelor's degree saw a decrease in the likelihood of working in "low value-added service industries" and an increase in unionization and pension plan participation rates (Ntwari & Fecteau, 2020, p. 4). Short credentials focused on filling specific skill gaps in fields with acute labour shortages, such as health and IT, also tend to see higher returns for earners (Bailey & Belfield, 2017; Daugherty & Anderson, 2021; OECD, 2023). Some of our interviewees suspected labour shortages in these industries may motivate employers to collaborate with postsecondary institutions more actively in program development, making them more inclined to recognize the credential in their hiring processes.

Broadly speaking though, the financial gains associated with microcredentials appear to be modest and short-lived relative to those offered by macrocredentials (OECD, 2021b). This may relate to employers' valuations of microcredentials; despite employer perceptions that microcredentials have the potential to benefit the workforce (Fong et al., 2023), the literature suggests that employers do not (yet) value microcredentials as highly as traditional macrocredentials (Fong et al., 2023; Harvey et al., 2023; Kato et al., 2020). Many employers also lack hiring systems that recognize or account for short credentials (Gallagher et al., 2023) or are simply not familiar with microcredentials (Oliver, 2022; Pichette et al., 2021). Progressively stacking microcredentials towards macrocredentials that employers are more familiar with is unlikely to be the solution: this approach introduces more decision points for learners and likely reduces odds of completion, particularly for marginalized learners who would benefit from guided pathways (Bailey & Belfield, 2017; OECD, 2023).

Some interviewees also reminded us that microcredential earners may derive important economic benefits aside from immediate financial gains. For example, learners enrolling in microcredential programs may aim to develop social capital or confidence in their abilities. An OECD report makes a similar observation; that learners who tend to be interested in microcredentials (e.g., professionals with prior education experience) may derive "intangible career benefits" that are difficult to capture in quantitative data (Kato et al., 2020), such as adapting to changing job requirements.

Conclusion and Recommendations

The information available suggests microcredentials are best suited to supplementing adult learners' skills and experience with focused training. That is, the evidence supports the Ontario government's strategy to use microcredentials for upskilling, as outlined in the 2020 budget (Government of Ontario, 2020).

Current evidence shows less promise for microcredentials aimed at expanding postsecondary access or reskilling through progressively stacked pathways. Adjustments to traditional postsecondary programming and services (e.g., wraparound support services) are likely better suited to improving access for equity-deserving learners. In the event that workers need to change industries, competency-based education may be a better approach to meeting the comprehensive (re)training needs of adult learners (Pichette & Watkins, 2018; Pichette et al., 2019). Microcredentials "allow for small-scale experimentation of new pedagogies and technologies, including innovations in teaching and learning and more flexible delivery modes" (OECD, 2021b); microcredential programs that validate competencies gained through prior work or learning may offer an opportunity for institutions to experiment with and gradually build capacity to deliver competency-based education programs.

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With these reflections in mind, we offer the following recommendations.

Gather Evidence

Microcredentials Data

By collecting and using data about each of the factors reviewed here — supply, demand and outcomes — Ontario institutions and government can ensure microcredential funding is optimized to meet the needs of various groups of learners. Making these data available through platforms like the Open Data Catalogue[12] or the Open Strategic Information Management System[13] would enable improved policy analysis.

- **Supply.** The microcredential portal presents an opportunity to collect consistent data about program offerings (including, for example, the competencies microcredentials are designed to develop, delivery mode, price, expected effort or time commitment, and type of assessment they feature). By introducing criteria comparable to Australia's critical information requirements, which stipulate data points that institutions must provide to list microcredentials on a shared marketplace (Department of Education, Skills and Employment, 2022), government, along with eCampusOntario, could offer transparent, consistent information about Ontario microcredentials with the added benefit of helping to build trust among learners and employers (Oliver, 2019).
- **Demand.** Gathering and reporting institutional data about microcredential enrolments, ideally along with demographic data (including prior education) and program details, would help clarify the features that appeal to specific groups of learners, and in turn, inform decisions about future programming and marketing. Ministry data pertaining to the uptake of financial assistance for microcredentials via OSAP would also help build an understanding of learner characteristics.
- **Outcomes.** Institutional tracking and reporting of microcredential completion rates can shed light on economic outcomes, especially where administrative data linkages are possible. Institutions could also conduct surveys to track microcredential graduate earnings, further education, job retention and other career benefits such as job satisfaction, confidence and progression; these data could inform institutional and provincial strategies on an ongoing basis, particularly if paired with demographic data and program details.

System-level Data

Tracking student pathways to and through the education system and labour market would enable government and education providers to explore strategies, not limited to microcredentials, for serving students at all stages of a lifelong learning journey. For example, system-level data could be used to explore evidence-based equity strategies such as adjustments to student financial assistance policies or wraparound supports that help "remove structural and systemic barriers to skills development" (Future Skills Council, 2020). HEQCO's work with partners in Hamilton illustrates that building a system-level, longitudinal data

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[12] Please see https://data.ontario.ca/.
[13] The Open Strategic Information Management System (Open SIMS) is a restricted-access portal that includes reports, analyses and interactive visualizations related to Ontario's postsecondary education system. The portal was designed to support MCU's policy and program decisions, and to provide opportunities for postsecondary education researchers (Government of Ontario, 2023).

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infrastructure is imminently doable using information already tied to the Ontario Education Number ([Au et al., 2022](#)).

Offer a Transparent Strategy Focused on Upskilling

To date, Ontario has released elements of a microcredential strategy in the provincial budget and in media releases, but there is no unifying strategy document where postsecondary institutions can access up-to-date or consolidated details. Clear objectives would help the sector design microcredential programs that achieve shared goals and ensure limited education funds are used most effectively. Once developed, findings from ongoing data collection efforts could inform regular strategy updates.

In the interim, based on the evidence summarized here, an overarching goal of upskilling to meet specific industry and community needs appears most strategic. Unless new evidence is collected that suggests otherwise, avoiding language like "reskilling" or "retraining" as part of strategic direction, and focusing on stand-alone value for learners, would prevent confusion and misalignment. Importantly, transparent plans to evaluate and update the strategy (i.e., how often it will be reviewed and revised) would ensure its ongoing relevance to the sector.

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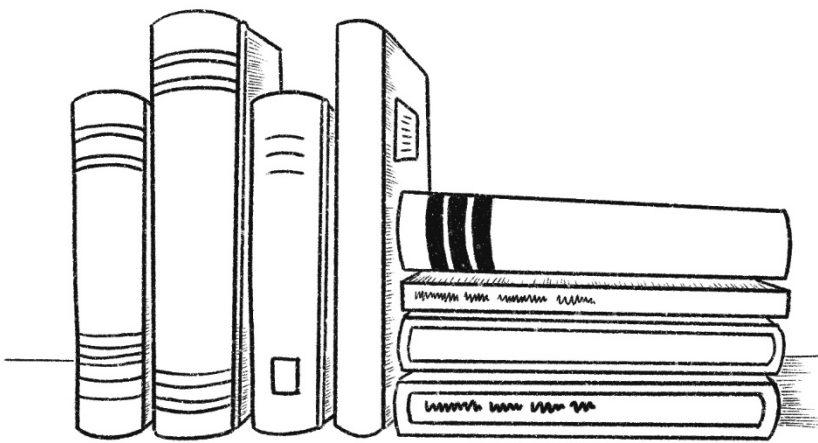
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Appendix

Methodology

This report sought to answer the research question: What role should microcredentials play in Ontario's higher education system? To do so, an extensive literature review was conducted alongside 16 semi-structured interviews and a scan of microcredentials advertised on Ontario's portal.

Interviews

Sixteen semi-structured interviews were conducted between August and September of 2023. A purposeful sampling[14] technique was used to ensure interviewees had relevant expertise and represented a diversity of perspectives. Interviewees included representatives from Ontario postsecondary institutions, research and quality assurance bodies, as well as representatives from governments and institutions outside of Ontario. A set of interview questions was developed for each type of interviewee (i.e., for representatives from Ontario institutions, regulatory/research bodies and other jurisdictions). Interviewees were asked about: target market and demand for microcredentials; use-cases that microcredentials are well- and ill-suited to meet; microcredential strategies; and data available/used (if any) to inform these strategies. Each interview was approximately one hour long. Interviewees were provided questions in advance and assured that any views expressed would not be directly attributed to them or their affiliate organizations. Interview notes were recorded and coded in NVivo to identify themes. The following is an alphabetic listing of interviewee affiliations.

- British Columbia Institute of Technology
- Conestoga College (x2)
- First Nations Technical Institute / FNTI
- Future Skills Centre
- Government of Alberta
- Higher education and learning consultant
- Humber College
- Irish Universities Association
- New Zealand Qualifications Authority
- Postsecondary Education Quality Assessment Board (PEQAB)
- Program on Skills, Credentials & Workforce Policy, George Washington University
- Queen's University
- Sault College
- State University of New York (SUNY) Empire State University
- The G. Raymond Chang School of Continuing Education, Toronto Metropolitan University

Portal Analysis

eCampusOntario maintains a portal, microlearnontario.ca, designed to advertise and help learners navigate microcredentials offered in the province. At the time our analysis was

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[14] "Purposeful sampling is a technique widely used in qualitative research for the identification and selection of information-rich cases for the most effective use of limited resources. This involves identifying and selecting individuals or groups of individuals that are especially knowledgeable about or experienced with a phenomenon of interest … In contrast, probabilistic or random sampling is used to ensure the generalizability of findings by minimizing the potential for bias in selection and to control for the potential influence of known and unknown confounders" (Palinkas et al., 2015).

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conducted, the portal contained data on about 1,734 microcredentials (eCampusOntario, 2023).[15] A sample of 264 microcredentials was extracted from the microcredential portal, in October 2023 using the filter of microcredentials starting in the next 90 days. This filter was the best, most expedient option available for creating a sample; other filters would have excluded variables of interest for analysis (e.g., filtering by delivery format or duration would preclude an analysis of how microcredentials vary by these features). Still, we note the sample was not random.

The portal does not allow data to be exported, so the following fields were manually recorded in Excel:

- Institution Name
- Institution Type
- Delivery Mode (i.e., in person, online or hybrid)
- Hours
- Cost
- Pathways (i.e., whether the microcredential was stand-alone, could be bundled with other microcredentials or stacked progressively)
- Prerequisites

If the information corresponding to a field was not contained in the portal for a given microcredential, the institutional webpage linked from the portal was consulted. If the information was not included on the webpage directly linked from the portal, that field was marked "unclear." The body of this commentary does not report findings related to fields where data were frequently "unclear"; for example, the format of 42% of the microcredentials analyzed was unclear (i.e., not indicated either on the portal or the institutional webpage it linked to) and is therefore not reported in this commentary.

Based on the microcredentials listed in the portal, our analysis suggests Ontario microcredentials are being disproportionately offered by universities, in an online format, and averaging 42 hours in duration. An analysis conducted by the Higher Education Strategy Associates (HESA) yielded similar results (HESA, 2023).

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[15] The microcredentials included in the eCampusOntario portal are a subset of programs currently offered across the province.

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