eCampusOntario 2016-18 Project Funding Review

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for eCampusOntario

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Table of Contents

Summary and Report Highlights

Between 2016 and 2018, eCampusOntario provided support to 167 education projects designed and developed by member college and universities from across the province of Ontario. These projects were aimed at improving access to digital education and learning resources as well as growing Ontario's capacity for quality online and distance education. A proportional percentage of funding went to universities (70% funding for 64% of Ontario's students in 2016) and colleges (30% funding for 34% of Ontario's students in 2016).

This report was prepared through analysis of output patterns and key attributes of funded projects. Results are summarized in relation to two main areas:

Collaboration: eCampusOntario provided funding support for projects that focused on collaboration within and among. Funding also enabled partnerships between colleges and universities and employers within Ontario.

Education for employment: eCampusOntario engaged the most colleges and universities in all regions of the province to develop research, learning programs and certifications, and educational content that are meeting workforce demands.

Below is a summary of report highlights:

Who was funded:

- 81% of all universities received funding
- 75% of all colleges received funding
- 47% of central core Ontario regions received project funding
- 6% of northern Ontario regions received funding
- Colleges participated in all 6 funded project categories
- $6,199,094 awarded to collaborative program and course development involving Ontario*Learn*

What was funded:

- 84 (50%) of funded projects involved some level of collaboration
- 9 projects focused on Indigenous culture, resources, and social need
- 5 projects the development of French language skills
- Projects were funded in all 10 "top learning trends" (Horizon Report, 2019)
- 18 projects focused on ed tech tools identified by the national survey (2018)
- 164 of 167 projects furthered education in employment areas experiencing hiring increases (April 2019)
- 25% of projects were online courses, modules, or programs leading to a degree, diploma, or certificate
- *Education*, *elearning, business*, *employment*, *Indigenous,* and *French* were frequently funded project subjects

Methodology

An eCampusOntario project inventory served as the primary source of information for this assessment, which was supplemented by online search for additional, external information on specific initiatives. This research was supported through a reading of secondary source literature. Where appropriate, eCampusOntario data on funded projects was contrasted with data on the broader provincial educational environment, trends in elearning innovation, and the Ontario labour market. This compare and contrast approach helped to shape the context that informs understanding of eCampusOntario priorities, activities, and success outcomes.

Part I: Funded Projects Overview

eCampusOntario is leading the way for Ontario's post-secondary institutions to increase adoption of online and technology-enabled learning and inspire innovation in online learning practice.

Regional Coverage

Extending the reach of online educational content enables Ontario institutions across the province to participate in eLearning innovation. In Figure 1 below, the distribution of eCampusOntario project funding across six regions (identified by the Ontario College of Teachers) is outlined.

*Figure 1. eCampusOntario projects by region*
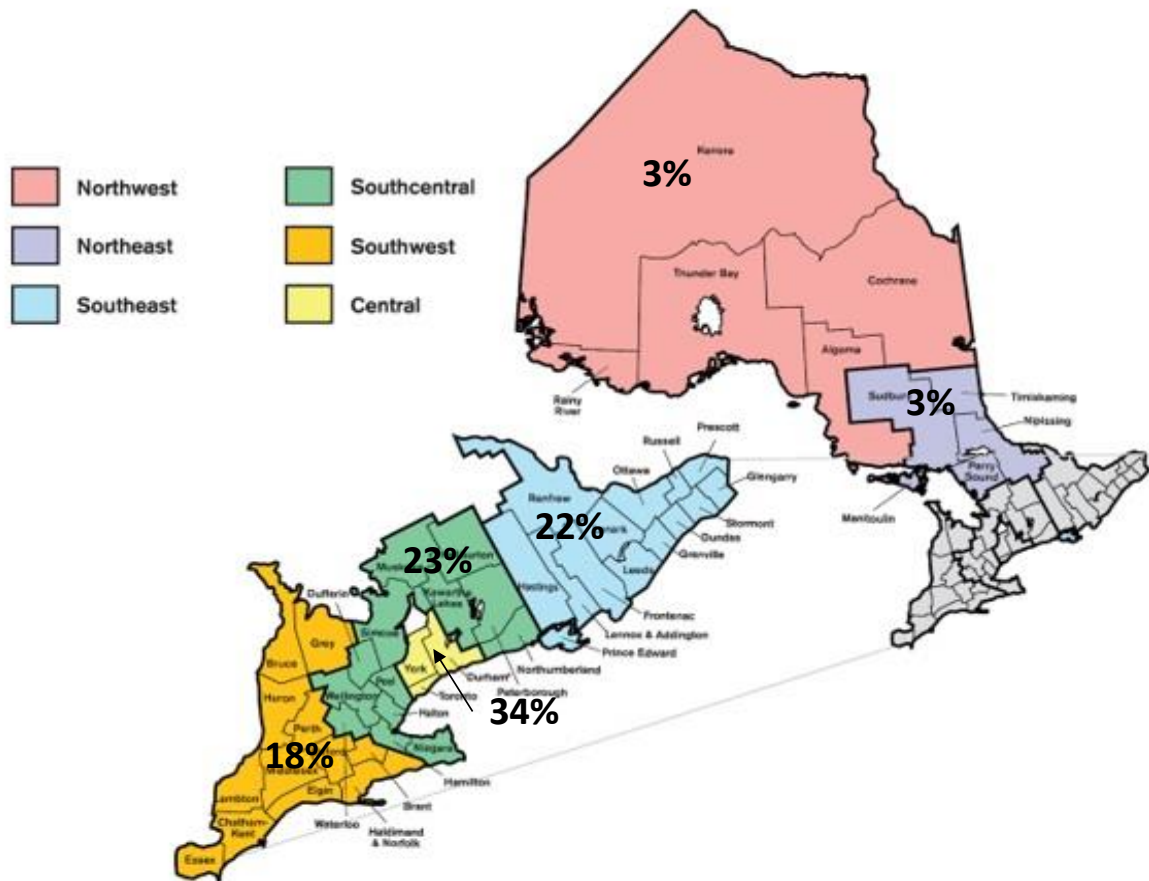
As Figure 1 shows, **all regions in the province have benefited from eCampusOntario projects.** Approximately 34% of support has been devoted to activity in the central Ontario region, 23% has been targeted at the southcentral region, 22% to the southeast, 18% to the southwest, and northeast and northwest Ontario each account for 3% of funding. While the concentration of resources in the central and southcentral regions may suggest imbalance in provincial funding, this more heavily populated area also contains approximately half of the province's publicly funded higher learning institutions. Taken together, **projects in regions outside this central core received just under half (47%) of eCampusOntario funding support. Project funding (6%) in underserved regions of the north also underscore eCampusOntario success in extending funding across the province.**

Profile of Funded Projects

Project funding support for colleges and universities offers another perspective on the purposeful inclusion of institutions across the province. As Figure 2 shows, **universities accounted for 70% of eCampusOntario project funding, while colleges accounted for 30% of project funding.**

Figure 2. Funding of eCampusOntario projects by type of institution
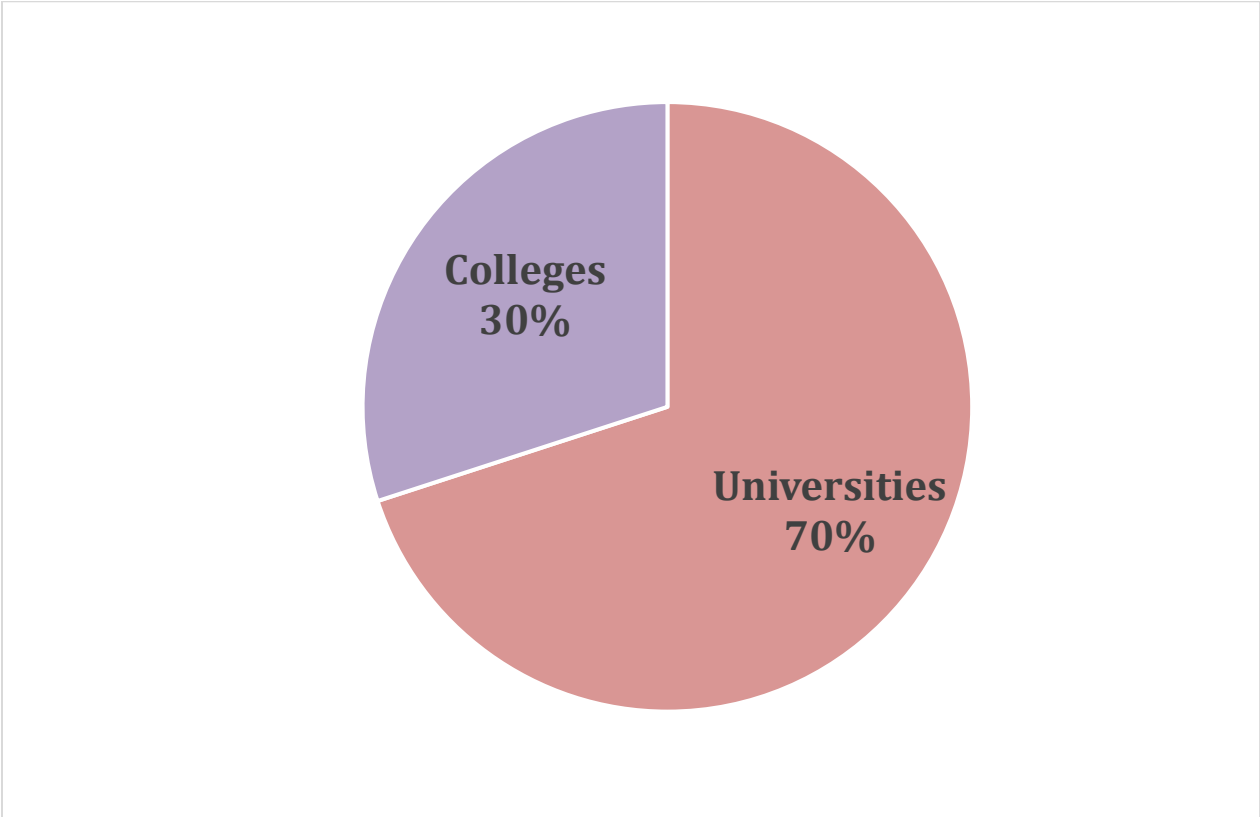
This eCampusOntario funding distribution maps to broader institutional categories as they exist within the Ontario higher education landscape. According to the Council of Ontario Universities, there are 21 universities in the province; 17 of these, or 81% of all universities in the province, have received eCampusOntario project funding. Ontario also boasts 24 publicly funded colleges; 18 of these, or 75% of all publicly funded colleges, have developed projects with eCampusOntario support. Funding support for a strong majority of institutions in both college and university constituencies has been a hallmark of eCampusOntario funding activity.

Greater engagement with the university community aligns with demographic considerations. While enrollment in Ontario universities was approximately 515,000[1] for the 2016-2017 academic year (approximately 64% of the total), student enrollment in Ontario colleges (2015-2016) was 285,891[2], or roughly 36% of students. **When student populations are taken into account, funding for universities is nearly proportionate to that of Ontario colleges.**

Similarly, eCampusOntario project funding by size of institution is well aligned with provincial institutional characteristics, as shown in Figure 3. Based on sizing that defines a large institution as having 15,000 students or more, medium as an institution having between 5,000 and 15,000 students, and a small institution as one that has 5,000 or fewer students,[3] eCampusOntario funding has been targeted at the typical Ontario institution, which tends to be a large organization.

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[1] Council of Ontario Universities. (2018). Total university enrolments for 2015-2018. By the numbers. Ontario College of Universities. Retrieved from https://ontariouniversities.ca/resources/data/numbers

[2] Total college enrolments for 2016-2017.
Statistics Canada. (2018). Postsecondary enrolments, by program type, credential type, Classification of Instructional Programs, Primary Grouping (CIP_PG), registration status and sex. Retrieved from https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3710001101&pickMembers%5B0%5D=1.7&pickMembers%5B1%5D=2.3&pickMembers%5B2%5D=6.1

[3] The Times Higher Education University Ranking defines a small university as having 5,000 students or fewer students. THE. (2016). Data blog: how do we define a 'small' university? https://www.timeshighereducation.com/blog/data-blog-how-do-we-define-small-university#survey-answer

CollegeData defines a large college as 15,000 plus students and a midsized organization as between 5,000 and 15,000 students. CollegeData. (2019). Retrieved from https://www.collegedata.com/en/

Figure 3. Project funding by size of institution, eCampusOntario vs province
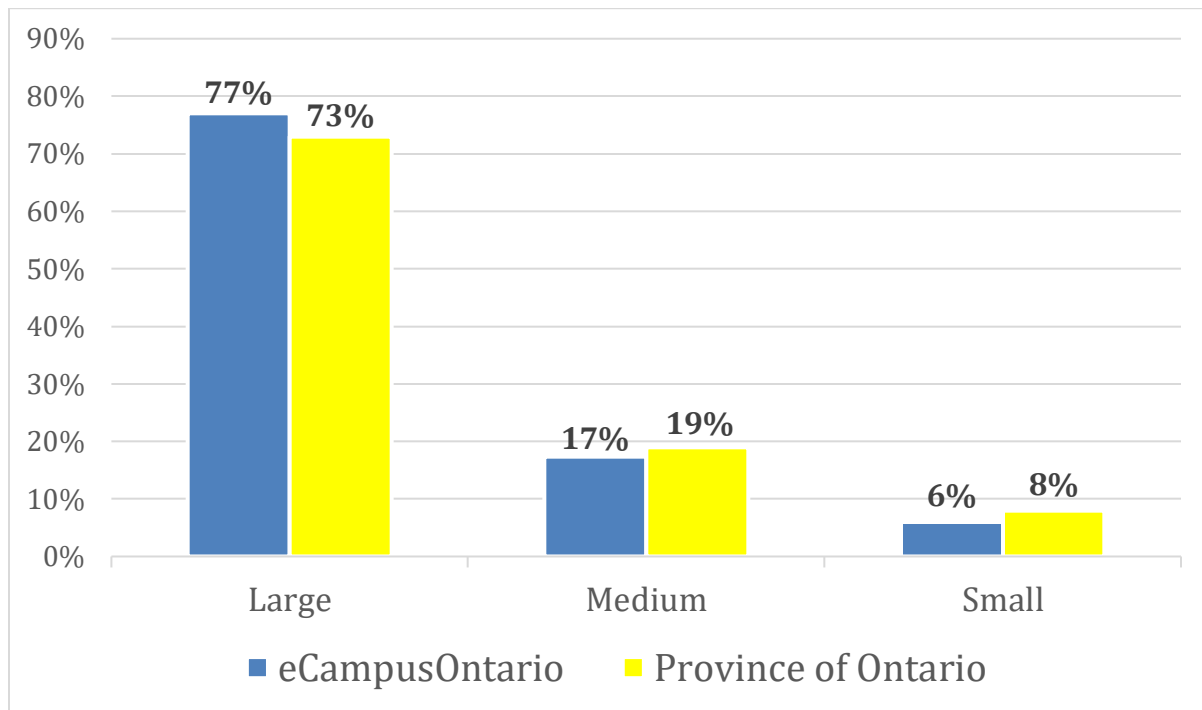
Achieving Strategic Initiatives

The eCampusOntario strategic mandate for 2018-21 calls to achieve three strategic initiatives to support all publicly funded institutions in Ontario:

1) organizational leadership through support for open and collaborative practices in online teaching and learning that furthers the interests of member institutions;
2) expanded capacity for shared and collaborative services that leverage knowledge, experience and infrastructure of post- secondary system partners while reducing cost;
3) and ongoing innovation through investment in research and development, including the funding, prototyping, testing and evaluating of new projects and emerging technologies that benefit institutions, learners and educators.[4]

These objectives are congruent with program activities for the period under review, as shown in Figure 4: support for open and collaborative practices has been advanced through funding for projects classified as program development, open content and open textbook; capacity for shared services has been built in Edtech Sandbox activities; and innovation in technology-enabled learning has been fostered through projects identified and research and innovation.

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[4] eCampusOntario (2018). eCampusOntario strategic plan 2018-21, p. 10. Retrieved from https://www.ecampusontario.ca/wp-content/uploads/2018/09/eCO-Strategic-Plan-2018-UPDATE.pdf

From 2016-18, eCampusOntario also provided support for research aimed at digital inclusion, a sixth project category, also shown in Figure 4, that addresses learners' accessibility requirements as well as the educational needs of disadvantaged groups.

*Figure 4. eCampusOntario funding by project category*
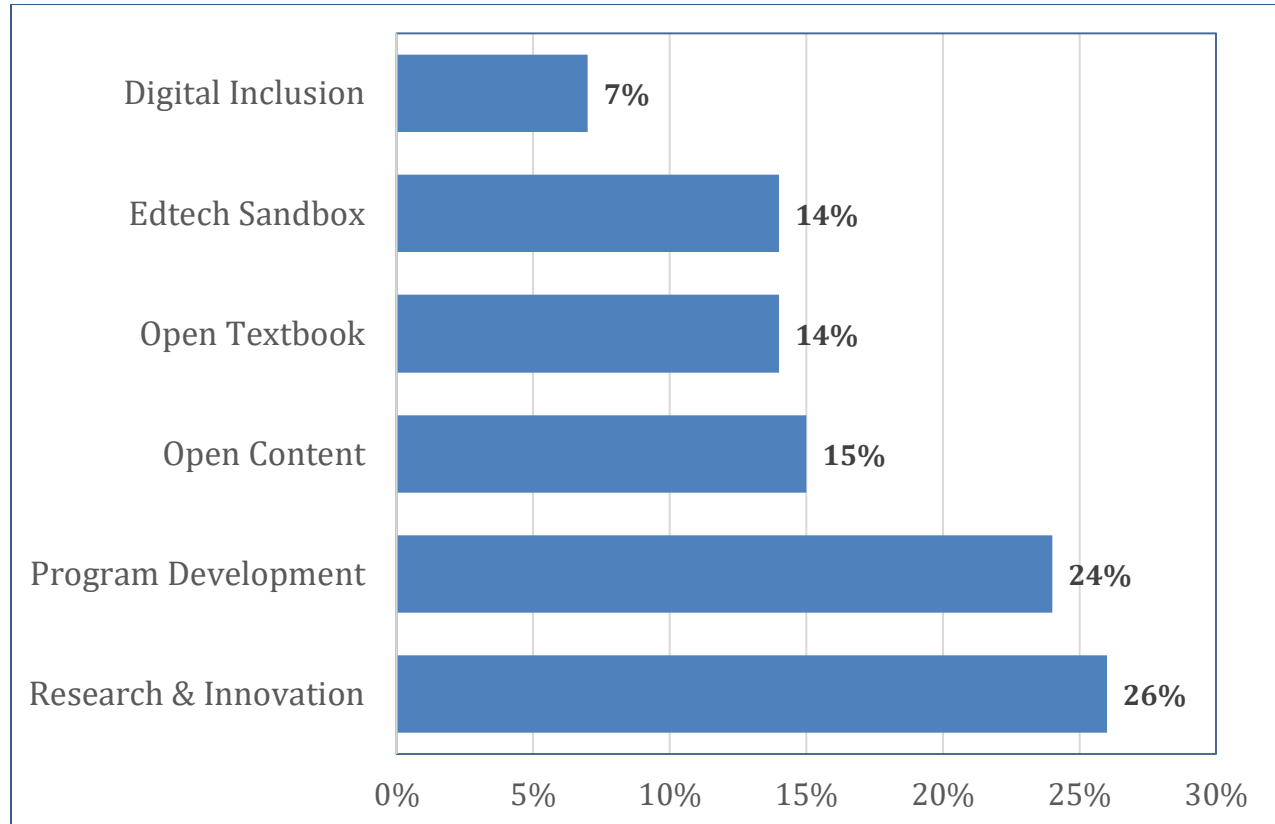
From 2016-18, eCampusOntario supported a wide range of activities that address the organization's mandate. While significant project funding was devoted to research and innovation (26%), over half of projects were focused on open and collaborative practices (program development 24%, open content 15%, open textbook 14%), capacity building (Edtech Sandbox) and digital inclusion.

While supporting the range of educational objectives, eCampusOntario funding has also been distributed across six regions and types of institution, as shown in Figures 5 and 6, respectively.

Figure 5 shows engagement with a broad range of eCampusOntario project activities in virtually all regions of the province. While all project categories were represented in the central, southcentral, southeast and southwest regions, northern regions were also involved in three types of project activity.

Figure 5. eCampusOntario projects by category and region
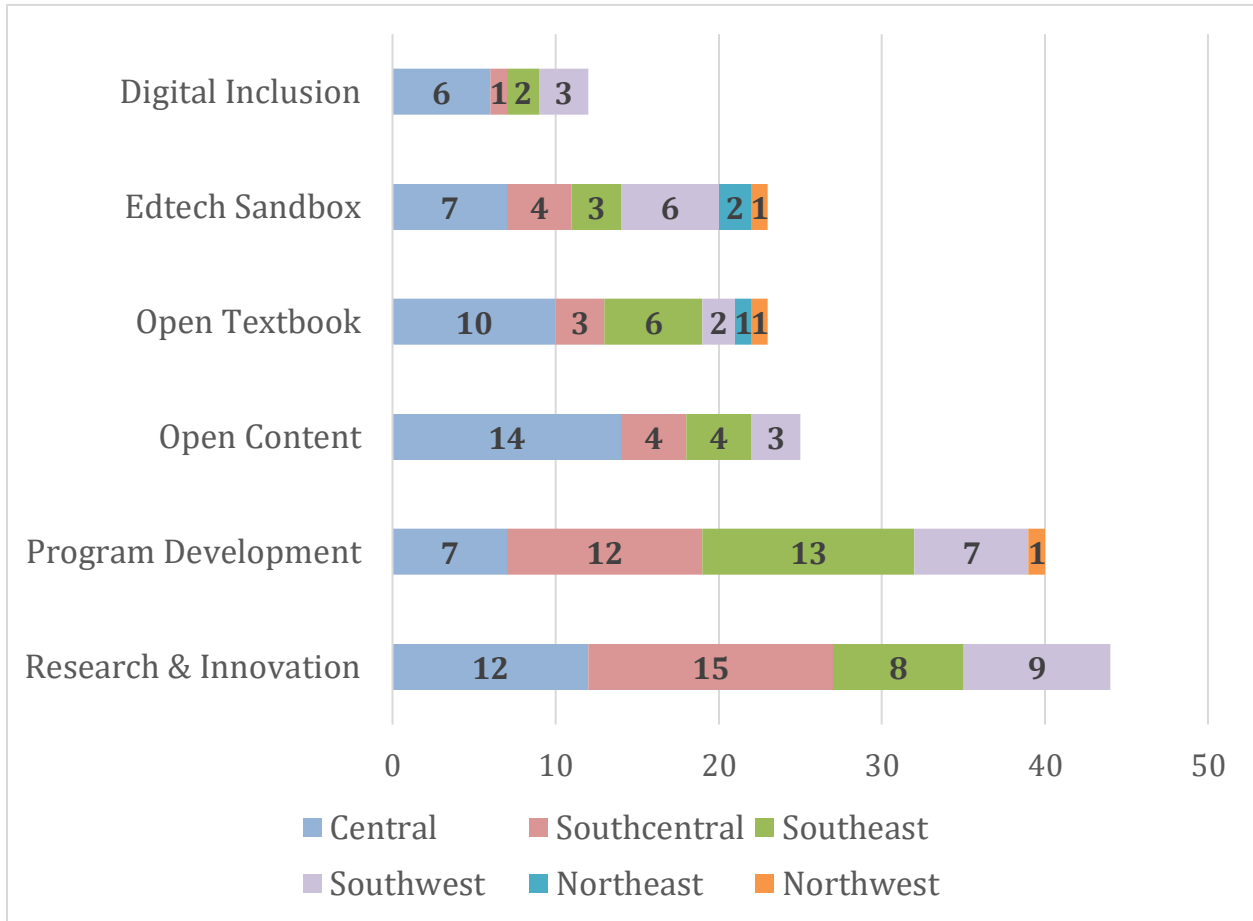
Through support of research activities, eCampusOntario has helped to promote member leadership in online learning. Through open and collaborative content development, it has helped to increase access to digital curriculum, while improving delivery efficiency and cost. Through new service capacity it has supported the scale of digital innovation in educational content.

In Figure 6, university and college participation in projects representing each kind of eCampusOntario category is apparent. Reflecting their greater weight in the sample (accounting for 70% of total projects), universities are more active than colleges in 4 of 6 categories; however, **college participation in all categories reflects broad engagement and access to support for the range of eCampusOntario project activities.**

Figure 6. eCampusOntario projects by category and type of institution
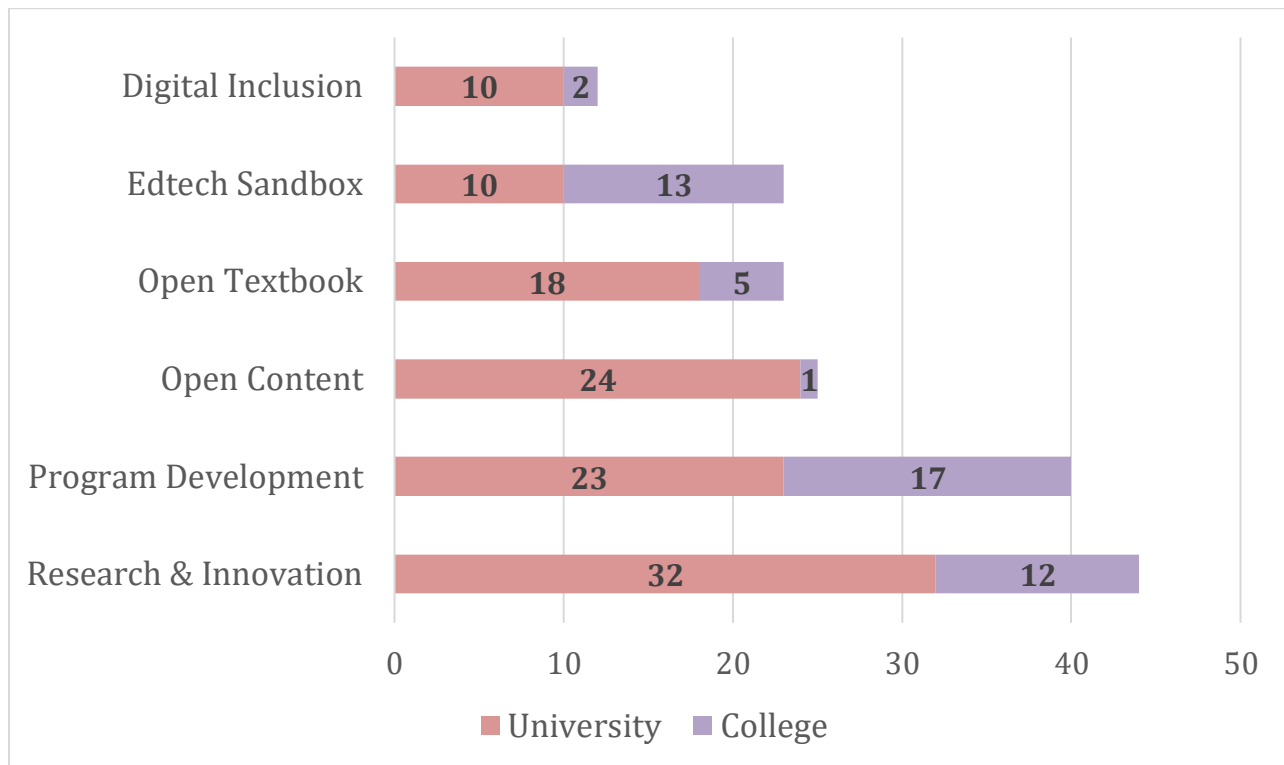
In addition to broad inclusion across regions and for different kinds of institutions, these figures highlight certain strengths, and indicate relative potential for the achievement of eCampusOntario goals going forward. For example, as Figure 7 illustrates, universities have shown greater engagement with research activities than colleges, which in turn dominate in the rapid adoption of elearning services represented by participation in the EdTech Sandbox projects. Looking through a regional lens, **the EdTech Sandbox and creation of the open textbook emerge as two kinds of initiatives that are accessible to institutions across the province.**

In project categories outlined in Figure 5 and 6, digital inclusion stands alone, a unique kind of initiative that performs one of two functions – improves the accessibility of elearning content and/or addresses the needs of marginalized groups. Projects that aimed at improving accessibility through developing technology capabilities included the following:

- Carleton University explored privacy and security strategies in screen readers to improve accessibility technology for the visually impaired,
- University of Toronto piloted the use of physical "data literacy objects" to promote digital literacy for blind and partially cited citizens, and
- York University researched how best to deliver digital technologies to young adults with developmental disabilities to improve educational, employment, community living and community integration prospects.

A second group of digital inclusion projects aimed at outreach to socially marginalized groups. These included:

- a Fanshawe College project that considered mechanisms to improve access to digital health care information for marginalized seniors groups,
- a Ryerson project that looked to identify digital tools which can by used by isolated caregivers to create networks and access information,
- a University of Toronto initiative that explored digital technologies based on inclusive design to deliver workplace safety information to groups that otherwise would not have access to this material (older, younger, unemployed, migrant or workers in small organizations), and
- an Algonquin College project designed to assess the impact of digital inclusion and online learning in indigenous territories.

These initiatives advanced knowledge on the creation of technology-enabled solutions and addressed the needs of other social groups, illustrating efforts to address social priorities in the province. Over the period under review, eCampusOntario provided funding for priority initiatives that included **9 projects focused on Indigenous culture, resources and social need, and 5 initiatives targeted at the development of French language skills.**

Technological Innovation

Another measure of excellence in eCampusOntario projects may be found in the application of innovative technologies and digital approaches that are key indicators of its forward-thinking strategy. In the EDUCAUSE Horizon Report for 2019[5], educational experts have described several trends driving advancements in the field of online learning. Table 1 shows how trends that EDUCAUSE panelists have identified as significant since 2015 align with a number of eCampusOntario funded projects.
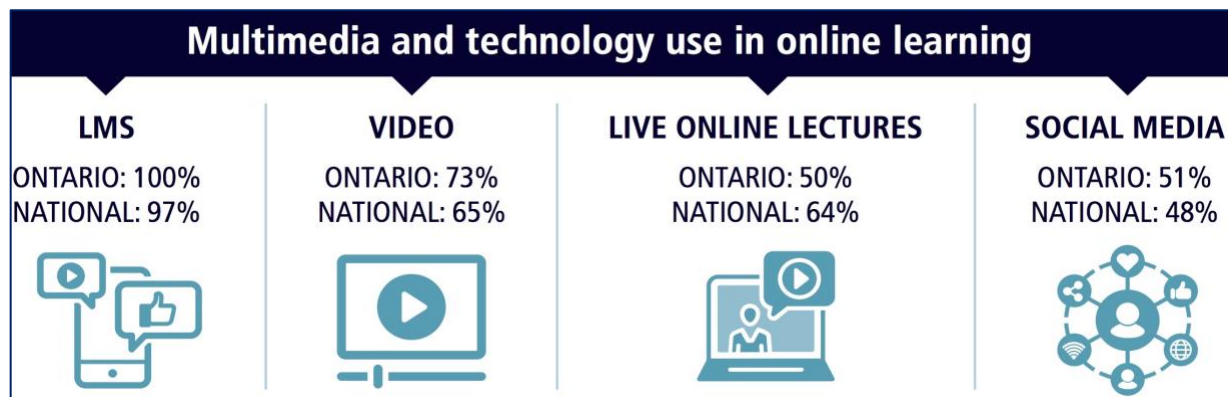
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[5] EDUCAUSE (2019). Horizon report. 2019 Higher education edition. pp. 6-12. Retrieved from https://library.educause.edu/-/media/files/library/2019/4/2019horizonreport.pdf?la=en&hash=C8E8D444AF372E705FA1BF9D4FF0DD4CC6F0FDD1

Table 1. Alignment of funded projects with EDUCAUSE top online learning trends for 2019

EDUCAUSE top online learning trends	eCampusOntario projects
Blended Learning Designs	6 blended; 2 hybrid
Growing Focus on Measuring Learning	3 analytics; 7 assessment; 4 evaluations
Advancing Cultures of Innovation	4
Redesigning Learning Spaces	9 labs
Deeper Learning Approaches	2
Collaborative Learning	1
Proliferation of Open Educational Resources	23 open textbook; 25 open content
Rethinking How Institutions Work	3
Cross-Institution & Cross-Sector Collaboration	84
Rise of New Forms of Interdisciplinary Studies	3
Modularized and Disaggregated Degrees	15 module projects; 4 badges

Similarly, Figure 7 reports selected findings from the the Canadian Digital Learning Research Association (CDLRAA) national survey for 2018, which identified LMS (97% of cases), use of video (65%), live online lecture formats (64%), mobile technologies (55%), and social media (48%) as used frequently in online learning environments.[6]

Figure 7. Multimedia and technology use in Canada and Ontario post-secondary online and digital learning programs

Multimedia and technology use in online learning

LMS
ONTARIO: 100%
NATIONAL: 97%

VIDEO
ONTARIO: 73%
NATIONAL: 65%

LIVE ONLINE LECTURES
ONTARIO: 50%
NATIONAL: 64%

SOCIAL MEDIA
ONTARIO: 51%
NATIONAL: 48%

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[6] Canadian Digital Learning Research Association. (2019). The rise of online learning in Canadian universities and Colleges. Retrieved from file:///C:/Users/Admin/Downloads/infographic-tess-eng-web_2019-03-30%20(1).pdf

In 3 of these multimedia and technology categories, Ontario institutional averages outpace national averages. **Innovative technologies emerge as project focus in at least 18 eCampusOntario projects, and are components of several others, which demonstrate the overall rise in Ontario's innovative use of technology for digital and online learning.**
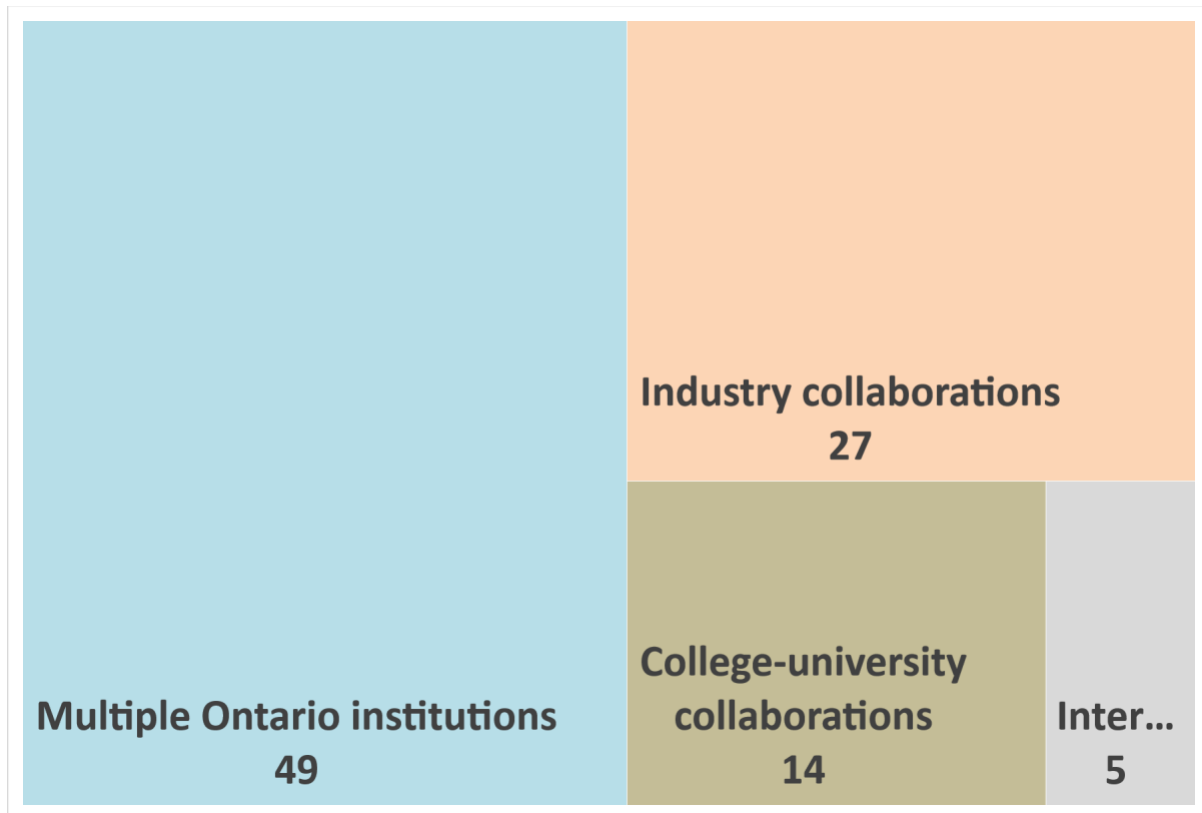
Part II: Collaborations and Partnerships

The binary system that has defined Ontario's post-secondary education environment, dictating the relatively siloed operation of universities and colleges, is giving way to greater student mobility across the two types of institutions. Encouraged by provincial bodies such as the College and University Consortium Council and greater cooperation between the [Council of Ontario Universities](#) and the Association of Colleges of Applied Arts and Technology of Ontario, laddering and degree completion agreements have begun to establish new pathways for student transfer between institutions.

This more collaborative approach in Ontario's higher education is also reflected in joint development of new programs and content that thrives on the pooling of subject matter experts (SME) and other instructor assets, as well as course sharing that can leverage scarce resources, while allowing instructors/institutions to focus more closely on area specializations.

In its approach to project funding, eCampusOntario has contributed to the development of new opportunities for resource sharing. eCampusOntario funding for projects involving multiple forms of institutional collaboration as well as industry partnership are outlined in Figure 8.

Figure 8. Projects involving institutional collaboration

Of total eCampusOntario funded projects, **84, or just over half, involved some level of collaboration between institutions.** Partnerships between multiple, Ontario-based institutions (49) predominate, with members working primarily in the area of program development (24) and the evolution of open content (15), but also in research and innovation projects (5), and in the creation of open textbooks (4) and digital inclusion (1). In fewer instances (14), eCampusOntario funding supported collaborations that crossed the college university divide in initiatives related to program development (6), open content (4), open textbooks (2), research and innovation (1) and digital inclusion (1). A total of five Ontario institutions worked with international partners in research and innovation to address the following challenges:

- the incorporation of social media in elearning analytics,
- the creation of online modules for heavy civil engineering,
- the use of gamification in an electronic medication administration record (eMAR) system simulator,
- development of multi-media case studies/vides incorporating new social innovation and entrepreneurship models for managing mental health disorders in low-resource settings and communities, and
- the adaptation of global health courseware to online delivery to develop complex problem-solving skills to address growing issues in sustainability.

Ontario*Learn* partnered with Ontario colleges in developing 9 programs and 31 courses; these collaborations received $6,199,094 of program funding.

Another collaboration category is the institution-industry partnership. To support joint development between educational institutions and industry innovators, eCampusOntario established relationships with key elearning providers whose capabilities enabled educational institutions to quickly and more easily adopt new trends in digital content creation. **Altogether, 27 Ontario institutions received eCampusOntario support for EdTech Sandbox-related projects:**

- Labster, a provider of virtual lab simulations that may be embedded in online science courses,
- Riipen, a Canadian based-platform that enables graduates to work on short term work projects to demonstrate employable skills, and
- CanCred a micro-credentials system based on Mozilla Open Badges.

Rather than reinvent the wheel, educational institutions have leveraged these industry capabilities to improve student learning and engagement. Multi-institutional collaborations across Ontario have helped educators to advance the development of state-of-the-art online delivery, sharing resources to reduce duplication, reduce costs and optimize content quality and student experience. See the eCampusOntario Sandbox report (2019) for more information.

Part III: Support for Workforce Development

With a mandate to support Ontario by advancing its digital education ecosystem, eCampusOntario has targeted funding at online technologies that support education for a range of industries and occupations in the province. eCampusOntario support for various fields is detailed in Figure 9.

Figure 9. Subject focus for eCampusOntario projects

In the Figure 9 word cloud, built from descriptions of the funded projects, the relative frequency of funding for various academic disciplines/professions by eCampusOntario is represented by font size. eLearning and education emerge as important priorities for support. As the image shows, a diverse range of subjects are also visualized—including **healthcase, business, employment, French, and the sciences**—that highlights the broad application of funding to support multiple industries, professions, and employment opportunities in Ontario.

Labour Market Alignment

Partnering with the Higher Education Quality Council of Ontario (HEQCO), in 2018 eCampusOntario engaged in a survey and focus group research to uncover student perceptions of professional and transferable skills development, and readiness for employment.[7] The study uncovered a sizable misalignment between the skills that students think they will need after graduation and the skills they are developing in their post-secondary experience. In face of this disquiet over job preparedness, the delivery of job-related education is especially critical to students' individual success, as is the delivery of specific hard skills that align with labour market needs in the Ontario economy.

In Figure 10, eCampusOntario project funding is outlined as it relates to high, moderate and low growth occupations. Growth estimates are provided by the Statistics Canada Labour Force Survey for April 2019, based on the National Occupational Classification (NOC) taxonomy defined by Employment and Social Development Canada.[8]

Figure 10 eCampusOntario project support for high, moderate and low growth Ontario employment

Education, law, commerce & government services

Business, finance & administration

Healthcare

Natural & applied science & related

Ontario employment increases by NOC

Art, culture, recreation & Sport

Natural resources & related

Sales & service

Trades, transportation & equipment operation

■ High growth   ■ Moderate growth   ■ Lower growth
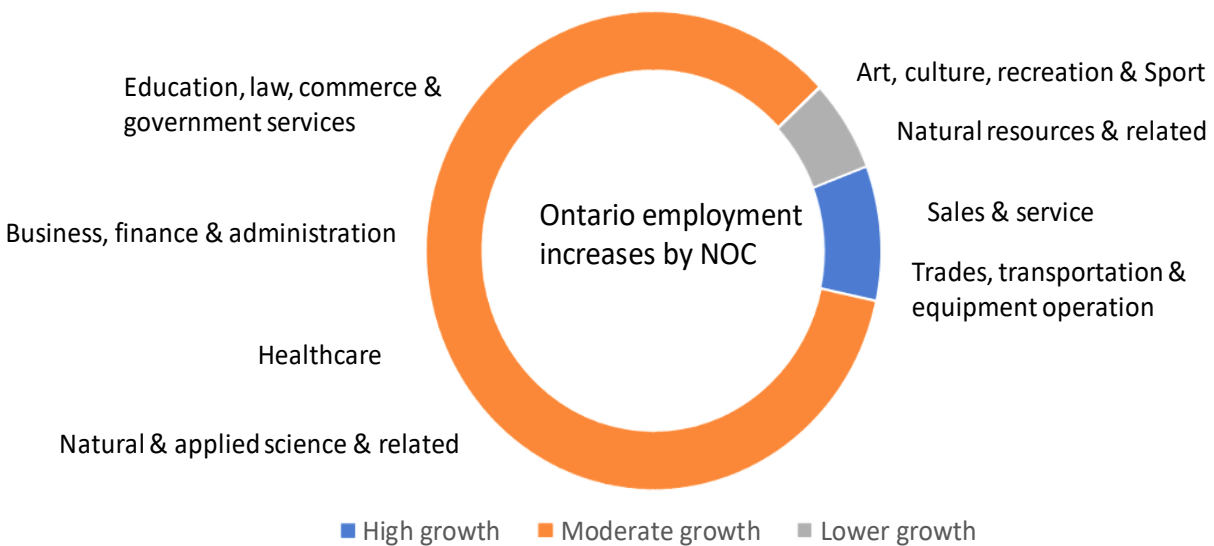
Source: Statistics Canada, Labour Force Survey, April 2018 to April 2019

As a snapshot of job gains and losses in Ontario from April 2018 to April 2019, the Labour Force Survey provides a quick view of growth in high level NOC areas, which encompass many

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[7] Lenarcic Biss, D. & Pichette, J. (2018). Minding the gap? Ontario postsecondary students' perceptions on the state of their kkills. Higher Education Quality Council of Ontario. Retrieved from http://www.heqco.ca/SiteCollectionDocuments/Formatted_%20Student%20Skills%20Survey_FINAL.pdf

[8] Chart 5 shows 'Employment increase and decrease by occupation'. Ministy of Training, Colleges and Universities. (2019, April). Labour market report. Retrieved from https://www.ontario.ca/page/labour-market-report-april-2019

specific, individual employment codes.[9] In the Figure above, **high growth employment areas include sales and services, trades, transportation and equipment operation;** moderate growth areas include education, law, commerce and government services; and low growth areas include art, culture, recreation and sport, and natural resources and related occupations.

When eCampusOntario funded projects are mapped onto this view of the Ontario labour market, one key finding is that **virtually all (164 of 167 total) initiatives support professional areas (defined by NOC) that experienced hiring increases in April 2019**. Approximately 84% of funded projects map to moderate growth areas, approximately 9% map to high growth areas, and 6% map to low growth year over year employment increases.

eCampusOntario demonstrated high levels of project funding alignment between educational initiatives and labour market needs. Going forward, this kind of support will remain critical. According to a recent Conference Board of Canada survey, 40% of Ontario's small and medium-sized businesses currently have difficulty hiring new employees, and labour shortages are not expected to improve for at least a decade.[10]
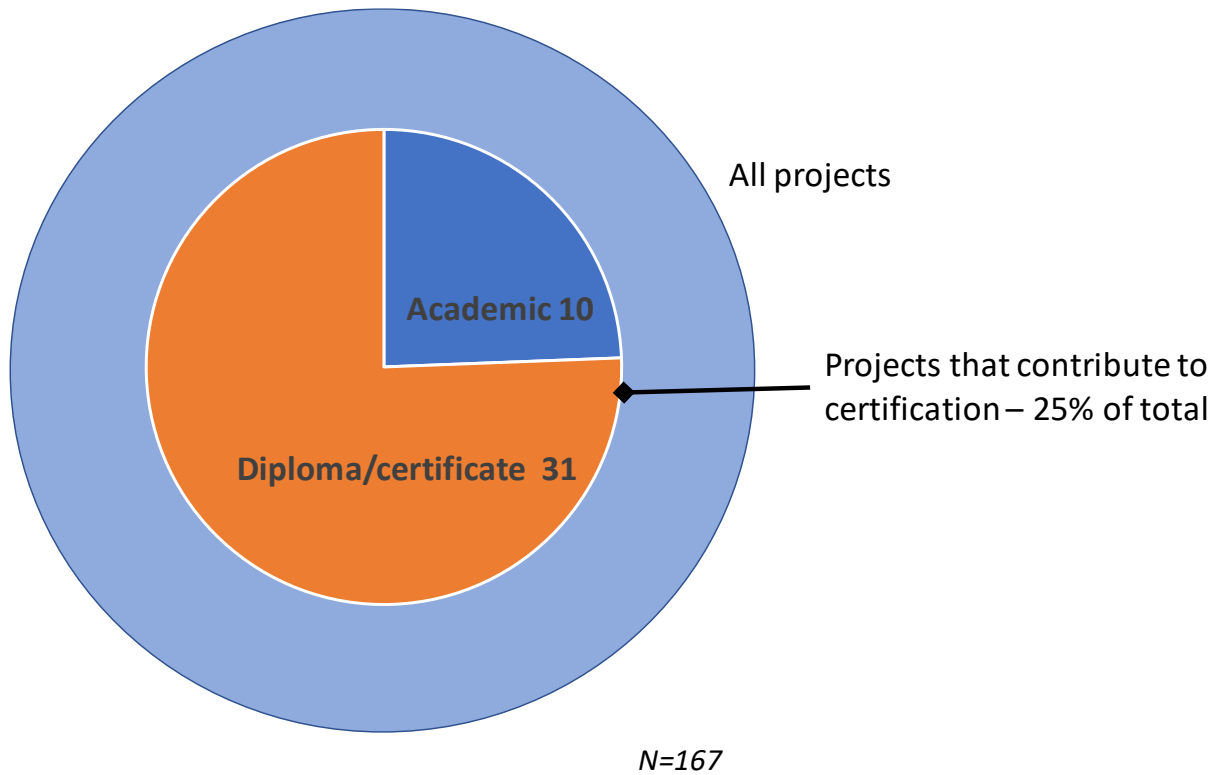
Certifications

In a recent survey of 1,538 Ontario employers (approximately 13% of total provincial employment) on how to address skills gaps, the Conference Board of Canada found significant employer interest in candidates' educational credentials. Approximately 57% of respondents stated need for employees with 2- or 3-year college diplomas, 44% who stated need for employees with 4-year degrees, and 41% who stated need to hire employees with trades training.[11] This strong employer interest in educational qualifications reflects the importance of credentialization to work opportunity and individual career success.

Figure 11 outlines eCampusOntario funded projects that are associated with some level of degree, diploma or certificate program.

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[10] BDC (2018, September). Labour shortage: Here to stay. Worker scarcity in Canada and what businesses can do to respond. Retrieved from https://www.bdc.ca/en/about/sme_research/pages/labour-shortage.aspx

[11] Stuckey, J., & Munro, D. (2013, June). The need to make skills sork. The cost of Ontario's skills gap. The Conference Board of Canada. Retrieved from https://www.collegesontario.org/Need_to_Make_Skills_Work_Report_June_2013.pdf

Figure 11 eCampusOntario funded projects that support educational certification

All projects

Academic 10

Projects that contribute to
certification – 25% of total

Diploma/certificate 31

N=167

Of 167 funded projects, **41—or 25% of the total—were online courses, modules or programs leading to some type of degree, diploma or certificate.** Although a quarter of potential funded project represents a portion of the total number of projects, eCampusOntario predicts that 100% of initiatives classified as program development have support some sort of credentialization.

Of projects associated with explicit mention of certification, **10 support student achievement of an academic degree, while 31 contribute towards attainment of a diploma or other form of certification.** In its focus on certification in program development initiatives, eCampusOntario funding has worked to reinforce the relevance of accredited training and education to both employers and employers for the current and future Ontario workforce.