



**SKILLSNEXT**

# Leveraging the Skills of Social Sciences and Humanities Graduates

JANUARY 2020

Sandra Lapointe &  
Jonathan Turner





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The Diversity Institute conducts and coordinates multi-disciplinary, multi-stakeholder research to address the needs of diverse Canadians, the changing nature of skills and competencies, and the policies, processes and tools that advance economic inclusion and success. Our action-oriented, evidence-based approach is advancing knowledge of the complex barriers faced by underrepresented groups, leading practices to effect change, and producing concrete results. The Diversity Institute is a research lead for the Future Skills Centre.

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The word "Canada" in a serif font, with a small Canadian flag icon integrated into the letter "a".

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# ABOUT THE PROJECT

Canadians' needs for skills training are changing rapidly. Through Skills Next, the Public Policy Forum and the Diversity Institute—in its role as a research lead for the Future Skills Centre—are publishing a series of reports that explore a number of the most important issues currently impacting the skills ecosystem in Canada. Each report focuses on one issue, reviews the existing state of knowledge on this topic, and identifies areas in need of additional research. This strong foundation is intended to help support further research and strengthen policymaking. A diverse set of authors who are engaged in the skills ecosystem through various roles, including through research, activism and policymaking, have been carefully selected to provide a broad range of perspectives while also foregrounding the Canadian context. Their varied backgrounds, experiences and expertise have shaped their individual perspectives, their analyses of the current skills ecosystem, and the reports they have authored.

Skills Next includes reports focused on:

- **Global comparison of trends to understand the future of skills;**
- **Knowns and unknowns about skills in labour market information;**
- **Rethinking the relationship between technology and the future of work;**
- **Defining digital skills and the pathways to acquiring them;**
- **Barriers to employment for immigrants and racialized people in Canada;**
- **Barriers to employment for persons with disabilities;**
- **The return on investment of industry leadership in skills and training; and**
- **Approaches to improving the transitions of university graduates from education to the workforce.**





## ABOUT THE AUTHORS



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Jonathan Turner co-founded the Graduate and Postdoctoral Development Network ([cags.ca/gpdn/](http://cags.ca/gpdn/)) – an organization with over 150 members at 39 institutions across Canada. He was an Executive for three years and now serves as the Chair of the Research and Partnerships Committee and the Project Manager for a Benchmarking Project run jointly with the Canadian Association for Graduate Studies. After finishing a PhD at the University of Toronto, Jonathan has worked as a Professional and Graduate Skills Specialist, Career Educator, Special Projects Advisor, and most recently as an Institutional Strategic Initiatives Officer. In all four roles he has focused on student and postdoctoral development in curricular, co-curricular, and curriculum-adjacent settings. He has a BA in Philosophy and History from York University, a BSc in Physics from the University of Waterloo, and a MA and PhD in History and Philosophy of Science and Technology from the University of Toronto.



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# EXECUTIVE SUMMARY

**Dramatic demographic shifts in recent years coupled with fast-paced technological change have amplified attention on the future of work and the skills needed by employers to sustain economic growth. Studies have explored the issue of “jobs without people” and “people without jobs” from various angles, with some focusing attention on the role of universities in preparing graduates for the workplace.**

This report briefly reviews existing research on emerging employer needs and employment prospects for university graduates (particularly in social sciences and humanities), before mapping out approaches that aim to support graduates' transition into employment. While debates persist, and although outcomes vary by discipline and population groups, there is evidence to suggest employment prospects for university graduates in the humanities and social sciences are better than some suggest—and, in particular, that they get better over time.

Data also indicates the so-called “skills gap” is, in part, a matter of perception and semantics and more work needs to be done to develop frameworks to support a better documented and nuanced understanding of the concern expressed by employers. At the same time, it reveals real challenges in terms of assessments and recognition that need to be addressed. In the final section, the report surveys a range of both longstanding and innovative approaches to enhance graduate employment opportunities and ease transition into the workplace. Some are integrated into and adjacent to university education. They include program and curriculum-based activities, pedagogical work-integrated learning activities, co-curricular skills development activities, and career and placement services.



We conclude that despite the proliferation of such initiatives and increased collaboration between universities and employers, our knowledge is at best partial and future action needs to be supported by additional research. Among other things, we need:

1. **More information on how universities are responding to growing demand to improve employability of graduates;**
2. **More comprehensive mapping of programs that exist and their key characteristics;**
3. **Better assessment of the impact of these programs, as well as information on who participates in them and who benefits from them;**
4. **Assessment of the particular impact of these programs on equity-deserving groups;**
5. **Shared frameworks and definitions of skills, competencies, tools and techniques; and**
6. **Increased promotion of collaboration across institutions to share best practices, replicate, and scale what works.**



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# INTRODUCTION

The world of work is changing, fast. Innovation and technology are transforming its nature as a generation of skilled and experienced workers is retiring. Meanwhile, employers are investing less than ever in employee training and development, and universities in turn are being called upon to be more responsive to employer needs.<sup>1</sup> It is therefore perhaps unsurprising that debate persists about the job readiness of Canada's university graduates. Some employers continue to report being unable to fill available positions, while university graduates are simultaneously unable to find work commensurate with their education, especially in the social sciences and humanities. This is one factor that fuels discussion and concern regarding the relevance of university graduates' skills.

Expectations for university training are also changing. Admittedly, in a general sense, the role of post-secondary institutions is at least in part to 'develop students' general and technical skills, prepare them for specialized roles in the workforce, and generate and share advanced research and knowledge for social and economic benefit."<sup>2</sup> As the focus on career readiness and employment outcomes is increasing in response to government and industry pressure, and post-secondary institutions are trying to adapt, it's important to remember that post-secondary education stakeholders are also keen to preserve universities' distinctive mission.<sup>3, 4, 5</sup>

Government priorities for higher education are increasingly aligned with those expressed by industry: both want education to equip future employees with skills that prepare them for transition into the workforce, and to ensure they can maintain employment by adapting as work evolves. Some governments are responding to this pressure by adding emphasis on digital skills and programming and increasing their focus on science, technology, engineering, and math (STEM) disciplines.<sup>6</sup> For instance, in response to a report that focused on the importance of increasing the number of graduates with deep technology skills, the Government of Ontario recently announced a planned increase in the number of STEM graduates over the next five years.<sup>7</sup>

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<sup>1</sup> Stuckey, J., and Munro, D. (2013). [The need to make skills work: The cost of Ontario's skills gap](#). The Conference Board of Canada, p. 8.

<sup>2</sup> Munro, D. (2019). [Skills, training and lifelong learning](#). Public Policy Forum.

<sup>3</sup> Mosaic Research Solutions. (2016). [Canadian graduate and professional student survey - \(2016\): Summary report](#). Canadian Association for Graduate Studies.

<sup>4</sup> Mosaic Research Solutions. (2019). [Career centre resources, services and metrics: A pan-Canadian benchmarking survey](#). CACEE Research Brief. Canadian Association of Career Educators and Employers (CACEE).

<sup>5</sup> Grant, M. (2016). [Aligning skill development to labour market need](#). The Conference Board of Canada.

<sup>6</sup> The Premier's Highly Skilled Workforce Expert Panel. (2016). [Building the Workforce for Tomorrow: A Shared Responsibility](#). Government of Ontario.

<sup>7</sup> Ministry of Economic Development, Job Creation and Trade. (2017). [Ontario Boosting the Number of Graduates in Science, Tech, Engineering, Mathematics and Artificial Intelligence](#). Government of Ontario.

New programs—such as work-integrated learning (WIL)—are being funded to help students transition to employment.<sup>8</sup> Universities generally maintain they have a social mission and are preserving essential values when they focus on producing graduates who contribute to society. Graduates themselves have mixed views on the skills they acquire and how well-prepared they are to work after graduation—40 percent of social sciences and humanities undergraduates return to school within a year of graduating, 15 percent of them enrolling in community college.<sup>9</sup> Increasingly, students and their parents expect a university education to enhance career opportunities. Thus, while post-graduation employment statistics have long been part of key performance indicators for colleges, more and more governments are extending their application to universities as well.<sup>10</sup>

Employers too, are focusing attention on universities, with 76 percent claiming they are “working with an educational institution(s), including universities, colleges, and polytechnics to better prepare students for joining the workforce.”<sup>11</sup> But the nature and impact of these collaborations differ across institutions and program areas.

Significantly, views differ on whether preparing job-ready employees is the responsibility of post-secondary institutions or that of employers, and extensive research has been undertaken around the world on the nature and dimensions of the so-called “skills gap.”<sup>12</sup> Some point their fingers at universities, arguing they are not responding adequately and their approaches are out of date.<sup>13</sup> Others note that employers are unable to accurately predict the need for specific skills.<sup>14, 15, 16</sup> Still some argue employers often overlook qualified workers, including women, Indigenous peoples, racialized people and persons with disabilities, as well as internationally trained professionals, because of bias and systemic

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<sup>8</sup> Government of Canada. (2019). [Budget 2019: Investing in Young Canadians](#). Government of Canada

<sup>9</sup> Institute for Competitiveness & Prosperity. (2018). [Teaching for Tomorrow: Building the Necessary Skills Today. Working Paper 33](#). Institute for Competitiveness & Prosperity.

<sup>10</sup> Ontario Ministry of Colleges and Universities. (2019). [Key performance indicators, colleges and other public institutions](#). Government of Ontario.

<sup>11</sup> Business Council of Canada. (2016). [Developing Canada's future workforce: a survey of large private-sector employers](#). Aon Hewitt, p. 8.

<sup>12</sup> Borwein, S. (2014). [The Great Skills Divide: A Review of the Literature](#). Higher Education Quality Council of Ontario (HEQCO).

<sup>13</sup> Munk, J. (2016). [Universities can't solve our skills gap problem, because they caused it](#). TechCrunch.

<sup>14</sup> The calls for more technology workers, for example, have persisted for 20 years but wage shifts do not necessarily indicate the shortages are as acute as claimed. See, for instance, Finnie, R., Pavlic, D., and Childs, S. (2018). [Earnings of university bachelor's degree graduates in information and communication technology programs: A tax data analysis](#). Canadian Public Policy, 44(S1) S13–S29. Moreover, calls by Nortel to “double the pipeline for engineers” led Ontario to do just that. Then the company collapsed, the dot-com boom busted, and Ontario ended up with many underemployed engineers. Similarly, in recent years the calls for more STEM talent have shifted to calls for more so-called “soft skills” — labour market projections based on employer surveys are often fraught.

<sup>15</sup> Cukier, W. (2019). [Bridging the Skills Gap](#). HRProfessionalNow.

<sup>16</sup> Lee, J.Y., and Patel, S. (2019). [Redefining career communities in higher education](#). International Journal of Higher Education 8(5), 1–11.

barriers leaving even trained engineers without jobs.<sup>17, 18, 19</sup> While Canada invests heavily in post-secondary education compared to other countries, Canadian employers under-invest in training compared to others, according to international studies.<sup>20, 21, 22</sup>

There is little doubt the growing focus on job readiness and skills has started to erode enrolment in humanities and, to a lesser extent, social sciences.<sup>23</sup> Pundits both challenge<sup>24, 25, 26, 27</sup> and defend<sup>28</sup> the value of social sciences and humanities education. Humanities scholars have tended to defend the importance of humanities to the functioning of democracy and civil society. They often reject more “utilitarian” arguments as signs of corporatization of the university.<sup>29</sup> Increasingly, however, the defence of humanities and social sciences has been based on their importance in developing the skills—such as critical thinking, communication, and problem-solving—needed to succeed in the global economy. A recent report published by RBC for example noted that:

**... demand for the skills [Liberal Arts] cultivate is growing. As more tasks become automated in the workplace, there is an increasing demand for people with the skills to both complement and collaborate with technology. Critical thinking, reading comprehension and communication skills are needed more than ever, yet fewer youth are choosing Liberal Arts programs that deepen these competencies. Heading into the 2020s, we need more curiosity and creativity. Employers told us that candidates with strengths in language and problem solving get hired. As a result, interdisciplinary learning is needed to push the capabilities offered by a Liberal Arts education.<sup>30</sup>**

<sup>17</sup> Ng, E., Gagnon, S. (2020). [Employment gaps and underemployment for racialized groups and immigrants in Canada: Current findings and future directions](#). Skills Next. Public Policy Forum, Diversity Institute at Ryerson University, Future Skills Centre.

<sup>18</sup> Tompa, E., Boucher, N. and Samosh, D. (2020). [Skills gaps, underemployment and equity of labour-market opportunities for persons with disabilities in Canada](#). Skills Next. Public Policy Forum, Diversity Institute at Ryerson University, Future Skills Centre.

<sup>19</sup> Forthcoming Skills Next paper on barriers to employment for Indigenous people in Canada.

<sup>20</sup> Stuckey, J., and Munro, D. (2013). [The need to make skills work: The cost of Ontario's skills gap](#). The Conference Board of Canada, p. 8.

<sup>21</sup> Munro, D. (2014). [Employers Must Start Investing in Skills Training or Risk Having Public Policy Nudge Them Along](#). Financial Post.

<sup>22</sup> Organisation for Economic Co-operation and Development (OECD). (2019). [Getting Skills Right: Future-Ready Adult Learning Systems](#). OECD.

<sup>23</sup> Dutt-Ballerstadt, R. (2019). [Academic Prioritization or Killing the Liberal Arts?](#) Inside Higher Ed.

<sup>24</sup> Chiose, S. (2014). Recent University Grads Increasingly Jobless. The Globe and Mail

<sup>25</sup> Cohen, P. (2016). [A Rising Call to Promote STEM Education and Cut Liberal Arts Funding](#). The New York Times

<sup>26</sup> Edge, J., Martin, E., and McKean, M. (2018). [Getting to work: Career skills development for social sciences and humanities graduates](#). The Conference Board of Canada.

<sup>27</sup> The Premier's Highly Skilled Workforce Expert Panel. (2016). [Building the Workforce for Tomorrow: A Shared Responsibility](#). Government of Ontario.

<sup>28</sup> Lewington, J. (2019). [Yes, you will get a job with that arts degree: Arts students once feared spending life as a barista. But they're increasingly popular hires for tech firms](#). Maclean's.

<sup>29</sup> Ruark, J. (2011). [Defenders of the humanities look for new ways to explain their value](#). The Chronicle of Higher Education.

<sup>30</sup> Schrumm, A., et al. (2019). [Bridging the Gap: What Canadians told us about the skills revolution](#). Royal Bank of Canada (RBC), 4-5.

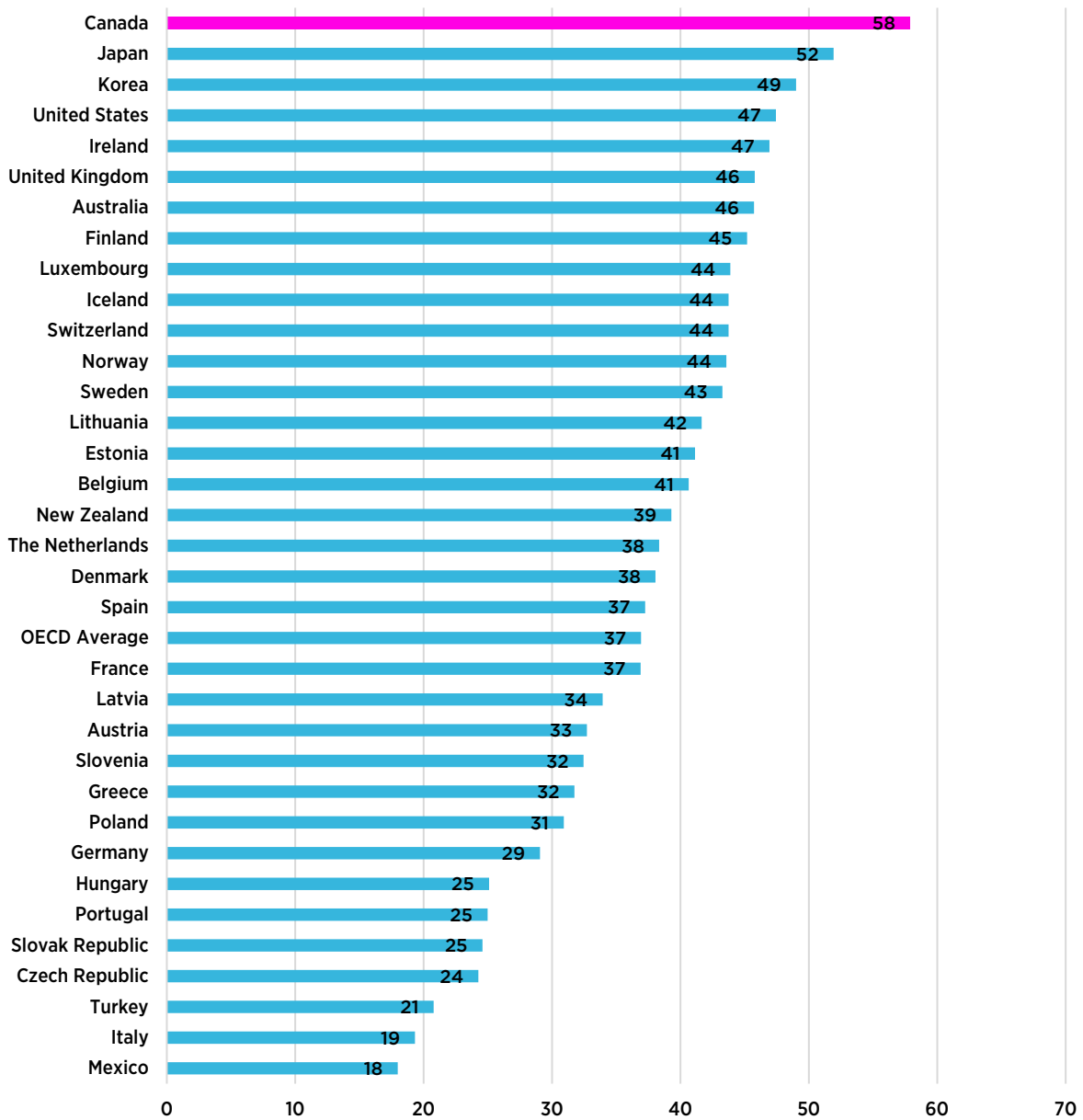
In this report, we review existing research on employment prospects for university graduates, particularly in social sciences and humanities, and seek to illuminate the true nature of the so-called “skills gap” in which they find themselves. We take stock of the discourse on the skills gap, examine emerging employer needs, and review some of the extent to which innovative approaches are being used to better transition graduates into employment. Finally, we close by highlighting a number of questions that need answering if we are to fully understand just how big—or small—the skills gap really is, and what can be done about it.



# EMPLOYMENT OUTCOMES OF UNIVERSITY GRADUATES

Canadians are among the best-educated people on the planet. Fully 58 percent of 25- to 64-year-olds hold a post-secondary credential, including college or university graduation (see Figure 1).

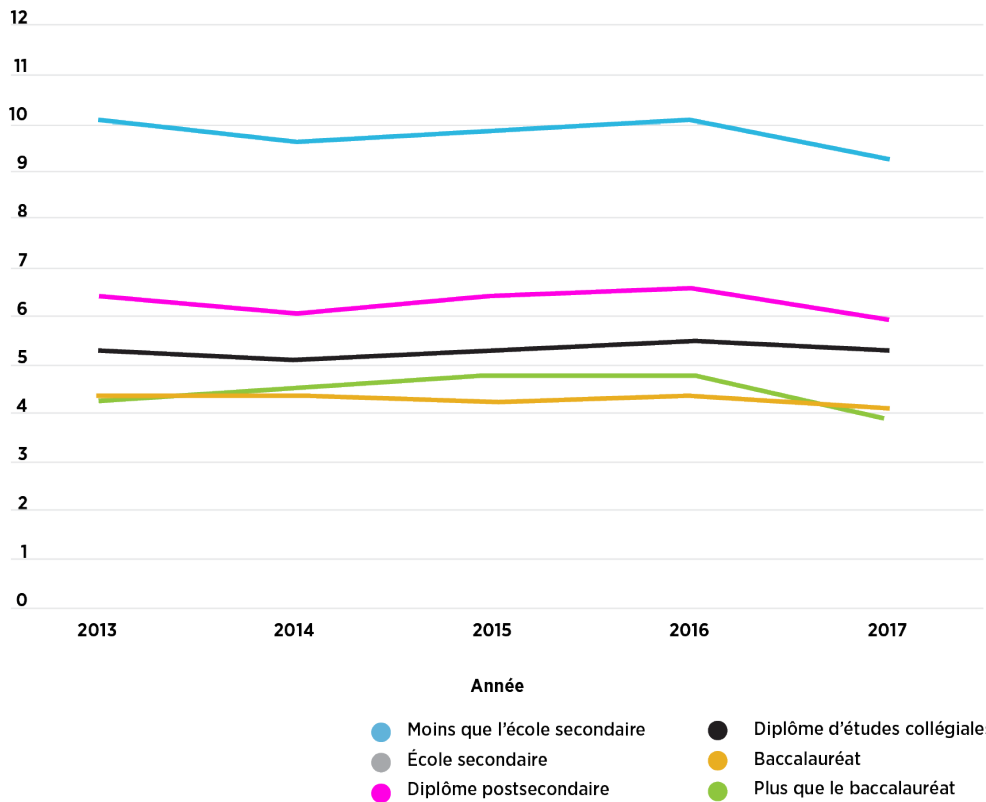
**Figure 1: Percentage of those aged 25 to 64 with a post-secondary credential**



Source: OECD. (2018). [Education at a Glance](#).

Bachelor degree holders earn, on average, \$25,000 more per year than high school graduates.<sup>31</sup> Those with bachelor’s or post-graduate degrees are less likely to be unemployed than college or high school graduates (Figure 2).

**Figure 2: Unemployment Rate by Education Level (Percent unemployed, 2013-2017 by highest level of education attained, 25 years old and over)**



Source: Statistics Canada. [Labour force characteristics by educational degree, annual](#). Table 14-10-011801.

Income and employment data for social sciences and humanities graduates also indicate their skills are in demand and the “skills gap” is perhaps not as pronounced as is claimed. While it’s true that engineering and technology graduates obtain employment more quickly, the disparity in employment outcomes between STEM, and social sciences and humanities graduates narrows over time.<sup>32</sup> Data on salaries in Ontario, for example, indicate business graduates earn almost as much as engineers, and social sciences

<sup>31</sup> Statistics Canada. (2017). [Does education pay? A comparison of earnings by level of education in Canada and its provinces and territories](#). Catalogue No. 98-200-X(2016)024.

<sup>32</sup> Finnie, R., et al. (2016). [Barista or Better? New Evidence on the Earnings of Post-Secondary Education Graduates: A Tax Linkage Approach](#). Education Policy Research Initiative.

graduates earn more than science graduates after two years.<sup>33, 34</sup> Likewise, humanities graduates earned slightly more than biology and agriculture graduates two years out (see Table 1 below).<sup>35</sup> Similar findings have been reported in the United States, where an initial earnings premium for STEM majors disappears after several years.<sup>36</sup>

Indeed, after years of focusing on digital skills and the importance of STEM disciplines,<sup>37</sup> employers have recently become more vocal about the importance of “soft skills” such as communications and interpersonal skills. In a recent book, executives at Microsoft indicated humanities graduates were critically important in dealing with emerging technologies such as artificial intelligence.<sup>38</sup> Major corporations such as banks continue to recruit from social sciences and humanities graduates and some believe the premium on their skills will actually increase as a result of disruptive technologies.<sup>39</sup>

This is particularly important as an over-emphasis on STEM has had unintended consequences regarding inclusion.<sup>40</sup> In spite of years of effort, for example, there are only marginally more women in engineering than 30 years ago and fewer in computer science.<sup>41</sup> University students with disabilities are far more likely to study social sciences and humanities, as are Indigenous students. Consequently, programs that privilege STEM exclude these groups, as has been documented in gender and diversity analyses of co-operative education and other work-integrated learning programs, applied research, and more.<sup>42</sup>

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<sup>33</sup> Frenette, M., and Frank, K. (2016). [Earnings of postsecondary graduates by detailed field of study](#). Economic Insights No. 056. Statistics Canada

<sup>34</sup> Rastrick, C. (2018). [Meaningful Employment for Humanities and Social Sciences Graduates](#). Ontario Centre for Workforce Innovation.

<sup>35</sup> Cukier, W. (2019). [Inclusive Innovation: Challenging Assumptions](#). Presentation to the Inclusive Prosperity: Recoupling Growth, Equity and Social Kingston Conference. Queen’s University.

<sup>36</sup> Deming, D. (2019). [Engineers Sprint Ahead, but Don’t Underestimate the Poets](#). College of Arts and Sciences.

<sup>37</sup> See, for instance, The Expert Panel on STEM Skills for the Future. (2015). [Some Assembly Required: STEM Skills and Canada’s Economic Productivity](#). Council of Canadian Academies.

<sup>38</sup> Microsoft, Smith, B., and Shum, H. (2018). *The Future Computed: Artificial Intelligence and its role in society*. Microsoft.

<sup>39</sup> Schrumm, A., et al. (2019). [Bridging the Gap: What Canadians told us about the skills revolution](#). Royal Bank of Canada (RBC), 4-5.

<sup>40</sup> Cukier, W., Campbell, M., and McNamara, L. (2019). *Diversity implications of work integrated learning*. Ontario Human Capital Research and Innovation Fund. Toronto: Ryerson Diversity Institute.

<sup>41</sup> Cukier, W. (2019). [Women in engineering: Barriers remain 30 years after École Polytechnique shooting](#). The Conversation.

<sup>42</sup> Cukier, W., Campbell, M., and McNamara, L. (2019). *Diversity implications of work integrated learning*. Ontario Human Capital Research and Innovation Fund.

**Table 1: Salary of those employed full time after two years in Ontario by discipline<sup>43</sup>**

DISCIPLINE	2005 GRAD	2014 GRAD
Dentistry	\$103,750	\$99,601
Veterinary Medicine	\$70,714	\$77,440
Medicine	\$68,333	\$72,875
Law	\$75,376	\$72,412
Computer Science	\$56,828	\$70,148
Engineering	\$58,939	\$65,475
Nursing	\$58,927	\$62,201
Mathematics	\$50,814	\$58,718
Business and Commerce	\$52,383	\$54,416
Therapy and Rehabilitation	\$50,313	\$52,500
Health Professions	\$51,410	\$51,061
Other Arts and Sciences	\$49,954	\$44,736
Physical Sciences	\$48,860	\$43,444
Education	\$47,992	\$43,550
Social Sciences	\$43,996	\$42,047
Journalism	\$40,870	\$40,190
Kinesiology/Recreation/Phys Ed.	\$42,647	\$38,948
Humanities	\$41,550	\$38,892
Agriculture and Biology	\$42,038	\$38,660
Fine and Applied Arts	\$36,911	\$35,742
<b>Average</b>	<b>\$49,669</b>	<b>\$49,636</b>

<sup>43</sup> Cukier, W. (2019). [Inclusive innovation: Challenging assumptions](#). Presentation to the Inclusive Prosperity: Recoupling Growth, Equity and Social Kingston Conference. Queen's University.

Also worth noting, just as science degrees offer pathways to professional training in medicine, dentistry and veterinary medicine with good employment prospects, humanities and social sciences undergraduate degrees offer pathways to professional degrees such as law and business administration that are associated with in-demand and well-paid positions.<sup>44</sup> For example, of the top 10 disciplines with the highest probability of being admitted to law school, most are humanities and history is No. 1.<sup>45</sup>

Still, a significant proportion of university graduates are unemployed or underemployed. For example, based on a self-reported measure of over-qualification, Statistics Canada found about 12 percent of workers aged 25 to 64 with a university degree reported having a job that required only a high school education (i.e., they were “overqualified.”) Another 19 percent said their job required a college education, while 69 percent said their job required a university education. Underemployment or over-qualification has a significant impact on job satisfaction. After accounting for other pertinent factors, about 13 percent of university graduates with a job for which they were overqualified were not satisfied, compared with only three percent of those who were appropriately qualified in a university-level position.<sup>46</sup>

Disciplinary specialty, of course, is not the only factor affecting employment outcomes for graduates. Other factors affect career outcomes, including demographics and the characteristics and ability of the individual job seeker. Regardless of qualifications and skills, research shows gender, socioeconomic status, sexuality, racialization, Indigeneity, ability, neurodiversity, and other individual characteristics all impact employment outcomes, in part because of unconscious bias and systemic barriers in employment processes.<sup>47, 48, 49, 50, 51, 52</sup>

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<sup>44</sup> Cukier, W. (2019). [Inclusive innovation: Challenging assumptions](#). Presentation to the Inclusive Prosperity: Recoupling Growth, Equity and Social Kingston Conference. Queen’s University.

<sup>45</sup> College Consensus. (n.d.). [10 best degrees for getting into law school](#). College Consensus.

<sup>46</sup> Uppal, S., and LaRochelle-Côté, S. (2014). [Overqualification among recent university graduates in Canada](#). Statistics Canada.

<sup>47</sup> Ng, E., Gagnon, S. (2020). [Employment gaps and underemployment for racialized groups and immigrants in Canada: Current findings and future directions](#). Skills Next. Public Policy Forum, Diversity Institute at Ryerson University, Future Skills Centre.

<sup>48</sup> Tompa, E., Boucher, N. and Samosh, D. (2020). [Skills gaps, underemployment and equity of labour-market opportunities for persons with disabilities in Canada](#). Skills Next. Public Policy Forum, Diversity Institute at Ryerson University, Future Skills Centre.

<sup>49</sup> Forthcoming Skills Next paper on barriers to employment for Indigenous people in Canada.

<sup>50</sup> Block, S., and Galabuzi, G.-E. (2018). [Persistent inequality: Canada’s colour-coded labour market](#). Canadian Centre for Policy Alternatives.

<sup>51</sup> Angus Reid Institute. (2015). [Disability and accessibility: Canadians see significant room for improvement in communities where they live](#). Angus Reid Institute.

<sup>52</sup> Turcotte, M. (2014). [Persons with disabilities and employment](#). Statistics Canada.



# DEFINING SKILLS AND COMPETENCIES

While there is evidence some Canadian employers are focusing more on skills than credentials,<sup>53</sup> understanding the nature of the skills needed by employers and the role of post-secondary institutions in fostering those skills is impeded because assumptions and terminologies used to describe these concepts often diverge. The literature from which institutions can draw to identify the competencies employers are looking for is, at best, uneven: definitions vary, assessment frameworks differ in scope, and data derives from divergent methodologies.<sup>54, 55, 56, 57</sup>

For example, traditional approaches to labour market information rely on surveys and occupational codes or job categories that are often inadequately defined and understood, and which quickly become out of date. Emerging efforts to use technology to extract and distil real-time data from job boards and databases such as Burning Glass, LinkedIn and Magnet, hold promise.<sup>58, 59</sup> However, they are also fraught with challenges because databases use different ontologies and skills taxonomies. For instance, some approaches draw on the traditional national occupational codes to define and organize information about employer needs, while others work with elaborate taxonomies of competencies that include information about knowledge, skills, behaviours, context and even attitudes.<sup>60</sup>

Adding to the complexity is the presence of important gaps in understanding and common language. In addition to gaps in the data and disagreements regarding job readiness, differences in terminology also add to the confusion. For example, the often-fuzzy definitions of, and differentiation between, skills, competencies, tools and techniques can make it challenging to discuss and apply these concepts.<sup>61, 62, 63</sup>

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<sup>53</sup> Braham, E., Tobin, S. (2020). [Solving the skills puzzle: The missing piece is good information](#). Skills Next. Public Policy Forum, Diversity Institute at Ryerson University, Future Skills Centre.

<sup>54</sup> Grant, M. (2016). [Aligning skill development to labour market need](#). The Conference Board of Canada

<sup>55</sup> Canadian Education and Research Institute for Counselling (CERIC). (2019). [Career development in the Canadian workplace: National business survey](#). CERIC.

<sup>56</sup> Shortt, D., Robson, B. and Sabat, M. (2020). [Bridging the digital skills gap: Alternative pathways](#). Skills Next. Public Policy Forum, Diversity Institute at Ryerson University, Future Skills Centre.

<sup>57</sup> Pretti, T. J., et al. (Forthcoming). An analysis of competency frameworks and the future of work. Diversity Institute, Future Skills Centre, and University of Waterloo.

<sup>58</sup> See, for instance, World Economic Forum (WEF). (2018). [Towards a Reskilling Revolution: A Future of Jobs for All](#). WEF.

<sup>59</sup> LinkedIn Talent Solutions. (2019). [Future of Skills 2019: Anticipating what's next for your business: An Asia-Pacific Edition](#). LinkedIn Talent Solutions

<sup>60</sup> Braham, E., Tobin, S. (2020). [Solving the skills puzzle: The missing piece is good information](#). Skills Next. Public Policy Forum, Diversity Institute at Ryerson University, Future Skills Centre.

<sup>61</sup> Ibid.

<sup>62</sup> Shortt, D., Robson, B. and Sabat, M. (2020). [Bridging the digital skills gap: Alternative pathways](#). Skills Next. Public Policy Forum, Diversity Institute at Ryerson University, Future Skills Centre.

<sup>63</sup> Labour Market Information Council. (2019). [Is this a skill which I see before me? The challenge of measuring skills shortages](#). LMIC Insights, 14.

Further complicating matters is the insufficient attention paid to important distinctions regarding the target of analyses. In particular, credentials should not be combined with skills and tools or techniques, and confusion on this point makes it difficult to achieve clarity when developing educational programs.<sup>64,65</sup> For example, while knowledge of programming may be a skill, knowledge of a specific programming language such as cobol or java is properly understood as a tool or technique. Similarly, while good written communication is a skill, being able to write an essay or a memo or a press release is the application of that skill to a particular technique. Typically, skills take more time to develop than techniques do to master, and failing to distinguish between them creates additional difficulties.

Along with job-specific technical skills and general digital skills, many employers are concerned about a lack of “foundational” or “essential” skills.<sup>66</sup> One survey shows that in addition to continuous learning and interpersonal and communications skills, employers want employees who also possess skills that support innovation and adaptability,<sup>67, 68</sup> such as social and emotional intelligence, active listening, intercultural communication and ethical reasoning.<sup>69</sup> But despite a growing body of literature supporting the need for essential skills (see Box 1), there is no consensus on which skills should be prioritized in university education, how to best develop them, or the best way to measure them.<sup>70, 71</sup> Indeed, while universities are increasingly moving toward competency frameworks, there is little consistency in the approaches or definitions used, and often the frameworks appear to emerge from the programs themselves rather than employer needs, or well-established and measurable frameworks.<sup>72</sup>

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<sup>64</sup> Employment and Social Development Canada. (2019). [Skills and Competencies Taxonomy](#). Government of Canada.

<sup>65</sup> Labour Market Information Council. (2019). [Bridging the gap between skills and occupations: A concept note to identify the skills associated with NOC](#). LMIC Insights, 16.

<sup>66</sup> Shortt, D., Robson, B. and Sabat, M. (2020). [Bridging the digital skills gap: Alternative pathways](#). Skills Next. Public Policy Forum, Diversity Institute at Ryerson University, Future Skills Centre.

<sup>67</sup> Business Council of Canada and Morneau Shepell. (2018). [Navigating change: 2018 Business Council Skills Survey](#). Business Council of Canada.

<sup>68</sup> World Economic Forum (WEF). (2016). [The future of jobs: Employment skills and workforce strategy for the fourth industrial revolution](#). WEF.

<sup>69</sup> Ibid.

<sup>70</sup> Advisory Council on Economic Growth. (2018). [Learning nation: Equipping Canada's workforce with skills for the future](#). Government of Canada.

<sup>71</sup> The British Academy. (2017). [The right skills: Celebrating skills in the arts, in the humanities and social sciences](#). The British Academy

<sup>72</sup> Pretti, T. J., et al. (Forthcoming). An analysis of competency frameworks and the future of work. Diversity Institute, Future Skills Centre, and University of Waterloo.

## Essential Skills

Employment and Social Development Canada's essential skills framework defines a set of basic skills needed across occupations. These skills include:



**Reading**



**Thinking**



**Writing**



**Oral communication**



**Document use**



**Working with others**



**Numeracy**



**Continuous learning**



**Computer use/  
digital skills**

Each skill is associated with a complexity rating and set of assessments.<sup>73</sup>



This essential skills framework is part of an expansive taxonomy of skills tied to occupations. It aims to identify a set of competencies that are both well-defined and in principle measurable and can be used in various settings to build a shared understanding of the skills job seekers have, the skills post-secondary institutions are developing and the skills employers need. Discussions to refresh the framework are ongoing and current focus is on an expansion to include the so-called “soft skills.”<sup>74</sup>

<sup>73</sup> Government of Canada. (2015). [Understanding essential skills](#). Government of Canada.

<sup>74</sup> Gyarmati, D., Lane, J., and Murray, S. (Forthcoming). Competency frameworks and Canada's essential skills. Public Policy Forum, Future Skills Centre, Diversity Institute at Ryerson University.

Frameworks and taxonomies are often developed to better define the skills needed to perform specific occupations. But employers are increasingly reinforcing the importance of critical thinking, communication, and interpersonal skills—the so-called “soft skills”—in addition to technical and digital skills. A survey of university faculty and students to determine which skills are the focus of undergraduate social sciences and humanities programs shows considerable alignment with the Essential Skills Framework (see Table 2).<sup>75</sup>

**Table 2: Comparison of Essential Skills to Skills reported by University Faculty and Students**

Essential Skills (ESDC)	Skills most often emphasized in social sciences and humanities programs (CBOC) <sup>76</sup>
Reading	(Not emphasized but implicit)
Writing	Written communication
Document use	Research
Numeracy	
Thinking	Problem solving and critical thinking
Oral communication	Verbal communication
Computer use/digital skills	
Working with others	
Continuous learning	Interest in learning/learning ability
	Creativity
	Civic-minded or good citizenship
	Time management
	Adaptability

Areas not specifically cited in the report such as numeracy, digital skills and the capacity to work with others are also important to employers and the focus of some co-curricular programs for social sciences

<sup>75</sup> Edge, J., Martin, E., and McKean, M. (2018). [Getting to work: Career skills development for social sciences and humanities graduates](#). The Conference Board of Canada, p. 30.

<sup>76</sup> Ibid, p. 30.

and humanities (SSH) graduates. Interestingly, creativity and adaptability, which are currently not part of the current Essential Skills Framework, are often cited as important skills.<sup>77</sup>

Many universities are developing competency frameworks that include concepts similar to those we find in the Essential Skills Framework but there is little consistency. For example, a cursory review of approaches taken by Canadian universities when it comes to graduate competency frameworks shows six universities having six different frameworks (See Appendix A). While there are areas of significant overlap, there is no common language or common approach, even across universities in the same province. It is unsurprising then that there should also be gaps and inconsistencies between educators and employers when it comes to their respective understanding of talent-building.

Other disagreements surround how skills should be assessed. Building on decades of research into assessment tools, some advocate for standardized testing.<sup>78</sup> For example, a pilot project to assess the value of standardized testing in skills assessment through a large-scale trial was recently undertaken by the Higher Education Quality Council of Ontario (HEQCO).<sup>79, 80, 81</sup> The study, which assessed more than 7,500 students at 20 Ontario universities, suggested one in four graduating students did not meet expected literacy or numeracy levels, if the acceptable level is set at a three on a scale of one to five.<sup>82, 83</sup>

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<sup>77</sup> Edge, J., Martin, E., et McKean, M. 2018. [Getting to work: Career skills development for social sciences and humanities graduates](#). Le Conference Board du Canada. p. 29.

<sup>78</sup> Usher, A. (2019). [Performance-Based Funding 101: Measuring Skills](#). Higher Education Strategy Associates.

<sup>79</sup> Weingarten, H. P., & Hicks, M. (2018). [On test: skills, summary of findings from HEQCO's skills assessment pilot studies](#). Higher Education Quality Council of Ontario (HEQCO).

<sup>80</sup> Weingarten, H. P. et al. (2018). [Measuring essential skills of postsecondary students: Final report of the essential adult skills initiative](#). Higher Education Quality Council of Ontario (HEQCO).

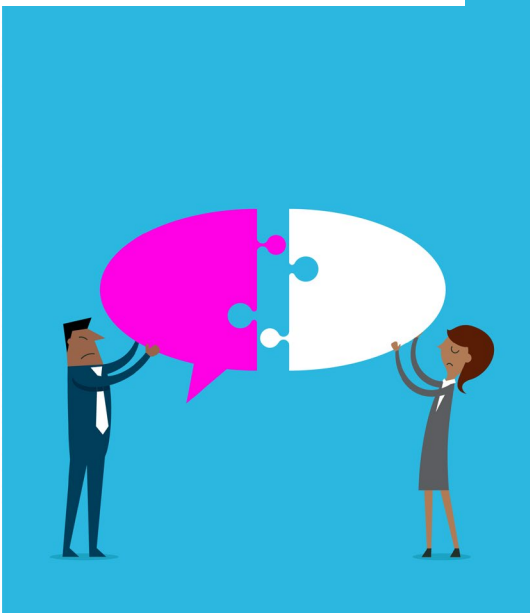
<sup>81</sup> Finnie, R. et al. (2018). [Measuring critical-thinking skills of postsecondary students](#). Higher Education Quality Council of Ontario (HEQCO).

<sup>82</sup> Weingarten, H. P., & Hicks, M. (2018). [On test: skills, summary of findings from HEQCO's skills assessment pilot studies](#). Higher Education Quality Council of Ontario (HEQCO).

<sup>83</sup> There were questions raised about the score used to define acceptable. See Sá, C. (2019). [HEQCO's skills agenda shows a lack of rigour and scientific integrity](#). University Affairs.



**Lack of shared definitions and reference points over skills is contributing to mismatched expectations between employers and graduate students. One study found that students and employers differed widely in their assessment of students' communication skills.**



Pointing to evidence that non-cognitive skills play a critical role, however, others argue we need more than standardized testing in assessing skills.<sup>84</sup> For example, despite efforts to assess them through testing, some say interpersonal skills should be measured in other ways. Others advocate the need for a broader range of assessment methods, including more holistic approaches and self-reflection, such as those used in project-based assessments<sup>85</sup> or e-portfolios.<sup>86</sup>

Nonetheless, there is some evidence that a lack of skills, as assessed by standardized testing is related to underemployment. For example, in one study among university graduates who consider themselves overqualified for their job, 47 percent had lower literacy skills and 54 percent had lower numeracy skills (defined as obtaining a level two or lower out of five) on Program for International Assessment of Adult Competencies (PIAAC) tests. There is no question, however, that the political issues and implementation challenges around standardized testing are considerable.<sup>87</sup>

Clearly there are differences in perceptions of how skills are understood. There are large gaps between employers and graduates when it comes to assessing skills and competency, in part because of significant differences in definition. In fact, one study found that while over 90 percent of students assessed their communications skills as excellent,

<sup>84</sup> Heckman, J.J., Stixrud, J., and Urzua, S. (2006). [The effects of cognitive and noncognitive abilities on labor market outcomes and social behavior](#). *Journal of Labor economics*, 24(3), 411-482.

<sup>85</sup> Bell, S. (2010). [Project-Based Learning for the 21st Century: Skills for the Future](#). *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 83(2), 39-43.

<sup>86</sup> Alanson, E.R., and Robles, R.A. (2016). [Using Electronic Portfolios to Explore Essential Student Learning Outcomes in a Professional Development Course](#). *Asia-Pacific Journal of Cooperative Education*, 17(4), 387-397.

<sup>87</sup> Phelps, R. (2003). *Kill the messenger: The war on standardized testing*. Routledge.

only 30 percent of employers agreed.<sup>88</sup> This may be in part because they use communications skills to refer to different toolkits: a student might be referring to their ability to write essays, while employers are thinking of the ability to prepare briefings, memos, and business communications. There is also evidence to suggest students have difficulties when it comes to articulating the skills they have developed or how they have applied them—and are better at reporting on the content of individual courses.<sup>89, 90</sup>

Conversely, others have argued the real problem that needs solving is the lag time between employers identifying a skills need and universities first responding in their program design and then being able to produce graduates who meet emerging needs.<sup>91, 92</sup> At the same time, employers themselves are not always well-positioned to project their future skills needs, given an absence of real-time labour market information, inconsistent definitions and taxonomies, and the rate of change.

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<sup>88</sup> Cukier, W. (2003). Constructing the IT skills shortage in Canada: the implications of institutional discourse and practices for the participation of women. Presentation to the Proceedings of the (2003) SIGMIS Conference on Computer Personnel Research. Philadelphia.

<sup>89</sup> Martini, T.S., and Clare, M. (2014). [Undergraduates' Understanding of Skill based Learning Outcomes: Can e-portfolios Help?](#) Higher Education Quality Council of Ontario (HEQCO).

<sup>90</sup> Edge, J., Martin, E., and McKean, M. (2018). [Getting to work: Career skills development for social sciences and humanities graduates](#). The Conference Board of Canada.

<sup>91</sup> D2L Corporation. (2018). [The future of work and learning in the age of the 4th industrial revolution](#). D2L Corporation, p. 10.

<sup>92</sup> Grant, M. (2016). [Aligning skills development with labour market need](#). The Conference Board of Canada, p. 52.

# EFFORTS TO INCREASE GRADUATE EMPLOYABILITY

While there is considerable evidence to suggest some employers value the skills developed in universities generally, including those that social sciences and humanities graduates possess, many universities offer or are developing programs designed to respond to the needs that employers have identified.

Universities have a long history of offering professional training for regulated and unregulated professions where the focus of the programs is clearly employment: these include social sciences and humanities disciplines as well as STEM. There is also a range of specializations and minors allowing students to develop expertise to position them for employment, as well as certificates and diplomas targeting job opportunities. In addition to curricula specifically geared toward employment, universities are embedding pedagogical innovation in programs to provide opportunities for work-integrated learning. These range from co-ops to internships and practica, applied research, service learning and entrepreneurial experiences. The aim is to equip graduates with skills and know-how valued by employers.

Universities are also expanding and tracking co-curricular or extra-curricular opportunities targeting the development of skills that will make employment more readily accessible. Many universities are also expanding and redesigning career counselling and job placement services, enhancing existing resources with new technology-enabled tools. Table 3 summarizes these efforts with illustrative examples and we elaborate briefly on these below.

**Table 3: University responses to employer needs**

Initiative	Examples
<b>PROGRAM AND CURRICULUM-BASED</b>	
Professional training—regulated	Law, medicine, dentistry, nursing, accounting, engineering, social work, teachers, psychology'
Professional training—non-regulated	Business, computer science, information systems, public administration, journalism
Professional minors and concentrations—programs with highly tailored and flexible learning opportunities	Business minors accessible for arts graduates, Integrated Business and Humanities Program at McMaster
Specialized diplomas and certifications	Big data analytics; Java programming; public relations
<b>PEDAGOGICAL: WORK-INTEGRATED LEARNING</b>	
Co-operative education	Engineering, computer science, business
Internships or work placements	Hospitality and tourism; ECE; immigration and settlement
Applied research and training with employers	Integrated learning semesters, Mitacs graduate student training
Entrepreneurial incubators—typically extra-curricular opportunities to develop a for-profit or social enterprise	Creative destruction labs, DMZ, Social Innovation Zone
Internships	University of Toronto's Master of Public Policy Internship program
Field placements, practica	Bachelor of Social Work, University of Regina
Community service learning	SFU City Studio, McMaster City Lab
Study abroad or student exchange programs	Queen's University's Bader International Study Centre in Herstmonceux, England
<b>CO-CURRICULAR ACTIVITIES</b>	
Non-credit professional development programs	U of T Co-Curricular Records, Concordia GradProSkills, UBC Graduate Pathways to Success, University of Calgary My Grad Skills, McGill Skills 21; Ryerson's Advanced Digital and Professional Training (ADaPT)
<b>CAREER COUNSELLING AND JOB PLACEMENT</b>	
Enhanced career counselling and job matching services, career services	Resume and interview support, self-assessment tools, career mapping, matching tools such as Orbis; Magnet

## Program and curriculum-based

Part of a post-secondary institution's mission is to respond to professional needs. Institutions place different emphases on the acquisition of workplace-specific skills. Universities have many programs, often regulated, designed to equip students with competencies they need to enter a range of professions. Typically, they require the acquisition of a well-defined body of specialized knowledge, skills and expertise, which are developed in part through practical experience.<sup>93</sup> Professional programs in universities tend to have close relationships with the associations overseeing their accreditation.<sup>94</sup>

Even with well-defined competencies and pathways to employment, professional programs are not without critics. In regulated professions, for example, questions have been raised about the design of programs and their currency, such as with respect to the use of technology in medicine.<sup>95</sup> Some critique admission standards both for misalignment with competencies needed to practise the profession. For example, many argue the MCAT,<sup>96</sup> LSAT<sup>97</sup> and GMAT<sup>98</sup> have a limited relationship to academic performance or practice in medicine, law or business respectively.

Others critique professional schools for biases that exclude diverse populations and ignore the impact of socio-economic status and privilege-reinforcing social stratification.<sup>99</sup> Given critical shortages in some professions, there have also been criticisms levelled against some requirements for licensure. A good example is the fact that there are not enough articling positions for law school graduates even though it is a requirement to be called to the bar.<sup>100</sup> Others have critiqued professional programs for paying insufficient attention to issues such as professional ethics, for instance business and accounting education coming under fire in the context of the recent financial crisis.<sup>101</sup>

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<sup>93</sup> Mulder, M., and Winterton, J. (2016). Introduction. In Mulder, M. (Ed.). *Competence-based vocational and professional education: Bridging the world of work and education*. Dordrecht: Springer.

<sup>94</sup> See Universities Canada. (n.d.). [Professional program accreditation](#). Universities Canada.

<sup>95</sup> Canadian Medical Association. (2011). [Curricula reform needed to develop more tech-savvy physicians](#). Canadian Medical Association Journal.

<sup>96</sup> Sesate, D.B., et al. (2017). [Coupling admissions and curricular data to predict medical student outcomes](#). *Research in Higher Education*, 58, 295–312.

<sup>97</sup> Wernikowski, N.S. (2017). Examining the exam: Use of the LSAT in Canadian law school admission procedures. *Saskatchewan Law Review*, 80: 289-310.

<sup>98</sup> Kass, D. et al. (2019). [Does the GMAT matter? The impact of a GMAT waiver policy on MBA student performance](#). *Journal of Education for Business* (10), 1-7.

<sup>99</sup> Posselt, J.R., and Grodsky, E. (2017). [Graduate education and social stratification](#). *Annual Review of Sociology* 43, 353-378.

<sup>100</sup> Habermacher, A. (2019). [A hitchhiker's guide to the crisis of legal education](#). SSRN, 1-18.

<sup>101</sup> Hooker, J. (2004). [The case against business ethics education: A study in bad arguments](#). *Journal of Business Ethics Education*, 1(1), 75–88.

Post-secondary institutions are responding in various ways—with more flexible admissions, new curricular designs, pedagogical innovation, more outreach, support for more diverse candidates, and more.<sup>102, 103</sup>

### **Professional Education (regulated)**

Across Canada, many formal professional educational programs are tightly connected to employers in regulated professions such as medicine, law, veterinarian science, dentistry, accounting, nursing, engineering and more.<sup>104</sup> Quality assurance usually includes accreditation of the programs and certification examinations for graduates. These programs are more likely to have mandatory requirements for work-integrated learning pedagogies described below such as articling, internships or work experience preceding accreditation. In addition to vouching for quality, accreditation by regulatory bodies and other mechanisms, such as internships, are often used to strengthen connections between universities and industry. Salary and employment data (Table 1) suggest graduates of these programs typically are well paid. Some professional education programs are integrated with bachelor's degrees, others require additional training following two to four years of undergraduate education.

### **Professional Education (non-regulated)**

There are also programs in non-regulated professions—business, computer science, information systems, geomatics, public administration, journalism—that are largely designed to meet employer needs and typically involve close connections with employers. Nevertheless, employers often express concerns about the training of graduates in these programs. For example, there have been extensive debates about the value of business education.<sup>105</sup> These programs are typically among those most likely to include co-operative education or other forms of work-integrated learning such as placements and internships. Available salary data indicates that some, for example business graduates, are well paid but others, for example journalism graduates, are not (See Table 1).

### **Minors and Concentrations**

Universities are developing programs—for instance, minors in management, entrepreneurship, applied ethics, or social innovation—designed to provide students with these practical and in-demand skills. Universities are now developing new targeted minors and concentrations in high demand areas such as business and entrepreneurship and making them available to arts and social sciences students. Trent

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<sup>102</sup> Edge, J., Martin, E., and McKean, M. (2018). [Getting to work: Career skills development for social sciences and humanities graduates](#). The Conference Board of Canada.

<sup>103</sup> Institute for Competitiveness & Prosperity. (2018). [Teaching for tomorrow: Building the necessary skills today. Working Paper 33](#). Institute for Competitiveness & Prosperity

<sup>104</sup> See, for example, Government of Manitoba. (n.d.). [Manitoba: My new home](#). Government of Manitoba.

<sup>105</sup> Hubbard, G. (2019). [The real value of business schools](#). AACSB International.

University's business minor for arts graduates<sup>106</sup> is one example; Ryerson University's entrepreneurship minor is another.<sup>107</sup>

## Certificates and Diplomas

According to a recent study by the Institute for Competitiveness & Prosperity, the lines between university and college education are increasingly blurred. University graduates often attend college and college graduates often transition to universities. Recognizing the opportunities presented through applied and professional training, most universities now offer forms of this training, such as standalone continuing education divisions.<sup>108</sup> Universities provide opportunities for degree students to access these and other applied programs, so they can graduate with a degree as well as a certificate or diploma. The range of these is enormous—from short, six-credit certificates to dual credentials where graduates receive both a degree and a college diploma (e.g. Seneca at York).<sup>109</sup> Often, students are able to count some of their core program credits towards the certificate.

## PEDAGOGICAL: WORK-INTEGRATED LEARNING

Work-integrated learning (WIL) is, arguably, the pedagogical approach that has gained the most traction in recent years and it has benefitted from significant government investment.<sup>110</sup> While the gold standard for WIL is the formal co-op program described below, new more flexible models are emerging, particularly as government investments have increased dramatically to support WIL.<sup>111, 112</sup> Indeed, in Budget 2019, the Government of Canada promised an investment of \$798.2 million in WIL over five years.<sup>113</sup> Preliminary research has shown that WIL programs may ease the transition into workplaces, particularly for graduates in social sciences and humanities, where the applicability of curriculum-based learning may not be immediately obvious. More than half of university students participated in a WIL

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<sup>106</sup> Zoledziowski, A. (2017). [Ontario University profiles to help you choose](#). The Globe and Mail.

<sup>107</sup> Ryerson University. (2020). [Programs](#). Ryerson University.

<sup>108</sup> Institute for Competitiveness & Prosperity. (2018). [Teaching for tomorrow: Building the necessary skills today](#). Institute for Competitiveness & Prosperity

<sup>109</sup> York University. (2020). [Dual credentials programs with Ontario colleges](#). York University.

<sup>110</sup> Business/Higher Education Roundtable (BHER). (2019). [Business, post-secondary leaders celebrate unprecedented federal investments in preparing Canadian students for the workforce](#). BEHR.

<sup>111</sup> Academica Group. (2016). [Taking the pulse of work-integrated learning in Canada](#). Business/Higher Education Roundtable.

<sup>112</sup> Patrick, C-J., et al. (2008). The WIL [Work Integrated Learning] report: A national scoping study. Queensland University of Technology.

<sup>113</sup> Canadian University Survey Consortium (CUSC). (2018). [2018 Graduating Student Survey](#). CUSC.



experience in 2018.<sup>114</sup> With the exception of business students, however, those studying in social sciences and humanities typically have less access to WIL than, say, engineering students.<sup>115, 116, 117</sup>

Some research on WIL is problematic because the data are not disaggregated by discipline and, as noted above, many professional programs are over-represented among WIL participants, thus skewing data. However, recent studies reviewed by The Conference Board of Canada suggest even students in non-professional programs, such as fine arts and humanities, who participated in WIL have a slightly higher labour force participation rate (77.6 percent) than those who did not (74.3 percent).<sup>118</sup> However, the same review found social sciences graduates who participated in WIL earned about the same annually (\$35,578.27) as those who did not participate (\$35,819.12). This highlights the need to better understand how the outcomes of WIL experiences are co-determined by other factors.<sup>119</sup>

There have been more efforts deployed recently to define and codify WIL approaches, for example through the Business Higher Education Roundtable (BHER)<sup>120</sup> or sector associations such as Co-operative Education and Work-Integrated Learning Canada (CEWIL).<sup>121</sup> Nonetheless, there remain multiple models for WIL, the ways in which they are implemented are inconsistent, and the degree of formality, assessment, and credentialing vary dramatically.

Additionally, research on the impact of these programs and services is lacking. Some studies suggest there are systemic barriers for certain populations.<sup>122, 123</sup> For instance, women are concentrated in the social sciences and humanities and the relative lack of WIL programs in these disciplines means women are disproportionately impacted. Indeed, there is evidence to suggest that students from under-represented groups are also poorly served by WIL opportunities.<sup>124</sup>

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<sup>114</sup> Canadian University Survey Consortium (CUSC). (2018). [2018 Graduating Student Survey](#). CUSC.

<sup>115</sup> Edge, J., Martin, E., and McKean, M. (2018). [Getting to work: Career skills development for social sciences and humanities graduates](#). The Conference Board of Canada, p. 26-31, 42-47.

<sup>116</sup> Cukier, W., Hodson, J., and Omar, A. (2015). [“Soft” skills are hard: A Review of the literature](#). The Diversity Institute, Ryerson University.

<sup>117</sup> Cukier, W. (2016). [Bridging the skills gap towards the 21st-century workforce: Employment-linked education has most promise](#). Canadian HR Reporter.

<sup>118</sup> Peters, J., Sattler, P., and Kelland, J. (2014). [Work-integrated learning in Ontario's postsecondary sector: The pathways of recent college and university graduates](#). Higher Education Quality Council of Ontario (HEQCO), p. 27.

The difference between these two earnings levels is not statistically significant, p. 42.

<sup>120</sup> See Business/Higher Education Roundtable (BEHR). (2020). [Talent](#). BEHR.

<sup>121</sup> Co-operative Education and Work-Integrated Learning Canada (CEWIL). (2020). [What is WIL?](#) CEWIL.

<sup>122</sup> Cukier, W., Campbell, M., and McNamara, L. (2019). Diversity implications of work integrated learning. Ontario Human Capital Research and Innovation Fund.

<sup>123</sup> Malatest, R.A. (2018). [Barriers to Work-Integrated Learning Opportunities](#). Higher Education Quality Council of Ontario (HEQCO).

<sup>124</sup> Cukier, W., Campbell, M., and McNamara, L. (2019). Diversity Implications of Work Integrated Learning. Ontario Human Capital Research and Innovation Fund.

Furthermore, the impact and value of WIL programs seem to vary considerably.<sup>125</sup> While professional programs often have more infrastructure and resources to support placements and career development, many social sciences and humanities departments lack similar program infrastructure and leave students responsible for finding and navigating WIL opportunities for themselves.

## Co-operative Education

Co-operative education programs—often called “co-ops”—are formal programs that require work terms for students to graduate and typically have formal links with employers. They tend to be concentrated in the professional schools and, while less structured and regulated than the mandated work experience in regulated professions, co-operative education is a model of curriculum-based experiential learning. “Co-op alternating” consists of combining academic terms and paid work terms. The amount of time spent in co-op varies but tends to represent 25 to 30 percent of the program.

Co-op programs have institutional support for placements and oversight and may result in students taking five years to complete what would otherwise be a four-year degree. Clearer definitions of the skills and competencies students are expected to acquire through co-op experience are needed and universities are stepping up.<sup>126, 127</sup> While research has generally supported the value of co-operative education,<sup>128</sup> it has also identified ways in which it can present barriers to some. Co-ops are formally embedded in curricula and concentrated on specific disciplines, such as architecture and engineering. They are much less frequent in social sciences and humanities disciplines.<sup>129</sup> There are also additional costs—particularly because of the need to extend the length of the program of study—that can make programs with co-ops less accessible.

## Applied Research and Training in Industry and Community

Another approach to connecting students to employment opportunities is through research projects targeting specific employer needs.<sup>130, 131</sup> Such applied research opportunities exist at the undergraduate and graduate level.<sup>132</sup> Most often, these are outside of traditional curricular structures, although some

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<sup>125</sup> Edge, J., Martin, E., and McKean, M. (2018). Getting to work: Career skills development for social sciences and humanities graduates. The Conference Board of Canada.

<sup>126</sup> University of Victoria. (2019). [10 core competencies](#). University of Victoria.

<sup>127</sup> University of Waterloo. (n.d.). [Waterloo Co-operative Education: Student Performance Evaluation](#). University of Waterloo.

<sup>128</sup> Rodriguez, C., Zhao, J., and Ferguson, S.J. (2016). [Co-op participation of college and bachelor's graduates](#). Statistics Canada.

<sup>129</sup> Ibid.

<sup>130</sup> Innovation, Sciences and Economic Development Canada (ISED). (2017). [Summary of the evaluation of Mitacs](#). Government of Canada.

<sup>131</sup> World Federation of Colleges and Polytechnics (WFCP). (2019). [Canadian colleges and universities continue to occupy a critical space in Canada's innovation ecosystem](#). WFCP.

<sup>132</sup> Academica Group. (2016). [Taking the pulse of work-integrated learning in Canada](#). Business/Higher Education Roundtable (BEHR).

universities formally build these into their programs, such as the University of British Columbia's Sauder School of Business.<sup>133</sup>

## Entrepreneurial Incubators

While initially designed to develop startups and create jobs, there is growing recognition that entrepreneurial training and incubators foster the kinds of “transferrable skills” that are highly valued by employers.<sup>134, 135</sup> Generally extra-curricular, many universities now support incubators and sometimes offer seed funding for students to develop and launch for-profit or social enterprises. Examples include the Creative Destruction Lab, started at the University of Toronto, and Ryerson University's DMZ and Social Venture Zone. Focus on cross-disciplinary collaboration designed to integrate social sciences and humanities students with engineers and computer science students who traditionally have dominated these spaces is trending in incubators. Additionally, there is growing recognition that the skills developed in incubators are valuable to artists and social activists as well as business and engineering students.<sup>136</sup>

## Internships

Internships are usually discipline-specific, supervised and structured. They can be paid or unpaid, and for academic credit work experience or practice placement. Internships may occur in the middle of an academic program or after all academic coursework has been completed and prior to graduation. Internships can be of any length but are typically 12 to 16 months long.<sup>137</sup> Recently, there has been considerable debate about the implications of unpaid internships, particularly for equity-deserving and low-income populations.<sup>138, 139</sup>

## Field Placements or Practica

There are a number of formats for field placements or practica offered in programs with differing degrees of formality. CEWIL maintains a field placement typically provides students with part-time or short-term intensive hands-on experience in a setting relevant to their program of study. This is opposed to the more formal, usually full-time, WIL experiences associated with professional programs such as articling. They may be optional or required for graduation, and structure and supervision vary. For

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<sup>133</sup> Sauder School of Business. (2019). [UBC Sauder Programs](#). University of British Columbia.

<sup>134</sup> Lamb, C., and Doyle, S. (2017). [Future-proof: Preparing young Canadians for the future of work](#). Brookfield Institute for Entrepreneurship + Innovation.

<sup>135</sup> Council of Ontario Universities. (2017). [Partnering for a better future for Ontario](#). Council of Ontario Universities.

<sup>136</sup> White, J.C. (2013). [Barriers to Recognizing Arts Entrepreneurship Education as Essential to Professional Arts Training](#). *Artivate: A Journal of Entrepreneurship in the Arts*, 2(3), p. 28-39.

<sup>137</sup> Co-operative Education and Work-Integrated Learning Canada (CEWIL). (2020). [What is WIL?](#) CEWIL.

<sup>138</sup> Turcotte, J.F., Nichols, L., and Phillips, L. (2016). [Maximizing Opportunity, Mitigating Risk: Aligning Law, Policy and Practice to Strengthen Work-Integrated Learning in Ontario](#). Higher Education Quality Council of Ontario (HEQCO).

<sup>139</sup> Walker, D. (2016). [Internships are not a privilege](#). *The New York Times*.

example, mandatory practica are required for some professions under the supervision of a qualified professional for a specified number of hours.<sup>140</sup>

## Community Service Learning (CSL)

Often associated with work within community and non-profit organizations, CSL typically involves community service with critical reflection as an application of classroom instruction. CEWIL notes that the structure of a CSL initiative can vary depending on the program and that the focus is typically different from other forms of WIL because of an emphasis on developing civic responsibility or a service orientation.<sup>141</sup> Some have critiqued service learning for the lack of conceptual precision.<sup>142</sup>

## Study Abroad Programs

While not generally considered to belong within WIL, some insist study abroad should be considered part of the experiential learning framework as these opportunities contribute to the development of skills for the 21<sup>st</sup>-century workplace, and not just for those studying international relations.<sup>143, 144</sup> The Government of Canada appears to agree, and recently announced additional support for international experience.<sup>145</sup> Study abroad and student exchanges are also increasingly incorporating more focus on work experience and transferrable skills with about one-third of placements fitting WIL definitions.<sup>146</sup> These programs aim to improve students' soft skills<sup>147</sup> and the global and cultural awareness that are defined by some as important employment skills.<sup>148</sup> The extent to which these experiences are linked to employment, however, varies considerably across institutions.

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<sup>140</sup> Co-operative Education and Work-Integrated Learning Canada (CEWIL). (2020). [What is WIL?](#). CEWIL.

<sup>141</sup> Centre for Teaching Excellence. (2020). [Incorporating Service-Learning into University Courses](#). University of Waterloo.

<sup>142</sup> Mooney, L.A., and Edwards, B. (2001). [Experiential Learning in Sociology: Service Learning and Other Community-Based Learning Initiatives](#). *Teaching Sociology*, 29(2), p. 181-194.

<sup>143</sup> Study Group on Global Education. (2017). [Global Education for Canadians: Equipping Young Canadians to Succeed at Home & Abroad](#). Centre for International Policy Studies, University of Ottawa and Munk School of Global Affairs, University of Toronto.

<sup>144</sup> Peers, R., and Dawson, M. (n.d.). [How studying abroad makes students more employable](#). Waterloo International.

<sup>145</sup> Usher, A. (2019). [That Weird Budget Commitment on Student Mobility](#). Higher Education Strategy Associates.

<sup>146</sup> Knight-Grofe, J., and Rauh, K. (2016). [A World of Learning 2016: Canada's performance and potential in international education](#). Canadian Bureau for International Education.

<sup>147</sup> Cukier, W., Hodson, J., and Omar, A. (2015). ["Soft" skills are hard: A review of the literature](#). Diversity Institute, Ryerson University.

<sup>148</sup> Lewington, J. (2019). [Mandatory international study helps students stand out](#). The Globe and Mail.

## CO-CURRICULAR SKILLS DEVELOPMENT ACTIVITIES

Co-curricular skills development activities are non-credit professional development programs (PDP) or workshops dedicated to skills- and talent-building that are not formally part of an academic program but are offered adjacent to it, often by a department or within a faculty. There is a range of these options and they typically focus on skills development through specialized workshops, career education, coaching and support or self-directed study. Many offer “co-curricular records” (CCR) on transcripts, certificates or badges. But they do not always include formal skills testing and assessment, and the substance varies considerably, from short one- to two-hour workshops to more intensive structured programs.

While there may be some overlap, these are generally distinct from career support and counselling activities (described below).<sup>149, 150, 151</sup> A cursory review of practice in Canadian universities reveals a range of such programs for undergraduate and graduate students, with different goals, structures, assessment mechanisms and credentialing approaches (See Appendix A). As with WIL initiatives, we need more aggregated information about the scope and delivery of individual programs, as well as a better understanding of their reach, value and impact and the best ways to track outcomes.

## CAREER AND PLACEMENT SERVICES

Universities are keen to strengthen their connections to employers. Career and placement services have long been a fixture of universities, but are becoming increasingly central to university missions.<sup>152, 153</sup> New mechanisms such as industry advisory committees, partnerships for program delivery, and councils and committees dedicated to improving co-ordination are being deployed to improve outcomes.<sup>154</sup> A recent study for the Canadian Education and Research Institute for Counselling examined common career services offered at post-secondary institutions in Canada. Common strategies included career fairs, advice on preparing job applications and interviews, career counselling, job boards and notices about employment opportunities, career information, employer visits and presentations, career workshops and short courses, alumni networking, and mentoring programs. Universities are also including new tools and systems to support everything from resumé preparation and e-portfolios to navigating job opportunities,

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<sup>149</sup> Arthur, N., Neault, R., and McMahon, M., (Eds). (2019). [Career theories and models at work: Ideas for practice](#). Canadian Education and Research Institute for Counselling (CERIC).

<sup>150</sup> Shephard, B.C., and Mani, P.S. (Eds). (2014). [Career development practice in Canada: Perspectives, principles, and professionalism](#). Canadian Education and Research Institute for Counselling (CERIC).

<sup>151</sup> Canadian Association of Career Educators and Employers (CACEE). (2019). [Career centre resources, services and metrics: A pan-Canadian benchmarking survey](#). CACEE Research Brief.

<sup>152</sup> Contomanolis, E., et al. (2015). [The Future of career services is now](#). NACE Journal. National Association of Colleges and Employers.

<sup>153</sup> Dey, F., Cruzvergara, C.Y. (2014). [Evolution of career services in higher education](#). New Directions for Student Services 148: 5-18.

<sup>154</sup> Colleges and Institutes Canada. (2017). [Academic-employer connections in colleges and institutes: The role of the Program Advisory Committees](#). Colleges and Institutes Canada.

work placement, job matching, and developing new technological platforms like Orbis and Magnet.<sup>155</sup> Increasing demands are driving the re-engineering of career centres across North America.<sup>156</sup>

The resources directed toward career and placement services can differ significantly between institutions and across programs. Business schools, for example, typically have extensive and dedicated services, while many other social sciences and humanities programs do not. For some of the reasons already discussed, some academic departments have ambivalent attitudes toward career centres.<sup>157</sup>

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<sup>155</sup> Dietsche, P., and Lees, J. (2017). [Insight into Canadian post-secondary career service models: Final report](#). PSE Information Systems.

<sup>156</sup> Young, J.R. (2016). [Reinventing the career center](#). The Chronicle of Higher Education.

<sup>157</sup> See for example: Davis, D., and Binder, A. (2016). [Selling Students: The Rise of Corporate Partnership Programs in University Career Centers](#). In Berman, E.P., and Paradeise, C. (Eds). [The university under pressure](#). Emerald.

## ASSESSMENT AND CREDENTIALS

While employers may encourage collaboration, there is considerable fragmentation and lack of co-ordination regarding the design, development, delivery, and assessment of programs, as well as regarding the stewardship of employer relationships—even within the same institution.



There are substantial differences between formal program and curriculum-based approaches, pedagogical approaches such as work-integrated learning, co-curricular skills development activities, and career and placement services in terms of their formality and their governance with respect to design, resourcing, assessments and credentialing. For instance, curriculum-based professional training is tied to degree-level expectations that are generally premised on specific learning objectives and outcomes. While co-op programs may lack rigorous learning outcome assessment, they are structured as part of the curriculum and are typically documented on transcripts. As noted above, there is growing awareness of the need to better define learning objectives and competencies for these programs.<sup>158</sup>

By contrast, practices are uneven in the case of many forms of WIL. Some WIL opportunities such as internships, service learning, research projects, entrepreneurial experiences and exchanges are embedded in curricula and associated with specific course and/or graduation requirements. But this is not always the case. What's more, even when they are part of the curriculum, the extent to which there are clearly defined targeted learning outcomes or competencies that are also formally assessed

<sup>158</sup> Pretti, T. J., et al. (Forthcoming). An analysis of competency frameworks and the future of work. Diversity Institute, Future Skills Centre, and University of Waterloo.



varies considerably. This then impedes the ability to track and assess impacts of these approaches.

The scope and objectives of co-curricular programs and “individual development plans” (IDP) or “individual learning plans” (ILP), as well as the consistency of their implementation, varies from one institution to another. Within one institution, it may even vary across faculties. Some include rigorous skills assessment; others simply track participation. It has become a growing practice for institutions to provide students who participate in co-curricular activities with co-curricular records (CCR) on the basis of a system of badges, micro-credits, or transcript notation (see Appendix A).<sup>159</sup> These programs may also rely on self-assessment and self-reporting.

It has been argued that co-curricular initiatives need to take a more systematic approach to documenting and communicating the value that these learning and skills-building opportunities offer students. In fact, some see the lack of assessment as a serious failure.<sup>160</sup> University career services can play a role in collecting and distributing information on career pathways and graduate transitions, and help students articulate and communicate the skills developed through programs and the acquisition of new tools.<sup>161</sup>

With the exception of a few partnered approaches funded federally and provincially, such as Mitacs programming, most efforts are institution-specific. The nature of the programming—and the measure of quality and effectiveness—depend on institution-specific needs and other contextual factors. Consequently, the consensus among practitioners is that efforts to evaluate impacts are often stymied by fragmented information and political issues.

Practitioners also point out that offerings of co-curricular talent-building opportunities depend on various domain-specific theories and practices as well as pedagogical preferences. This variability is greater for co-curricular initiatives than for academic programs because these offerings are usually driven by considerations specific to the faculty, staff and students at a particular institution. The overall design of these programs often depends on access to information—for example survey data and labour market projections—or on industry connections, advice and projections. As discussed above, there are, however, significant gaps in data, terminology and shared understandings of what employment opportunities exist. Lags between current and future needs also present obstacles, as do misaligned definitions and understandings of the skills required.

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<sup>159</sup> Edge, J., Martin, E., and McKean, M. (2018). [Getting to work: Career skills development for social sciences and humanities graduates](#). The Conference Board of Canada, p. 67-69.

<sup>160</sup> Stuckey, J., and Munro, D. (2013). [The need to make skills work: The cost of Ontario's skills gap](#). The Conference Board of Canada.

<sup>161</sup> Edge, J., Martin, E., and McKean, M. (2018). [Getting to work: Career skills development for social sciences and humanities graduates](#). The Conference Board of Canada, p. 67-69.

And while no pan-Canadian dataset on the variability of resources exists, it's clear that at the individual institutional level available support plays a significant role and affects commitments to programming, particularly in times of financial constraint. Even when programs manage to endure, assessments and evaluation may not be high priorities and are often the first cuts made. Changes to initiatives are also driven by student demand, shifts in priorities based on new personnel and experts, available resources, perceived changes in labour market realities, updates in literature in either the subject or pedagogy, personal preferences, and even “gut instincts.”

Employers generally encourage universities to help graduates transition from post-secondary education into employment, and employers assume universities are at least partially responsible for graduates' transition to employment.<sup>162</sup> They may collaborate on design and delivery of programs and curriculum, WIL, co-curricular activities or work closely with career centres in the recruitment of graduates. However, as practitioners know, the resources available, depth of collaboration, and extent to which programs are tied to actual employer needs depends on various factors. In spite of existing collaborations, university programs often reflect limited “incorporation of labour market information and outcomes into the development of graduate student PDPs, or strategies for developing positive relationships with employers.”<sup>163</sup> Thus, while employers may encourage collaboration, there is considerable fragmentation and lack of co-ordination regarding the design, development, delivery, and assessment of programs, as well as regarding the stewardship of employer relationships—even within the same institution.

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<sup>162</sup> Stuckey, J., and Munro, D. (2013). [The need to make skills work: The cost of Ontario's skills gap](#). The Conference Board of Canada

<sup>163</sup> Lypka, C., and Mota, M.H.R. (2017). [Graduate professional development: Towards a national strategy](#). Consortium of Canadian Graduate Student Professional Development Administrators. p. 24.

## FURTHER RESEARCH

The sheer number of initiatives underway attests to the fact that universities are clearly interested in better responding to student and employer needs. This report reviewed a number of ways universities are attempting to improve their ability to teach in-demand skills and to explicitly prepare graduates for entry into the workforce by closing the putative university graduate “skills gap.”

But much remains to be done and understood, and the effectiveness of many initiatives underway is limited by gaps persisting in our knowledge of both the current situation in universities and our understanding of the broader skills-building landscape. In this context, more research is needed in a number of areas, including:

1. **Better surveys** of university response to growing demands to improve employability of graduates in social sciences and humanities through formal and informal approaches.
2. **More comprehensive mapping** of existing programs, their goals and structure, how they link to employer needs, the processes they use, tools available to measure quality and effectiveness, and ways skill acquisition is documented or credentialed.
3. **Assessment of the impact of these programs**, including who participates, who benefits, and whether they result in improved employment outcomes.
4. **Assessment of the particular impact of these programs on equity-deserving groups**, including low-income people, racialized individuals, Indigenous Peoples, persons with disabilities, women, and LGBTQ2S+ people. This includes information on the extent to which individuals from these groups apply to, are selected for, participate in, and succeed in these programs.
5. **Shared frameworks and definitions of skills, competencies, tools and techniques** that can enable better connections between employers and post-secondary institutions.
6. **Increased promotion of collaboration** across institutions to share best practices, replicate, and scale what works.

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# APPENDIX A

## Selection of Professional Development Programs (PDP) and Co-Curricular Records (CCR) programs

Institution	Name	Goals	Credential
<b>University of Toronto</b>	Graduate Professional Skills <sup>164</sup>	Four skill areas: <ul style="list-style-type: none"> <li>▪ Communication and interpersonal skills</li> <li>▪ Personal effectiveness</li> <li>▪ Teaching competence</li> <li>▪ Research-related skills</li> </ul>	Transcript notation and certifications for some individual offerings within PDP
	Co-Curricular Records (CCR)	Competency framework with six domains: <ul style="list-style-type: none"> <li>▪ Practical skills development</li> <li>▪ Community and global engagement</li> <li>▪ Interpersonal engagement</li> <li>▪ Personal growth and development</li> <li>▪ Novel and adaptive thinking</li> <li>▪ Knowledge development and application</li> </ul>	Official validated record
<b>Concordia University</b>	GradProSkills <sup>165</sup>	Eight domains: <ul style="list-style-type: none"> <li>▪ Career building</li> <li>▪ Communication</li> <li>▪ Language training</li> <li>▪ Leadership &amp; management</li> <li>▪ Software &amp; web tools</li> <li>▪ Success in graduate school</li> <li>▪ Teaching</li> <li>▪ Wellness &amp; life balance</li> </ul>	Record of participation
<b>University of Alberta</b>	Professional Development <sup>166</sup>	Eight hours of mandatory professional development and annual updates of an IDP	IDP
<b>Ryerson University – Diversity Institute</b>	Advanced Digital and Professional Training Program <sup>167</sup>	Designed for students and graduates from any post-secondary institution, it focuses on training in job search skills, communications skills, interpersonal skills, digital skills, financial literacy, and specialized workshops combined with work-integrated learning	Badge

<sup>164</sup> University of Toronto. (2019). [Graduate professional skills \(GPS\)](#). University of Toronto.

<sup>165</sup> Concordia University. (2019). [GradProSkills](#). Concordia University.

<sup>166</sup> University of Alberta. (2019). [Professional development](#). University of Alberta. The case of the University of Alberta is interesting, not least because professional development is mandatory for graduate students.

<sup>167</sup> Ryerson University. (2020). [Advanced Digital and Professional Training](#). Ryerson University.

Institution	Name	Goals	Credential
<b>University of British Columbia</b>	Graduate Pathways to Success <sup>168</sup>	<p>Five competencies:</p> <ul style="list-style-type: none"> <li>▪ Graduate school success</li> <li>▪ Self management</li> <li>▪ Professional effectiveness</li> <li>▪ Career building</li> <li>▪ Constructive leadership</li> </ul> <p>Four integral areas:</p> <ul style="list-style-type: none"> <li>▪ Critical thinking</li> <li>▪ Creativity</li> <li>▪ Integrity</li> <li>▪ Recognition of our global and societal responsibility</li> </ul>	Certificates for some individual offerings within PDP
<b>University of Calgary</b>	My GradSkills <sup>169</sup>	<p>Four areas:</p> <ul style="list-style-type: none"> <li>▪ Expert</li> <li>▪ Leader</li> <li>▪ Communicator</li> <li>▪ Innovator</li> </ul>	Certificates for some individual offerings within PDP
<b>McGill University</b>	SKILLSETS <sup>170</sup>	<p>Seven subject areas:</p> <ul style="list-style-type: none"> <li>▪ Expand your expertise</li> <li>▪ Solve problems</li> <li>▪ Lead projects</li> <li>▪ Communicate</li> <li>▪ Work with others</li> <li>▪ Be well</li> <li>▪ Plan your career</li> </ul>	Official record
	SKILLS21 <sup>171</sup>	<p>Five streams:</p> <ul style="list-style-type: none"> <li>▪ Citizenship</li> <li>▪ Collaboration</li> <li>▪ Discovery</li> <li>▪ Leadership</li> <li>▪ Well-being</li> </ul>	Official record

<sup>168</sup> The University of British Columbia. (2019). [Graduate pathways to success](#). The University of British Columbia.

<sup>169</sup> University of Calgary. (2019). [My Gradskills: Professional development for grad students](#). University of Calgary.

<sup>170</sup> McGill University. (2019). [Skillsets: Unlock your potential](#). McGill University.

<sup>171</sup> McGill University. (2019). [Skills21 streams](#). McGill University.

