

Skills and Higher Education in Canada

Towards Excellence and Equity



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TABLE OF CONTENTS

1. INTRODUCTION	4
Excellence	5
Equity	5
2. A FOUNDATION FOR HEALTH, WEALTH AND WELL-BEING	6
3. EXCELLENCE	8
Higher Education Attainment	8
Skills Attainment	10
Foundational Skills	15
From Expansion to Excellence	16
4. EQUITY	17
Aboriginal Achievement	17
Gender Gaps	19
Immigrant Achievement and Recognition	20
Regional Differences	21
5. POLICY OPTIONS	23
Excellence and Equity in Skills and Higher Education	25

1

INTRODUCTION

Canada's performance in higher education and skills development has been fairly strong for many years. On key measures we are at or near the top of international rankings and our highly skilled people contribute to economic competitiveness, social innovation, and political and community well-being. But there are troubling indications that Canada's skills and education performance is deteriorating, that not enough is being done to address a range of economic and social problems, and that opportunities and benefits have been poorly distributed across regions and groups. In short, there are signs that we are not doing enough to achieve the high levels of skills *excellence* and *equity* we need. Action is needed to sustain and enhance the performance of higher education and skills development in Canada.

But why should we act? Skills and education are essential to Canada's economic prosperity and social well-being, and to the health and welfare of individuals. Canadians who have acquired advanced skills and education are able to make greater contributions to the economy, society, their communities and their own well-being than those without such skills and credentials. Moreover, the economy is becoming more technology and knowledge-intensive, and addressing persistent and emerging policy challenges—such as innovation and productivity, climate change, health, inequality, and the fairness and effectiveness of our political institutions—require ever-increasing levels of scientific, economic, cultural and political literacy. Succeeding in the new economy and addressing key policy challenges will require greater excellence and equity in skills and higher education.

Admittedly, the challenges and opportunities we face cannot be addressed through a skills and higher education strategy alone. Improving innovation and productivity, addressing inequality and climate change, and achieving social and economic justice for all, require thinking and action on many levels. Still, without a highly skilled and educated population we cannot even begin to address these issues adequately, nor tackle new challenges as they arise.

Recognizing the importance of skills, Canada spends enormous sums on their development. Combined private and public spending on higher education alone was over \$40 billion in 2012.¹ At \$22,475 (USD), Canada's per student spending on higher education is second in the OECD and well above the average of \$13,528 (USD).² As a result, over 51 per cent of Canadians hold a university or college credential—versus an OECD average of 32 per cent—and another 12 per cent hold trades certificates.³ And Canadians perform well in international assessments of skills such as literacy, numeracy, and problem-solving. But we need to do much better.

¹ M. Grant, *The Economic Impact of Post-Secondary Education in Canada* (Ottawa: The Conference Board, forthcoming 2014).

² OECD, *Education At a Glance 2013: Country Note—Canada* (Paris: OECD, 2013). http://www.oecd.org/edu/Canada_EAG2013%20Country%20Note.pdf

³ OECD, *Education At a Glance 2013: Country Note—Canada*.

Excellence

Is Canada producing graduates with the *right skills* to sustain and enhance the country's economic competitiveness and social well-being? Although we lead the world in higher educational attainment and score well in international skills assessments, performance is weakening and competitors are catching up. Additionally, we have too few people with advanced degrees (particularly PhDs), insufficient graduates from the STEM disciplines, deficits in essential, innovation and commercialization skills, and a poor track record on workplace training—all necessary to support an innovative economy and society.

Equity

Are some regions and groups being left behind? Despite strong performance overall, the *distribution* of skills and education opportunities and achievements is uneven across regions and groups. While provinces like British Columbia, Alberta, and Ontario perform well, other provinces and territories struggle to keep up, and looking through the lenses of Aboriginal status, immigration status and gender we see an uneven distribution of opportunity and achievement. In too many cases, participation and achievement are determined not by choice, but by circumstances over which individuals have little control.

After briefly discussing how skills and higher education contribute to economic, social, and individual well-being, this paper examines two key challenges—excellence and equity—and concludes with six policy options to improve Canada's performance.

2

A FOUNDATION FOR HEALTH, WEALTH AND WELL-BEING

A highly skilled and educated population is essential to achieving a range of economic and social outcomes, as well as to improving the health and welfare of individuals themselves. These provide the basic motivations to improve Canada's skills and higher education performance.

1. Skills and education are key determinants of economic productivity and growth. Differences in average literacy skills explain 55 per cent of the variation in economic growth among OECD countries since 1960.⁴ With very high skills and higher education attainment rates, it is not surprising to find Canada among the most developed and prosperous countries in the world. But with fewer advanced degree-holders (e.g., Masters and PhDs),⁵ and weak performance on workplace education and training,⁶ it is also not surprising to find that Canada has been lagging key international peers in innovation and productivity growth for many years.⁷

2. Individuals with strong foundational skills are more likely to complete high school and post-secondary education, and to go on to good careers. The Youth in Transition Survey reveals a “strong association between reading proficiency and educational attainment.”⁸ Fifteen year old Canadian students who took the OECD's Programme for International Student Assessment (PISA) test and who scored in the bottom quartile on reading proficiency “were much more likely to drop out of secondary school and less likely to have completed a year of postsecondary education than those in the highest quartile of reading scores.” Moreover, Canadian students who scored in the top level on reading performance “were 20 times more likely to go to university than those in the lowest PISA level.”⁹

3. Individuals with advanced skills and education do better in the labour market than those without. Canadians with university, college and/or trade credentials have higher employment rates and lower unemployment rates than those who have only a high school diploma or less.¹⁰ (See “Unemployment rates aged 15 and over, by educational attainment”). While those without high school have an employment rate of only 55 per cent, those with university or college credentials have employment rates of 82 and 81 per cent, respectively.¹¹ There are differences across disciplines and regions but, on average, higher education credential holders aged 25 to 64 earn 39 per cent more than high school graduates.¹²

4. Highly educated Canadians are more active in their communities and politics. Canadians with a university or college education are much more likely to volunteer in their communities than those with a high school education or less. In 2010, 58 per cent of adults with a university degree and 45 per cent with a post-secondary diploma or certificate reported doing volunteer work, compared to 43 per cent with a high school education and only 37 per cent of adults with less than high school.¹³ Similarly, an analysis of the 2011 federal election shows that while 78 per cent of people with a university degree voted, those with a high school education or less voted at rates of only 60 per cent or less.¹⁴

⁴ S. Coulombe, J.F. Tremblay and S. Marchand, *Literacy Scores, Human Capital and Growth Across Fourteen OECD Countries, International Adult Literacy Survey Series* (Ottawa: Statistics Canada, 2004).

⁵ The Conference Board of Canada, *Advanced Skills and Innovation* (Ottawa: The Conference Board, 2011) <http://www.conferenceboard.ca/hcp/hot-topics/innovation.aspx>

⁶ D. Munro, *Developing Skills: Where Are Canada's Employers?* (Ottawa: The Conference Board, 2014). http://www.conferenceboard.ca/topics/education/commentaries/14-03-20/developing_skills_where_are_canada_s_employers.aspx

⁷ The Conference Board of Canada, *Advanced Skills and Innovation*.

⁸ CMEC, *Measuring Up: Canadian Results of the OECD PISA Study* (Toronto: CMEC, 2013).

⁹ CMEC, *Measuring Up*, 10.

¹⁰ Statistics Canada, “Unemployment rates of population aged 15 and over, by educational attainment, Canada, 1990 to 2012.”

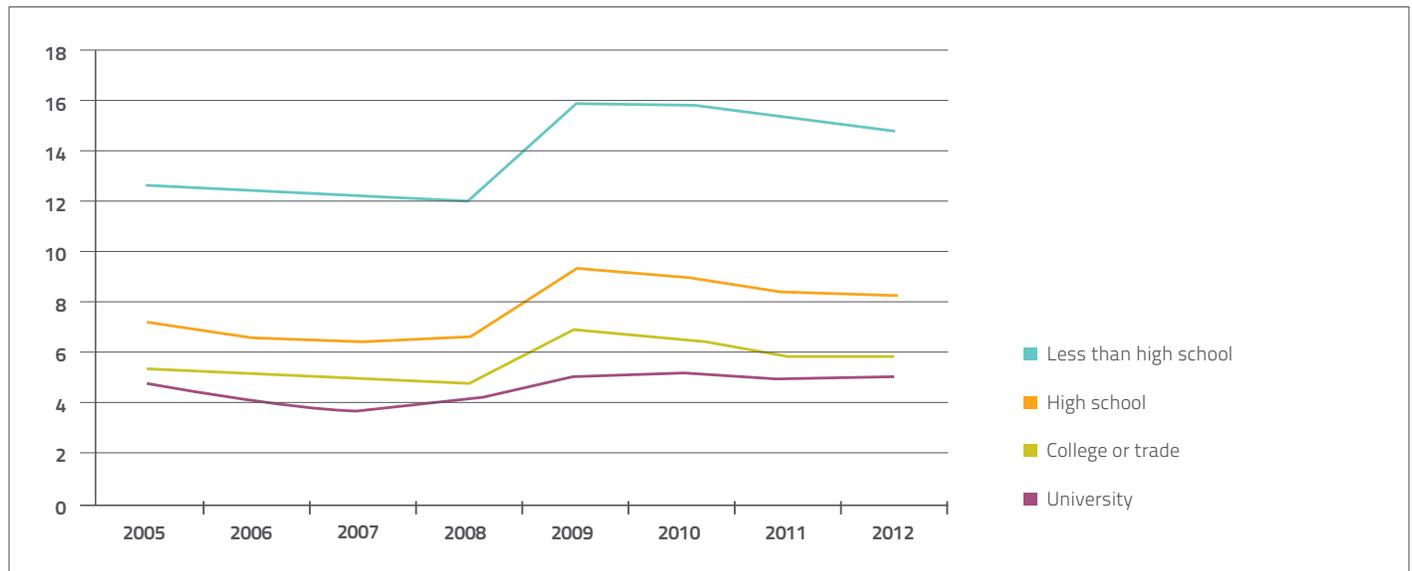
¹¹ Ministry of Training, Colleges, and Universities, *Ontario Labour Market Statistics for January 2012*, 2.

¹² OECD, *Education At a Glance 2013: Country Note—Canada*.

¹³ M. Vézina and S. Crompton, *Volunteering in Canada* (Ottawa: Statistics Canada, 2012), 41,42.

¹⁴ S. Uppal and S. LaRochelle-Côté, *Factors associated with voting* (Ottawa: Statistics Canada, 2012), 6.

Figure 1: Unemployment rates aged 15 and over, by educational attainment, Canada, 2005 to 2012 (per cent)



Source: Statistics Canada (81-582-X), 2013.

5. *Advanced skills and higher education are associated with better physical and mental health.* As skills and educational attainment increase, so does the ability to find secure, well-paid employment; find, understand, and follow health information; navigate the health system; and acquire the resources needed to lead a healthy lifestyle.¹⁵ Given Canada’s high rate of tertiary educational attainment, it is not surprising to find that Canadians are among the world’s healthiest citizens.¹⁶

Skills and higher education have additional benefits which are harder to quantify, but no less important to individual and community well-being. The artistic and cultural contributions of those who have studied and developed skills in the fine arts enrich our communities. The capacity of experts and citizens to address difficult policy issues, such as homelessness, public health, multiculturalism and integration, and transportation infrastructure, is enhanced through higher education and skills development. And individuals with higher levels of skills and educational attainment are also better equipped to pursue knowledge of self and the world, and to engage in critical reflection about oneself, one’s community, and the world.

¹⁵ Chief Public Health Officer of Canada, *Report on the State of Public Health in Canada 2008 - Addressing Health Inequalities* (Ottawa: Public Health Agency of Canada, 2008). See chapter 3.

¹⁶ World Health Organization, Canada: *Health Profile* (Geneva: WHO, 2013). www.who.int/gho/countries/can.pdf.

3

EXCELLENCE

The benefits of skills and higher education are clear. But are Canadians skilled and educated enough to experience the full range of benefits? Is Canada producing graduates with *the right skills* to sustain and enhance the country's economic competitiveness and social well-being?

Higher Education Attainment

More than half of Canadians (aged 25 to 64) held a university or college credential in 2011—the highest rate among OECD countries, and well above the average of 32 per cent.¹⁷ An additional 12 per cent of Canadians hold trades certificates, bringing the proportion of Canadians with some form of PSE credential to nearly two thirds.¹⁸ Canada's proportion of university graduates (27 per cent) is slightly higher than the OECD average (23 per cent) and our proportion of college graduates (25 per cent) is world-leading and more than twice the OECD average (10 per cent).¹⁹

Overall, the rate of tertiary education attainment in Canada is 11 percentage points higher now than it was in 2001—primarily the result of higher PSE participation among younger Canadians.

- 57 per cent of 25 to 34 year-old Canadians hold a higher education credential versus an OECD average of 39 per cent. This includes university (32 per cent), college (22 per cent), and other non-trades related credentials (3 per cent).²⁰
- 43 per cent of the 55 to 64 year-old population in Canada hold such credentials—including those with university (20 per cent), college (18 per cent), and other (4.5 per cent) credentials.²¹ Thus, a more educated population is set to replace Canada's retiring workers.

- Only 10.7 per cent of Canadians aged 25 to 34 hold trades certificates versus 12.8 per cent of those aged 55 to 64.²² As the latter cohort retires, Canada may face shortages in key skilled trades—though this will depend on the level and specific kinds of industry demand.

FIELDS OF STUDY

Canadians earn credentials in a wide range of subjects. In the 25-64 year old population, the majority of degrees are held in business, management and public administration (20 per cent); social and behavioural sciences and law (17 per cent); education (13 per cent); architecture, engineering, and related technologies (12 per cent); humanities (11 per cent); and health and related fields (9 per cent).²³ Recent graduates are most likely to hold credentials in the social and behavioural sciences; business, management and public administration; and health and related fields. (See “Proportion of undergraduate university degrees awarded annually, by discipline, 2001 to 2011”).

¹⁷ OECD, *Education At a Glance 2013: Country Note—Canada*.

¹⁸ Statistics Canada, *Education in Canada: Attainment, Field of Study and Location of Study* (Ottawa: Statistics Canada, 2013). <http://www12.statcan.gc.ca/nhs-enm/2011/as-sa/99-012-x/99-012-x2011001-eng.pdf>

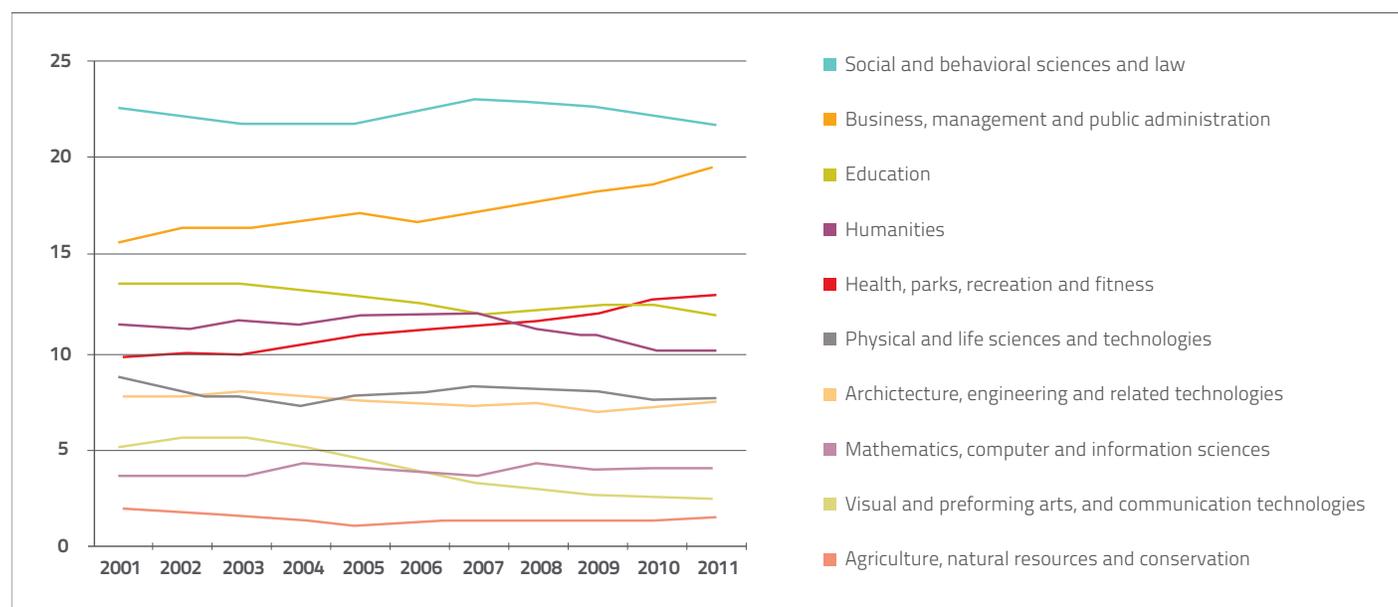
¹⁹ Statistics Canada, *Education Indicators in Canada: An International Perspective* (Ottawa: Statistics Canada, 2014). Table A.1.3. <http://www.cmec.ca/Publications/Lists/Publications/Attachments/322/Education-Indicators-Canada-International-Perspective-2013.pdf>

²⁰ Statistics Canada, *Education in Canada; Statistics Canada, Education Indicators in Canada*. Table A.1.3.

²¹ Statistics Canada, *Education in Canada; Statistics Canada, Education Indicators in Canada*. Table A.1.3.

²² Statistics Canada, *Education Indicators in Canada*. Table A.1.3.

²³ Statistics Canada, *Education in Canada*, 7.

Figure 2: Proportion of undergraduate university degrees awarded annually, by discipline, 2001 to 2011 (per cent)

Sources: Statistics Canada, CANSIM 477-0020; The Conference Board of Canada.

STEM DEGREES

Nearly 25 per cent of all degrees are in the STEM disciplines—science, technology, engineering, and mathematics. Twenty six per cent of master's and 53 per cent of PhDs are held in a STEM discipline.²⁴ Although Canada has a higher share of university graduates in STEM fields than the OECD average,²⁵ we lag key international competitors, like Finland and Germany, who have made science a fundamental part of their educational cultures.²⁶

Moreover, immigrants hold more than half of all STEM credentials in Canada (51 per cent) despite representing only a quarter of adults.²⁷ This suggests that Canada relies more on a strategy of international recruitment than domestic development for STEM degree-holders. Given the importance these disciplines to innovation—including business innovation and innovation in health, education, social services, and other public sectors—and the rising global competition for STEM graduates, Canada must do better on domestic development.

²⁴ Statistics Canada, *Education in Canada*, 14.

²⁵ C. Cheung, Y. Guillemette and S. Mobasher-Fard, "Tertiary Education: Developing Skills for Innovation and Long-Term Growth in Canada." *OECD Economics Department Working Papers*, No. 991. (Paris: OECD, 2012), 26.

²⁶ The Conference Board of Canada, *Percentage of Graduates in Science, Math, Computer Science, and Engineering* (Ottawa: Conference Board, 2014). <http://www.conferenceboard.ca/hcp/details/education/graduates-science-math-computer-science-engineerin.aspx>

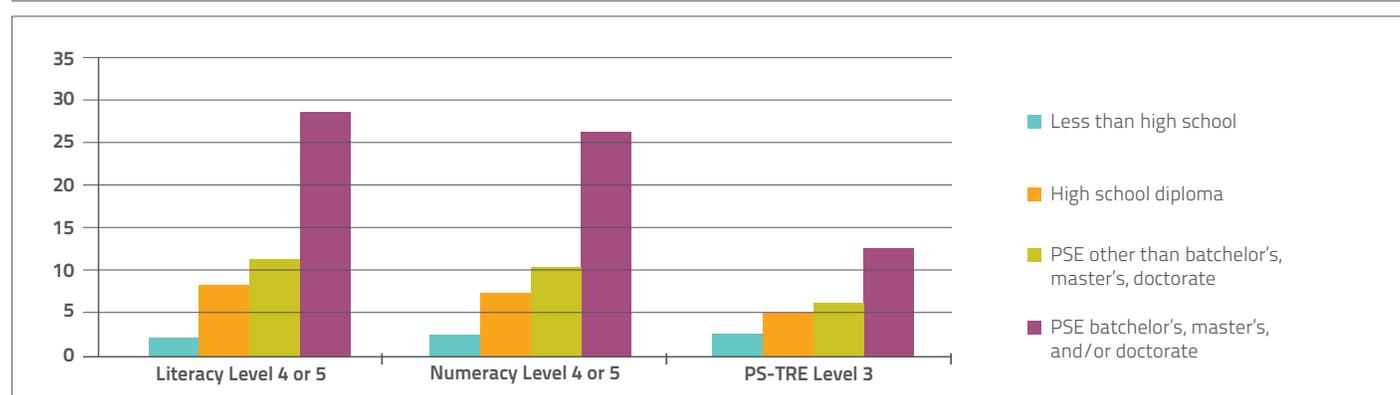
²⁷ Statistics Canada, *Education in Canada*, 15.

ADVANCED DEGREES

Canada also needs more advanced degrees holders to contribute to innovation—both business innovation and social innovation. A Conference Board study on advanced skills and innovation, found associations between the number of PhDs per 100,000 population and both patents per population and business R&D spending—important indicators of innovation performance.²⁸ And a study focused on Ireland found that "R&D active firms employing PhD researchers have rates of patenting 2.5 times greater than similarly active firms which do not employ PhD researchers."²⁹ Because they value research and understand research methods, graduate degree holders in both the private and public sectors constitute an important support and receptor community for research and development—a key weakness in Canada's innovation performance.

²⁸ The Conference Board of Canada, *Advanced Skills and Innovation*.

²⁹ Advisory Science Council, *The Role of PhDs in the Smart Economy* (Dublin: Forfas, December 2009), ix.

Figure 3: Top skills proficiency by educational credential (per cent)

Sources: OECD; Statistics Canada.

While the number of master's and doctoral degrees earned annually by Canadians has doubled over the past two decades, we still lag international peers.³⁰ Canada ranks below the OECD average in graduate degrees awarded annually per capita³¹ and ranks 15th of 16 key competitor countries in PhDs per capita.³² In light of Canada's poor performance in innovation over the past two decades,³³ increasing the number of advanced degree holders and employing their skills more effectively in private and public organizations is a strategy Canada cannot afford to neglect.

Skills Attainment

Canadians' higher education attainment is world-leading but our development of key skills is less impressive than our education success would predict.

LITERACY, NUMERACY AND PROBLEM-SOLVING USING TECHNOLOGY

The OECD's Programme for the International Assessment of Adult Competencies (PIAAC) shows that Canadians, on average, score:

- at the OECD average in *literacy*;
- below the OECD average in *numeracy*; and
- above the OECD average in *using technology to solve problems*.³⁴

While the last result is positive, Canada should be doing better given that adults with PSE credentials generally score higher than those without and there are proportionally more PSE graduates in Canada than in other countries. (See "Top Skills Proficiency by Educational Credential"). In fact, Canadians with higher education credentials score lower than higher education graduates in other countries. For example,

- Canadians with tertiary credentials scored only 290 (out of 500) in *literacy*, which is below the OECD average of 297. Only three countries had lower scores.³⁵
- 47 per cent of Canadians with tertiary credentials scored at Level 3 or higher *using technology to solve problems*, versus the OECD average of 52 per cent, putting Canada behind 14 of the 19 countries surveyed.³⁶

The Impact of Immigration

Part of the explanation emerges from the differences in scores between immigrant and non-immigrant credential-holders. While "native-born, native-language" *university* graduates in Canada score 313 in literacy—above the OECD mean of 307—"foreign-born, foreign-language" university graduates in Canada score 275—versus the OECD mean of 273. Taking immigrants' scores out of the picture would see Canada ranking 7th (rather than 13th) in literacy. By contrast, "native-born, native language" college graduates score 281—below the OECD mean of 287—while foreign-born, foreign-language graduates score 251—versus the OECD mean of 253).³⁷

³⁰ Statistics Canada, Table 477-0020.

³¹ Cheung, Guillemette and Mobasher-Fard, "Tertiary Education," 8.

³² The Conference Board of Canada, *PhD Graduates* (Ottawa: Conference Board, 2014). <http://www.conferenceboard.ca/hcp/details/education/phd-graduates.aspx>

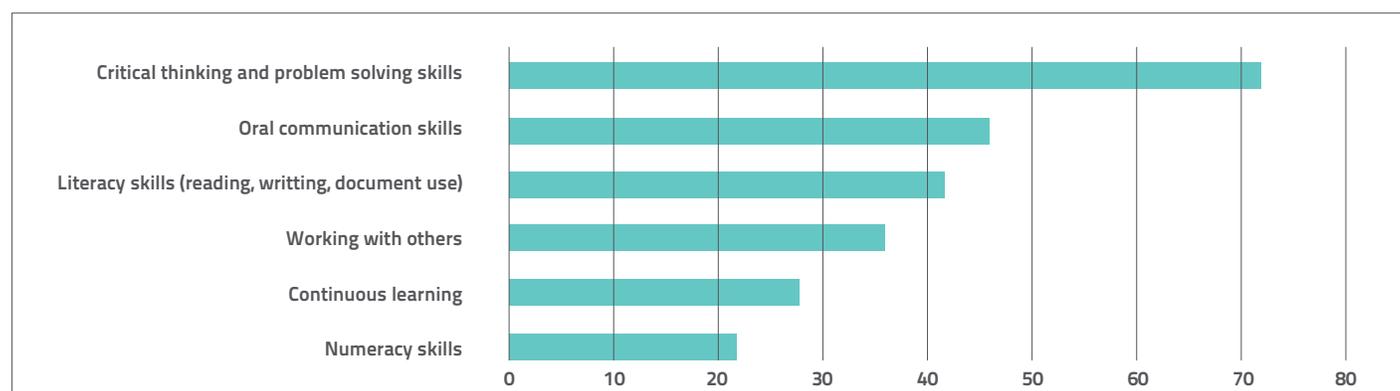
³³ The Conference Board of Canada, *How Canada Performs—Innovation* (Ottawa: Conference Board, 2014).

³⁴ Statistics Canada, *Skills in Canada: First Results from the Programme for the International Assessment of Adult Competencies (PIAAC)* (Ottawa: Statistics Canada, 2013). <http://www.statcan.gc.ca/pub/89-555-x/89-555-x2013001-eng.pdf>

³⁵ OECD, *OECD Skills Outlook 2013*, 119. See Table A3.9 (L) and data at <http://dx.doi.org/10.1787/888932901011>.

³⁶ OECD, *OECD Skills Outlook 2013*. See Table A3.10 (P) and data at <http://dx.doi.org/10.1787/888932901030>.

³⁷ All results in this paragraph from A. Parkin, "Is Canada's Post-Secondary System Prepared for the Challenges of the 21st Century?" Presentation at the *Skills and Post-Secondary Education Summit 2013*. Toronto, November 5-7, 2013.

Figure 4: Essential Skills Gaps (percentage of employers observing gaps)

Source: The Conference Board of Canada, *Ontario Employers Skills Survey*.

Canada's higher proportion of immigrants explains some of the lower than expected performance on literacy among university graduates and suggests that the higher education system may be performing better than initially thought. But from the perspective of skills held in the workforce and their contribution to economic and social outcomes, the fact that so many Canadians and permanent residents have less than ideal literacy, numeracy and problem-solving skills is something that must be addressed.

ESSENTIAL SKILLS

Essential skills are those that “provide the foundation for learning all other skills and enable people to evolve with their jobs and adapt to workplace change.”³⁸ Unfortunately, Canadians appear to have weaker essential skills than economic and individual success require. A 2013 survey of over 1,500 Ontario employers, for example, revealed serious concerns about the essential skills of Ontario workers.³⁹ Over 70 per cent of employers reported gaps in the critical thinking and problem-solving skills of current and prospective employees. Nearly half also reported insufficient oral communication (46 per cent) and literacy skills (42 per cent) in the workforce. (See “Essential Skills Gaps”). Canadian firms and individuals cannot expect to excel in the face of such deficits.

³⁸ ABC Life Literacy Canada, *9 Essential Skills*. 2013. <http://abclifelifiteracy.ca/nine-essential-skills>

³⁹ D. Munro and J. Stuckey, *The Need to Make Skills Work: The Cost of Ontario's Skills Gap* (Ottawa: Conference Board, 2013).

INNOVATION SKILLS

Canadians are highly educated and we rank very well in international comparisons of research output and quality.⁴⁰ But the innovation performance of Canadian businesses is weak—scoring a “D” and ranking 13th of 16 peer countries in the Conference Board of Canada's *Report Card on Innovation*.⁴¹ While many factors contribute to weak innovation performance, inadequate innovation and commercialization skills are a key piece of the puzzle.⁴²

Canadian firms consistently rank skills among the top three or four factors *necessary* for innovation success. In the Conference Board's *Survey on Innovation Metrics and Management*, 40 per cent of firms cited employees' skills, attitudes, and behaviours as a “critical competitive attribute” for innovation, placing it fourth among 19 factors necessary for innovation success.⁴³ In Statistics Canada's *Survey of Innovation and Business Strategy*, lack of skills was cited by over a quarter of firms as an obstacle to innovation—the second most frequently cited barrier.⁴⁴

⁴⁰ Expert Panel on the State of Science and Technology in Canada, *The State of Science and Technology in Canada, 2012* (Ottawa: The Council of Canadian Academies, 2013).

⁴¹ The Conference Board of Canada, *How Canada Performs—Innovation* (Ottawa: Conference Board, 2014).

⁴² The Conference Board's *Innovation Skills Profile 2.0* identifies the skills, attitudes and behaviours employees and managers need to contribute to innovation—including creativity, problem-solving, risk assessment and risk-taking, relationship-building, communication, and implementation skills. *Innovation Skills Profile 2.0* (Ottawa: Conference Board, 2014). http://www.conferenceboard.ca/Libraries/PUBLIC_PDFS/InnovationSkillsProfile.sflb

⁴³ D. Watt and D. Munro, *Skills for Business Innovation Success: It's People Who Innovate* (Ottawa: Conference Board, 2014), 15.

⁴⁴ Industry Canada, *Survey of Innovation and Business Strategy* (Ottawa: Statistics Canada, 2009). www.ic.gc.ca/eic/site/eas-aes.nsf/eng/ra02097.html

To improve Canada’s innovation performance we need to improve innovation skills. A number of PSE institutions have taken important steps to integrate innovation skills development into their programs, but there is considerable room to offer more, as well as to conduct systematic assessments of outcomes to determine what works best in developing innovation skills.⁴⁵

UNIVERSITY GRADUATES’ VIEWS OF SKILLS ATTAINMENT

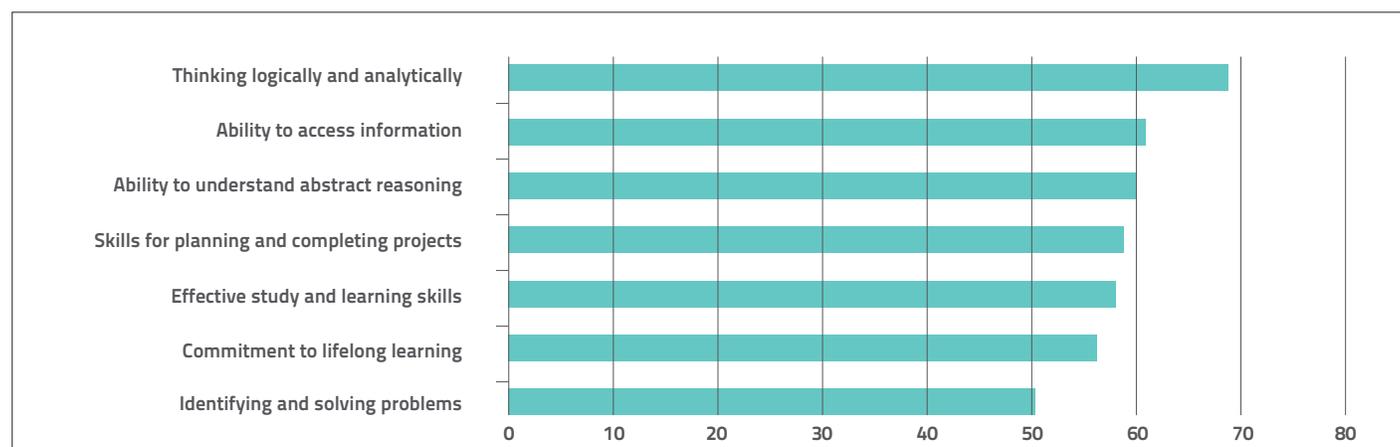
University graduates’ views reinforce many concerns about skills. A 2012 survey of 15,000 graduating undergraduate students found that a quarter did not feel that university contributed much or very much to their knowledge of their subject area, and only 45 per cent felt prepared for further study in a graduate or professional program.⁴⁶ On other skills, graduates’ views about the contribution of university to their development are underwhelming. (See Chart “Contribution of university education to skills development”). Subjective measures of skills attainment are problematic, but the fact that so many graduates believe that their university education did not contribute to their development raises pressing questions about higher education quality.

LIFELONG LEARNING AND WORKPLACE SKILLS DEVELOPMENT

PSE institutions are central to developing the skills that contribute to economic, social, and individual well-being, and there are opportunities for improvement. Workplace training and lifelong learning are also important, but Canada’s track record in these areas is weak. In 2009, only 31 per cent of Canadian adults participated in some form of non-formal job-related education. This was slightly higher than the OECD average (28 per cent), but behind leading countries such as Sweden (61 per cent), Norway (47 per cent), and Finland (44 per cent).⁴⁷ (See “Adult participation in non-formal job-related education”).

Although more Canadians participated in 2009 (31 per cent) than in 2003 (25 per cent), our performance relative to international peers has slipped. In 2003, the average participation rate for 13 comparator countries for whom data was available was 23 per cent—a rate that Canada exceeded by 2 percentage points. But by 2009, those same 13 countries had an average participation rate of 33 per cent—a rate that Canada lagged by 2 percentage points⁴⁸. In fact, other evidence shows that employer spending on training and development has declined by about 40 per cent over the past two decades.⁴⁹

Figure 5: Contribution of university education to skills development(per cent of graduates responding “much” or “very much”)

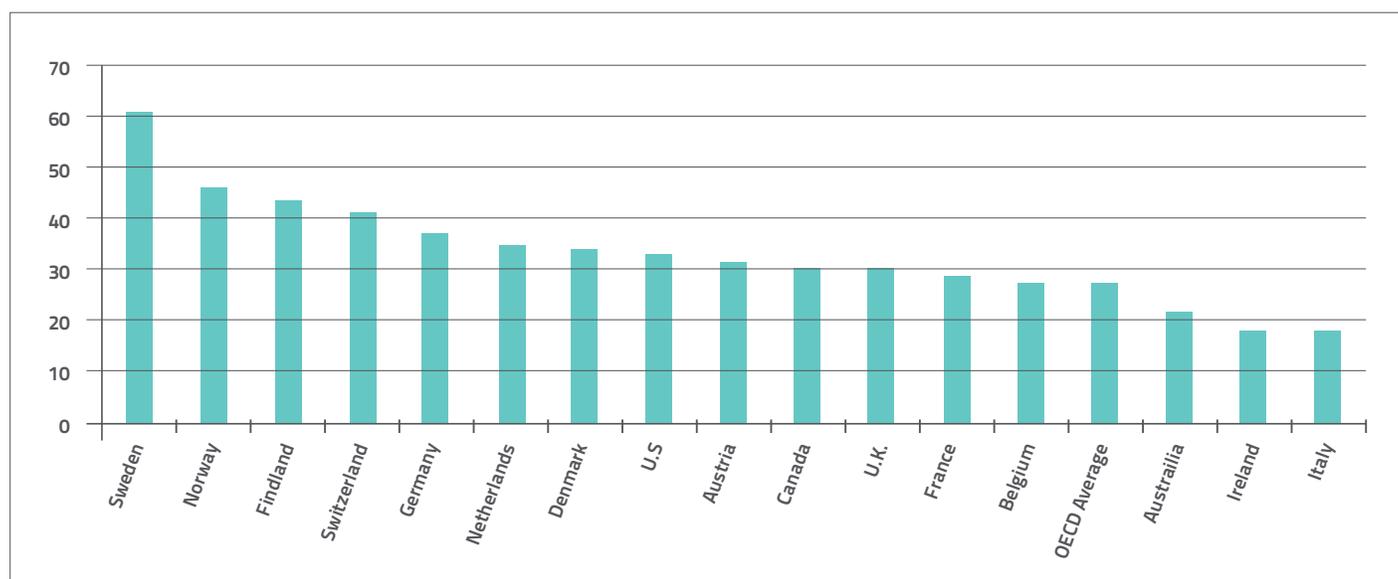


Source: Canadian University Survey Consortium.

⁴⁵ D. Watt and D. Munro, *Skills for Business Innovation Success*.
⁴⁶ Canadian University Survey Consortium. *2013 First-Year University Student Survey*. (CUSC, 2013).

⁴⁷ OECD, *LSO network special data collection on adult learning activities*. Tables C5.1a and C5.2a.
⁴⁸ The Conference Board of Canada, *Adult Participation in Education* (Ottawa: The Conference Board, 2014). <http://www.conferenceboard.ca/hcp/details/education/adult-participation.aspx>
⁴⁹ D. Munro, *Developing Skills: Where Are Canada’s Employers?* (Ottawa: The Conference Board, 2014). http://www.conferenceboard.ca/topics/education/commentaries/14-03-20/developing_skills_where_are_canada_s_employers.aspx

Figure 6: Adult Participation in Non-Formal Job-Related Education, 2009 or Most Recent Year (per cent)



Source: OECD, *Education at a Glance 2011* (Indicator C5).

To be fair, employers who invest in employee skills development face an investment risk—specifically that employees whose training they support may be “poached”, and there is some evidence that this occurs.⁵⁰ Even where poaching is a low risk, the widespread *belief* that it occurs perpetuates a collective action problem. When employers do invest, the perceived risks encourage investments in *specific* skills for particular tasks and jobs rather than more *general and transferable* skills.⁵¹ This situation persists despite the fact that larger investments in employee training can improve employee retention. (See “Turnover Rates, by per employee TLD spending”).

Even when workplace training is offered, many potential participants face barriers to participation. Many are hampered by limited time and resources, geography, health and confidence.⁵² And those who participate in employer-sponsored skills development are more likely to already have relatively high educational attainment and skills compared with those who do not participate. In 2008, “more than two-thirds of workers with university degrees took part in formal work-related training, while only 22 per cent of workers without a high school diploma took part.”⁵³ Results from PIAAC show that participation in job-related training increases with literacy proficiency. (See “Participation of Canadians in Job-Related Education or Training by Literacy Level”).

Simply put, the more educated and skilled an individual is, the more likely she is to receive even more skills training, while those who most need training are least likely to get it. This can have pervasive, life-long effects.

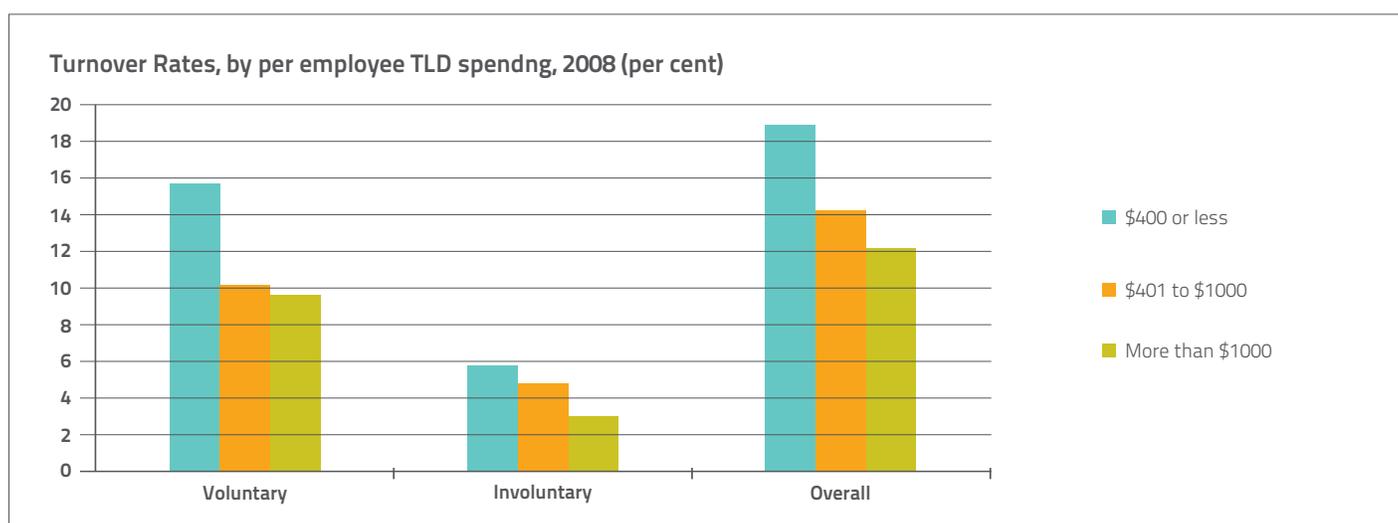
⁵⁰ Nordicity, *Labour Supply/Demand Dynamics of Canada's Information and Communications Technology (ICT) Sector* (Toronto: Nordicity, 2012), 22.

⁵¹ C. Halliwell, *No Shortage of Opportunity: Policy Ideas to Strengthen Canada's Labour Market in the Coming Decade*. IRPP Study 42 (Montreal: Institute for Research on Public Policy, 2013), 27.

⁵² V. Peters, *Results of the 2003 Adult Education and Training Survey*; OECD, *Thematic Review on Adult Learning—Canada: Country Note* (Paris: OECD, 2002); D. Munro, *Job-Related Training: Barriers to Learner Participation* (Ottawa: The Conference Board, 2014). http://www.conferenceboard.ca/topics/education/commentaries/14-04-10/job-related_training_barriers_to_learner_participation.aspx

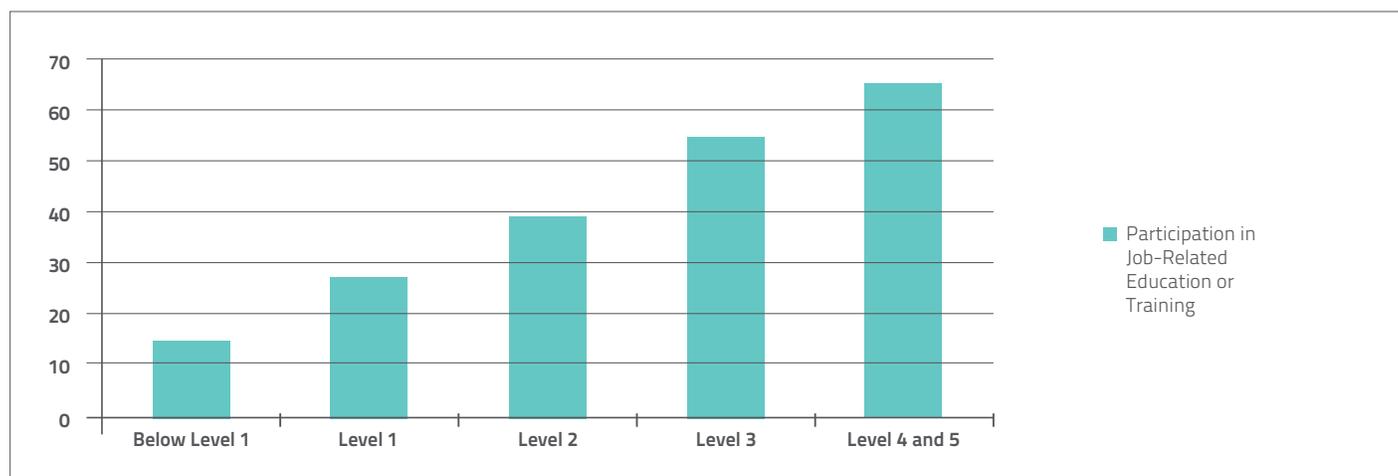
⁵³ Canadian Council on Learning, *Securing Prosperity Through Canada's Human Infrastructure: The State of Adult Learning and Workplace Training in Canada* (Ottawa: CCL, 2009), 26.

Figure 7: Turnover Rates, by per employee TLD spending, 2008 (per cent)



Source: The Conference Board of Canada, Learning and Development Outlook, 2009.

Figure 8: Participation of Canadians in Job-Related Education or Training By Literacy Level (per cent)



Source: OECD, PIAAC (Figure 5.7 (L)).

Recognizing that successful workplace training depends not only on the behaviour of employers, but on employees and other stakeholders, it is nevertheless the case that employers' weak investment in training exacerbates skills pressures and prevents businesses and individuals from becoming more competitive. Even as many employers raise concerns about

skills shortages, not enough are taking steps to address the challenge. As part of an excellence agenda for skills and higher education in Canada, employers need to take more responsibility for the training that, ultimately, produces great benefits for them.⁵⁴ And all stakeholders should take action to reduce the barriers faced by Canadians who would benefit from skills development opportunities.

⁵⁴ Canadian Council on Learning, *Securing Prosperity Through Canada's Human Infrastructure*, 27.

Foundational Skills

Proficiency in certain skills—including reading, mathematics, and science skills—among students in the K-12 system shapes and constrains future skills development opportunities and helps to explain advanced skills outcomes. These skills provide a foundation upon which further learning depends, and achievement by age 15 helps to explain future skills development performance. Although the K-12 system is beyond the scope of this paper, a brief look at the skills proficiency of Canada’s 15 year olds provides a useful picture of the preparedness of Canada’s future higher education attendees and workers.

The PISA scores of Canadian 15 year olds in mathematics, reading, and science are, on average, strong by international standards. But Canada’s scores and international rankings have slipped in recent years, and there is significant variation across the country.

- *Mathematics.* Canadian students scored 24 points above the OECD average in mathematics, ranking 10th among 65 participating countries and 4th among OECD countries.⁵⁵ But recent trends are troubling. Scores have declined by 14 points across the country as a whole over the past nine years, with very large declines in Manitoba (36 points), Alberta (32 points) and Newfoundland and Labrador (26 points).⁵⁶ (See “Canadian PISA Results in Mathematics, Reading and Science Over Time”).

Sixteen per cent of Canadian students scored at level 5 or 6—indicating high level performance—but an almost equal proportion (15 per cent) scored at or below the level of basic proficiency needed to participate in modern life.⁵⁷ Wide variation across provinces is also evident, with Quebec leading all provinces and, along with BC, scoring higher than both the Canadian and OECD averages, while students in Prince Edward Island score well below both the Canadian and OECD averages.⁵⁸ Finally, boys performed better than girls in Canada (by 10 points on average), but this was only statistically significant in four provinces – Quebec, Ontario, Alberta, BC.⁵⁹

- *Reading.* Canadian students scored 27 points above the OECD average in reading, ranking 6th among 65 participating countries and 5th in the OECD.⁶⁰ Reading scores in Canada have declined, but the Council of Ministers of Education in Canada maintains that the decline is not yet statistically significant. Still, Canada has slipped from 2nd to 6th among participating countries and the decline is significant in some provinces, ranging from a 16 point drop in Quebec to a 34 point drop in Manitoba.⁶¹ (See “Canadian PISA Results in Mathematics, Reading and Science Over Time”).

With the exception of Prince Edward Island, all provinces were at or above the OECD average.⁶² Additionally, girls performed significantly better than boys in reading in Canada (by 35 points on average)—ranging from 26 points better in British Columbia to 53 points better in Newfoundland and Labrador.⁶³

- *Science.* Canadian students scored 24 points above the OECD average in science and ranked 8th among PISA participants and 6th among OECD peers.⁶⁴ Science scores in Canada have declined by 9 points over the past six years and Canada has slipped from 3rd to 8th place. The largest declines occurred in Newfoundland and Labrador (11 points), Quebec (15 points), Prince Edward Island (18 points) and Manitoba (21 points).⁶⁵ (See “Canadian PISA Results in Mathematics, Reading and Science Over Time”).

Alberta and British Columbia scored higher than both the Canadian and OECD average while Prince Edward Island scored below the OECD average and well below the Canadian average.⁶⁶ There were no statistically significant gender differences in science performance among Canadian 15 year olds who took the PISA test.

⁵⁵ CMEC, *Measuring Up*, 18.

⁵⁶ CMEC, *Measuring Up*, 30.

⁵⁷ CMEC, *Measuring Up*, 24-5.

⁵⁸ CMEC, *Measuring Up*, 19-21.

⁵⁹ CMEC, *Measuring Up*, 27.

⁶⁰ CMEC, *Measuring Up*, 34-5.

⁶¹ CMEC, *Measuring Up*, 40.

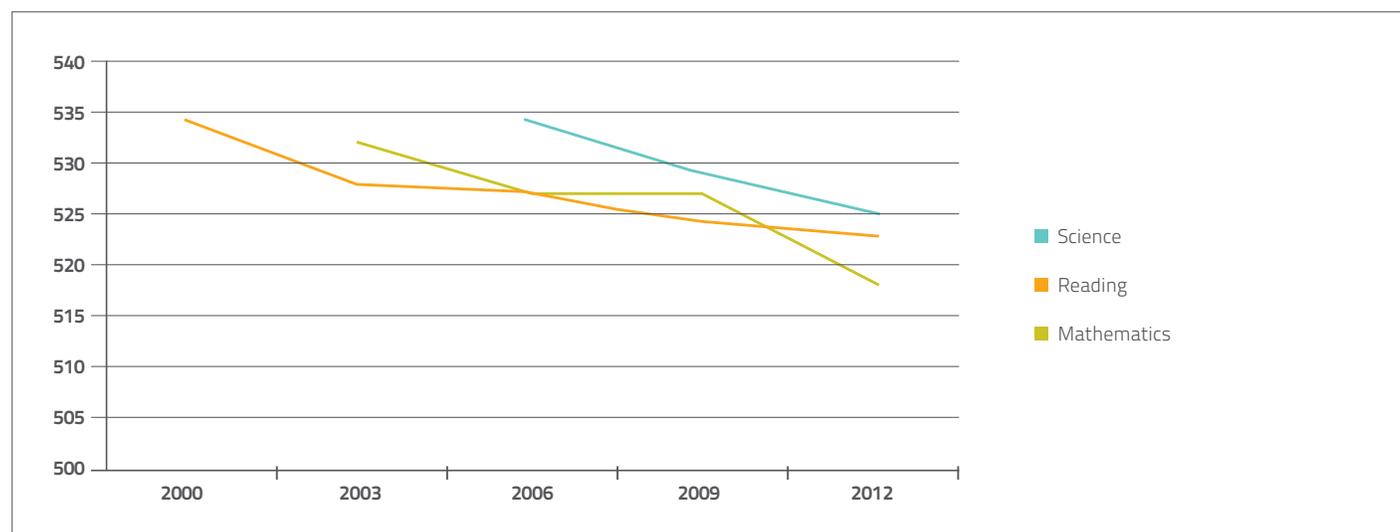
⁶² CMEC, *Measuring Up*, 37.

⁶³ CMEC, *Measuring Up*, 40.

⁶⁴ CMEC, *Measuring Up*, 36.

⁶⁵ CMEC, *Measuring Up*, 41.

⁶⁶ CMEC, *Measuring Up*, 37.

Figure 9: Canadian PISA Results in Mathematics, Reading and Science Over Time (Score)

Source: CMEC.

From Expansion to Excellence

Canada's performance on skills and higher education is impressive on many levels, but we may not be achieving the level of excellence we require to sustain and enhance economic prosperity and social well-being. Simply producing more graduates of lower quality is not an ideal strategy for economic competitiveness, nor social and individual well-being. We need to focus on the quality of education, the mix of disciplines, the number and quality of advanced degree holders, and opportunities to sustain and enhance skills through workplace training and life-long learning.

In particular, we should consider ways to assess learning outcomes more directly, encourage and incentivize institutions to improve skills outcomes, and hold them accountable for performance. We should be much more attentive to the quality of graduates' skills—including literacy, numeracy, critical thinking, problem-solving, communication, and innovation and employability skills—and support initiatives that enhance those skills. And we should think about ways to encourage more students to pursue degrees in the STEM disciplines and advanced degrees such as master's and PhDs in order to support both business and social innovation.

4

EQUITY

While many Canadians have developed advanced skills and completed higher education and enjoy the associated economic and other benefits, many others face barriers to participation and completion, leaving them and the country economically and socially less secure and successful than they could be. Differences in skills and educational attainment track characteristics that include Aboriginal status, gender, and immigration, as well as region. In some cases, these disparities harm both those left out and the economic and social well-being of Canada overall.

Higher education and the development of advanced skills are not for all Canadians. Some may simply choose to pursue other paths. But in too many cases, participation and achievement are determined not by choice, but by circumstances over which individuals have little control. Where communities and governments have power to shape those circumstances it is imperative that we discuss whether and how to do so. In addition to designing and pursue an excellence agenda for skills and higher education, we need to design and pursue an equity agenda.

Aboriginal Achievement

Many who identify as Aboriginal have earned university, college and/or trades credentials and many exhibit advanced skills that contribute to economic, social, and individual well-being. But there is a large achievement gap between Aboriginal and non-Aboriginal individuals that contrasts sharply both with Canada's egalitarian values and responsibilities to Aboriginal peoples.

HIGHER EDUCATION ATTAINMENT

By 2011, 48 per cent of those who self-identify as Aboriginal held a post-secondary credential. This was higher (55 per cent) for those reporting Métis as their single identity, but lower (36 per cent) for those reporting Inuit as their single identity.⁶⁷ Overall, there is an attainment gap of 16 percentage points between the Aboriginal and non-Aboriginal populations in Canada.

- Fewer than 10 per cent of Aboriginals held a university degree (versus 27 per cent of non-Aboriginals) and 21 per cent held a college diploma (versus 25 per cent for non-Aboriginals).

- Notably, 14.4 per cent of those who identify as Aboriginal held a trades certificate—a rate that is more than two percentage points *higher* than the non-Aboriginal attainment of 12 per cent.⁶⁸

GAPS IN SKILLS DEVELOPMENT

There are also substantial gaps between Aboriginals and non-Aboriginals in the development of core skills. PIAAC results show that, on average, the Aboriginal population scores below the non-Aboriginal population in both literacy and numeracy.

- On average, the Aboriginal population scored 260 (out of 500) in *literacy* versus 274 for the non-Aboriginal population.
- The average *numeracy* score for the Aboriginal population was 244 versus 266 for the non-Aboriginal population.⁶⁹

The size of the gaps varies across provinces and territories, and it narrows or widens in different age cohorts. But across all provinces, territories and age groups tested, the Aboriginal population consistently scores below the non-Aboriginal population.

SKILLS DEVELOPMENT BY EDUCATIONAL ATTAINMENT

However, comparing the skills attainment of Aboriginal and non-Aboriginal populations with similar levels of education reveals an interesting picture. Similarly educated cohorts of Aboriginal and non-Aboriginal individuals achieve nearly identical literacy scores and similar numeracy scores.⁷⁰

Among those with Bachelor's degrees or higher, Aboriginal graduates score slightly higher on literacy (305) than non-Aboriginal graduates (300).

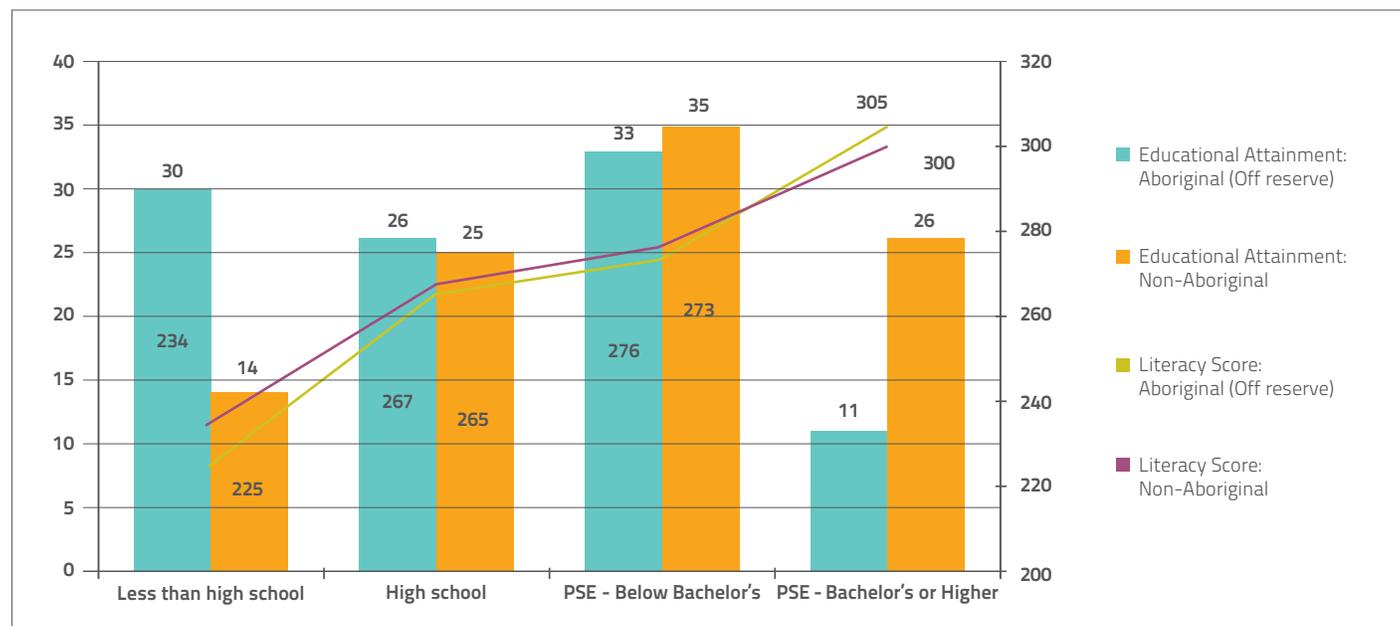
⁶⁷ Statistics Canada, *The educational attainment of Aboriginal peoples in Canada* (Ottawa: Statistics Canada, 2013), 7.

⁶⁸ Statistics Canada, *The educational attainment of Aboriginal peoples in Canada*, 4.

⁶⁹ CMEC, "PIAAC in Canada." Slide Presentation. 2013.

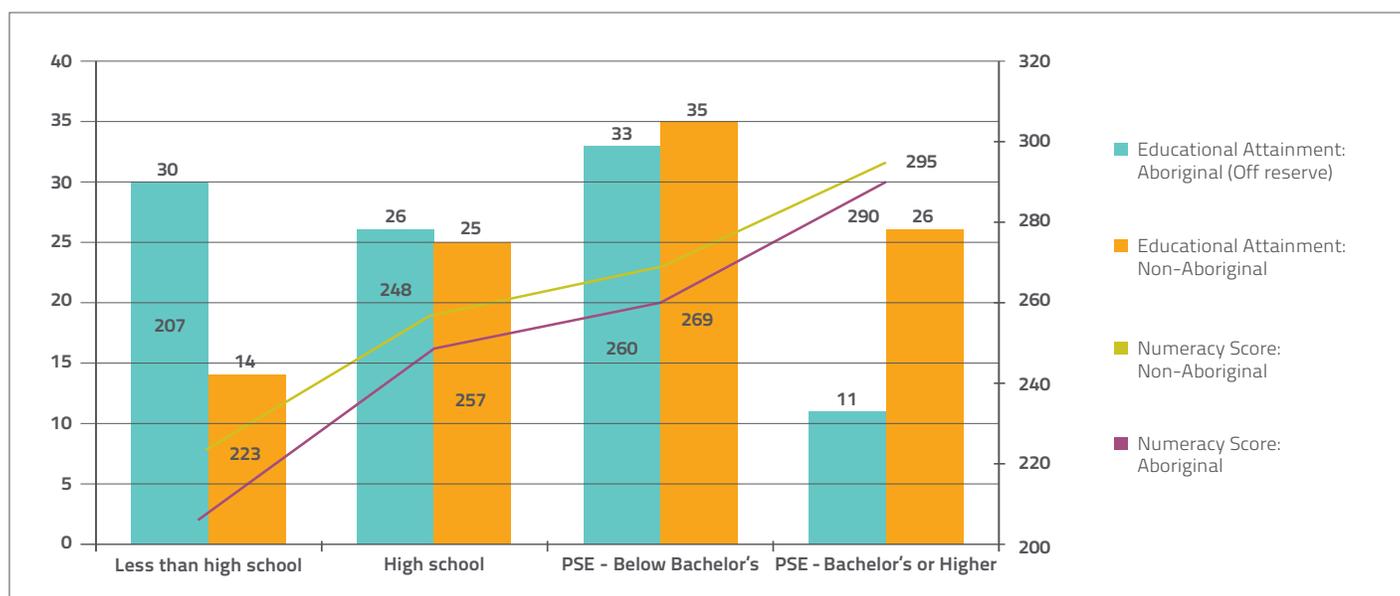
⁷⁰ CMEC, "PIAAC in Canada." Slide Presentation. 2013.

Figure 10: Educational Attainment and Literacy Scores, Aboriginals (off-reserve) and Non-Aboriginals (per cent educational attainment; PIAAC literacy score out of 500)



Sources: CMEC, OECD.

Figure 11: Educational Attainment and Numeracy Scores, Aboriginals (off-reserve) and Non-Aboriginals (per cent educational attainment; PIAAC numeracy score out of 500)



Sources: CMEC, OECD.

At first glance, it appears that skills levels relate more to educational attainment than to Aboriginal status which would suggest that improving PSE access and completion rates for Aboriginal people could lead to enhanced skills. But it is not clear how much of a contribution education makes to skills development (versus serving as a selection and sorting mechanism for already highly skilled people). Nor is it clear that enough has been done to prepare more Aboriginal students to succeed in higher education. The high proportion of Aboriginal students who do not complete high school (nearly 30 per cent) is a glaring indicator of the challenge and highlights that the issue is much broader than the PSE system alone.

LABOUR MARKET OUTCOMES

Higher education and skills attainment for Aboriginals is not always associated with better labour market outcomes. Aboriginals with PSE credentials have lower employment and participation rates, and higher unemployment rates, than non-Aboriginals with PSE credentials. And although Aboriginal graduates earn higher incomes than Aboriginal non-graduates, there is persistent income inequality between Aboriginal and non-Aboriginal graduates.⁷¹

Table 1: Employment Outcomes of Aboriginal and non-Aboriginal populations, aged 25-54, with PSE

	ABORIGINAL WITH PSE CREDENTIAL (PER CENT)	NON-ABORIGINAL WITH PSE CREDENTIAL (PER CENT)
UNEMPLOYMENT RATE	9.5	5.7
EMPLOYMENT RATE	76.0	84.5
PARTICIPATION RATE	84.0	90.0

Source: Statistics Canada (71-588-X, no.3).

All of this suggests that while PSE completion can improve the economic and social well-being of Aboriginal graduates, addressing persistent socio-economic inequalities between Aboriginal and non-Aboriginal populations will require more than an education strategy. Still, given how critical skills and education are to various social and economic outcomes, supporting higher participation and achievement among Aboriginals in Canada must be a key goal.

Gender Gaps

Differences in skills and higher education achievement between Canadian men and women are another challenge. On some measures, men outperform women, while in others the reverse is true. Notable differences in the kinds of higher education paths men and women pursue and the benefits they experience are another issue to examine.

EDUCATIONAL ATTAINMENT

Canadian women are more likely to have a university or college credential, but much less likely to have a trades certificate, than Canadian men.

- Among adults aged 25-64, university credentials are held by 28 per cent of women and 26 per cent of men, while college credentials are held by 28 per cent of women and 21 per cent of men.
- Overall, there is a gap of nearly 10 percentage points between women and men in terms of university and college completion—placing Canada 9th among 16 peer countries in the Conference Board of Canada's analysis of gender gaps in tertiary education.⁷²

In the younger 25 to 34 age cohort, the gap is even wider.

- Sixty five per cent of women and 49 per cent of men aged 25 to 34 hold a university or college credential—a gap of 16 per cent.⁷³ For this age cohort, Canada ranks 12th among 16 peer countries on gender equity in tertiary education.⁷⁴

As the Conference Board notes, “just 20 years ago, a smaller proportion of women than men had a tertiary education, and a key challenge was to make higher education more accessible and welcoming to women. While the challenge remains in some of the mathematics, computer, and engineering disciplines, the overall gender imbalance tipped in women's favour in Canada in the early 1990s.”⁷⁵ Some are now asking whether there is a “boy crisis” in education and wondering what can be done to address it.⁷⁶

⁷¹ TD Economics, *Employment and Education Among Aboriginal Peoples: A New Perspective From the 2011 National Household Survey* (Toronto: TD Economics, 2013).

⁷² The Conference Board of Canada, *Gender Gap in Tertiary Education* (Ottawa: Conference Board, 2014). <http://www.conferenceboard.ca/hcp/details/education/gender-gap-tertiary.aspx>

⁷³ Statistics Canada, *Education in Canada*, 9.

⁷⁴ The Conference Board of Canada, *Gender Gap in Tertiary Education*.

⁷⁵ The Conference Board of Canada, *Gender Gap in Tertiary Education*.

⁷⁶ Paul Cappon, *Exploring the “Boy Crisis” in Education* (Ottawa: Canadian Council on Learning, 2011), 1.

In the skilled trades, however, men aged 25 to 64 are almost twice as likely to have achieved certification (15 per cent) as women (8 per cent). In the younger 25 to 34 age cohort, 79 per cent of those who hold a Registered Apprentice certificate are men.⁷⁷ Moreover, a high proportion of trade certificates earned by women tend to be in fields such as personal services (e.g., hairstyling, esthetics) and cooking where labour market outcomes are weaker.⁷⁸

LITERACY, NUMERACY AND PROBLEM-SOLVING SKILLS

A similarly mixed story emerges when we examine the literacy, numeracy, and problem-solving skills of Canadian men and women.

- The *literacy* and *problem-solving* skills of Canadian men and women, as measured by the OECD's PIAAC, are essentially the same—though in the 55 to 64 age group, men score slightly higher than women in literacy and more men (19 per cent) than women (14 per cent) score at the highest levels in problem-solving in technology-rich environments.⁷⁹
- However, PISA scores for Canadian 15 year olds highlight a gap in *reading* achievement. Girls performed better than boys in reading in Canada by 35 points on average—ranging from 26 points better in British Columbia to 53 points better in Newfoundland and Labrador.⁸⁰ Given the importance of reading as a foundation for future education and lifelong learning, that gap requires attention.

With respect to *numeracy*, the situation is reversed.

- PIAAC results show a gap of nearly 15 points between men (273) and women (258) in numeracy. The gap is largest in the 55-64 age group—with men scoring 262 and women scoring 242—and smallest in the 16-24 age group—with men scoring 273 and women scoring 264.⁸¹
- PISA *mathematics* scores of 15 year old Canadians indicate that things are not likely to improve anytime soon. Canadian boys outperformed girls by 10 points on average—though this was only statistically significant in four provinces (Quebec, Ontario, Alberta, B.C.).⁸² Given how important math skills are in the STEM disciplines, and given our need to improve STEM participation and performance—especially among women—there is a need to take action on the numeracy gap.

Individuals will choose different education paths for a variety of personal reasons, but we must ensure that all paths are open to both men and women. If women freely choose STEM pathways less often than men, or if men freely choose trades rather than college or university more often than women, that is fine. But if, in reality, those choices are constrained by differences in early-life acquisition of foundational skills and/or by inhospitable educational or occupational cultures, then attention is needed.

Immigrant Achievement and Recognition

To meet its skills needs, Canada relies to a great extent on immigrants. Given the way Canada selects immigrants, on average, they tend to have higher educational attainment than other Canadians. The 2006 census showed that while 19 per cent of all Canadians held a university degree, more than half (51 per cent) of recent immigrants had attained a university degree.⁸³

At the same time, many immigrants have weaker literacy and communication skills (as noted above) and their educational and occupational credentials are often not recognized by Canadian institutions and employers. Consequently, labour market outcomes for immigrants are weaker than similarly educated and skilled Canadians. The employment rate of university-educated immigrants (as of March 2014) stood at 68.8 per cent, versus a rate of 78 per cent for university degree-holders born in Canada. The unemployment rate for university-educated immigrants stood at 7 per cent, versus a mere 3.1 per cent for those born in Canada with university degrees.⁸⁴ This is all the more remarkable when one considers that immigrants hold the majority of STEM degrees in Canada which tend to be in higher demand than some other disciplines.

If Canada is going to rely on highly educated immigrants to meet skills and occupational needs, then a better system of credential recognition will be needed. Additionally, given the integration challenges many immigrants face, additional essential and other skills training should be provided to ensure that they are able to use their full range of skills to contribute to Canada's economy and society, as well as their own well-being.

⁷⁷ Statistics Canada, *Education in Canada*, 9.

⁷⁸ D. Boothby and T. Drewes, *Returns to Apprenticeship in Canada* (Ottawa: C.D. Howe Institute, 2010).

⁷⁹ Statistics Canada, *Skills in Canada*, 29.

⁸⁰ CMEC, *Measuring Up*, 40.

⁸¹ Statistics Canada, *Skills in Canada*, 86. Table B.2.3.

⁸² CMEC, *Measuring Up*, 27.

⁸³ Employment and Social Development Canada, *Learning: Educational Attainment* (Ottawa: ESDC, 2014). http://www4.hrsdc.gc.ca/3ndic.1t.4r@-eng.jsp?iid=29#M_5

⁸⁴ Statistics Canada, Table 282-0105. <http://www5.statcan.gc.ca/cansim/a05>

Regional Differences

There are substantial differences between provinces and territories in higher education attainment and skills development. Many factors help to explain the differences—including demographics, funding, institutional structures, regional labour markets and others—but there are complex interactions among these factors and focusing on only one or even a few is unlikely to repair the gaps. Recognizing that more investigation will be required, a good start is simply to understand where we are in terms of higher educational attainment and skills development.

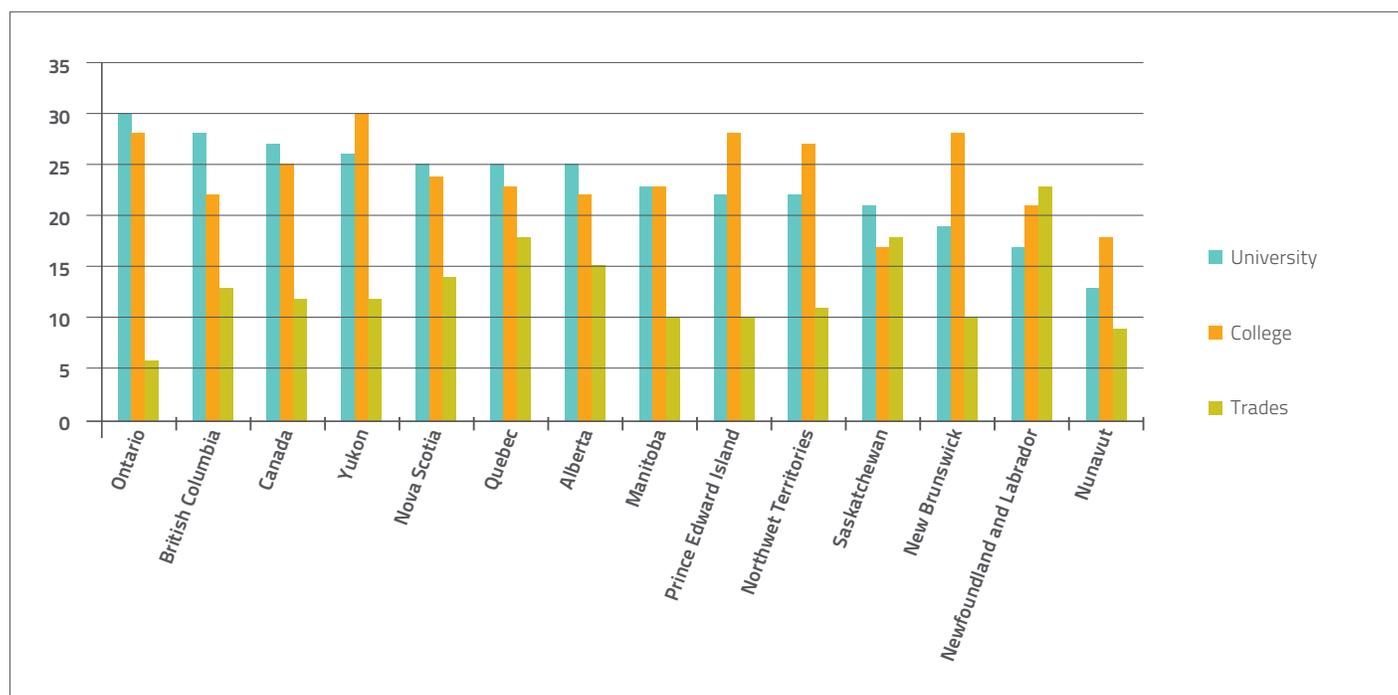
HIGHER EDUCATION ATTAINMENT

With 58 per cent of its population (aged 25 to 64) holding university or college credentials, Ontario leads all provinces and territories in higher education, but has the lowest rate of residents with trade credentials (6 per cent) in the country. By

contrast, Nunavut lags all Canadian jurisdictions in higher education attainment (31 per cent university), while Newfoundland and Labrador lags all provinces (38 per cent). But Newfoundland has the highest rate of residents with trades credentials (23 per cent).⁸⁵ (See “PSE attainment, provinces and territories, 2011”)

Without examining the nature of labour market demand or investigating the preferences of students themselves, it is not possible to say whether the differences in attainment and credential distribution are unfair or misaligned with labour market needs. For example, the fact that Saskatchewan has three times the proportion of trades certificate holders (18 per cent) as Ontario (6 per cent), but only nearly 20 percent fewer college and university graduates (38 per cent) likely reflects both regional differences in labour markets and unique barriers for certain kinds of learners in Saskatchewan. Whether action is needed to address these differences requires further research.

Figure 12: PSE attainment, provinces and territories, 2011 (per cent)



Source: Statistics Canada, Education Indicators, Table A.1.1.¹

¹ To be precise, the data is collected according to the OECD's classification of credentials which roughly, but not exactly, aligns with institutional type. For ease of understanding, we refer to ISCED 4 as trades credentials, ISCED 5B as college credentials and ISCED 5A/6 as university credentials, but recognize that this is not entirely accurate. Statistics Canada, *Education Indicators in Canada*, 18-19.

⁸⁵ Statistics Canada, *Education Indicators in Canada*, 85. Table A.1.1.

SKILLS ATTAINMENT

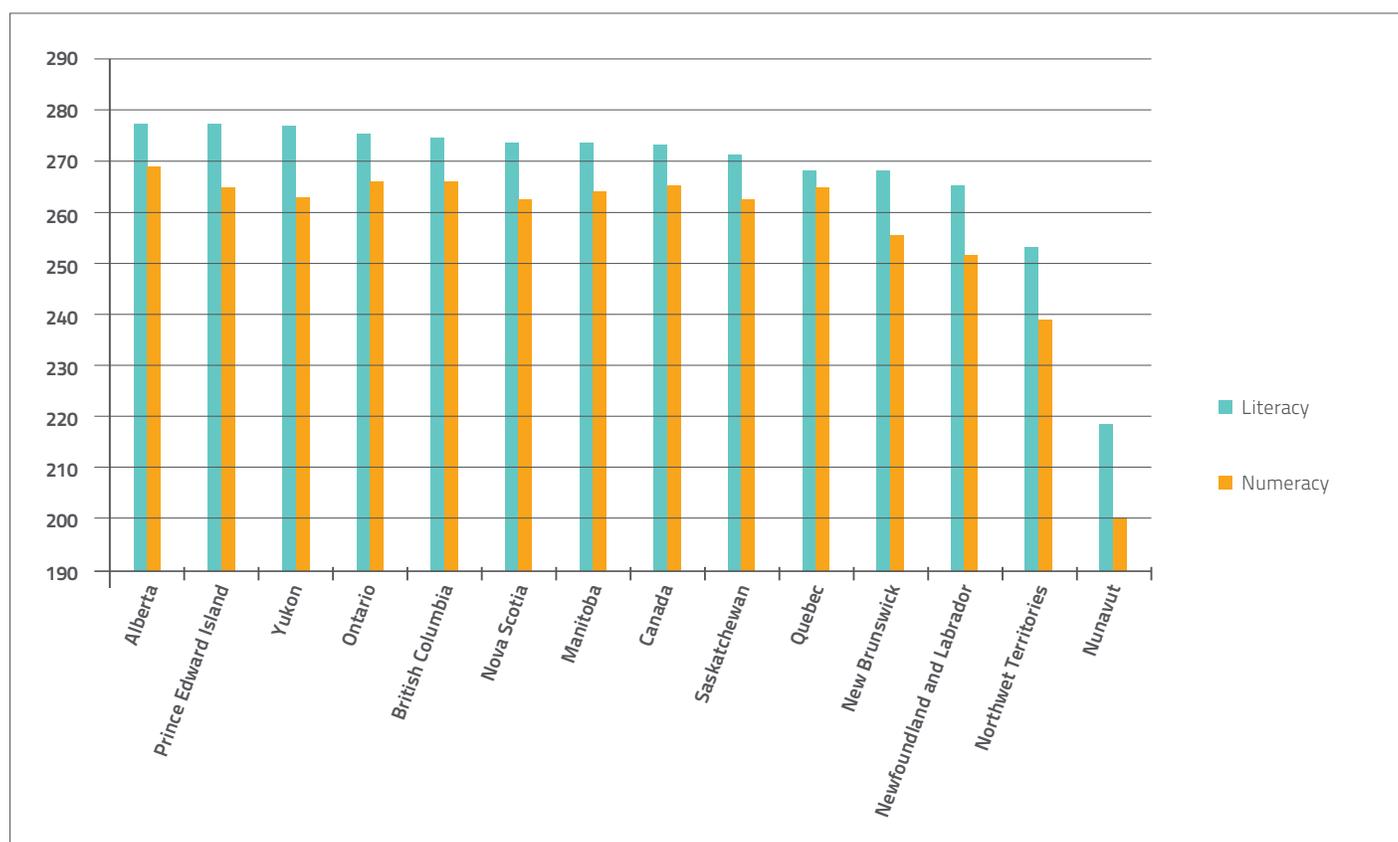
Unlike educational attainment where the issues are more complicated, differences in core skills like literacy, numeracy, and problem-solving are clearly cause for concern and a handful of provinces and territories have residents with substantial deficits.

- PIAAC *literacy* scores show a 13 point difference between the highest and lowest provinces—Alberta and Newfoundland and Labrador—while adults in Nunavut scored, on average, 54 points below the Canadian average and 59 points below Alberta.⁸⁶ (See “Average PIAAC literacy and numeracy scores, provinces and territories”).

- In *numeracy*, no Canadian jurisdiction scored above the OECD average (269) while some provinces and territories scored well below both the OECD and Canadian average (265)—including Newfoundland and Labrador, Northwest Territories and Nunavut (200).⁸⁷

In sum, even as Canadians, on average, perform at or below the OECD averages on literacy and numeracy—thereby raising concerns about overall performance—some provinces and territories show striking deficits. Understanding and addressing the weaker literacy and numeracy skills in, specifically, Newfoundland and Labrador, Nunavut, Northwest Territories and New Brunswick should be part of an equity agenda for skills and higher education.

Figure 13: Average PIAAC literacy and numeracy scores, provinces and territories (per cent)



Source: Statistics Canada, Skills in Canada. Charts 1.1, 1.3.

⁸⁶ Statistics Canada, *Skills in Canada*, 14.

⁸⁷ Statistics Canada, *Skills in Canada*, 19.

5

POLICY OPTIONS

On average, Canada performs well in terms of higher education attainment and on some skills measures. But there are ongoing and emerging challenges with respect to graduates' skills (both quality and kinds), insufficient advanced and STEM degree attainment, and inadequate opportunities for workplace training. As the economy becomes more technology- and knowledge-intensive, and our ability to address emerging and persistent policy challenges requires ever-increasing levels of scientific and cultural literacy, it is imperative that governments and PSE institutions in Canada adopt an *excellence* agenda for skills and higher education.

Additionally, skills and higher education opportunities and outcomes differ by Aboriginal status, gender, immigrant status, and region. Many individuals and communities are being left out of the economic, social, and individual benefits that skills and higher education bring—and often left out not by choice, but by circumstances beyond individual control. Along with an excellence agenda, then, Canada must adopt an *equity* agenda for skills and higher education.

As a federal state in which responsibility for education rests with provincial governments and responsibility for skills training is shared by federal and provincial governments, the ability to pursue an *excellence* and *equity* agenda on a national scale is constrained. The federal government is not without levers to influence the direction of skills and higher education in Canada, but policy options must be sensitive to and work within the constitutional realities of Canada. With that in mind, the following six policy options could help governments, institutions, employers and individuals advance the excellence and equity agenda that Canada needs.

1. Create a National Learning Outcomes Assessment Program

To track and improve the skills development performance of higher education institutions, the federal and provincial governments should work together to establish a national learning outcomes assessment program.

Many institutions and provinces participate in programs that track so-called key performance indicators and initiatives like the National Graduates Survey and the National Survey of Student Engagement. These programs improve PSE planning and performance but they provide, at best, only indirect measures of the actual skills acquired by graduates.

The federal government, working with the provinces, should create a program which directly measures the skills students develop—including literacy, numeracy, critical thinking, problem-solving, communication, and innovation and employability skills—and the contribution PSE institutions actually make to that development. Institutional participation should be incentivized, but voluntary, and institutions should receive incentives for achieving improvements in students' skills relative to their baseline performance. Models worth exploring include the *Collegiate Learning Assessment (CLA)* created by the Council for Aid to Education in the United States⁸⁸ and the OECD's *Assessment of Higher Education Learning Outcomes (AHELO)* feasibility study.⁸⁹ Some Canadian institutions have participated in pilots of both programs which would provide lessons for adapting parts of these assessment approaches for the country as a whole.

⁸⁸ Council for Aid to Education, *CLA+ Overview*. <http://cae.org/performance-assessment/category/cla-overview/>.

⁸⁹ OECD, *Measuring Learning Outcomes in Higher Education: Lessons Learnt from the AHELO feasibility study and next steps* (Paris: OECD, 2013). <http://www.oecd.org/site/ahelo/>.

2. Create a Canadian Council on Skills and Higher Education

To ensure that Canadian PSE institutions, employers, policy-makers and other stakeholders have access to independent expertise, research and advice on skills and higher education, the federal government should establish an independent, arms-length Canadian Council on Skills and Higher Education (CCSHE).

There are a number of organizations that aim to improve and coordinate skills and higher education performance in Canada including, notably, the *Council of Ministers of Education, Canada* (CMEC). Institutions like the *Higher Education Quality Council of Ontario* (HEQCO) serve an important research function for individual provinces. And the Conference Board's *Centre for Skills and Post-Secondary Education* is currently pursuing a broad research agenda and developing a national strategy for skills and PSE. What Canada needs, in addition to these organizations, is a Council independent of federal and provincial governments, supported by a research staff and independent skills and education experts (serving on a “scientific committee”) who can:

- convene expert panels to assess the state of knowledge and best practices in skills development and educational achievement and provide independent advice on how to tackle challenges in skills and higher education;
- coordinate and report regularly on learning and skills outcomes in all provinces and territories (i.e., act as the coordinating body for a national learning outcomes assessment program);
- conduct and share research and analysis on Canadian and international best and promising practices in skills development and pedagogy, with special attention to addressing concerns about excellence and equity;
- convene meetings and summits of international experts to share experiences and promising strategies for improving skills and higher education outcomes; and
- serve as a repository of knowledge and expertise from which educational institutions, employers and training organizations, governments, and other stakeholders could draw.⁹⁰

⁹⁰ Those familiar with education in Canada may think this is a proposal to re-create the now-defunct Canadian Council on Learning. While the CCL performed an important function during its tenure, the current proposal differs in emphasizing the role of expert panels and advice and in providing a more comprehensive inventory of practical knowledge and initiatives for use by Canadian institutions, governments and stakeholders. With respect to its funding and operation, a newly created CCSHE would be more like the Council of Canadian Academies (<http://www.scienceadvice.ca/en/about.aspx>), which has a science assessment mandate, but with a stronger in-house research capacity, knowledge collection and sharing mandate than the CCA.

3. Make significant new investments in education and skills for Aboriginal peoples

To ensure that current and future generations of Aboriginal peoples in Canada achieve equitable skills and higher education opportunities and outcomes, the federal government should make substantial investments in foundational skills programs for Aboriginal youth and address barriers faced by Aboriginal peoples to higher education participation and completion.

Persistent gaps in skills and educational achievement between Aboriginal and non-Aboriginals in Canada can be narrowed if all parties are willing to invest resources, effort and political will in identifying and addressing the various circumstances that contribute to gaps. Specific investments and programs should be the result of consultation between Aboriginal peoples, governments, educators, and other stakeholders. But a first step must be a commitment of resources and goodwill by the federal government to address the issues.

4. Identify and support programs to narrow skills and education gaps between men and women.

To narrow the gaps between men and women, and boys and girls, in skills acquisition and PSE attainment, governments, institutions, and other stakeholders should identify and support specific programs that aim to address the causes of differing performance.

As the gaps between men and women differ depending on what metric one is examining, programs to address gaps between men and women will be many and varied. For example, programs to address boys' reading deficits will be different than those which address women's low participation in certain STEM disciplines. The federal government—perhaps through a newly created CCSHE—should develop an inventory of programs with demonstrated success in addressing the causes of specific gender gaps in skills and education performance. Provincial governments and institutions should provide additional support to expand those programs that demonstrate success.

5. Improve credential recognition and skills training for immigrants.

To improve the labour market participation and outcomes of immigrants, governments, institutions, and industry associations should work to improve credential recognition practices, and federal and provincial governments should invest more in skills development for recent immigrants.

Immigrants to Canada tend to be highly educated, but have weaker literacy and communication skills and often find that their educational and occupational credentials are not recognized by Canadian institutions and employers. If Canada is going to rely on highly educated immigrants to meet skills and occupational needs, then federal and provincial governments, educational institutions, and industry will need to build on and extend current efforts to achieve a better system of credential recognition will be needed. Additionally, given the integration challenges many immigrants face, additional essential and other skills training should be provided to ensure that they are able to use their full range of skills to contribute to Canada's economy and society, as well as their own well-being.

6. Increase employer investments in skills training.

To complement the skills development that occurs in higher education, and to ensure that they have the highly trained people they need, employers should increase investments in skills training.

Employers' weak investment in skills training is exacerbating skills pressures and preventing businesses and individuals from becoming more competitive. Even as many employers raise concerns about skills shortages, not enough are taking steps to address the challenge. They need to take more responsibility for the training that, ultimately, produces great benefits for them.⁹¹ Existing and emerging provincial and federal initiatives, such as the Canada Job Grant, provide a wide range of incentives and support for employers. The governments that provide such incentives and support should assess how well those incentives actually generate new training and contribute to skills development and shift resources from poor-performing to strong-performing programs.

Excellence and Equity in Skills and Higher Education

Canada's performance in higher education and skills development has been fairly strong for many years. We lead the world in producing higher education graduates, the skills they acquire place Canada near the top of international rankings, and our highly skilled people contribute to economic prosperity, and social, political and individual well-being. But there are signs that Canada's skills and higher education performance is deteriorating, that not enough is being done to address a range of economic and social problems, and that opportunities and benefits have been poorly distributed across regions and groups. For these reasons, Canada needs to embark on an excellence and equity agenda for skills and higher education. We do well, but we can do much better.

⁹¹ Canadian Council on Learning, *Securing Prosperity Through Canada's Human Infrastructure*, 27.

