BRAVE NEW WORK

KEY ISSUES SERIES

SKILLS, TRAINING AND LIFELONG LEARNING

DANIEL MUNRO

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ABOUT BRAVE NEW WORK

Getting Ready for Canada's Jobs Future

Automation, digitization, AI and other tech-enabled advances have changed traditional work patterns and will increasingly change the nature of work. The unbundling of tasks from work, benefits from jobs, and jobs from organizations is affecting living standards and work opportunities in Canada. Other mega-trends like changing demographics and social expectations will add to these challenges. Decision makers need to explore new policy options to ensure decent jobs and secure a competitive, inclusive and innovative Canadian economy.

In partnership with TD Bank and the Government of Canada, PPF has committed to a 3-year initiative focused on the changing nature of work and its implications for Canadians. Through research projects and pan-Canadian convening events, PPF is developing brave, informed, and precautionary policy ideas and solutions to issues related to the future of work, such as income volatility, lifelong learning, social safety nets, and inequality.

THE KEY ISSUES SERIES

Policy development for the future of work will be influenced by a wide and interconnected system of technological, social and political trends. PPF's Key Issues Series explores five pressing areas of policy concern around these trends in research papers by Canadian experts. Each paper offers an in-depth look at a policy issue and its impact on Canadian businesses and workers, with recommendations and ideas for policy-makers and other stakeholders, including education providers, labour organizations, and public and private service providers. These papers will be released in spring 2019.

- **Skills, Training and Lifelong Learning**
  By Daniel Munro
- **Facilitating the Future of Work Through a Modernized EI System**
  By Sunil Johal and Erich Hartmann, The Mowat Centre
- Automation, AI and Anxiety: Policy Preferred, Populism Possible
  By Peter Loewen and Benjamin Allen Stevens
- **Old Gigs, New Gigs: Are Courts and Legislators Reinterpreting an Age-Old Debate for the New World of Work?**
  By Carole Piovesan
- **Canada's Precarious Work Predicament: How Canada's Past Can Inform Policies for the Emerging Gig Economy**
  By Brian Topp and Theresa Lubowitz

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Dan holds degrees from the University of Toronto (BA), Western University (MA) and M.I.T. (PhD).

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EXECUTIVE SUMMARY

The nature of work is changing. The interaction of automation and artificial intelligence with demographic changes, large sectoral disruptions, slow productivity growth and other trends raises concerns about the future of work even as it opens new opportunities.

TO-DO LIST

As Canada improves its systems of skill development, training and lifelong learning, it should:

1. Emphasize foundational skills, without which workers struggle to learn new skills and knowledge;
2. Improve equity and inclusion of training and skill development opportunities;
3. Encourage cost-sharing among industry, workers and government;
4. Encourage information-sharing among educational institutions, industry, unions and other stakeholders, and sound analysis of that information; and
5. Track program effectiveness.

As work evolves, workers need the right mix of skills and continuous learning opportunities at all career stages. Training programs need to function well, and the market must enable a smooth flow of workers into and out of positions while ensuring lifelong learning.

While Canada's K-12 education system is a world leader in equipping children and young people with the skills they need, training opportunities for workers in the labour force are scarce and unevenly distributed. Less than one-third of Canadians receive job-related, non-formal education. Those who do receive only 49 hours of instruction annually, below the OECD average of 58 hours. Worse, the people who most need additional training are the least able to receive it. Less educated, Indigenous and older workers, as well as those workers living in rural and remote communities, are less likely to receive workplace training.

A better skills and training system must address the reasons employers do not or cannot provide enough training and development. These reasons include cost; the fear that employees will take their new knowledge to other organizations; and information gaps in what skills and knowledge they may want their employees to acquire. Employers may also believe it is easier to poach skilled employees from other firms and to place pressure on formal education systems to produce skilled "work-ready" graduates than it is to train their existing employees.

Training models around the world offer lessons for Canada to improve its training systems and programs. In successful models, companies, educational institutions and other organizations work together to fund training initiatives that benefit workers and firms alike, as in Sweden's job security councils, the Technology

Apprenticeship Program that PwC in the United Kingdom launched with five universities, and the training and skills programs developed by Italian sports car manufacturers.

Canada can also improve and expand its existing policy instruments. Lifelong Learning Plans, which allow workers to draw from their RRSPs in order to fund new training and education for themselves or their spouses, could be revised to allow employers to contribute more to accounts and to provide additional federal funds to match contributions. The success of Quebec's legislation that requires firms to spend at least one percent of revenues on employee training annually could be replicated by other provinces.

A highly skilled and educated population is essential to economic growth and social well-being. In the face of rising global competition and rapid technological change, effective and inclusive systems of training and development are essential for innovation, growth, employment and good incomes. To ensure that our innovation economy is strong and benefits everyone, changes are needed to make Canada's skills, training and lifelong learning systems more accessible, inclusive and effective.

INTRODUCTION

Canada's systems of training, reskilling and lifelong learning are trapped in a paradox.

While Canada's K-12 education system is a world leader in equipping children and young people with the education and foundational skills they need, training and development opportunities for workers already in the labour force are scarce and unevenly distributed.

Canada lags global peers on spending and delivery of training, and provides few training and reskilling opportunities to workers who most need them while providing many opportunities to those who least need them. Bad as this is, trends in the world of work make it even worse. If Canada is to have a strong innovation economy that benefits everyone, it needs to make skills, training and lifelong learning systems more accessible, inclusive and effective. It needs to bring order to this messy and neglected middle.

KEY QUESTIONS

This report examines whether existing skills and training policies, programs and structures can meet changing needs, and how well learning opportunities are distributed. It explores reasons why training and development systems are insufficient, why access and use are uneven and what might be improved.

The questions addressed include:

- **What is the state of Canada's training, reskilling and lifelong learning systems?**
- **Who is offered and who uses training opportunities? Who is excluded?**
- **How can Canadian training, reskilling and lifelong learning be configured as an integrated system rather than an add-on to other systems?**
- **What is needed to ensure that workers have sufficient opportunities to develop new skills and knowledge? To ensure that they can participate in and benefit from the innovation economy?**
- **What is needed to ensure that employers have access to people with the skills and knowledge they need to be innovative, competitive and prosperous?**
- **What can Canada learn from the policies, programs and practices of other countries?**
- **What concerns and principles should guide the design of skills, training and lifelong learning programs and policies in Canada?**

REPORT STRUCTURE

The report begins with an overview of Canada's broader education, skills and training systems, of which mid-career skills training and development systems form a critical but neglected part. In the next section, training and development inputs, participation and barriers are examined to provide a picture of how well Canada's systems meet changing skills needs. After examining promising models from other jurisdictions, the report identifies key principles and priorities for improving Canada's systems of skills training and development as well as outstanding gaps and questions that should be addressed.

CANADA'S CURRENT EDUCATION, SKILLS AND TRAINING SYSTEMS

Canada's education, skills and training ecosystem consists of 13 provincial and territorial education systems, federal labour market and skills programs, employer-sponsored training initiatives, career colleges, and a federal system for Indigenous education and training.

While the constitution gives provincial governments jurisdiction over education—with special federal arrangements for Indigenous education—successive federal governments have funded and pursued a range of skills-related initiatives aimed at the labour market and economic development.[1]

Notably, while formal Kindergarten to Grade 12 (K-12) and post-secondary systems and institutions could be improved—and post-secondary education (PSE) systems could play a larger role in reskilling and upskilling—they do not need fundamental transformation. By contrast, labour market and skills programs, training initiatives, apprenticeship and trades programs, and adult education and learning could use improvement and, critically, better systematization and coordination. The messy middle of training, (re)skilling, and adjustment programs needs both better performance and structural improvements.

Canada's education, skills and training systems include:

- **K-12** education systems, which provide children with the skills and knowledge they need to be healthy and engaged citizens, pursue further education and training, and acquire and succeed in jobs in the labour market. Although K-12 systems are structured, funded and operated differently across provinces and territories, they are largely effective in imparting students with the skills and knowledge they need to succeed;
- **PSE** systems, which are provincial and territorial systems of universities, colleges, polytechnics and CEGEPs. These institutions 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. They offer a wide range of research-focused, theoretical, practical, professional and technical programs and fields of study leading to degrees, diplomas and certificates;

[1] Munro, D., MacLaine, C. and Stuckey, J. 2014. Skills—Where Are We Today? The State of Skills and PSE in Canada. Ottawa: Conference Board of Canada.

- **Apprenticeships and trades** training systems, which equip students and learners with the technical and general skills needed to master and become certified in a skilled trade. They combine on-the-job and in-class instruction, which is usually provided by a college or polytechnic institute; and
- **Adult learning and education** systems, which are less formally structured collections of training and education programs. They are designed to reskill or upskill adults already in the labour market and adults who wish to prepare for entry into the labour market, but who need remedial or additional training and education. Two kinds of adult learning and education are particularly relevant:
    - **Employer-sponsored training and development.** Workers can acquire new skills and knowledge through employer-provided training and education, which includes onboarding training for new employees, additional training for current employees, and opportunities for non-employees (such as co-op students and interns) who may become employees later. Such training can be delivered through on-site training sessions, workshops and mentoring, as well as through off-site education and training institutions, such as colleges, universities or private training providers.[2]
    - **Training for unemployed and low-skilled employed workers.** Unemployed, underemployed or precariously employed workers often lack the time, resources and skills to pursue education and training in the formal PSE system or to receive employer-sponsored training.[3] Provincial and federal governments try to meet their needs with active labour market measures, including job search assistance, career counselling, wage subsidies and skills development.[4] The federal government gives special attention to opportunities for Indigenous peoples.

[2] Ibid.; Canadian Council on Learning. 2009. Securing Prosperity Through Canada's Human Infrastructure: The State of Adult Learning and Workplace Training in Canada. Ottawa: CCL.

[3] Munro, D., MacLaine, C. and Stuckey, J. Skills—Where Are We Today?

[4] Halliwell, C. 2013. No Shortage of Opportunity: Policy Ideas to Strengthen Canada's Labour Market in the Coming Decade. IRPP Study 42. Montréal: Institute for Research on Public Policy.

TRAINING AND SKILLS DEVELOPMENT: WHO NEEDS IT? WHO GETS IT?

Canada's systems for skills and knowledge development are weighted towards foundational learning in schools and post-secondary institutions.

Canada invests heavily in K-12 and higher education to equip people with the skills and knowledge they need to enter the labour force, to function as engaged and healthy citizens, and to pursue and benefit from later learning opportunities. It invests much less in providing mid- and later-career opportunities to develop new skills and knowledge, and some groups face substantial barriers in accessing and benefitting from what is available.

The nature of work is changing. New skills will be needed for those entering the world of work for the first time as well as for those who are well into their working lives. The effects of automation and other technological changes require continuous learning opportunities at all career stages. Gaps in our education and training systems will contribute to long-term challenges for workers, firms, the economy and society more broadly, especially as the nature of work evolves.

FOUNDATIONAL SKILLS AND EDUCATION

In addition to helping students acquire skills and knowledge to succeed in the workplace, society and their personal lives, foundational skills and education are essential to later reskilling and upskilling success. So how is Canada doing?

CANADA'S ACHIEVEMENTS

Canada is a world leader in providing high-quality education to nearly everyone in the country. Globally, Canada has one of the top high school attainment rates; nearly 90 percent of Canadians aged 25 to 64 have completed high school versus the OECD average of 78 percent. Among those aged 25 to 34, 93 percent of Canadians have completed high school versus 85 percent of the OECD population.[5] Moreover, Canadians are among the world's most highly educated people—more than 57 percent of Canada's population have a post-secondary credential, versus the OECD average of 31 percent. Among people aged 25 to 34, 61 percent of Canadians have a post-secondary credential, compared to 44 percent in the OECD (Figure 1).[6]

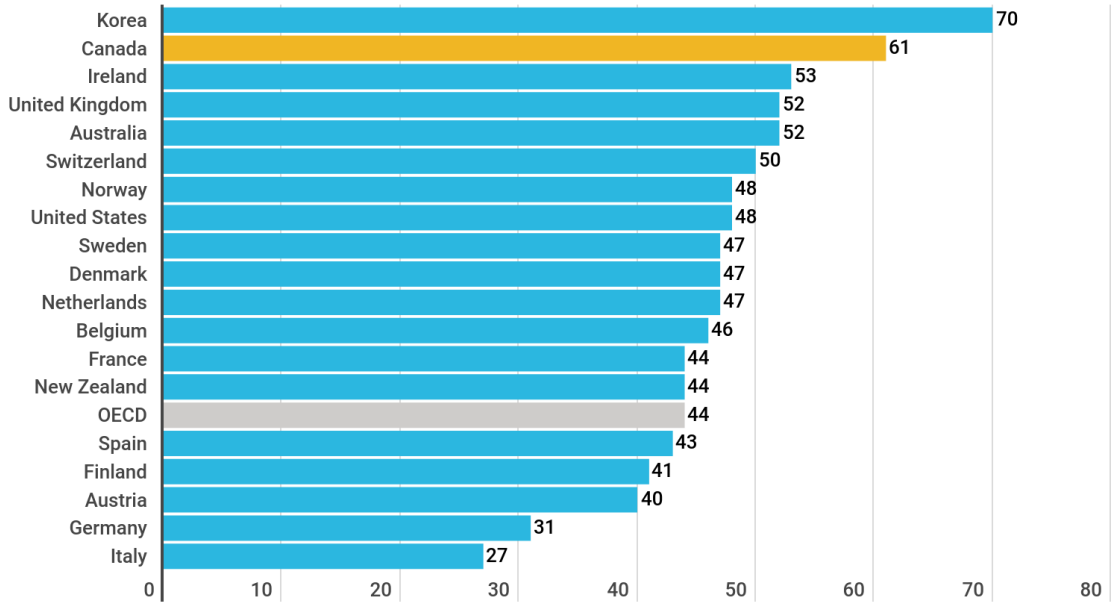
[5] OECD. 2018. Education at a Glance 2018: OECD Indicators. (Tables A1.1 and A1.2).

[6] Ibid.

FIGURE 1

Canada is a global leader in higher-education attainment

Percentage of those aged 25 to 34 with a post-secondary credential:



Source: OECD, Education At A Glance 2018.

Canada's young people score very well on international assessments of science, mathematics and reading. On the OECD's Programme for International Student Assessment (PISA) test of the science, math and reading skills of 15-year-olds, Canadian youth score:

- **35** points above the OECD average in science, ranking third in the OECD and fourth among all 72 countries participating in PISA;
- **26** points above the OECD average in mathematics, ranking fifth in the OECD and seventh among all PISA participants; and
- **34** points above the OECD average in reading, ranking first in the OECD and second among all PISA participants.[7]

INEQUITIES AND GAPS

For each of these achievements, there are also inequities and gaps. Most notably, the skills and educational attainment of Indigenous peoples continues to lag that of non-Indigenous Canadians.

[7] Council of Ministers of Education, Canada. 2016. Measuring up: Canadian Results of the OECD PISA Study. Toronto: CMEC.

- In 2011, 48 percent of Indigenous people had a post-secondary qualification, compared to 65 percent of non-Indigenous Canadians.[8]
- Approximately 30 percent of Indigenous people do not have a high school diploma, versus just 10 percent among non-Indigenous Canadians.[9]
- Overall, Indigenous adults in Canada score lower than non-Indigenous adults on the OECD's assessments of literacy, numeracy and problem-solving skills.[10] However, Indigenous and non-Indigenous adults with the same education do equally well on literacy, numeracy and problem-solving skills. The skills gap between the two populations is a result of an education gap.[11]

The importance of these differences should not be understated. Those with good foundational skills receive later-career reskilling and upskilling opportunities, while those with weak foundations fall further behind. Strong foundational skills and education are essential to inclusive and effective systems of later training, reskilling and lifelong learning.

TRAINING AND DEVELOPMENT

Later career training and development is less impressive than Canada's foundational skills and educational attainment. Mid-career workers in Canada receive limited training and development opportunities relative to global peers, and there are substantial and persistent inequities in who is offered, who uses, and who benefits from those opportunities.

Though data on training and development are deficient and dated, they paint a concerning picture. Although the proportion of Canadians (31 percent) who receive some job-related, non-formal education and training is slightly above the OECD average (28 percent), European peers receive substantially more training (Figure 2). Moreover, while OECD residents who participate in training receive 58 hours of instruction annually, on average, Canadians receive only 49 hours of instruction (Figure 3). While employers, governments, unions and others have spent decades sounding the alarm about skills gaps, Canada remains a middling performer in offering workers opportunities to improve their skills.[12]

[8] Ferguson, S.J. and Zhao, J.Z., 2013. The Educational Attainment of Aboriginal Peoples in Canada: National Household Survey (NHS), 2011. Statistics Canada Statistique Canada.

[9] Munro, D. 2014. Skills and Higher Education in Canada.

[10] Statistics Canada. 2013. Skills in Canada: First Results from the Programme for the International Assessment of Adult Competencies (PIAAC), 44.

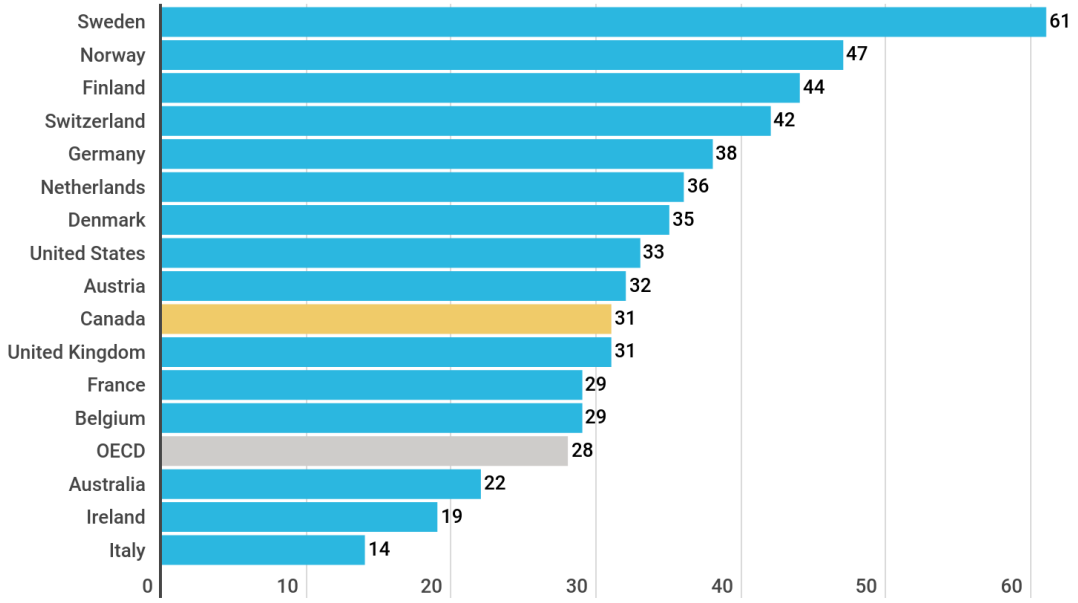
[11] Munro, D. 2014. Skills and Higher Education in Canada.

[12] Miner, R. 2010. People without jobs, jobs without people: Ontario's labour market future. Toronto: Miner and Miner; Munro, D. and Stuckey, J. 2013. The Need to Make Skills Work: The Cost of Ontario's Skills Gap. Ottawa: Conference Board of Canada; Munro, D. and Stuckey, J. 2015. Skills for Success: Developing Skills for a Prosperous B.C. Ottawa: Conference Board of Canada.

FIGURE 2

Participation in ob -Related, Non-Formal Education

Percentage of adults

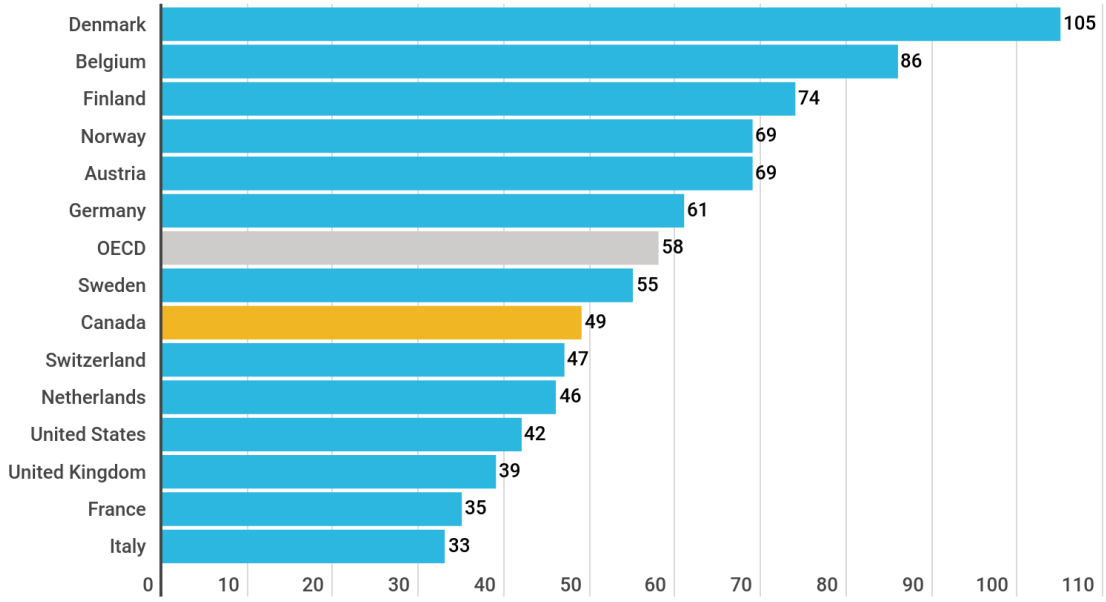


Source: OECD, *Education At A Glance,* 2011.

FIGURE 3

Hours of Instruction Received by Training Participants

Hours per year



Source: OECD, *Education At A Glance,* 2011.

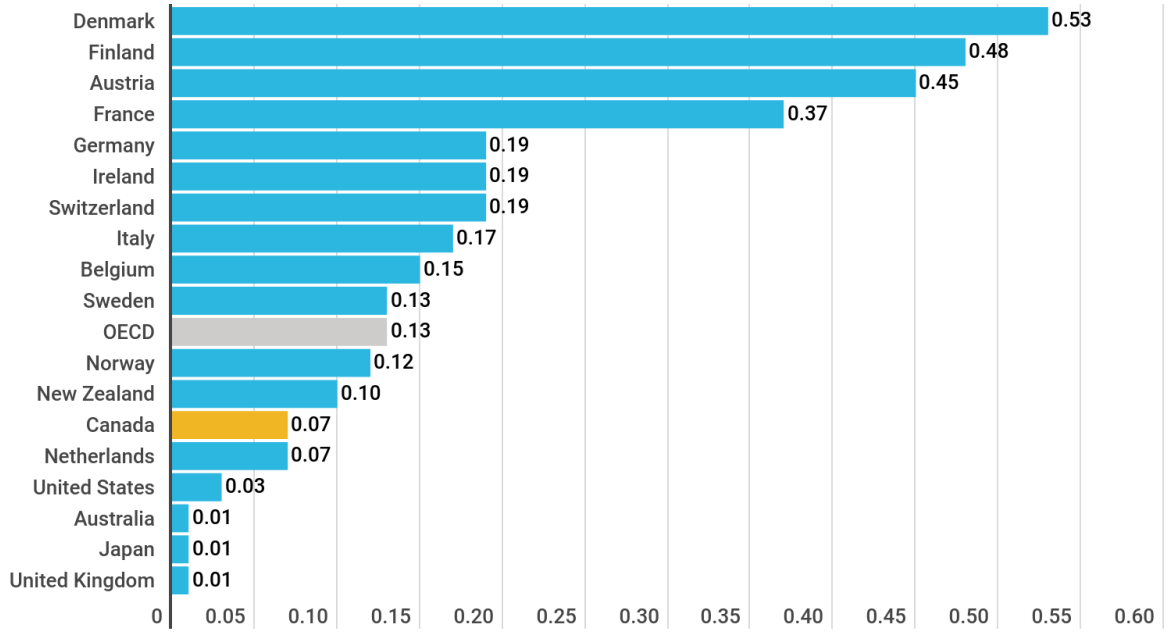
SPENDING ON TRAINING AND DEVELOPMENT

It is unsurprising that Canada is a middling performer on training and development given how little employers and governments spend on these activities. OECD data on public spending on labour market programs show that public spending on training programs (0.07% of GDP) is only half the OECD average (0.13%) and well below spending by global leaders Denmark (0.53%), Finland (0.48%) and Austria (0.45%) (Figure 4).

FIGURE 4

Government Spending on Training, 2016

Share of GDP



Source: OECD, 2016

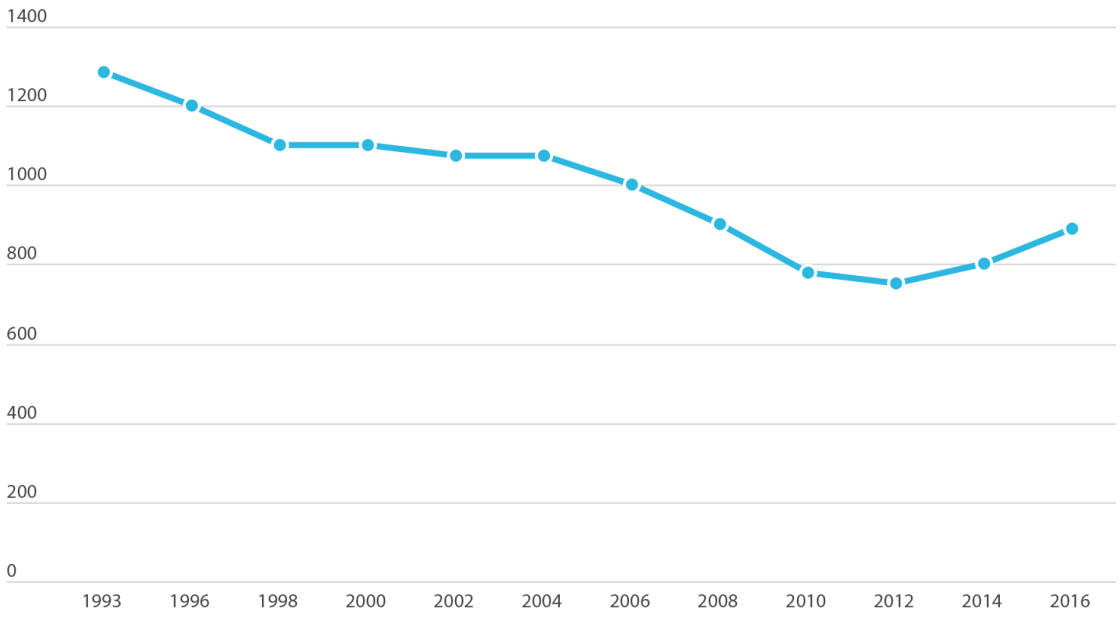
Bi-annual employer surveys by the Conference Board of Canada reveal that Canadian employers decreased spending on employee training and development for nearly two decades until they increased spending per employee by small amounts in 2014 (Figure 5). Canadian employers have spent less than employers in the United States for at least a decade. In 2006, Canadian employers surveyed spent roughly $1,000 per employee on training while U.S. employers spent approximately $2,000 per employee. By 2016, Canadian employers were spending 81 cents for every dollar American firms spent, a substantial improvement from just over 50 cents a decade earlier. But the gap was closed primarily because U.S. employers reduced spending, not because Canadian employers increased it.[13]

[13] Cotsman S. and Hall, C. 2018. Learning Cultures Lead the Way: Learning and Development Outlook—14th Edition. Ottawa: The Conference Board of Canada.

FIGURE 5

Direct Learning Expenditure per Employee, 1993-2016

Per employee by Canadian employers, constant 2016



Source: Cotsman and Hall, 2018.

WHO BENEFITS? WHO IS LEFT OUT?

Not only do employers in Canada offer less training and development than elsewhere, there are persistent inequities in who is offered and uses those training opportunities.

For instance, higher literacy levels are associated with higher levels of job-related adult education and training. Only 15 percent of Canadian workers who score below Level 1 in literacy proficiency report participating in job-related education and training, while more than 65 percent of those who score at Levels 4 or 5 report the same.[14] (Figure 6).

Workers with advanced education are more likely to participate in on-the-job training or job-related learning opportunities. While fewer than a quarter of workers with less than high school education participate in non-formal training and education, more than two-thirds of Canadian university graduates do.[15]

The same pattern holds for training opportunities that happen only at the workplace, as opposed to those that can be accessed at the workplace or off-site. While 19 percent of those with less than a high school

[14] Munro, D., MacLaine, C. and Stuckey, J. Skills—Where Are We Today?

[15] Canadian Council on Learning. 2009. Survey of Canadian Attitudes Towards Learning: 2008. Ottawa: CCL.

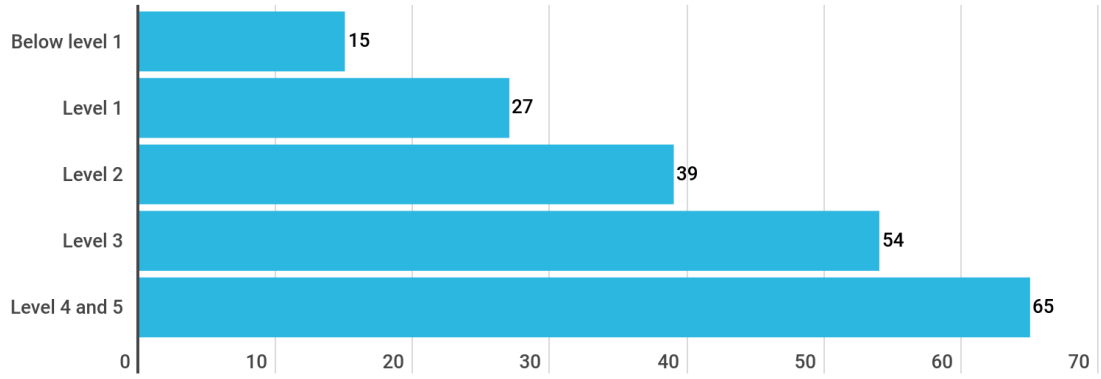
education participate in training at the workplace, more than 43 percent of those with a bachelor's degree or higher participate in training provided at the workplace or off-site.[16]

People in rural and remote locations are less likely to participate in reskilling and upskilling activities given the challenges both employers and employees face in providing and accessing programs, materials and expertise. Indigenous peoples living in rural, remote and northern regions face additional challenges to participating in training and development.

FIGURE 6

Workers with higher literacy get more training

Participation in job-related training and education by Survey of Adult Skills literacy level



Source: OECD, Skills Outlook, 2013

Older workers are also less likely to be offered and participate in training opportunities. Among Canadians aged 55 to 65, only 23 percent participated in on-the-job training, versus 34 percent of those aged 16 to 24, and between 38 and 40 percent of those aged 25 to 54.[17] (Figure 7). The decline is often attributed to two factors: older workers' belief that additional training has less value for them given their imminent retirement; and employers' preference for investing in younger employees who are expected to have long careers and whom employers perceive, whether accurately or not, to be better learners.[18]

[16] Custom calculations by CMEC based on PIAAC 2012.

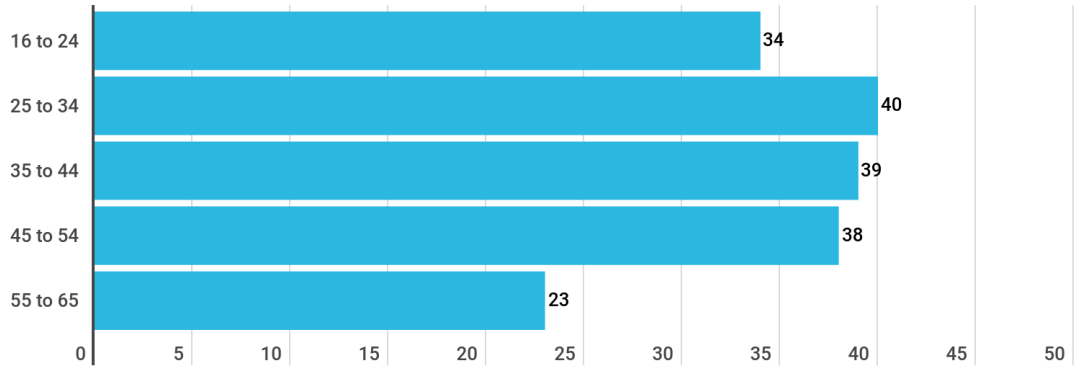
[17] Custom calculations by CMEC using PIAAC 2012.

[18] World Economic Forum. 2017. "Accelerating Workforce Reskilling for the Fourth Industrial Revolution: An Agenda for Leaders to Shape the Future of Education, Gender and Work." https://www.weforum.org/whitepapers/accelerating-workforce-reskilling-for-the-fourth-industrial-revolution Geneva: WEF; EU-OSHA, Cedefop, Eurofound and EIGE. 2017. Joint report on Towards age-friendly work in Europe: a life-course perspective on work and ageing from EU Agencies. Luxembourg: Publications Office of the European Union.

FIGURE 7

Participation in On-the-ob Training by Age

Percent



Source: Custom calculations by CMEC based on PIAAC 2012.

Because of public and private sector employers' low spending on training and development, responsibility for reskilling and upskilling falls largely on workers themselves. Some workers continue their education and participate in training at their own expense and on their own time, but it is difficult to know how many workers manage to do so. It is likely that those who are able to continue learning have extra time and resources, while those who don't have insufficient time and resources—that is, those people who most need training and development opportunities are least likely to receive them.

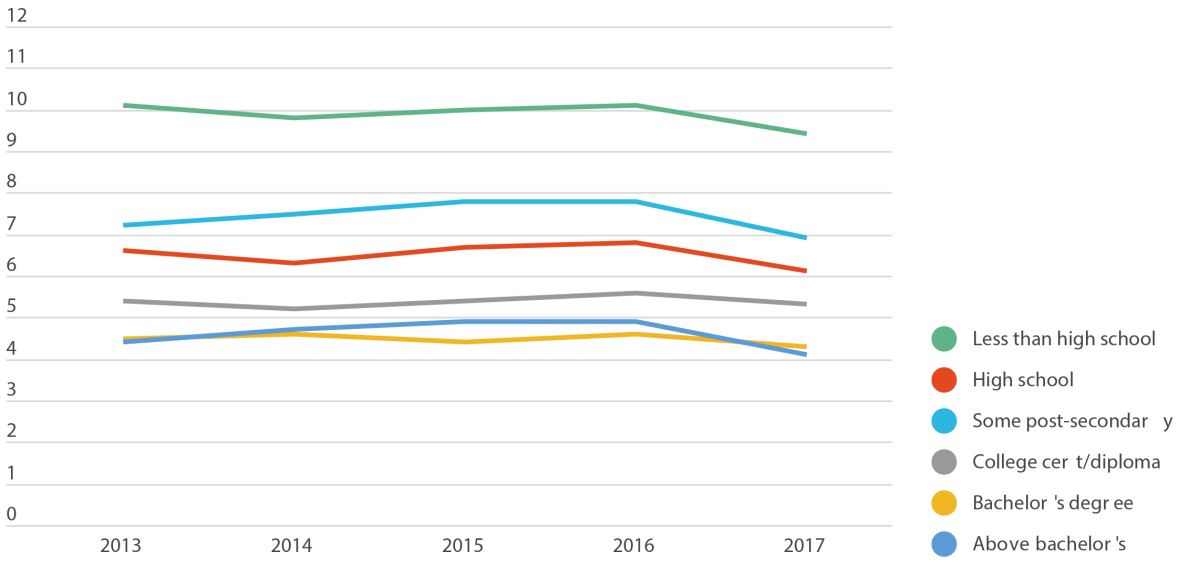
SKILLS AND KNOWLEDGE GAPS IN THE EMERGING ECONOMY

A dilemma in labour markets complicates efforts to prepare people and employers for the future of work. On the one hand, employment risk (measured as unemployment rates and susceptibility to automation), and therefore the need for reskilling and upskilling, decreases as educational attainment increases (Figures 8 and 9). On the other hand, as educational attainment increases, so do training opportunities and their uptake. In other words, the workers who *most need* training and development opportunities to continue working are *least likely* to receive them.

FIGURE 8

Unemployment Rate by Education Level

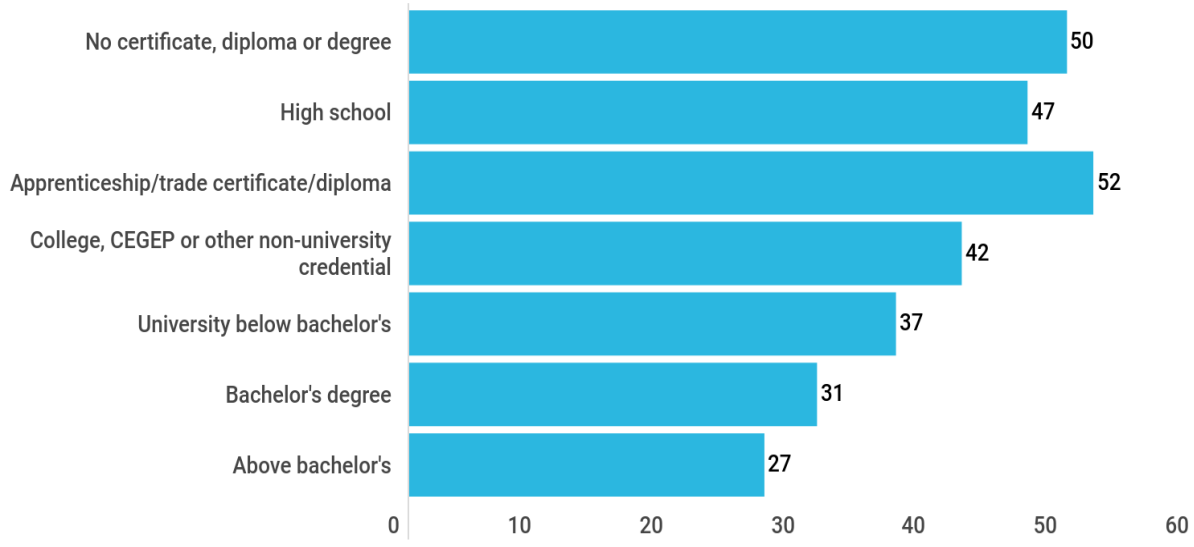
Percent unemployed, 2013-2017 by highest level of education attained



Source: Statistics Canada, Labour Force Survey

FIGURE 9

Automation and Education



Percentage of tasks automatable in occupations, by education of occupation holder

Sources: Calculations based on Census 2016 and methodology from Lamb 2016 and McKinsey 2015

The labour market resilience of highly educated workers is largely a result of their ability to learn new skills as their jobs change. That is, they grow in their roles not because their education has provided them with

specific skills and knowledge, but because their education has helped them develop the advanced skills needed to learn new skills and knowledge—either through formal training and development opportunities, or by learning while on the job.

This reality contrasts the oft-heard critique of education that says it imparts useless knowledge and should be replaced with training, micro-credentials and short-term programs to develop in-demand technical and other skills.

But while many employers *say* that higher education has lost its relevance to their needs, they are, in fact, more likely to spend their training and development dollars on their most highly educated employees because they believe those employees constitute a better investment for scarce training dollars.

Educated workers are in a better position to learn and apply new skills and knowledge. They have a stronger foundation for lifelong learning.

KEY BARRIERS AND GAPS

There are many reasons why employers do not provide enough training and development opportunities, and why some workers receive fewer of these opportunities. A review of the literature and data on barriers to employer provision of and worker participation in training and development opportunities identifies numerous challenges.[19]

CHALLENGES FOR EMPLOYERS

- **Cost.** Employers often lack the time and resources needed to provide their employees with training and skills development. Many recognize the benefits of employee training, but the upfront costs can be prohibitive, especially for smaller firms. While more than 90 percent of large firms (500+ employees) offer workplace training, less than half of smaller firms (20 or fewer employers) do so.[20]
- **Investment risks.** Employers that spend on employee training risk losing those employees—and thus their training investments—to other organizations. Those that take the risk often prefer to provide firm-specific skills training rather than transferable skills training.[21]
- **Information gaps.** Many employers lack good information about the skills and knowledge they may want their employees to acquire in the face of technological change, and thus delay making training

[19] D. Munro, C. MacLaine and J. Stuckey, Skills—Where Are We Today?

[20] Canadian Council on Learning. 2009. Securing Prosperity Through Canada's Human Infrastructure: The State of Adult Learning and Workplace Training in Canada, 26.

[21] Halliwell, C. No Shortage of Opportunity; Bessen, J. 2015. Learning by Doing: The Real Connection Between Innovation, Wages, and Wealth. New Haven: Yale.

investments. And of those employers that decide to invest, many lack information about which training and education providers they should hire to help.

- **Alternatives.** While training and development investments are important, many employers see other, potentially lower-cost, ways to acquire people with the skills they need, including poaching skilled employees from other firms and placing pressure on formal education systems to bear the cost and responsibility of producing skilled and "work-ready" graduates.

CHALLENGES FOR WORKERS AND LEARNERS

- **Learning Readiness.** As noted, workers who participate in training opportunities tend to have a strong education and skills foundation. Many people who lack foundational skills—the skills needed for later learning—avoid or simply fail to benefit from training opportunities. Skills starting points can have pervasive, persistent effects. Low-skilled individuals "risk being trapped in a situation in which they rarely benefit from adult learning, and their skills remain weak or deteriorate over time—which makes it even harder for these individuals to participate in learning activities."[22]
- **Time and Cost.** Even when training is offered and paid for, many workers do not have the resources and time to participate—especially if training involves additional hours beyond work hours, foregone income and the need to cover ongoing or new expenses (such as childcare). While dated, research shows that the obstacles for Canadians who do not participate in job-related training include cost (45%), being too busy at work (35%), family responsibilities (27%) and conflicts between work and training schedules (27%).[23]
- **Union Membership.** Historically, unions have been important partners in training initiatives by providing support to workers, working with employers and educators to ensure fair and effective delivery of relevant training, and providing some training themselves. Unionized employers are more likely (76%) than non-unionized employers (53%) to offer workplace training and development.[24]
- **Geography.** Accessing training and development programs is particularly challenging in northern and rural areas. While online learning can fill some gaps, in certain regions it is challenging to receive reskilling that requires hands-on instruction.

[22] OECD. 2013. OECD Skills Outlook 2013: First Results from the Survey of Adult Skills, 210.

[23] Peters, V. 2004. Working and Training: First Results of the 2003 Adult Education and Training Survey. Ottawa: Statistics Canada.

[24] Canadian Council on Learning. Securing Prosperity Through Canada's Human Infrastructure.

PROMISING MODELS FROM OUTSIDE CANADA

Other jurisdictions face the same challenges in providing accessible, inclusive and effective training and development opportunities.

As such, it is possible to learn from their experiences. To be sure, social, political, economic and cultural conditions in other places are different, so direct adoption of initiatives from elsewhere might not be possible. Nevertheless, their programs, policies and practices can be adapted and provide inspiration for new or improved initiatives in Canada.

A HOLISTIC FOCUS ON DISPLACED WORKERS: SWEDEN'S JOB SECURITY COUNCILS

For many years, Sweden has operated "job security councils" that assist workers with reskilling and finding employment opportunities. The councils are created by collective agreements between industry and labour and are funded by business contributions that amount to 0.3 percent of company payroll. Run as independent, not-for-profit organizations, the councils provide unemployed workers with financial support, coaching, targeted training and development, and assistance finding new positions.[25]

The councils reflect a strong commitment by industry and labour to the well-being of workers and provide rapid and flexible support when industry restructures. They contact workers even before they have been released by their employers, develop individualized plans for retraining and education, and provide a range of financial and non-financial supports to help them during the transition.[26] Their coordinated approach reduces the effort that workers themselves must put into piecing together different financial support, training and employment assistance programs. And it helps to address the collective action problem that individual employers face in paying for training and development. Pooling resources with other firms helps ensure that all firms are doing their share and all firms have opportunities to hire retrained workers.

About three million of Sweden's estimated five million employed workers (aged 16 to 64) are covered by job security councils.[27] There are concerns about the extent to which workers who are not covered have access to comparable services. Nevertheless, for those covered, the councils report that between 80 and 90 percent of displaced workers find new employment within eight months. In two-thirds of those cases,

[25] Walter, L. 2013. "Job Security Councils in Sweden." https://www.oecd.org/els/soc/13_Walter_Transition_Services_Sweden.pdf University of Gothenburg.

[26] European Monitoring Centre on Change. 2016. "Job security councils." https://www.eurofound.europa.eu/observatories/emcc/erm/support-instrument/job-security-councils Dublin: Eurofound.

[27] Trading Economics. "Sweden Labor Force Participation." https://tradingeconomics.com/sweden/labor-force-participation-rate

workers are placed in positions that pay the same or higher wages than the position they last held.[28] Some workers choose to continue with more education, while others launch their own businesses.

INDUSTRY-EDUCATION TRAINING PARTNERSHIPS

Partnerships among firms, educational institutions and other organizations can provide ways to organize and fund training initiatives that benefit workers and firms alike. Large firms can often afford to pay for education and training initiatives knowing that they will be able to reap the benefits, while among smaller or similar firms where the risk of skills poaching is high, consortia of cooperating firms can be more successful.

Two examples are worth exploring: PwC U.K.'s technology apprenticeship program, and Italian car manufacturers' skills development partnership.

- To identify and attract people with both technical and general employment experience to fill digital roles, PwC in the United Kingdom launched a **Technology Apprenticeship Program** to develop and hire talent. The company partnered with five universities to offer four-year applied technology degree programs that provide industry experience, free university tuition and a salary throughout the program. Students work towards a four-year honour's degree in a computer or technology-related field. They also participate in paid work placements with PwC to apply their classroom learning in a real-world setting.
- The program allows universities to keep their programs up-to-date and more relevant to evolving industry needs. And it helps PwC recruit employees who often lack the resources or opportunities to pursue education and careers in these fields. As it is a new program, it is not yet clear how many graduates will ultimately continue their employment with PwC. But for similar programs PwC has designed and funded over the past 15 years, nearly 100 percent of participants take a permanent position with PwC upon graduation.[29]
- Facing skills shortages in 2013, several of **Italy's sports car manufacturers**—Ferrari, Maserati, Lamborghini and Dallara—worked with ManpowerGroup, a consulting firm specializing in IT, engineering and finance services, and local governments and educational institutions to develop new training and skills programs to attract employees. The programs focused on adult workers being displaced from sectors with complementary skills and knowledge, such as the textile industry. It provided these workers with training to take on roles in sports car manufacturing—including roles in data analysis, engine building, chassis development, programming and race track engineering, as well as in project management, human resources and IT.

[28] Walter, L. "Job Security Councils in Sweden"; European Monitoring Centre on Change. "Job security councils."

[29] PwC. 2018. "Flying Start Degrees." https://www.pwc.co.uk/careers/school-jobs/jobs/flying-start-degrees/technology.html PwC; Leeson, A. October 26, 2017. "Fancy studying technology at university, for free?" The Guardian. https://www.theguardian.com/pwc-partner-zone/2017/oct/26/fancy-studying-technology-at-university-for-free; Irish Times. October 16, 2018. "New tech apprenticeship course a first for the north." http://www.irishnews.com/business/2018/10/16/news/new-tech-apprenticeship-course-a-first-for-the-north-1459369/

- According to program analysis, 243 graduates in seven cities were trained and took up new occupations, with average wage increases of 30 percent. Overall placement ranged from 55 to 70 percent. Based on the Italian success, ManpowerGroup is expanding the program to other locations in Europe and the U.S., with support from local universities, technical colleges and government agencies.[30]

FOCUSING ON OLDER WORKERS

One of the challenges in skills and training systems is providing older workers with training and employment opportunities, as well as convincing workers and managers that such investments are worth making. Initiatives in the U.K. and Singapore address these challenges in different ways.

- In the U.K., the NAICE/Unionlearn **Mid-Life Career Review** initiative aims to empower older workers to find and pursue opportunities for growth. Funded by the Department of Business, Innovation and Skills, the program focuses on workers aged 45 to 64 and provides them with information on employment, training, financial planning and health issues. During the initial pilot period from 2013 to 2015, the program engaged approximately 3,000 people who were either unemployed, facing unemployment or looking to make a career transition. Engagement consisted of group and individual counselling and assistance in finding information about new opportunities. A review of the program found that 80 percent of participants reported higher self-confidence and skills, one in five unemployed participants found new employment opportunities, and one in three were motivated to continue to look for work or pursue additional training. The agencies involved viewed these results as a success and have been working to mainstream the program ever since.[31]
- In Singapore, a consulting firm, Beyond Age, has been working with managers and professionals to "shift perceptions about chronological age and to promote focusing on and honing the strengths and potential of older persons."[32] The organization offers training and counselling to managers to equip them to value and understand older workers and learn how to coach, manage and mentor mature adult learners and employees. As the labour force ages around the world, firms that are committed to and experienced in working with older employees will be better able to retain and hire experienced workers. Moreover, when managers and educators recognize the value of continuing to invest in learning and development for older workers, key gaps in training and development systems might begin to close.

[30] World Economic Forum. Accelerating Workforce Reskilling for the Fourth Industrial Revolution, 8.

[31] Ibid., 10.

[32] Ibid., 8.

POLICIES TO FUND TRAINING:
LIFELONG LEARNING PLANS AND EMPLOYER TRAINING LEVIES

Learners themselves have become responsible for funding their own mid-career training and development. Two government initiatives have tried to support self-directed learning, with mixed results.

- **Lifelong Learning Plans (LLP)** are an existing feature of the Canadian education and training ecosystem that allow workers to draw from their RRSPs in order to fund new training and education for themselves or their spouses.[33] Similar to the Lifelong Learning Accounts (LiLA) program that has been piloted in a number of U.S. states,[34] the Canadian plan is arguably more flexible in that workers need not set up a stand-alone learning account, but can draw from their RRSP for non-retirement purposes (in the same way one can draw from an RRSP for a down payment on a first home).
- Unfortunately, neither program is helpful to younger and lower-income workers who have not been able to accumulate enough savings and employer-matching contributions to fund the additional training and education they might need. Moreover, in Canada, withdrawals from RRSPs under the LLP must eventually be repaid. If Canada is to continue to shift training costs onto workers and learners themselves, revisions to the LLP may be warranted, including providing employers with mechanisms to contribute more to the accounts, and providing additional federal funds to match worker and employer contributions.
- For many years, Quebec firms spent less on worker training and development than other Canadian firms. In response, the Quebec government passed legislation in 1995—renamed in 2007 as the ***Act to Promote Workforce Skills Development and Recognition***—that requires firms above a certain size to spend at least one percent of revenues on employee training and development annually.[35] If a firm does not spend the amount on training, they forfeit the difference as an additional corporate tax, which is then earmarked by the government for other training programs in the province. Since the act was passed, Quebec firms have increased their training and development spending to levels comparable with firms in other parts of Canada.

[33] Canada Revenue Agency. 2016. "Lifelong Learning Plan (LLP)." https://www.canada.ca/en/revenue-agency/services/tax/individuals/topics/rrsps-related-plans/lifelong-learning-plan.html Ottawa: Government of Canada.

[34] American Legislative Exchange Council. 2009. "The Lifelong Learning Accounts Act." https://www.alec.org/model-policy/the-lifelong-learning-accounts-act/ Washington, D.C.: ALEC.

[35] LégisQuébec. 2007. Act to Promote Workforce Skills Development and Recognition. http://legisquebec.gouv.qc.ca/en/ShowDoc/cs/D-8.3

BETTER LABOUR MARKET INFORMATION

An essential part of any effective and inclusive skills, training and lifelong learning system is the timely collection, analysis and sharing of information about changing skills and occupational demand and supply. Few jurisdictions have managed to completely solve the problem of providing workers, firms, educators and others with the information they need, though numerous initiatives are worth examining.

- Denmark's **national skills anticipation system** provides timely labour market trends and skills demand information for 850 occupations through partnerships with industry, government and non-governmental actors. The system provides skills forecasts based on employer demand and education and labour market trends, skills gaps assessments and skills foresight based on sectoral assessment of future needs. The system relies on data from quantitative forecasting, sector studies, qualitative studies and surveys of employers, workers and graduates. A key to obtaining good information and producing accurate and useful analysis is the participation of multiple social partners, all of whom want to ensure that students, graduates, workers, employers and other stakeholders have solid empirical evidence on which to base decisions and make investments. By engaging local-level actors and agencies, the system is able to collect fine-grained local-level information—both quantitative and qualitative—about changing skills needs among employers.[36]
- Launched by Bayes Impact, **Bob Emploi** is a platform service for job and training seekers in France that helps them to more quickly and easily find accurate and relevant information on employment listings, training opportunities and a range of HR and other supports that can help them to develop skills and find employment. The service collects information about users from public sources and from users themselves, and information is gleaned from government, employers and others, facilitated largely by the French government's decision to endorse an open data and platform model for service delivery. Using the data and proprietary algorithms, the system generates better employment and service matches for users based on their data profiles.[37]

[36] World Economic Forum. Accelerating Workforce Reskilling for the Fourth Industrial Revolution, 9.

[37] Ahanda, M.L.E. November 22, 2017. "Using open labor market data for social good." Medium. https://medium.com/bobemploi/using-open-labor-market-data-for-social-good-70abca387db9; World Economic Forum. Accelerating Workforce Reskilling for the Fourth Industrial Revolution, 10.

PRINCIPLES FOR TRAINING SYSTEMS AND PROGRAMS

In the future, work will be substantially different than what it is today. Technological change and global competition will force firms and individuals to focus on rapid reskilling and upskilling.

Canada's systems of training and development are not yet up to the task. There are gaps in foundational skills, training and development opportunities, and support for worker transitions. What principles and considerations should guide Canada's systems of skills, training and lifelong learning?

EMPHASIZE FOUNDATIONAL SKILLS

Workers who have the foundational capabilities to learn new skills and knowledge have a substantial advantage over those who do not. Economies with proportionally more people with foundational skills will fare better overall—both in terms of growth and inclusion—than those with lower proportions of people with these skills. While it is important to discuss what specific technical skills will be needed in the new economy, and how workers will attain them, foundational skills are essential. This means that provinces should be skeptical of, and move slowly with, any proposed changes to K-12 and higher education systems to ensure that graduates are "work-ready."

Preparing graduates to be work-ready cannot come at the expense of ensuring they have the literacy, numeracy, critical thinking and other foundational skills needed to adapt in the future.

IMPROVE EQUITY AND INCLUSION

Canada's skills, training and lifelong learning systems generate unequal opportunities and results. Right now, those who most need training and development opportunities are least likely to receive them. We must ensure that everyone can acquire foundational skills, and that appropriate training and development opportunities are provided to workers across the skills spectrum to reskill and adapt to change. This should address prominent barriers, including learners' time, resources, learning ability, location of training and other factors. Additionally, because employer investment in training is relatively low, measures to stimulate more spending and activity would help to address training inequities by enabling employers to focus not only on highly educated workers, but on all workers.

ENCOURAGE COST-SHARING

Policies and programs that encourage cost-sharing among industry, workers and governments are essential. For workers, the benefits of reskilling and training are clear, but the costs can be prohibitive. For employers,

the costs are less prohibitive, but concerns about employee poaching generates collective action and free-rider problems. For governments, filling gaps in training and development systems is important, but so are concerns about crowding out learner and industry spending. Together, workers, industry and governments should be able to cooperate on training and development programs that address barriers, collective action problems and concerns about crowding out.

ENCOURAGE INFORMATION-SHARING

It is one thing to know that workers need to reskill, but another to know which specific skills and knowledge are needed, in what sectors, and in what proportions. Relevant and timely labour market information is necessary. Education and training institutions are experts in developing foundational and advanced skills and knowledge, but they do not always know what employers need. For technical reskilling and upskilling, cooperation among educational institutions, industry, unions and other stakeholders would help. The challenge, however, is to be mindful of the interests of workers and not only employers. Industry has the best information about what they need now, but what they need now might not aid the long-term resilience and well-being of workers. Good information and sound analysis of that information are essential.

TRACK PROGRAM EFFECTIVENESS

It is well known who participates in education and training and what the employment and income outcomes of this training are. Less is known about the effectiveness of specific training mechanisms. Effective skills, training and lifelong learning systems require better program-level information about how well skills are developed. The Future Skills Centre (FSC) supports pilot projects in skills development and will be responsible for measuring effectiveness and impact. The FSC should develop a common measurement framework that can be applied to all training programs and should make pilot project funding conditional on partners collecting and providing rich, comparable data on inputs, outputs and outcomes of their programs.

OUTSTANDING RESEARCH QUESTIONS

This report highlights the key strengths and weaknesses in Canada's skills, training and lifelong learning systems; the challenges faced by workers, firms and other stakeholders; and key principles to guide system improvements. Still, many questions remain.

INCLUSION

- What are the reasons for suboptimal foundational skills development among some individuals and groups, and how can barriers be addressed?
- To what extent do Canada's education systems reinforce or address disparities in performance by family income and wealth, immigration status, Indigenous status, geography and other demographic factors?
- Can Canada's fragmented systems of education and training for Indigenous peoples be improved to ensure they have the education and skills they want and need to contribute to individual and community success?

PRESENT AND FUTURE RELEVANCE

- What can be done now for workers with suboptimal foundational skills who are left vulnerable to labour market changes and are often passed over for reskilling opportunities?
- How can we balance the need to equip workers with skills that are relevant to employers *today*, while ensuring they have the capacity to learn new skills and prevent their skills from becoming irrelevant tomorrow?

COSTS AND COORDINATION

- How can we provide incentives for measures that support workers' skills training and development so they are not responsible for funding and coordinating training themselves?
- What broader social supports could be used to provide a secure platform for workers' labour market transitions and skills upgrading?
- Do cooperative sector-based skills and training consortia work? How should skills-training consortia be designed and operate to benefit both workers and firms?

ASSESSMENT AND IMPROVEMENT

- What can be done to ensure that Canada's labour market information systems collect, analyze and share relevant information about skills and education needs and opportunities, while recognizing

that some information providers may have incentives to share incomplete or self-interested information?

- What information should be collected to assess the effectiveness of skills and training programs and projects? What criteria should be used to assess effectiveness?

CONCLUSION

Learners, workers and employers are well served by some aspects of Canada's skills development, training and lifelong learning initiatives and institutions.

Our educational systems do a good job of equipping people with foundational skills for success and later learning—and we tend to do quite well in ensuring equitable opportunities and achievement among our youngest students, albeit with significant exceptions among Indigenous students.

Our lifelong learning activities and programs—the messy middle—are less impressive. Mid-career training and development opportunities are scarce. They favour the already highly skilled and educated over the less skilled and educated, and there is little information about how well specific mechanisms develop skills and contribute to innovation, growth, employment and good incomes.

A highly skilled and educated population is essential to economic growth and social well-being. In the face of rising global competition and rapid technological change, reskilling and upskilling are increasingly important to sustain prosperity and to ensure that everyone can share in that prosperity. As a result, effective and inclusive systems of training and development are critical. Canada's systems of training, reskilling and lifelong learning have substantial gaps and need improvement if they are to meet the needs of workers and firms. To ensure that our innovation economy is strong and benefits everyone, changes are needed to make Canada's skills, training and lifelong systems more accessible, inclusive and effective.

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