LET'S GET 'SKILLS SECURE':
Closing the Gaps in Canada's Lifelong Education System

Canada's labour market will not have the skilled workers it needs unless we change the way we train workers today. As automation spurs rapid change, Canada needs to change its approach to education, training and skills development in order to close the skills gap. By Lori Turnbull

Research by global management consulting firm McKinsey indicates that 45 percent of what we're paid to do could be automated in the coming decades, and 60 percent of all occupations could see 30 percent or more of their activities automated. While opinions vary on the proportion of jobs that are likely to be destroyed, created or changed, there is little doubt disruption is coming. A report by the Government of Canada's Advisory Council on Economic Growth states that, by 2030, automation could threaten more than 10 percent of Canadian jobs. Workers need to build new skill sets to be competitive and meet the needs of the changing labour market.

A report co-authored by accounting firm Deloitte and the Human Resources Professionals Association paints a starker picture: it estimates that 35 to 42 percent of Canadian jobs could be threatened by automation. Low-skill and low-paying jobs are not the only ones vulnerable; machines can also drive trucks, build cars, read x-rays, diagnose cancer, investigate crime and crunch data with much more accuracy and precision than humans. Despite the current preoccupation with coding, even computer scientists are not immune to displacement.

SUMMARY AND RECOMMENDATIONS

Labour markets in Canada and around the world are being disrupted by the gig economy and the corresponding need for diverse and shifting skill sets, as well as by artificial intelligence and technological developments. Jobs of the future will demand skill sets and competencies that we cannot yet anticipate; at the same time, many skills that have made individuals competitive in the past will become automated.

Canada's labour market will not have the skilled workers it needs unless we change the way we train workers today. Michael Wernick, Clerk of the Privy Council, has spoken about the importance of creating the right "mix of skills" in the public service; it is a top priority of his to "raise the capabilities" of the federal workforce. If the skills gap is to close, cultural and attitudinal changes will be necessary to support the implementation of a new approach to adult learning and skills development. To prepare Canadians in all sectors for the future, governments should take the following actions:

- develop a comprehensive national platform that improves the flow of information between employers and job seekers

- build partnerships with employers and post-secondary institutions to identify labour market needs and ensure educational programs are aligned with those needs

- harmonize employment and income supports with skills and employment services to provide appropriate incentives for upskilling

- use incentive structures to promote innovation in post-secondary systems

- emphasize training and competency building in the kinds of capabilities that are not transferable to robots

- use evidence-based approaches in working toward skills security, recognizing the important role of arts and social sciences as well as science-based disciplines

In the short to medium term at least, the effects and implications of automation will vary by community and region in Canada, straining the ties that bind our federation. Smaller communities that depend on resource extraction such as mining, agriculture and forestry may be heavily affected. These industries are concentrated in the Prairie provinces, southwestern Ontario and southern Quebec. A place like Fort McMurray, Alta.—once an economic engine for the country and job mecca for Canadians—may be deeply transformed by automation and machine learning. As the trend towards automation increases, "artificial intelligence creep" will become more pervasive and affect a broader and more diverse range of occupations. As these developments continue, we have a responsibility to consider how increased automation could affect segments of the population already under-represented in the labour market, including Indigenous people and persons with disabilities.

Canada should cultivate the labour force of the future

Currently, Canada's labour market and skills ecosystem is not up to the task ahead. Traditional linear pathways through formal education no longer guarantee success. Post-secondary institutions, including both colleges and universities, are at great risk of disruption partly because, historically, they have been highly resistant to change. That said, many institutions have made enduring and meaningful changes to how they recruit and respond to students, deliver content, and build and recognize skills and competencies. We need to build on this capacity and momentum for innovation by taking larger steps toward reforming our education system so it more closely responds to employer needs. For example, as employers such as Shopify focus more on competencies than degrees, educational institutions are being pushed to offer alternatives to more traditional modes of teaching and learning. For example, Northeastern University's Toronto campus

A BIG ASK

Canadians are being asked to abandon the notion of job security as they have always known it in favour of "skills security," and that's a big ask. Instead of grooming employees who are responsive to their employers and to their specific job descriptions, Canadians are being asked to be more versatile.

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is responding to this push by offering specialized Master of Science programs in Regulatory Affairs, Project Management and Cybersecurity.

To maximize the effectiveness of new approaches, Canadians need to know about, and have easy access to, education, training and skills development—as well as to employment opportunities that match their unique and upgraded skills.

RECOMMENDATIONS

To close the skills gap and prepare Canadians for the future, Canada needs to reposition its approach to education, training and skills development in the following ways:

1 We must develop a comprehensive national platform that links employers and job seekers.

The Magnet-Orbis partnership is an example of how this could be done; these companies are working together to build a network that would connect employers and students.

2 Governments should build partnerships with employers and post-secondary institutions to identify labour market needs and ensure

that educational programs and products are aligned to those needs.

This partnership won't come for free. To put a number on it, the Advisory Council on Economic Growth estimates that investments of $15 billion per year in adult skills development will be necessary to meet the demands of the shifting labour market.

3 Canada should harmonize employment and income supports with skills and employment services to provide appropriate incentives and supports for upskilling, particularly for those furthest from the job market—persons on social assistance, those with disabilities, newcomers and persons in low-employment regions. This will help such people navigate and access opportunities.

4 Governments should consider using incentive structures to promote innovation in post-secondary systems and to develop new intermediaries that will encourage collaboration, sharing, competency-based modular approaches, alternative pathways, technology-enabled testing and learning, and new forms of credentials and outcomes tied to

employability.

Granting councils, provincial ministries, employers, accreditation bodies and new forms of competition can all help drive change while collaborating with universities and colleges to build a modular curriculum that increases opportunities for online learning. This will enable Canadians to simultaneously learn and work, increasing their opportunities to earn certificates quickly—in addition to taking courses and earning degrees over longer periods.

This is not to suggest that universities are not investing in these approaches already. But their emphasis today is on delivering degree programs on campus with the expectation that students will leave a university with letters after their name. Universities could shift their priorities to devote more attention and resources to lifelong learning, with educational products to match the shifting needs of the labour market. Through federal granting agencies, such as the Social Sciences and Humanities Research Council and the Natural Sciences and Engineering Research Council, as well as the Government of Canada's new Innovation Superclusters Initiative, government can work effectively with universities and colleges to set priorities and develop work plans.

5 Governments should emphasize training and competency building in the kinds of capabilities that are not transferable to robots.

Specifically, federal, provincial and territorial governments need to build capacity across the board in human competencies such as communication, collaboration, empathy, inclusion, reconciliation, ethical leadership and strategic planning. These competencies are not easily replicated by robots, given the need for discretion, human intelligence and judgment. These skills are also applicable across disciplines and workplaces.

6 Governments should work toward "skills security" by embracing evidence-based approaches and by finding ways to become more innovative and responsive to change. They should track and respond to employment outcome data and labour market information, recognizing that science, technology, engineering and math disciplines are foundational to skills security.

Working toward 'skills security'

Though no job is immune from the effects of automation, not every job will be completely transformed. Some Canadians will work in secure, salaried positions for the same employer for decades, but an increasing number will not. Canadians are being asked to abandon the notion of job security as they have always known it in favour of "skills security," and that's a big ask. Instead of grooming employees who are responsive to their employers and to their specific job descriptions, Canadians are being asked to be more versatile. As the Government of Canada's Advisory Council on Economic Growth points out, this will require substantial collaboration among employers, governments, universities, community organizations, service providers and workers.

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