

Intelligence MEMOS



From: Parisa Mahboubi
To: Canadians Concerned about Growth
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Re: **BACK TO SCHOOL: A GOOD TIME TO EXAMINE CANADA'S DIGITAL SKILL DEFICIT**

Rapid digitalization across the economy and an aging population are feeding Canada's digital and STEM skills shortages.

The COVID-19 pandemic has also intensified the need for digital skills across all sectors, and contributed to existing shortages.

My timely new C.D. Howe Institute [report](#) outlines the extent of the problem, contributing factors to the supply of digital skills and offers policy recommendations on how to bridge the digital skills gaps through developing, attracting and retaining digital talent. It especially highlights the important role of education and training, as well as immigration, in addressing shortages.

Digital skills for work include a broad spectrum that enable workers to find, use, design, develop and share digital content, and to communicate and collaborate using digital devices to solve problems more effectively. Broadly speaking, workplace digital skills can range from basic skills required of the general workforce, to specialized and advanced skills needed for developing digital technologies, products and services.

Pre-pandemic data shows shortages in all types of digital skills (5 to 16 percent). With record low unemployment rate and rising demand for digital skills in all kind of jobs (digital and non-digital oriented jobs), Canada's labour market is becoming tighter amid growing concern over shortages. If they are not addressed, skills shortages can hurt businesses and affect economic growth.

Policy responses need to direct attention to new graduates, newcomers, labour market and career transitioners, discouraged workers and out of-workforce people as sources of digital skills.

My report advises governments at all levels, according to their responsibilities, to take a holistic approach to the skills shortage by implementing education policies that include:

- education system reform, ensuring availability of resources and training options for teachers to implement modernized curricula;
- increasing STEM enrolment and graduation numbers by raising student performance in STEM subjects, closing the STEM gender divide by better helping students to make study and career choices and encouraging under-represented groups to continue their education in STEM fields by identifying and addressing their particular needs;
- working with educational institutions to develop and expand digital skills learning, artificial intelligence and data science courses and programs;
- increasing high-quality work experience options such as work-integrated learning opportunities and expanding co-op programs in the information and communications technology sector;
- investing in micro-credential/certification programs that are paired with work placement for youth not in education, employment or training;
- investing in upskilling and reskilling the existing workforce; and,
- preventing brain drain and retaining new graduates.

In short, Canada should focus on developing talent by enhancing education quality, increasing STEM enrolments and graduations and supporting opportunities in STEM fields. Furthermore, Canada needs to address inequalities and gaps in STEM fields and occupations, offer pathways into these sectors for youth and other groups who face barriers to employment.

Immigration is the other broad tool to attract more digital talent in the short-term. Policies should aim at increasing the admission of immigrants with prior study-permit-holder status and retaining international students, particularly in STEM fields. They should also ensure that the combined temporary and permanent immigration programs sufficiently increase the supply of newcomers with digital skills and that skilled immigrants receive the tailored support they need to integrate successfully into the labour market.

We can reduce the underemployment of skilled immigrants through greater efforts to bolster language skills and address barriers to the recognition of foreign credentials and experience.

Expanding the pool of digital talent will also require higher wages to attract more workers, on-the-job training opportunities to address skills gaps, a shift in educational focus from degrees to skills acquisition and recognition and support of non-formal training options.

Parisa Mahboubi is a Senior Policy Analyst at the C.D. Howe Institute.

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