

Practical Innovation: Beyond COVID

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For the last two years, Canadians—and indeed the world well beyond our borders—have been focused on COVID-19. Yet, even before the pandemic upended our everyday lives, Canada’s economy and labour market were undergoing a significant transformation. New technology, demographic shifts and industrial transformations were already affecting the supply and demand for talent.

Despite months of economic turmoil, today’s call for skilled workers is increasingly urgent. Businesses and governments recognize that today’s workers must bring a combination of talents to the table—technical skills, an innovation mindset and tremendous resilience to change.

From my seat, it is increasingly obvious that Canada’s polytechnics have a ready answer to these challenges. Positioned at the intersection of learner and labour market, institutions offer programs that are both responsive to known business needs and ahead of emerging trends. Flexible program design reflects the changing nature of work, offering an innovative and entrepreneurial approach to skills development.

Students walk in the door looking for an industry-relevant education; they leave both competent and confident in their skills. While the polytechnic model of education is more than its component parts, my sense is that there are three key elements at play: an industry focus, a commitment to experiential learning in all its forms and an innovation infrastructure that supports adaptation and resilience.

While a traditional post-secondary model is very much “education up”—translating labour market signals into curricula, delivering training and assuming employers will recognize credentials as responsive to their requirements—polytechnics embed industry

at every level. By engaging the industry in the co-design of programs, labour market signals are that much clearer and more relevant.

This happens at the program level through advisory committees that review current programs, courses and learning outcomes against emerging requirements. It happens each time an employer donates a piece of equipment or shares insights into challenges and opportunities in their sector.

But, that is just the beginning. With instructors often drawn from industry and full-time faculty augmented by part-time instructors moonlighting from their regular employment, classrooms both reflect the realities of the workplace and integrate real-life challenges, problems and projects into course outlines.

The polytechnic toolbox includes capstone projects, engagement in applied research and in-class challenges posed by business partners. In addition, on-campus labs and shops provide workplace-authentic experiences, from building houses in carpentry programs to developing and interacting with robots in the manufacturing lab. These experiences help prepare students for a fluid, ever-changing world of work.

In response to COVID-19 restrictions, when access to work-integrated learning (WIL) placements became a more significant challenge, polytechnics began offering access to virtual labs, placements and training with partners that were, in some cases, located around the globe. What could have been a poor substitute for experiential learning has, in fact, opened the door to students who might have once faced barriers to WIL experiences. It will be fascinating to see how these new approaches become part of the WIL menu as the pandemic fades.

Change, and the human resilience required to embrace it, has also been front-and-centre during the past 24 months. As automation, artificial intelligence and the Internet of Things become commonplace across economic sectors, the global

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marketplace is transforming at an ever-increasing speed. One of the clearest messages coming from industry is a requirement for innovation skills among graduates.

Innovation drives economic growth and enhances social well-being. It can be incremental—improving efficiencies, experimenting with new technologies or testing theories and concepts. Innovations can also be ground-breaking and globally significant—impacting the food we eat, human health and wellness, and how we interact with the planet.

One of the most pragmatic examples of innovation at polytechnics is the capacity to undertake applied research. Institutions mobilize state-of-the-art facilities, equipment and expertise to deliver creative solutions to businesses and their staff. Applied research projects often include a student experience component, helping learners develop strong problem-solving skills, build employer connections and gain relevant experience.

The same companies later hire many students they assist during their studies, allowing employers to benefit from access to an innovation-enabled talent pipeline. Applied research also provides employers and their staff with a front seat to the process to develop products, adopt technology or develop a proof of

concept. Given the prevalence of small- and medium-sized businesses in Canada—many without an innovation infrastructure of their own—polytechnic applied research stands to help power Canada's broader innovation ecosystem while creating the talent pipeline to drive it.

Taken together, an industry-driven approach to program development and delivery, experiential opportunities for students, and innovation supports to help businesses adapt are game-changers. They address the critical needs that were emerging before the pandemic and those rearing their heads again as Canada looks beyond it.

Like the rest of Canada, polytechnic institutions have been swept up in the realities of an extended pandemic, forced to adapt to health guidelines and restrictions. Unlike many others, the capacity to pivot and respond was built into institutional DNA. It is those characteristics that make polytechnics ideally positioned to drive recovery.