POLYTECHNIC APPLIED RESEARCH

Innovation drives economic growth and enhances social well-being. It can be incremental—improving efficiencies, experimenting with new technologies or testing theories and concepts. It can also be ground-breaking and globally significant – impacting the food we eat, human health and the way we interact with the planet. Applied research at Canada's polytechnics is working at both ends of this spectrum, supporting non-profit and business enterprises across industrial and social sectors to solve today's most pressing challenges.

Applied research refers to an exceptionally broad range of supports delivered in response to industry demand. Polytechnic institutions across Canada mobilize state-of-the-art facilities, equipment and expertise to deliver solutions for partners, always in collaboration and often with the help of student talent. In most cases, intellectual property is retained by the business partner, creating an environment that amplifies the incentive for engagement and streamlines commercialization.

The impact of these partnerships is substantial. For every $1 invested in applied research at one of Polytechnics Canada's 13 member institutions, **the return on investment ranges from $8.09 to $18.49**. The social benefits of applied research, such as reductions in carbon emissions and improvements in public well-being, are difficult to quantify but support an estimate closer to the upper boundary.[1]

By engaging students in applied research, learners receive hands-on opportunities to work alongside employers to solve real-world challenges. This ensures graduates enter the labour market with strong problem-solving skills, employer connections and relevant experience. For employers, this can serve as a critical talent pipeline.

Applied research focuses on near-to-market commercialization activities, such as:

Business validation | Product development and enhancement | Prototype development | Field/lab testing and simulation | Proof of concept | Pre-market product and process testing

Polytechnics support business partners in a wide range of sectors, including:

- National defence
- Health and eldercare
- Agri-food
- Advanced manufacturing
- Construction
- Digital industries and artificial intelligence

[1] The Economic Impact of Applied Research at Canada's Polytechnics (2024)

Building a Stronger Canada

Benefits to Business

Polytechnics serve as innovation hubs and essential partners for driving growth, fostering experimentation and cultivating new ideas. Their applied research expertise empowers enterprises to achieve greater efficiencies, reduce costs, scale operations and access new markets. In fact, polytechnic partners indicate:[2]

51%
Collaborations increased their R&D capability

48%
Projects improved competitiveness

26%
Their business was able to access new markets, including outside Canada

21%
Applied research increased productivity

This innovation support allows partners to grow, enabling further participation in R&D.

While organizations of all sizes benefit from these partnerships, small- and medium-sized enterprises (SMEs) are particularly well-served. More than 75% of applied research business partners at polytechnics are SMEs – a group that faces unique barriers to investing in R&D. For many SMEs, the risks of investing in R&D are significant, often constrained by limited technical staff, inadequate facilities and tight budgets. Polytechnics are uniquely equipped to address these challenges due to their strong connections with industry and their ability to respond quickly to diverse needs.

Benefits to Canada

While partners come to polytechnics seeking innovative solutions to challenges or obstacles to growth, the solution is almost always collaborative and mutually beneficial. In many cases, these projects are also supporting significant social advances – building improvements to health and eldercare, agriculture and food production, and environmental sustainability, among others. Focused on practical and scalable outcomes, applied research addresses some of the biggest challenges of our time.

By aligning research efforts with local industry needs, polytechnics stimulate economic growth, create jobs and fuel innovation. Generally speaking, as investments in applied research grow, the economic benefits become increasingly significant. Industry contributions match public support, delivering high-impact, cost-effective innovations that strengthen Canada's technological leadership and global competitiveness. These research projects also actively involve students, providing hands-on learning experiences that nurture talent, foster academic collaboration and support the development of an innovation-enabled workforce.

Benefits to Students

Polytechnic applied research bridges the gap between innovation and education, creating a talent pipeline that addresses the challenges businesses face today while simultaneously developing the next generation of Canada's workforce. Through applied research projects, students gain valuable hands-on experience by collaborating directly with employers in their fields of study. This practical experience equips learners with workforce-ready skills, enabling them to transition seamlessly into their careers upon graduation. Moreover, students who participate in applied research projects are often hired by the partnering companies.

Insights from applied research are integrated into curricula, establishing a dynamic feedback loop that enriches classroom learning and ensures all students benefit from the lessons learned in applied research projects.

[2] The Economic Impact of Applied Research at Canada's Polytechnics (2024)

Amplify the Impact of Applied Research

Polytechnic applied research is making significant economic and social impact – and still Canada's polytechnics have the capacity to do more. They just need to be leveraged effectively and resourced appropriately.

Here's how the federal government can stimulate more innovation partnerships, help businesses grow, enhance Canada's competitiveness, deliver social impact and provide more opportunities for learners to participate in real-world experiential learning opportunities:

- Rebalance federal research funding to direct 10% of Tri-Council investments to polytechnics and colleges, facilitating proactive business engagement in R&D and ensuring research is mobilized by those best suited to drive economic impact.
- Conduct a review of academic research funding programs to ensure strong alignment with the evolving needs of the Canadian economy, supporting innovation, industry collaboration and economic growth and competitiveness.
- Make strategic infrastructure investments in Applied AI Research Centres at polytechnics to ensure institutions can build cutting-edge facilities designed to translate AI discoveries into market-ready solutions.
- Encourage businesses to engage in applied research at polytechnics and colleges as a way to derisk technology adoption and connect with an innovation-enabled talent pipeline.

Applied Research Impacts

Polytechnics Canada collects the outcomes and impacts of applied research at its 13 member institutions annually.

In 2025-26, our members:

Undertook **4,166 applied research projects**	Deployed more than **$42.1 million** in federal funding and leveraged an additional **$72.2 million** from other sources
Served **2,825 partners,** **77%** of which were in the **private sector**	
Engaged **16,275 students** in applied research	
Co-developed **1,206 prototypes**	
Leveraged the expertise of **1,431 faculty**	

About Polytechnics Canada

Polytechnics Canada is the voice of leading research-intensive, publicly supported polytechnics, colleges and institutes of technology. Our mission is policy advocacy for federal action in innovation and skills.

Polytechnics Canada members play a critical role in enhancing Canada's productivity and innovation. Through their facilities and networks, our members provide meaningful solutions to industry problems and accelerate knowledge transfer. Graduates are job-ready and equipped with the skills employers need across sectors.

At Polytechnics Canada, we are proud promoters of the polytechnic education model—applied, hands-on and technical; industry-focused and industry-driven.

Learn more at polytechnicscanada.ca.

Our Members

Algonquin College

BCIT British Columbia Institute of Technology

Conestoga Connect Life and Learning

Fanshawe

George Brown Polytechnic

Humber Polytechnic

KPU Kwantlen Polytechnic University

NAIT

RRC Polytech

SAIT

Saskatchewan Polytechnic

Seneca Polytechnic

Sheridan