Beyond the Classroom

The Future of Post-Secondary Education Has Arrived
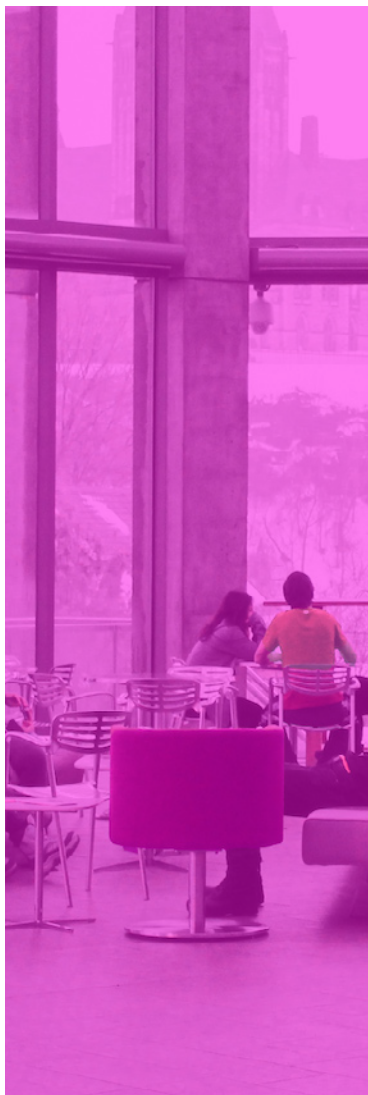
Future Skills Centre

The Future Skills Centre – Centre des Compétences futures (FSC-CCF) is a forward-thinking centre for research and collaboration dedicated to preparing Canadians for employment success. We believe Canadians should feel confident about the skills they have to succeed in a changing workforce. As a pan-Canadian community, we are collaborating to rigorously identify, test, measure, and share innovative approaches to assessing and developing the skills Canadians need to thrive in the days and years ahead.

The Future Skills Centre was founded by a consortium whose members are Ryerson University, Blueprint, and The Conference Board of Canada.

If you would like to learn more about this report and other skills research from FSC, visit us at fsc-ccf.ca or contact info@fsc-ccf.ca.
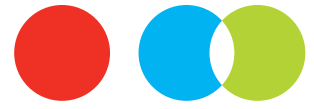
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Contents

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Key Findings

- Virtual learning options led to increased participation in post-secondary education across Canada. Participation in virtual learning can grow further if we expand access to broadband Internet and digital technology.

- Leaders agree that our economy depends on a continuous learning mindset—workers must update or learn new competencies as skill demands shift. Flexible learning options, including micro-credentialling and upskilling initiatives, may help those already in the workforce learn new skills and advance or transition in their careers.

- Providing experiential learning opportunities for students through collaboration between industry and post-secondary institutions (PSIs) will be key to addressing labour shortages during and after Canada's economic recovery.

- Experiential learning, such as work-integrated learning, is not always an equal playing field. For example, unpaid internships present a barrier to students from low-income families, and many government-funded opportunities are not open to international students. Such internships are often a barrier for all but the most privileged students.

Introduction

Many education leaders across the country are beginning to reimagine post-secondary institutions (PSIs) to meet rapidly changing skill demands and to increase accessibility.

Although the COVID-19 pandemic disrupted many plans for the post-secondary space, it accelerated positive changes: streamlined virtual learning options made learning more inclusive of older students and those living in remote communities; experiential learning opportunities were expanded outside of major cities; and enrolment across post-secondary education (PSE) programs increased. For many education stakeholders, these pandemic developments are key elements of how to re-envision existing PSIs to ensure a brighter future for Canada.

In partnership with the Future Skills Centre (FSC), The Conference Board of Canada brought together Canadian leaders in education, skills, and training to discuss how to improve current PSIs to respond to both labour market challenges and students' needs. The Regional Sounding Tour (RST) examined key challenges in Canada's skills systems and asked leaders to think about the future. To expand on findings from the RST, we introduced the Virtual Regional Sounding Tour (VRST) during the COVID-19 pandemic. VRST participants debated how to create PSIs that reflect the socio-economic impacts of the pandemic and embrace collaboration among institutions, industry, and government.

Leaders across these tours agreed that PSIs should focus on three areas of growth: virtual learning; flexible learning options; and experiential learning, specifically work-integrated learning. These themes point toward PSIs' shifting role in the learning process, beyond designing and delivering traditional degree programs. They also speak to leaders' optimism that we can foster a post-secondary system that supports the diverse needs of employers and learners across Canada.

Virtual Learning, Reimagined

Virtual education has the potential to make learning possible for everyone, everywhere.

The COVID-19 pandemic transformed PSIs in a matter of months. Compared with 2019, when only about 16 per cent of university and 12 per cent of college students studied virtually,[1] almost all Canadian students participated in online learning in 2020.[2] The move to a distanced education model allowed students to continue course work and complete classes, despite the uncertainty of the pandemic.[3] While our sounding tour did not include the voices of students,[4] there is reason to believe that virtual learning has made elements of education more accessible for some students across Canada and has positively impacted their learning experience.[5]

This swift transition to online learning led to increased opportunities for Canadians across age ranges and regions. In some cases, online learning even proved to be an intergenerational activity.

> **We're talking about mid-career and grandmas. So, we had grandma taking a class online, using her television with her grandkids in the back. And that was the dynamic of the learning that was happening.**
>
> **VRST participant**, British Columbia, March 2021

For others, virtual learning presented an opportunity to attend courses at institutions outside of their regions. VRST participants in provinces such as British Columbia, Manitoba, Ontario, and Quebec discussed increased enrolment in PSE programs, linking the growing numbers to the accessibility of online learning.

> **We saw somewhere between a small and a profound increase in enrolments from geographic areas that we were unable to serve before the pandemic.... Students in some of these remote communities now had attractive options from UBC and other institutions in the province that weren't available before.**
>
> **VRST participant**, British Columbia, March 2021

Trades programs, which conventionally require an in-person apprenticeship, also became more accessible for some in the move to remote learning. We heard from participants in Northern Manitoba, for example, that students in the trades no longer have to travel to Winnipeg for their apprenticeships. Stakeholders hope this change could help increase Indigenous participation in the skilled trades, a sector where 59 per cent of businesses report skills shortages stemming from the need to replace retiring workers.[6]

Participants mentioned some of the challenges with virtual learning including lack of social connections when learning remotely; increased mental health issues for some individuals; and concerns over how to best support teachers with developing digital resources and preparing

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1   Schrumm, "The Future of Post-Secondary Education: On Campus, Online and On Demand."

2   Doreleyers and Knighton, *Covid-19 Pandemic: Academic Impacts on Postsecondary Students in Canada*.

3   Ibid.

4   See the Future Skills Centre report, *Survey on Employment and Skills,* for work that focuses on youth's reported experiences.

5   Pichette, Brumwell, and Rizk, *Improving the Accessibility of Remote Higher Education.*

6   Statistics Canada, "Percentage of Businesses in Canada That Encountered Skill Shortages, 2019."

for the "unknown", as we heard in places like New Brunswick and Ontario. But, overall, there were more positive remarks about how to best use virtual learning both now and in the future. Increased participation in the trades and traditional post-secondary courses clearly demonstrates that, for instance, PSIs should continue to offer virtual learning options post-pandemic. Providing learning opportunities for Canadians across regions and generations will be key to closing skills gaps as talent shortages grow across the country.[7]

Effective Virtual Learning Takes a Team of Experts

In some ways, virtual learning is not new. PSIs have used digital technology to teach, create, and communicate for years.[8] But the pandemic forced PSIs to expand their use of technology beyond being a supplement to in-person learning. PSIs can now use digital technology in place of most, if not all, in-person learning. However, education stakeholders recognized that many instructors and faculty were unprepared to deliver engaging lectures and course content online and that we cannot rely on technology alone to reshape the way we learn. Participants from Ontario, New Brunswick, Alberta, and British Columbia highlighted the behind-the-scenes work of course-design experts, learning specialists, and support staff who made online learning possible during the pandemic.

Most training is developed to be delivered face to face, and we can't just port it over to an online learning management system and think you are still going to have a great product.... So, we've also had to have learning specialists help us tweak, adjust, and redevelop these programs so that they made sense online and were engaging to learners.

VRST participant, British Columbia, March 2021

PSIs should continue to engage course-design and teaching experts to ensure the highest quality of instruction. Instructors should also be trained in digital teaching tools so they are able to adapt their experience and knowledge to a distanced learning environment while maintaining engagement with students.[9]

It is impossible to fully replicate hands-on learning in an online environment. However, PSIs such as the University of Calgary[10] and York University[11] have developed tool kits to help instructors integrate critical reflection into online environments using written prompts, discussions, and other reflective activities. Critical reflection, or "meaning-making," can help students make connections between ideas and experiences and facilitates "the knowledge and skill development that would normally occur" with in-person learning.[12] Other institutions have suggested using the pandemic as an opportunity to take experiential learning online and make it more accessible to all students through, for instance, creating virtual workplace tours or a speakers' bureau that could connect the business world to the students.

7   Manpower Group, *Closing the Skills Gap: What Workers Want.*
8   Ivus, Quan, and Snider, *21st Century Digital Skills.*
9   Richardson and North, "Transition and Migration to Online Learning Environment."
10 University of Calgary, "Transitioning From Hands-On to Online Experiential Learning."
11 York University, "Resources: Going Remote, Covid-19 and Beyond."
12 University of Calgary, "Transitioning From Hands-On to Online Experiential Learning."

Balancing Virtual, Equitable, and Social Learning Is Hard

While virtual learning provides measurable impacts in terms of accessibility, leaders we spoke with expressed concerns about the equity gaps that distanced education exposed during the pandemic. One of the largest concerns was access to broadband and technology.[13] Many Canadians living in remote areas of Manitoba and Quebec, for example, do not have strong Internet access, let alone computers or other digital devices to access online learning platforms.

> **We had students coming to sit in our parking lot to get the Wi-Fi, because … where they would usually go to capture Wi-Fi, they didn't have access to it.**
>
> **VRST participant**, Manitoba, March 2021

To improve digital access for students, institutions in Manitoba and British Columbia created technology-lending programs in which PSIs and communities came together to support students.

> **We had to actually deliver iPads to people's houses because that was the only way [they] were going to get them. So, we had to stand out and do exchanges in the garage—"Here's your computer"— and get people online.**
>
> **VRST participant**, British Columbia, March 2021

Another pervasive concern about virtual learning was that it removes social interaction from the educational experience. We know that limited interaction among students, instructors, and peers can negatively impact students' mental health,[14] especially when considering that a reliance on email has replaced the ability to have quick conversations either before or after class and during office hours. Crucially, a lack of interaction can also affect the development of social and emotional skills (SES),[15] which will be key to closing skills gaps and offsetting the impacts of automation.[16] A speaker from Quebec worried about students' SES development, sharing that "the soft skills … the sense of being compassionate"[17] are missing from virtual learning.

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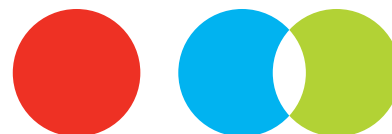
13 Digital skill gaps were also noted. For more on this, see Macpherson and Rizk, *Essential Skills for Learning and Working.*

14 Centre for Innovation in Campus Mental Health, "The Impact of COVID-19 on Post-Secondary Institutions."

15 Doo, "A Problem in Online Interpersonal Skills Training."

16 Giammarco, Higham, and McKean, *The Future is Social and Emotional.*

17 VRST, Quebec, February 25, 2021.

Canadians can no longer expect to have one career in their lifetime. Students and workers must be open to continuous learning to remain resilient through future disruptions and challenges.

To ease online learning's effect on mental health and SES development, PSIs and instructors can build interaction into course curriculum. Participants in Alberta and Manitoba described using tools like Zoom's "breakout rooms" and Google Docs to promote peer-to-peer learning and encourage the development of social and emotional competencies like open-mindedness and collaboration.[18] However, it remains to be seen whether there is enough evidence to show that these virtual tools can promote such skills. Other provinces, like British Columbia, offered hybrid learning options during the pandemic to maintain the social aspects of learning.

To encourage social relationships, we heard from participants that PSIs should continue to offer hybrid learning options in addition to online learning options. According to some research, effective hybrid learning courses prioritize in-class time for interpersonal activities that cannot be replicated virtually while still maintaining flexibility in course design and assessment.[19] Participants believed that both students and faculty respond positively to hybrid learning—it does not affect course completion rates; it allows students the flexibility to maintain human connection and explore new ways of applying course material outside of the classroom; and it gives instructors opportunities to engage with students outside of online forums.[20]

A Flexible, Lifelong Endeavour

The nature of work is changing, and so should the way we learn.

Disruptions in the world of work require people to learn new skills at every point in their career;[21] in other words, they have to develop a lifelong learning mentality that will better position them to seize new opportunities in the future.[22] Participants across British Columbia, Alberta, Manitoba, Ontario, and New Brunswick suggested that today's students and workers must be open to continuous learning to remain resilient through future disruptions and career challenges.

> I really think we need to be graduating graduates who are able to learn because learning's not finite anymore ... we've got to be creating lifelong learners. And employers have got to be creating lifelong learners.
>
> **RST participant**, Nova Scotia, November 2019

To remain employable, all Canadians—not just those entering the labour market for the first time—will require continuous training and learning.[23] Canadians can no longer expect to have a single career in their lifetime. Experts suggest that economic disruptors like artificial intelligence (AI) applications put 10.6 per cent of workers at high risk for automation-related

18 Reinholz and others, "A Pandemic Crash Course: Learning to Teach Equitably in Synchronous Online Classes."
19 Toub, "Hybrid Learning 2.0: The Great Experiment in Post-Secondary Education Enters Its Second Year."
20 Waldman and Smith, *Hybrid Learning in a Canadian College Environment*.
21 Munro, *Skills, Training and Lifelong Learning*.
22 Read more about emerging workforce and skills issues in the Future Skills Council report, *Canada – A Learning Nation*.
23 Future Skills Council, *Canada – A Learning Nation: A Skilled, Agile Workforce Ready to Shape the Future*.

job loss or transition.[24] To better understand the type and amount of employment at risk of automation, we developed the Automation Vulnerability Index (AVI), which will help policy-makers and education leaders better prepare students for technological change.[25]

To support the sectors at highest risk of automation, including manufacturing and hospitality,[26] opportunities to update skills must be available to those already in the labour market as well as newcomers who are adapting to Canadian workplaces. Interventions may be needed from organizations other than PSIs to help newcomers with upskilling, language learning, and credential recognition.

Flexible Course Options Will Help Sustain Dynamic Careers

Since the advent of the first distanced learning course in 1844—when a shorthand course was delivered using the English postal and rail systems[27]—educators have been thinking about how flexible learning options can help workers adapt to changing labour markets. Flexible learning could include anything from upskilling programs to micro-credentialling programs, which are defined as certifications "of assessed competencies that is additional, alternate, complementary to, or a component of a formal qualification."[28] While PSIs can go only so far in terms of changing the

way they deliver undergraduate education, more attention needs to be paid to the kinds of course offerings made at the undergraduate, graduate, and continuing education level.

VRST participants from Northern Ontario suggested that PSIs have "an opportunity to be much more flexible" in the ways that they design and deliver courses.[29] The participants shared that, while post-secondary learning will be imperative to fill skills gaps as the economy recovers from the pandemic, this learning "doesn't have to be a four-year degree or a master's program; it might be a very short intense upskilling programming."[30]

The conversation about non-traditional learning has become more urgent during the COVID-19 pandemic as fields like health care and tourism struggle with growing talent shortages. Provinces are taking action to help these industries recover—Ontario recently released its plan to invest $59.5 million into developing rapid training programs and short micro-credentialling courses to retrain displaced workers and to support students just entering the labour market.[31]
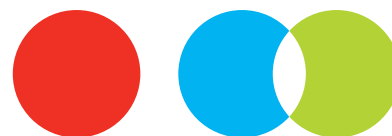
24 Frenette and Frank, *Automation and Job Transformation in Canada: Who's at Risk?*
25 Sonmez, *Preparing Canada's Economies for Automation.*
26 Ibid.
27 Tait, "Reflections on Student Support in Open and Distance Learning."
28 Colleges and Institutes Canada, "National Framework for Microcredentials."
29 VRST, Ontario, March 2, 2021.
30 Ibid.
31 Ontario, "Ontario Invests in New and Expanded Rapid Training Programs."

These flexible learning programs aim to foster an education system that is responsive to future labour market changes and disruptions. Private education platforms, such as Coursera and LinkedIn Learning, already offer alternative and complementary credentials to a university degree. These platforms are widely available and affordable, with subscriptions starting at $300 per year.[32] Some universities are also creating more flexible learning options, using platforms like edX to run short courses on varying topics. McGill University, for example, offers a "Social Learning for Social Impact" course while UBC and the University of Toronto offer courses ranging from "Designing and Developing an Online Course" to "Health Professional Teaching Skills."[33] More PSIs may need to provide short, flexible learning options beyond traditional degree programs to respond to future skills needs. These are likely to be offered in addition to traditional undergraduate degrees until there is greater employer buy-in.

For these short programs to succeed in the PSE landscape, they should be developed through extensive collaboration among PSIs, industry, and government. Industry in particular plays an important role. Employers must accept the training and see value in offering alternative credentials.

Universities and colleges are working very closely with industry and business to ask, "What are you going to need? What will your workforce need as we work in the post-COVID recovery?"

VRST participant, Ontario, March 2021

Co-developing curricula and programs that answer the needs of the workforce will help Canada's post-pandemic economic recovery while also building the foundation for PSIs, industries, and workers that are resilient to future challenges.

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32 LinkedIn Learning, "Select Learning Plan."
33 edX, "McGillX"; "UBCx"; "University of TorontoX."

Work-Integrated Learning Can Open Many Doors

Work-integrated learning is good for everyone—from students to entire industries.

Experiential learning helps students build skills and could reduce labour shortages in industries hard-hit by the pandemic, including tourism and other people-facing sectors.[34] Work-integrated learning (WIL) is proven to strengthen technical skills and the social and emotional skills specific to the workplace.[35] There is also strong evidence that experiential learning improves labour market outcomes for graduates: while 68.8 per cent of students who take part in experiential learning secure jobs after graduation, only 47.6 per cent of those who do not take part in experiential learning find meaningful employment after graduation.[36]

The COVID-19 pandemic severely impacted Canada's goal of ensuring that all post-secondary students have access to a WIL opportunity during their first diploma or degree.[37] More than one-third of students had their work placement cancelled or delayed because of the pandemic. The percentage of students who had their placements delayed jumps for those in graduate programs (45 per cent) and nears 50 per cent for those studying in health-related fields.[38,39] We do not yet know how these students will fare in the

workplace in the short term, or whether they will have the same immediate employment outcomes as their peers who completed work placements prior to the pandemic.

It is essential that PSIs expand the pool of experiential learning opportunities to support both those who had their placements cancelled during the pandemic and those who are looking to secure placements in the coming years. More opportunities can be created through increased collaboration with industry outside of major urban centres as well as with employers who are open to providing virtual experiential learning opportunities.

> **We have really developed some partnerships with more regional small and medium enterprises (SMEs). The students saw that going to the Gaspésie, Rivière-du-Loup and so on was safe compared with the greater Montréal area, which was scary. The big cities are scarier than the regions. So, it was a source of opportunities for businesses in the regions.**
>
> **VRST participant**, Quebec, February 2021

34 Statistics Canada, *COVID-19 in Canada: A Six-Month Update on Social and Economic Impacts.*

35 Martin and Rouleau, *An Exploration of Work, Learning, and Work-Integrated Learning in Canada.*

36 Ibid.

37 Bieler, *Work-Integrated Learning in the Post COVID-19 World.*

38 Wall, *COVID-19 Pandemic: Impacts on the Work Placement of Postsecondary Students in Canada.*

39 The Conference Board of Canada is currently exploring the impact of delayed placement on the health care field using nursing programs across Canada as an example.

Despite the pandemic's well-documented impact on experiential learning opportunities, participants in the VRST spoke about the need to extend these opportunities to all PSE students, regardless of program of study. Participants in Manitoba suggested that pre-employment experience should cover the entire duration of a PSE program, rather than just a specific placement period, to increase the benefit for both students and employers.

> **We're actually looking at how … you combine work-integrated learning all the way through the program, so they're actually benefiting the employer right from the beginning, and they're building that relationship right from the beginning, and they're building skills and talent and able to contribute to that employer very early on.**
>
> **VRST participant**, Manitoba, March 2021

Like Manitoba, New Brunswick is working to expand access to experiential learning through Future NB, a collaborative initiative among industry, government, not-for-profit, and education sectors. This program facilitates relationships between students and employers so they can "access rich learning opportunities and new ways to collaborate with one another, through experiential education."[40]

To ensure equity and consistent quality of these work placements, PSIs should attempt, when and where possible, to build strong relationships with potential employers and understand the employer's motivation for providing an experiential learning opportunity. The PSIs should assess whether the employer sees the placement as low-cost labour or as an opportunity to develop a future professional.[41] Employers with altruistic motivations or those who genuinely want to help students grow and find meaningful careers in the future are more likely to be strong mentors and influence students in their journey from education to the workforce.[42]

Prioritize Experiential Learning for Those Who Need It Most

In the RST and VRST, stakeholders in Saskatchewan, Alberta, and Nova Scotia raised concerns that experiential learning is "not an equal playing field." Unpaid internships, for example, hamper access to experiential learning for students from low-income families. One participant from Alberta worried that making experiential learning an expectation or requirement could widen pre-existing equity gaps for students unable to take on unpaid opportunities.

40 Future NB, "About."

41 Hoskyn and others, "GoodWIL Placements: How COVID–19 Shifts the Conversation about Unpaid Placements."

42 Martin and others, "Work-Integrated Learning Gone Full Circle: How Prior Work Placement Experiences Influenced Workplace Supervisors."

There are so many components to work-integrated learning and experiential learning that look like luxuries to a lot of our students.... I worry about the emphasis on these things at the university for students who are disadvantaged by many structures.

VRST participant, Alberta, February 2021

Although most PSIs provide a mix of paid and unpaid experiential learning opportunities, PSIs should focus on securing paid placements to mitigate financial barriers to participation. When it is not possible to provide paid opportunities, PSIs should prioritize students with low economic status for paid work placements alongside skill sets.

PSIs should also prioritize experiential learning opportunities for equity-deserving groups, including racialized students, students with disabilities, and women, many of whom face barriers to employment and have been disproportionately affected by the pandemic. An RST participant from Alberta suggested that PSIs should also focus on creating experiential learning opportunities for international students since many provincial programs limit participation to Canadian citizens. Together, PSIs, governments, and local employers should create measurable inclusion targets for filling experiential learning openings.

At the FSC and The Conference Board of Canada, we are investigating the role of experiential learning programs in order to better understand the impact of virtual learning on workplace transitions and how to create more innovative experiential learning programs moving forward. This includes research into specific sectors - such as nursing and construction - and work by many of our innovation project partners testing skills development approaches across Canada.

What Did We Learn?

After consultations with a wide variety of education and skills stakeholders, we learned that many PSIs' priorities—virtual learning, flexible learning, and work-integrated learning—are the same now as they were before the pandemic. But we also learned that the social and economic impacts of COVID-19 exposed accessibility gaps and hastened changes in the post-secondary landscape. While education and skills leaders spoke of regional differences in PSE, they all expressed a similar vision of PSIs as spaces that accommodate all learners.

Although we spoke to participants across a range of institutions and regions, we acknowledge that students' voices were missing from our tours. As PSIs move toward developing more flexible learning options, it will be essential to engage students to better understand their educational needs and aspirations, particularly about the quality and delivery of content from the learners' perspectives. Creating solutions to skills gaps now and in the future will require buy-in not only from PSIs themselves but also from students, industry, governments, and workers.
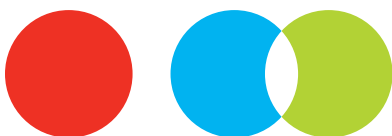
If we can create collaboration among sectors … that's what's going to produce these really innovative and creative solutions. Let's honour the past and what we've done well. But let's really capture those learning moments from the pandemic, to be able to make something better together.

VRST participant, New Brunswick, February 2021

Other central skills challenges, including equity and digital infrastructure, were mentioned in this report.

What's Next?

The Future Skills Centre is supporting more than 140 projects in skills development that are located across every Canadian province and territory. Many of these projects involve working closely with PSIs and other training providers to test various dimensions of the issues raised in the RST. These issues include how learning is delivered, how it is assessed and recognized, and how systems need to adapt and change to support an inclusive economic recovery. Many of these projects also involve working closely with employers and employer associations to do the very things recommended by RST participants: designing training programs and curricula that are demand-driven, inclusive, and applied. For example, in partnership with the Rogers Cybersecure Catalyst program, the FSC is supporting a rapid course for minority and female participants to join the growing cybersecurity field. The program is developed in close cooperation with employers in cybersecurity. The FSC is committed to bringing forward the learning from this and other pilots and partnerships and sharing the resulting insights about how learning and PSIs can better support learners. Transformational support will ensure that students acquire the right skills, in an effective way, that prepare them effectively for the labour markets of today and tomorrow.

For more in-depth discussion of these themes, read our other reports on the VRST and RST to be found at https://www.conferenceboard.ca/futureskillscentre/sounding-tours.

Appendix A

Methodology

In collaboration with the Future Skills Centre (FSC), The Conference Board of Canada talked with Canadians who are actively engaged in the country's skills and training community as well as individuals interested in learning more about skills development and the future of work.

The Regional Sounding Tour (RST) brought together Canadians who are actively involved or interested in education, employment, skills, and training. The RST was held in-person between October 2019 and October 2020.

The Virtual Regional Sounding Tour (VRST) focused on how the country has been impacted by COVID-19 and how the Future Skills Centre can help on the road to recovery. The VRST was held virtually between December 2020 and March 2021.

Who Attended?

Most participants who attended both the RST and VRST were employers and professionals working in government, post-secondary institutions, professional associations, and non-profit organizations across Canada. We spoke to 1,376 participants in 26 Sounding Tour "stops."

Data Analysis

In total, we analyzed 92 transcripts (52 from the RST, 40 from the VRST) to help us understand communities' needs and think of a regional approach to skills training that aligns with the future of work.

Data were organized by region and by whether they were obtained in-person or virtually. Team members created a code book to code transcripts consistently. We also looked at popular themes in grey literature (news clippings, journal articles) to help us identify the latest research in skills gaps, upskilling, equity, and shifts due to the pandemic. We coded only the conversations with participants, removing all staff commentary and remarks. NVivo 12 software was used to code all interviews.

To learn more about whom we spoke to and what we asked, please visit the Sounding Tour webpage.

Appendix B
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