

2022 FORESIGHT REPORT

Shaping the Future Workforce

This report explores:

Shaping the Future Workforce

Enabling learners to build future-fit careers.

**LABOUR MARKET
& VALUES SHIFT**



**HUMAN-TECH
SYNERGY**



**SUPPORTING WORK
READINESS**



Shaping the Future Workforce

Why do we use futures instead of future?

In foresight practice, we refer to the future in plural.

As we cannot predict the future, there is no definite image or vision of it. Thus, the future will always be an infinite range of possible outcomes rather than a single destination.

The *Virtual Learning Strategy (VLS)* is preparing Ontario postsecondary institutions for Hybrid Futures

The VLS is supporting ongoing and future virtual learning needs at all Ontario Indigenous Institutes, colleges, and universities.

The *VLS* ([link here](#)) is built on three key pillars:



Being the Future



Being a Lifelong Learner



Being a Global Leader

By applying strategic foresight approaches, the Ontario postsecondary sector can co-create hybrid futures by monitoring maturing trends and identifying future possibilities. This work aligns with the VLS pillar of *Being the Future*.

What is a *Foresight Report*?

Foresight reports are tools to support the navigation of uncertain and complex futures. Using strategic foresight (i.e., a research-driven, systematic exploration of possible futures), Foresight Reports help inform present-day decision-making by identifying patterns of change that may have significant lasting impacts for digital-by-design futures.

How do I *use* this Foresight Report?

This foresight report is a high-level overview of maturing trends within the postsecondary education sector. We recommend readers to use this report as a map for further exploration. Readers can click on the links provided to learn more about topics of interest. At the end of this report, readers will find a conversation guide to spark futures-facing conversations and explore gradients of possibility.

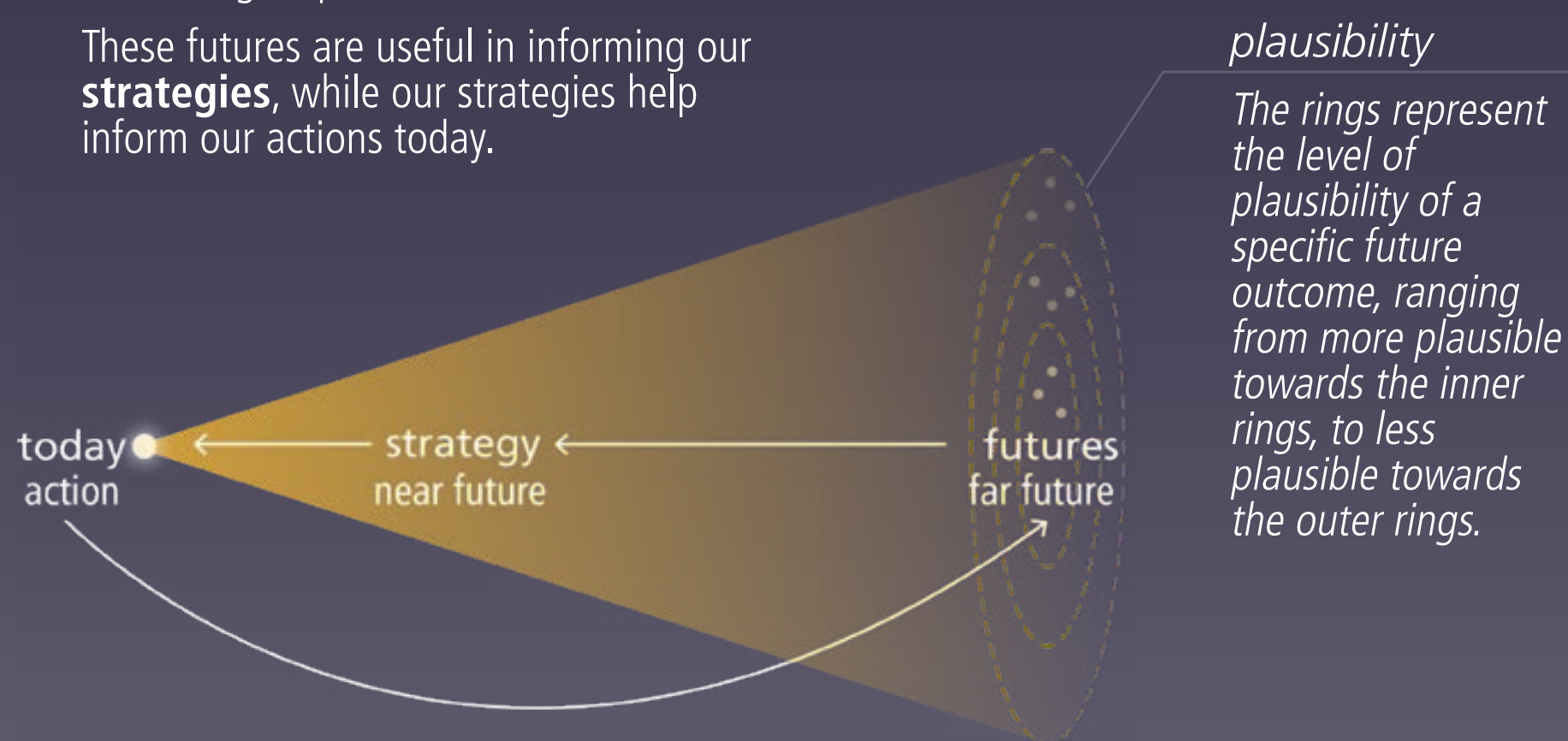
Why is Strategic Foresight *important* to Ontario postsecondary education?

The COVID-19 pandemic and the shift to emergency remote teaching amplified challenges across the Ontario postsecondary system. Strategic foresight supports institutions in navigating transformation by building awareness of some possible forces of change. Strategic foresight can help address immediate and short-term challenges, while articulating long-term visions for systems level evolution.

FUTURES INFORMING STRATEGIES OF TODAY

Emerging or maturing trends **today** allow us to imagine possible **futures**.

These futures are useful in informing our **strategies**, while our strategies help inform our actions today.



Adapted from [Joseph Voros, The Futures Cone](#)

REPORT OUTLINE



Introduction to Shaping the Future Workforce

Framework for needs of the future

3



The Labour Market & Values Shift

Adapting to labour market needs

Learner & workforce values

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Human-Tech Synergy

A tech-integrated workforce

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Supporting Work Readiness

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Conversation Guide

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FURTHER READING

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[What is Futures Literacy and Why Is It Important?](#)

Medium

2

[What is Foresight?](#)

Organization for Economic Co-operation & Development

Introduction to Shaping the Future Workforce

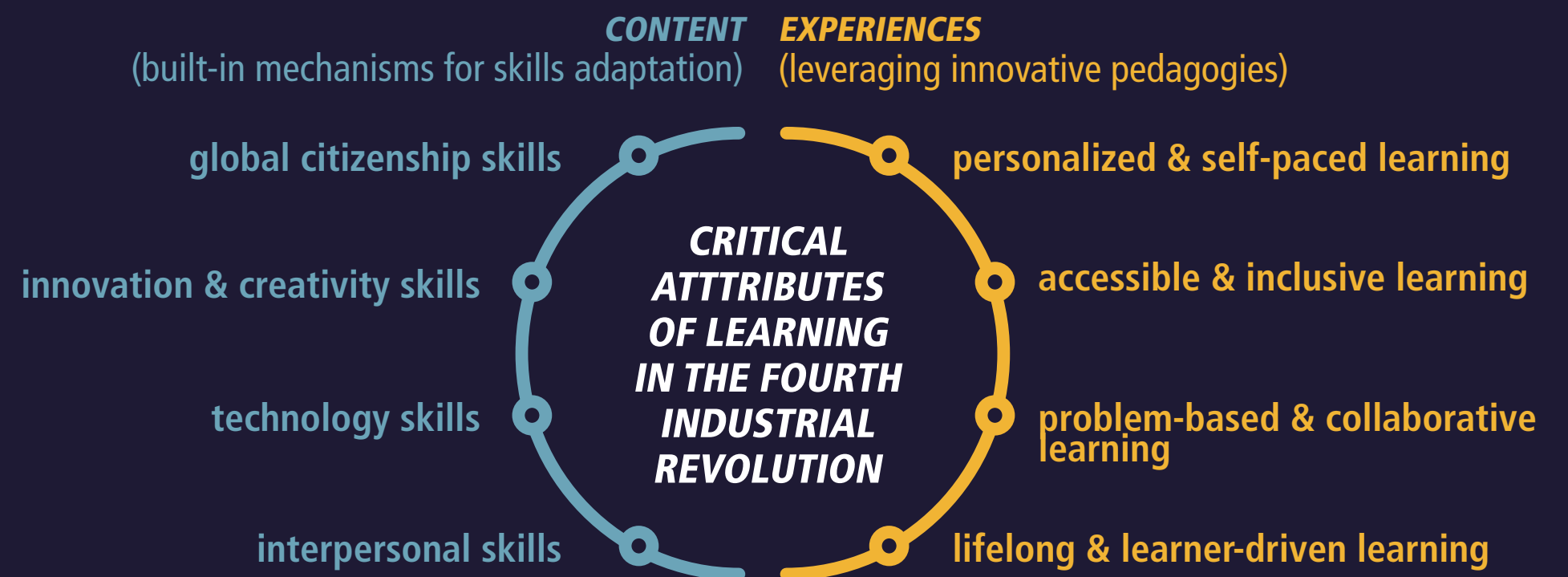
The fourth industrial revolution is currently underway, and it is transforming the economy and the jobs within it. Among the technologies that are shaping our evolving labour market are Artificial Intelligence (AI), the internet of things (IoT), and big data.

The future of the economy, work, and education are inseparable. As desirable skills across diverse roles and occupations continue to evolve, postsecondary education functions can be an essential support for current and future workforce.

As illustrated by the narrative visual below, in this report we highlight driving forces that underlie the workforce conditions, the skills that are valuable for the future, and what work readiness will mean for Ontarians.

FRAMEWORK FOR NEEDS OF THE FUTURE

In the context of job disruption, demand for new skills, and reflection of learners' intersecting identities, Ontario's postsecondary institutions have a critical role in preparing learners with the appropriate skills to help them thrive, grow, and adjust as needed in their personal life and career journeys. This framework introduces eight attributes of learning that have been identified as critical in the Fourth Industrial Revolution, including learning contents and experiences.



Adapted from [World Economic Forum](#).

Change drivers that influence the labour market, skills gap, reskilling and upskilling, and finding purpose.
more on page 4

LABOUR MARKET & VALUES SHIFT

Recognizing and understanding innately human skills and complementing human skills with technology.
more on page 5

HUMAN-TECH SYNERGY



SUPPORTING WORK READINESS

Postsecondary initiatives and programs to facilitate work-integrated lifelong learning, career agility, and satisfaction.
more on page 6

FURTHER READING

1 [Schools of the Future: Defining New Models of Education for the Fourth Industrial Revolution](#)
World Economic Forum

2 [Innovation in Post-Secondary Education](#)
Future Skills Centre

3 [Learning for the jobs of the future](#)
OECD

The Labour Market & Values Shift

The workforce and postsecondary education are intrinsically linked. On one end, labour market conditions influence learner needs and motivations. On the other end, evolving learner values and skills influence the labour market.

Major trends that were occurring prior to the global pandemic have been accelerated, and further implications have emerged: increased tech integration across sectors, labour inequities, and the importance of a growth mindset for career agility and adaptability.

Continuously engaging in education throughout one's career journey can help learners navigate labour market demands while enabling the pursuit of purpose and personal values.



"Making the shift from 'survive to thrive' depends on an organization becoming distinctly human at its core – a different way of being that approaches every question, every issue, and every decision from a human angle first."

– Deloitte Insights, 2020

CHANGE DRIVERS OF THE LABOUR MARKET

Highlighted below is a non-exhaustive and constantly evolving list of significant influences on the labour market. Ontario's postsecondary institutions can consider a variety of implications and possibilities for how learners may navigate the workforce and implementing solutions that are learner-centred, inclusive, and timely.

Defining change drivers

Change drivers are significant internal or external forces that push change forward and shape organisations, societies, and economies. [Link here](#) to learn more.

RECONCILIATION & INCLUSION

TECH-INTEGRATION

ONLINE PRESENCE

EVOLVING IDEOLOGIES

DEMOGRAPHIC CHANGES

SHIFTING GLOBAL INFLUENCES

URBANIZATION

CLIMATE EMERGENCY

LEARNER & WORKFORCE VALUES

Evolving economic labour market demands and changes in workplaces (e.g. shifts between remote and in-person work) have influenced the way we learn and work. Through self-reflection, many seek clarity and meaning during times of shifts. Flexibility, autonomy, engagement, and work-life balance are examples of personal values that many consider as important in finding work.

PURPOSE-FINDING

Personal, educational, and professional growth

During this time of reflection and flux, learners have the opportunity to find intersections of their competencies, passion, and contribution to the labour market and employer demands.

IKIGAI, 'A REASON FOR BEING'

This self-reflective journey of purpose finding is what the Japanese concept *Ikigai* represents: the feeling of balance that motivates a continuous pursuit of personal, educational, and professional growth.



Navigating the gig economy

While some enjoy the increasing independence and flexibility of contract and freelance work, many are calling for unified definitions, support, and regulation of such work. Protecting learners and the workforce also involves ensuring access to adequate tools, skills, and knowledge that support entrepreneurial needs and advocating for oneself as a gig worker.

ADAPTING TO LABOUR MARKET NEEDS

The adoption of new technologies leads to high demand for high-skilled jobs that require specialized training and extensive knowledge in a specific field. Conversely, the need for low to mid-skilled jobs is declining, leading to an increasing skills gap that raises barriers for entry level workers to secure in-demand, high-skilled work. These circumstances present an opportunity for postsecondary institutions, government, and industry to shape inclusive and scalable education systems that meaningfully support lifelong learners in their career and life journeys.

SKILLS GAP

Contributing factors to the skills gap: [Learn more here](#)

- Growing gig economy
- Decreasing cost of automation technology
- Inequitable access to learning & training opportunities
- Aging workforce
- Increasing demand for high-skilled & specialized labour

Postsecondary institutions as drivers of change

Postsecondary institutions can help respond to the job market demands by critically assessing what skills the learners are able to meet upon completing courses and activities. Labour market conditions change frequently, requiring continuous updates of educational materials, approaches, and programming.

RESKILLING & UPSKILLING

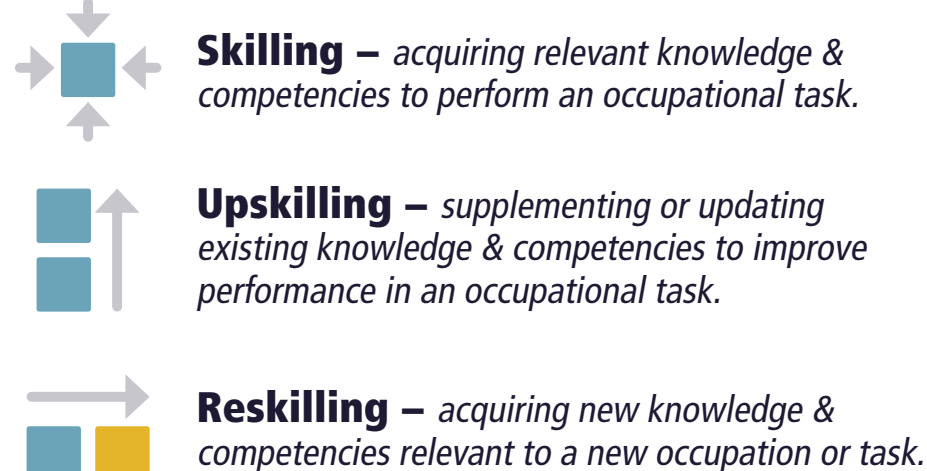
Effective and timely reskilling and upskilling can help close the skills gap while ensuring that human labour continues to be valued and augmented.

Collaboration between postsecondary institutions and various industry partners can facilitate reskilling and upskilling initiatives that support learners in maintaining career agility and satisfaction.

Supporting skills success

Postsecondary institutions and partner organizations can jointly work towards:

- A culture of continuous learning
- Identifying relevant skills gaps
- Creating time for learning
- Developing and/or offering relevant learning opportunities



FURTHER READING

1 [Workforce of the future - The competing forces shaping 2030](#)

PWC

2 [The Future of Ontario's Workers](#)

StrategyCorp

3 [Closing the Skills Gap](#)

World Economic Forum

4 [Yesterday's gone: Exploring possible futures of Canada's labour market in a post-COVID world](#)

Future Skills Centre & Brookfield Institute



CASE STUDY: FUTURE READY TALENT FRAMEWORK

The University of Waterloo's Future Ready Talent Framework (FRTF) is a research-backed tool to help lifelong learners, employers and educators understand key competencies that are needed to navigate the future of work and learning.

The FRTF consists of a total of 12 competencies grouped in 4 main themes: expand and transfer expertise, develop self, build relationships, and design and deliver solutions. These competencies are expected to be in demand across all industries in the emerging global

workforce.

The FRTF is designed to support all learners and at any stage of their learning journey. The FRTF is currently used in work-integrated learning programs at Waterloo to help students become future proof. The goal of the program is to support learners in developing skills to become future proof. Through the FRTF, Waterloo aims to support learners by helping them identify future-ready talents, set goals, and expand their competencies.

[Link to learn more.](#)



The Future Ready Talent Framework Wheel

Human-Tech Synergy

The COVID-19 global pandemic has accelerated pre-existing technological trends, including job automation and remote work. Technology has the capacity to create meaningful opportunities for the futures of work, but a transition must include adequate support for the workforce to be successful.

As we move into post-pandemic recovery, the skills most valuable to the labour market will continue to evolve, and postsecondary education will have a significant role in preparing the existing and future workforce.

This section explores the broader context of technology's role in the labour market, skills unique to humans, and how technological advances can augment human capabilities.



FLEMING COLLEGE

[Link here](#) to see Maureen Adamson, president of Fleming College, discuss the need to prepare students with soft skills.

"The future of work isn't about displacement of work by machines but rather has more to do with restructuring of the human skillset".
– Dr. Ritesh Malik

LEVERAGING INHERENTLY HUMAN SKILLS

The labour market is increasingly bridging the role of humans and technology, creating a need for a workforce that is proficient in foundational and soft skills. Developing these skills often requires both theoretical and practical experiences, and they are often transferable and interdisciplinary across jobs. The matrix below is a compilation of desired skills, positioned among four main categories.

SKILL SET & CAPABILITIES

- social & emotional intelligence
- creativity & entrepreneurship
- critical & analytical thinking
- communication & teamwork



HUMAN-TECH PARTNERSHIPS

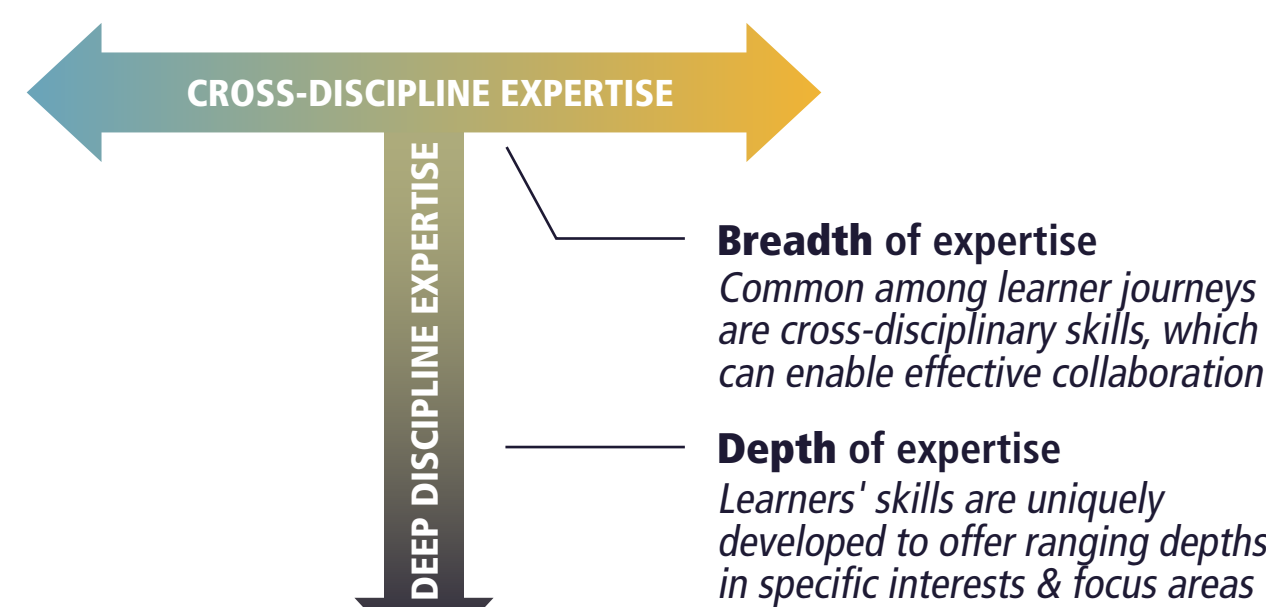
A future workforce impacted by technological innovation has been inevitable; technology has always reshaped how humans live and work. Engaging with technology can increase our efficiency, open up possibilities for growth, and help us transcend our limitations.

Supporting the current and future workforce involves a lifelong learning mindset to align with evolving desirable proficiencies, and leveraging both human and technological capabilities. The role of education will be to strengthen the capabilities of learners beyond digital literacy, towards meaningful engagement with human-machine partnerships.

[Learn more about 'The Next Era of Human-Machine Partnerships.'](#)

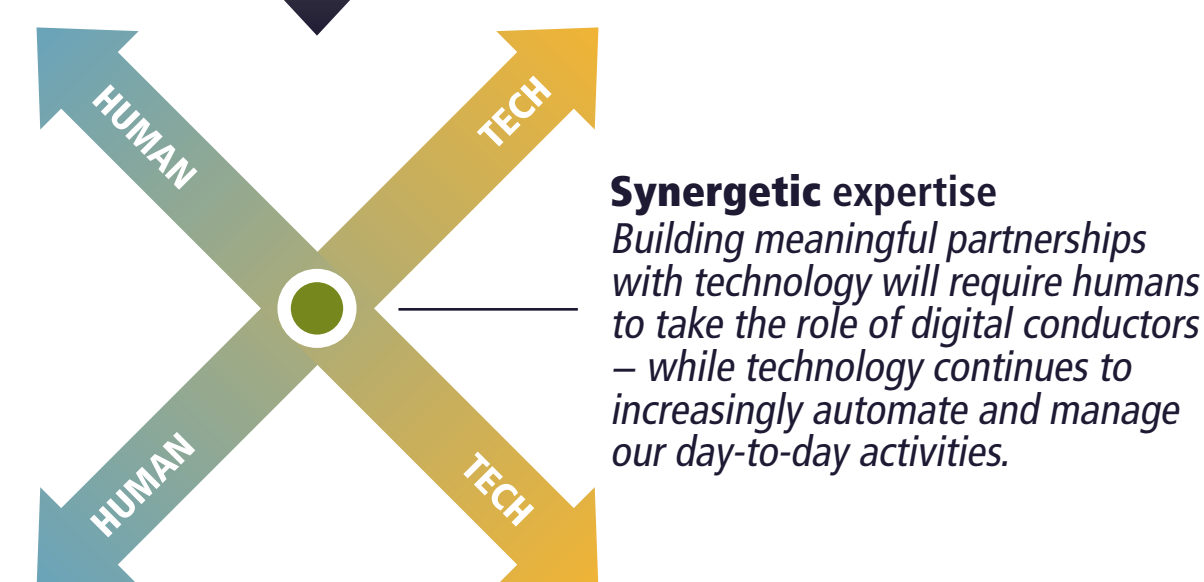
THE T-SHAPED SKILLS PROFILE

Each learner has the potential to offer a unique combination of competencies in the workforce. Representing this concept is the T-Shaped Skills Profile, a highly valued workforce profile which illustrates the balance between broad cross-disciplinary skills and depth of expertise.



THE X-SHAPED SKILLS PROFILE

The X-shaped learner is adaptive, soft (human)-skills proficient, and digitally literate. Considering the role of technology in the future of work, we can think of trans-disciplinary expertise as integrating human and technological capabilities.



A TECH-INTEGRATED WORKFORCE

The workforce is evolving in response to technology's shifting role in the labour market. While it can create space for a new set of career priorities and opportunities, it also highlights the critical need for supporting individuals through this transition.

EVOLVING WITH AUTOMATION AND ARTIFICIAL INTELLIGENCE (AI)

Creating new opportunities

Technology has the potential to open opportunities for humans, including new job creation. Technological innovation has historically increased labour efficiency, allowing space for a shift in our life priorities in pursuit of purpose and meaning.

This pursuit may prompt new types of interests, jobs, and career paths that highly value and leverage distinctly human capabilities.

Reskilling, upskilling, and postsecondary education can play a critical role in supporting this pursuit and transition.

Supporting vulnerable populations

Automation and AI disproportionately impact marginalized groups. Indigenous and Black individuals in Canada face higher risks in employment security than other populations. Women, youth, and those with lower levels of education also face higher risks. With 45% of Ontario jobs projected to transition towards automation, focused support for at-risk populations is essential during this transition and beyond to eliminate inequity.

Ethical considerations & automation

Organizations turning to automation to improve efficiency are facing ethical dilemmas on two fronts. First, automation contributes to widening skills and incomes gaps within the workforce. Furthermore, replacing humans with technologies can also put the users of these technologies at risk. In any case, decision makers in both private and public institutions must carefully reflect on the direct and indirect repercussions of their automation initiatives. For an overview resource on tech ethics and equity considerations, please see our previous [Foresight Report: Hybrid Futures](#).



EDUCATOR PROFILE:
VALÉRIE POMINVILLE
UNIVERSITÉ DE HEARST

The Ontario Extend program is an opportunity for the postsecondary education workforce to upskill for human-tech partnerships in teaching. Educators and staff can engage in an openly-licensed, self-paced, customizable, bilingual micro-credential that explores a range of emerging technologies and pedagogical practices for effective online and technology-enabled teaching and learning.

Valérie Pominville is one of the empowered educators who has upskilled through the Ontario Extend program.

"As teachers, we have to learn about new technologies and we have to look at what is being done in the workplace... we need to prepare our students for their future careers."

Valérie shares that learning in online and hybrid modalities is not just about a different format; it requires a different skillset, such as note-taking skills and self-managing. She has collaborated with Collège Boréal, and now with Université de Hearst, applying her learning from the Ontario Extend program to curate and develop resources that support learners in their online and hybrid experiences.

FURTHER READING

1 [Thinking Through the Ethics of New Tech... Before There's a Problem](#)
Harvard Business Review

2 [Future of skills](#)
Nesta

3 [Cultivating a Disciplined, Creative Mind and Humane Instincts](#)
EDUCAUSE

4 [The Next Wave: Automation and Canada's Labour Market](#)
Future Skills Centre

5 [Frameworks](#)
Heather McGowan

Supporting Work Readiness

Each career path is influenced by an evolving set of internal and external factors – some may seek career advancement or change once or more throughout life. At the same time, the labour market environment continually evolves based on social, technological, economic, and political factors.

As a result of these ever-changing circumstances, the future demands a system of postsecondary education that is as dynamic and adaptable as the technologies around which our world now revolves. Work readiness integrates postsecondary learning opportunities with wraparound learner supports that can enable learners to become career-agile and future-ready.

"We are entering a world, where the only legitimate borders for work are skill boundaries".
– Gyan Nagpal



Experiential & Work-Integrated Learning in Ontario

Experiential Learning (EL) and Work-Integrated Learning (WIL) will be an integral part of the strategies required to meet 10 metrics outlined by Ontario's new performance-based funding model, which will take effect in 2022.

WIL and EL will provide students with the skills required to integrate into the workforce and develop job-ready skills. [Link to learn more.](#)

ENABLING & MAINTAINING CAREER AGILITY

The model below is a holistic and iterative interpretation of the career journey. It suggests a perspective that is inquiry-based and lifelong, including elements of exploration, adaptability, growth mindset, and support systems. This model highlights critical factors for postsecondary learner supports to consider and implement into the learner experience.

MODEL FOR AN AGILE CAREER JOURNEY

pursuits & interests
e.g. co-curricular learning, hobbies

wraparound learner supports
e.g. career counselling, mentorship, personal support network

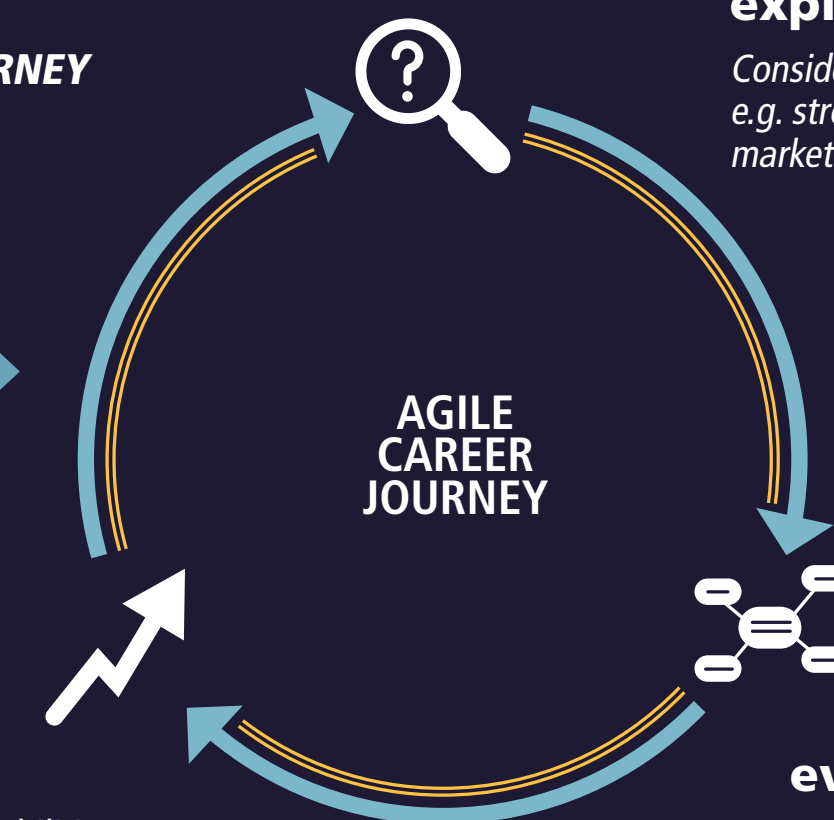
develop
Optimize capabilities: skill, reskill, upskill

explore

Consider internal & external factors: e.g. strengths, interests, values, market needs, learning opportunities

evaluate

Test career options: e.g. formal & informal learning, experiential learning



WRAPAROUND LEARNER SUPPORTS

As postsecondary institutions bridge learner needs and the labour market, it is essential that learners have access to wraparound supports that help them achieve their goals in ways that accommodate [intersectional learner identities and circumstances](#).

Learner supports can include:

- Curricula that prioritize vocational training that are 'just-in-time' for labour market demands
- Increased ways to enable flexible self-directed learning (e.g. micro-credentials)
- Practicum opportunities (e.g. apprenticeships)
- Mental health support through in-person and virtual options
- Hybrid career counselling and job placement services that evaluate current skills and identifies gaps to best support learner career trajectory

To learn more about wraparound learner supports for hybrid campus communities, please visit our [Hybrid Futures](#) Foresight Report.

EXPERIENTIAL & WORK-INTEGRATED LEARNING

Practical learning opportunities

Experiential Learning (EL) provides practical experience to learners in order to support theoretical course content. The objective of EL is to expose learners to specific disciplines, providing the freedom to explore and apply course concepts. Work-Integrated Learning (WIL) is a sub-category of EL, which is more focused on learner opportunities for workplace experience.

WORK-INTEGRATED LEARNING (WIL)

Bridges academic success and workforce development.

EXPERIENTIAL LEARNING (EL)

Practical knowledge embedded in an academic program.
i.e., interactive simulation, teaching lab, project-based course work, capstone project, on-campus work, sponsored research project

Structured work experience: Part of an academic program to familiarize learners with the workplace.
i.e., co-op, internship, placement, practicum, field experience, field work, 'sprinterships'

Systemic training: Majority of the learning happens at the workplace.
i.e., apprenticeships

Institutional partnerships: Offered by postsecondary institutions to accomplish community or industry goals.
i.e., applied research projects, service learning

Incubators & Accelerators: Promote entrepreneurship and have expanded over the years to include social initiatives.

Bootcamps & Hackathons: Popular for computer programmers and app designers to showcase their skills.

CO-CURRICULAR LEARNING

On-campus Clubs
Athletics & Recreation
Volunteer Experiences
Leadership Opportunities

AI-enhanced career counselling

As a way to augment wraparound support in career counselling, platforms powered by AI, such as [FutureFit AI](#) can be used to identify existing skills, reveal gaps, and provide personalized recommendations informed by labour market demands.



The VLS is investing over \$2.5 million in 31 projects that create and enhance content, capacity, fluency, and delivery for experiential learning.

[Learn more here](#)



CASE STUDY:

BEST PATHWAY TO POSSIBILITY PROGRAM

Iohahi:io Awkesasne Education and Training Institute is one of the nine Indigenous Institutes in Ontario recognized under the Indigenous Institutes Act, 2017. They provide education and training for learners at all stages of their learning journey. All programs, courses, and student opportunities offered by the institute are rooted in Haudenosaunee values, traditions, and culture. Iohahi:io offers full and part time postsecondary pathways, Mohawk language and history electives, welding and carpentry programs, high school credit, diploma programs, and more.

Their Building Essential Skills Training (BEST) Pathway to Possibility program, in partnership with Employment Ontario, gives learners the opportunity to learn or practice skills and experiences needed to enter and succeed in the job market; these include digital literacy and computer skills, communication and comprehension skills, and occupational training.

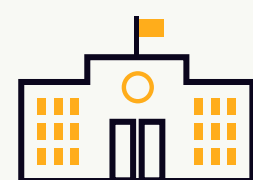
[Link here](#) for more information.

WIL benefits for learners, institutions, and industry



LEARNERS

- Gain practical experience & enhance skills
- Apply theoretical learning in a practical environment
- Build & expand network
- Explore career opportunities
- Transition into the workforce
- Build entrepreneurial skills



POSTSECONDARY INSTITUTIONS

- Increase community engagement
- Strengthen industry & government relationships/partnerships
- Enhance student experience & satisfaction
- Boost student recruitment
- Align with government priorities & mandate



INDUSTRY

- Create recruitment opportunities
- Reduce onboarding & training costs
- Bring new ideas for innovation & project development
- Enhance business talent pipeline
- Practice leadership & communication
- Build entrepreneurial skills

FURTHER READING

1 [Development and validation of a future ready talent network](#)
University of Waterloo

2 [Work-Integrated Learning in Ontario's Postsecondary Sector](#)
HEQCO

3 [A Practical Guide for Work-Integrated Learning](#)
HEQCO

4 [Building Future Skills](#)
Bow Valley College

CONVERSATION GUIDE



We invite you to select one or more trends from this report and use the questions provided to spark conversations across your institution.

Remember, this report is simply the beginning.

Please use the additional links and reading resources provided to help guide and support your futures-focused journey.

Reach Out to Us!
For additional guidance, questions, or to share your work, please contact research@ecampusontario.ca.

QUESTIONS TO FACILITATE FUTURES THINKING

WHAT

What new opportunities and challenges could arise from this trend?
What are the ethical implications of this trend?
What resources are needed to implement this trend (e.g., human, financial)?

WHY

Why is shaping the future workforce important to our community (including learners)?
Why is this trend important to supporting the future workforce?

WHO

Who needs to be involved in developing supports for the future workforce?
Who will be impacted (positively and/or negatively) by this trend?

HOW

How do we enhance capacity to facilitate the implementation of this trend?
How does this trend impact our current practices?
How can we build this trend to be sustainable?

WHERE & WHEN

Where do we go from here (i.e., what are next steps)?
When can we take action?
When can we explore this trend further?

References and Resources

Introduction

eCampusOntario. Virtual Learning Strategy (VLS). <https://vls.ecampusontario.ca/>

Larsen, N., Kaeseler Mortensen, J., Miller, R. (2020). What is 'Futures Literacy' and Why Is It Important? Medium. <https://medium.com/copenhagen-institute-for-futures-studies/what-is-futures-literacy-and-why-is-it-important-a27f24b983d8>

Ogilvy J. (2011). Facing the Fold. Triarchy Press.

Organization for Economic Cooperation and Development (OECD, 2021). What is Foresight? OECD: Strategic Foresight. <https://www.oecd.org/strategic-foresight/whatisforesight/>

Voros, J. (2017). The Futures Cone, use and history. The Voroscope. <https://thevoroscope.com/2017/02/24/the-futures-cone-use-and-history/>

Introduction to Shaping the Future Workforce

Davidson, M., & Ruparell, S. (2020). The Future of Ontario's Workers. Strategy Corp. <https://strategycorp.com/wp-content/uploads/2020/06/Colleges-Ontario-The-Future-of-Ontarios-Workers-White-Paper-June-2020.pdf>

Elhoussein, G., Leopold, T. A. & Zahidi, S. (2019). Schools of the future. World Economic Forum. <https://www.weforum.org/reports/schools-of-the-future-defining-new-models-of-education-for-the-fourth-industrial-revolution>

OECD. (n.d.). Learning for the jobs of the future. <https://www.oecd.org/skills/learning-jobs-future.pdf>

Schwab, K. (2016). The Fourth Industrial Revolution: what it means, how to respond. World Economic Forum. <https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/>

Young, S. J., Deller, F. M. & McCallum, K. E. (2021). Innovation in Post-Secondary Education. Future Skills Centre. <https://fsc-ccf.ca/research/innovation-in-post-secondary-education/>

The Labour Market & Values-Shift

Alini, E. (2021). There are plenty of jobs out there. Why aren't Canadians filling them? Global News. <https://globalnews.ca/news/8158090/canada-job-shortage-election/>

Auger, J., Irwin, E., Desetti, B., Bender H. & Crane, A. (2020). The Future of Lifelong Learning | Designing the Lifelong Learning System of the Future. Desire2Learn. <https://www.d2l.com/resources/assets/the-future-of-lifelong-learning/?zoominfo=false>

Charlebois, B. (2021). The Aftermath: The Impact of COVID-19 on the Canadian Job Market. United Nations Association in Canada Toronto Region Branch. <https://www.unacto.com/single-post/the-aftermath-the-impact-of-covid-19-on-the-canadian-job-market>

Davidson, M., & Ruparell, S. (2020). The Future of Ontario's Workers. Strategy Corp. <https://strategycorp.com/wp-content/uploads/2020/06/Colleges-Ontario-The-Future-of-Ontarios-Workers-White-Paper-June-2020.pdf>

Desire2Learn. (n.d.). Upskill and reskill your workforce with future-ready online learning. <https://www.d2l.com/corporate/solutions/upskilling-and-reskilling/>

Douglas, E. (2020). 52% of Ontario employees are ready to quit – here's how to stop them. Human Resources Director. <https://www.hcamag.com/ca/specialization/employee-engagement/52-of-ontario-employees-are-ready-to-quit-heres-how-to-stop-them/237447>

Fulcrum Search Science Inc. (2016). What does IKIGAI have to do with my Job Satisfaction and Fulfillment? <https://fulcrumsearchscience.com/employee-engagement/ikigai-and-job-satisfaction-and-fulfillment/>

Heaven, P. (2021). Posthaste: 'Quitting time!' A shocking number of Canadians are ready to quit if ordered back to the office, poll finds. Financial Post. <https://financialpost.com/executive/summary/posthaste-almost-half-of-canadians-who-prefer-working-from-home-would-look-for-another-job-if-forced-back-to-the-office-poll-finds>

Karbhari, V. (2021). Higher ed's role and opportunity in coskilling, upskilling, and reskilling. eCampus News. <https://www.ecampusnews.com/2021/04/23/higher-eds-role-and-opportunity-in-coskilling-upskilling-and-reskilling/>

Kelly, J. (2021). How To Find Your Own Personal 'Ikigai' To Get The Job You Love And Live Your Best Life. Forbes. <https://www.forbes.com/sites/jackkelly/2021/01/27/how-to-find-your-own-personal-ikigai-to-get-the-job-you-love-and-live-your-best-life/?sh=69bd250c4f60>

Klowden, K., & Lim, Q. (2021). Future of Work. Insights for 2021 and Beyond. Milken Institute. <https://milkeninstitute.org/sites/default/files/2021-04/Mil%20Future%20of%20Work%20Report%20-%20FINAL.pdf>

Lapointe, S. & Turner, J. (2020). Can universities bridge the graduate skills gap? <https://policyoptions.irpp.org/magazines/january-2020/can-universities-bridge-the-graduate-skills-gap/>

Levesque, E. M. (2019). Understanding the skills gap—and what employers can do about it. Brookings. <https://www.brookings.edu/research/understanding-the-skills-gap-and-what-employers-can-do-about-it/>

Lund, S., Madgavkar, A., Manyika, J., Smit, S., Ellingrud, K. & Robinson, O. (2021). <https://www.mckinsey.com/featured-insights/future-of-work/the-future-of-work-after-covid-19>

Ministry of Labour, Training and Skills Development. (2021). Ontario Creating a Better Future for Workers. <https://news.ontario.ca/en/release/1001033/ontario-creating-a-better-future-for-workers>

Mitsuhashi, Y. (2017). Ikigai: A Japanese concept to improve work and life. BBC. <https://www.bbc.com/worklife/article/20170807-ikigai-a-japanese-concept-to-improve-work-and-life>

Myklebust, J. P., & Smidt, H. (2021). What is the role of universities in global upskilling? University World News. <https://www.universityworldnews.com/post.php?story=2021012911049887>

Parikh, K. (2021). Key Trends Shaping The Workforce Of The Future. Forbes. <https://www.forbes.com/sites/forbestechcouncil/2021/02/11/key-trends-shaping-the-workforce-of-the-future/?sh=1c58b7087888>

Pittis, D. (2021). 'Profound effect' of COVID-19 is transforming Canada's labour market. CBC News. <https://www.cbc.ca/news/business/jobs-bank-canada-election-column-don-pittis-1.6169373>

PwC. (2020). Workforce of the future. <https://www.pwc.com/gx/en/services/people-organisation/workforce-of-the-future/workforce-of-the-future-the-competing-forces-shaping-2030-pwc.pdf>

Russek, H., Elias, D. & Thornton, J. (2021). Yesterday's Gone: Exploring possible futures of Canada's labour market in a post-COVID world. Brookfield Institute. https://brookfieldinstitute.ca/wp-content/uploads/Yesterdays-Gone_Final.pdf

Schroeder, R. (2020). Changing Market for Postsecondary Education. Inside Higher Ed. <https://www.insidehighered.com/digital-learning/blogs/online-trending-now/changing-market-postsecondary-education>

Schwartz, J., Hatfield, S., Scoble-Williams, N., & Volini, E. (2021). Workforce Strategies for Post-COVID Recovery. <https://www2.deloitte.com/global/en/pages/about-deloitte/articles/covid-19/covid-19-workforce-strategies-for-post-covid-recovery.html>

Stucki, M. (2021). Understanding the Larger Picture and Path-dependencies: Megatrends, Trends, and Change Drivers. Futures Platform. <https://www.futuresplatform.com/blog/megatrends-trends-and-change-drivers-the-larger-picture-and-path-dependencies>

Sutherland, M. (2021). Why employees hold the trump cards in post-pandemic workplace. CBC News. <https://www.cbc.ca/news/canada/new-brunswick/employees-quit-jobs-pandemic-trend-1.6098888>

Thompson, D. (2021). The Great Resignation Is Accelerating. The Atlantic. <https://www.theatlantic.com/ideas/archive/2021/10/great-resignation-accelerating/620382/>

University of Waterloo. (2019). Are you ready to manage the workforce of the future? https://uwaterloo.ca/hire/sites/ca.hire/files/uploads/files/university_of_waterloo_2019_survey_and_future_workforce_management_guide_-_are_you_ready_to_manage_the_workforce_of_the_future.pdf

University of Waterloo. (n.d.). Future Ready Talent Framework. <https://uwaterloo.ca/future-ready-talent-framework/>

White, M. (2021). Is it a sluggish labor market — or workers positioning themselves for better opportunities? NBC News. <https://www.nbcnews.com/business/economy/post-covid-labor-market-might-look-very-different-rebounds-n1272536>

Williams, C. (2021). A bright future for the world of work. The Economist. <https://www.economist.com/special-report/2021/04/08/a-bright-future-for-the-world-of-work>

World Economic Forum. (2017). Closing the Skills Gap. Business Commitment Framework. https://www3.weforum.org/docs/WEF_EGW_Closing_Skills_Gap_Initiative_Commitment_Framework_2017.pdf

Zahidi, S., Ratcheva, V., Hingel, G. & Brown, S. (2020). Future of Jobs. World Economic Forum. https://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf

Human-Tech Synergy

Ammanath, B. (2021). Thinking Through the Ethics of New Tech...Before There's a Problem. Harvard Business Review. <https://hbr.org/2021/11/thinking-through-the-ethics-of-new-tech-before-theres-a-problem?ab=hero-subleft-3>

Bharadwaj, A. & Dvorkin, M. (2019). The Rise of Automation: How Robots May Impact the U.S. Labor Market. Federal Reserve Bank of St. Louis. <https://www.stlouisfed.org/publications/regional-economist/second-quarter-2019/rise-automation-robots>

Blit, J., St. Amand, S. & Wajda, J. (2018). Automation and the Future of Work: Scenarios and Policy. Centre for International Governance Innovation. <https://www.cigionline.org/sites/default/files/documents/Paper%20no.174lowres.pdf>

Brower, T. (2021). The Future of Work Will Demand These 8 New Skills. Forbes. <https://www.forbes.com/sites/tracybrower/2021/02/14/the-future-of-work-will-demand-these-8-new-skills/?sh=2ac657b122e6>

Corporate Finance Institute. (n.d.). What are T-Shaped Skills? <https://corporatefinanceinstitute.com/resources/careers/soft-skills/t-shaped-skills/>

Crawford Urban, M. & Johal, S. (2020). Understanding the Future of Skills. Trends and Global Policy Responses. Public Policy Forum. <https://ppforum.ca/wp-content/uploads/2020/01/UnderstandingTheFutureOfSkills-PPF-JAN2020-EN.pdf>

Davidson, M., & Ruparell, S. (2020). The Future of Ontario's Workers. Strategy Corp. <https://strategycorp.com/wp-content/uploads/2020/06/Colleges-Ontario-The-Future-of-Ontarios-Workers-White-Paper-June-2020.pdf>

DC Velocity. (2021). Continuing education initiatives address robotics, sustainability, and more. <https://www.dcvelocity.com/articles/52929-continuing-education-initiatives-address-robotics-sustainability-and-more>

Doig, C. (2019). The X-Shaped Learner. Think Beyond. <https://www.thinkbeyond.co.nz/blog/x-shaped-learner>

Dondi, M., Klier, J., Panier, F. & Schubert, J. (2021). Defining the skills citizens will need in the future world of work. McKinsey & Company. <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/defining-the-skills-citizens-will-need-in-the-future-world-of-work>

Education. (2019). Interdisciplinarity & Soft Skills. <http://education.ca/2019/04/soft-skills/>

Elhoussein, G., Leopold, T. A. & Zahidi, S. (2019). Schools of the future. World Economic Forum. <https://www.weforum.org/reports/schools-of-the-future-defining-new-models-of-education-for-the-fourth-industrial-revolution>

Frank, M., Autor, D., Bessen, J. E., Brynjolfsson, E., Cebrian, M., Deming, D. J., Feldman, M., Groh, M., Lobo, J., Moro, E., Wang, D., Youn, H. & Rahwan, I. (2019). Toward understanding the impact of artificial intelligence on labor. Proceedings of the National Academy of Sciences of the United States of America, 116 (14) 6531-6539. <https://doi.org/10.1073/pnas.1900949116>

Frenette, M. & Morissette, R. (2021). Job security in the age of artificial intelligence and potential pandemics. Statistics Canada. <https://doi.org/10.25318/36280001202100600004-eng>

FutureFit AI. (2021). Empowering Organizations to Build a FutureFit Workforce. <https://www.futurefit.ai/>

Future Learn. (2020). 7 skills employers of the future will be looking for. <https://www.futurelearn.com/info/blog/careers/7-skills-employers-of-the-future-will-be-looking-for>

Gaviola, A. (2020). The future of work: How the pandemic's 'awakening' will shape Canada's labour force. BNN Bloomberg. <https://www.bnnbloomberg.ca/the-future-of-work-how-the-pandemic-s-awakening-will-shape-canada-s-labour-force-1.1538207>

Gumbel, P. (2018). How will automation affect jobs, skills, and wages? McKinsey Global Institute. <https://www.mckinsey.com/featured-insights/future-of-work/how-will-automation-affect-jobs-skills-and-wages#>

Hammer, M., Harris, M., Ramnane, K. & Blackwell, E. (2021). Ops 4.0—The Human Factor: A class size of 1. McKinsey & Company. <https://www.mckinsey.com/business-functions/operations/our-insights/operations-blog/ops-4-0-the-human-factor-a-class-size-of-1?cid=other-soc-lkn-mop-mck-oth-2107--&sid=5240341625&linkId=126870643>

Heath, N. (2016). AI will destroy entry-level jobs - but lead to a basic income for all. Tech Republic. <https://www.techrepublic.com/article/ai-will-destroy-entry-level-jobs-but-lead-to-a-basic-income-for-all/>

Hirsch, A., J., Okine-Ahovi, G. & Côté, A. (2020). How to Mobilize Higher Education and Workforce Development for the Rapid Re-Employment of Canadians. Public Policy Forum. <https://ppforum.ca/publications/how-to-mobilize-higher-education-and-workforce-development/>

HR Vision. (n.d.) 10 Job Skills You'll Need in 2020 and Beyond. <https://www.hrvisionevent.com/content-hub/10-job-skills-youll-need-in-2020-and-beyond/>

Iberdrola. (n.d.). Reskilling and upskilling: work training in the digital transformation era. <https://www.iberdrola.com/talent/reskilling-upskilling>

Institute for the Future. (2018). The Next Era of Human Machine Partnerships. https://www.iff.org/fileadmin/user_upload/downloads/IFTFforDellTechnologies_Human-Machine_070717_readerhigh-res.pdf

Shaping the Future Workforce

References and Resources

Human-Tech Synergy

- Lee, T. (2016). Automation is making human labor more valuable than ever. Vox. <https://www.vox.com/a/new-economy-future/manual-labor-luxury-good>
- Maclure, J., Rocheleau-Houle, D. (2021). Will artificial intelligence lead to more unfairness? Policy Options. <https://policyoptions.irpp.org/magazines/septembre-2021/will-artificial-intelligence-lead-to-more-unfairness/>
- Makala, B., Schmitt, M. & Caballero, A. (2021). How Artificial Intelligence Can Help Advance Post-Secondary Learning in Emerging Markets. https://www.ifc.org/wps/wcm/connect/ab1ede3d-3694-4260-b209-d12e4fab13de/EMCompass_Note_97-Jan-21-web.pdf?MOD=AJPERES&CID=nrdwfyL
- Manyika, J., Lund, S., Chui, M., Bughin, J., Woetzel, J., Batra, P., Ko, R. & Sanghvi, S. (2017). Jobs lost, jobs gained: What the future of work will mean for jobs, skills, and wages. McKinsey Global Institute. <https://www.mckinsey.com/featured-insights/future-of-work/jobs-lost-jobs-gained-what-the-future-of-work-will-mean-for-jobs-skills-and-wages>
- Mayor, T. (2019). Ethics and automation: What to do when workers are displaced. MIT Management Sloan School. <https://mitsloan.mit.edu/ideas-made-to-matter/ethics-and-automation-what-to-do-when-workers-are-displacedhealth/how-universities-are-helping-students-with-invisible-disabilities/>
- McGowan, H. (n.d.). Frameworks. <https://www.heathermcgowan.com/projects>
- Michael Page. (2019). Emotional Intelligence - the new skills gap. <https://www.michaelpage.co.uk/news/media-releases/emotional-intelligence-%E2%80%93-new-skills-gap>
- OECD. (2020). Preparing for the Future of Work in Canada. <https://www.oecd-ilibrary.org/sites/b0d851b2-en/index.html?itemId=/content/component/b0d851b2-en>
- Pleadwell, K. (2021). Staying Informed During the Pandemic. Abilities to Work. <https://www.abilitystowork.ca/blog/labour-market-trends-in-canada>
- Quillen, C. & Siemens, G. (2020). Cultivating a Disciplined, Creative Mind and Humane Instincts. Educause Review. <https://er.educause.edu/articles/2020/10/cultivating-a-disciplined-creative-mind-and-humane-instincts>
- Sleeman, C. (n.d.). The Future of UK skills: employment in 2030. Nesta. <https://data-viz.nesta.org.uk/future-skills/index.html>
- Stanford, J. (2020). Work After COVID-19. Public Policy Forum. <https://ppforum.ca/publications/work-after-covid-19/>
- Sylvain L. & Liu, Z. (2021). Robots or Workers? A Macro Analysis of Automation and Labor Markets. Federal Reserve Bank of San Francisco Working Paper 2019-17. <https://doi.org/10.24148/wp2019-17>
- Varga, C. (2020). How the pandemic is shaping the demand for skills. The Globe and Mail. <https://www.theglobeandmail.com/featured-reports/article-how-the-pandemic-is-shaping-the-demand-for-skills/>
- Whiting, K. (2020). These are the top 10 job skills of tomorrow – and how long it takes to learn them. World Economic Forum. <https://www.weforum.org/agenda/2020/10/top-10-work-skills-of-tomorrow-how-long-it-takes-to-learn-them/>
- Wilson, J. (2020). Key demographic groups more vulnerable to job loss through automation. Canadian HR Reporter. <https://www.hrreporter.com/focus-areas/automation-ai/key-demographic-groups-more-vulnerable-to-job-loss-through-automation/335798>
- Wyonch, R. (2020). The Next Wave: Automation and Canada's Labour Market. C.D. Howe Institute. https://fsc-ccf.ca/wp-content/uploads/2020/12/CD_Howe_EN_Report.pdf
- Young, S. J., Deller, F. M. & McCallum, K. (2021). Innovation in Post-Secondary Education. Future Skills Centre. <https://fsc-ccf.ca/wp-content/uploads/2021/06/Innovation-In-Post-Secondary-Education-PPF-DI-FSC-June2021-EN.pdf>
- Ziady, H. (2020). The pandemic is speeding up automation, and 85 million jobs are on the line. CTV News. <https://www.ctvnews.ca/business/the-pandemic-is-speeding-up-automation-and-85-million-jobs-are-on-the-line-1.5154794>

Supporting Work Readiness

- Beaupré, G. & Qadeer, S. (2020). Your post-secondary experience is much more than a credential. Canadian Immigrant. <https://canadianimmigrant.ca/careers-and-education/your-post-secondary-experience-is-much-more-than-a-credential>
- Business and Higher Education Roundtable. Work-Integrated Learning 101. <https://www.bher.ca/wil-hub/explore-wil-work-integrated-learning-101>
- Bow Valley College. (n.d.). Bow Valley College: Building Future Skills. <https://bowvalleycollege.ca/our-stories/2021/homepage/bow-valley-college-building-future-skills>
- Centennial College. (n.d.). Co-op Programs. <https://www.centennialcollege.ca/student-life/career-services-and-co-operative-education/co-op-education-at-centennial/co-op-programs/>

- Center for The Governance of Change. (2021). Higher Education and the Future of Work. <https://www.ie.edu/cg/research/higher-education-future-work/>
- CEWIL Canada. (n.d.). What is Work-Integrated Learning (WIL)? <https://cewilcanada.ca/CEWIL/About%20Us/Work-Integrated-Learning/CEWIL/About-Us/Work-Integrated-Learning.aspx?hkey=ed772be2-00d0-46cd-a5b8-873000a18b41>
- The Conference Board of Canada. (n.d.). Work-integrated learning in the post COVID-19 World. <https://www.conferenceboard.ca/e-library/abstract.aspx?clid=10942>
- Co-operative Education and Work-Integrated Learning Canada. (n.d.). WIL Definitions. https://files.ucei.ca/experientialeducation/exed_cewil_definitions.pdf
- eCampusOntario. (2021). The Hybrid Futures. <https://www.ecampusontario.ca/wp-content/uploads/2021/09/The-Hybrid-Futures-EN.pdf>
- eCampusOntario. (2021). Tomorrow's Learners. <https://www.ecampusontario.ca/wp-content/uploads/2021/11/Tomorrows-Learners-Tagged-20211029-1448.pdf>
- eCampusOntario. (2021). Virtual Learning Strategy (VLS). <https://vls.ecampusontario.ca/>
- Experiential & Work-Integrated Learning Ontario. (n.d.). Why consider learning beyond the classroom? <https://ewo.ca/student/>
- Fallon, J. (2019). How Higher Education Can Support the New 'Talent Economy'. LinkedIn. <https://www.linkedin.com/pulse/how-higher-education-can-support-new-talent-economy-john-fallon/>
- Fannon, A. (2021). Work-Integrated Learning's Future in Canadian Industry. The Future Economy. <https://thefutureeconomy.ca/interviews/work-integrated-learning-future-in-canadian-industry/>
- FutureFit AI. (2021). Empowering Organizations to Build a FutureFit Workforce. <https://www.futurefit.ai/>
- George Brown College. (n.d.). Experiential Learning and Work Integrated Learning. <https://www.georgebrown.ca/faculty/teaching-and-learning-exchange/academic-support/experiential-learning>
- Government of Canada. (n.d.). The Innovative Work-Integrated Learning Initiative. <https://www.canada.ca/en/employment-social-development/programs/work-integrated-learning.html>
- Government of Ontario. (n.d.). MAESD's Guiding Principles for Experiential Learning. <https://hive.utoronto.ca/public/dear/academic%20administrators/DCE%202017-18/A04%20EL%20-%20Guiding%20Principles%20FINAL%20EN.pdf>
- HEQCO. (n.d.). Work-integrated Learning. <https://heqco.ca/data-and-resources/work-integrated-learning/>
- IOHAH:IO Akwesasne Education & Training Institution. (2021). Home. <http://iohahio.ambe.ca/>
- Jahanian, F. (2020). How higher education can adapt to the future of work. World Economic Forum. <https://www.weforum.org/agenda/2020/01/how-can-higher-education-adapt-to-a-constantly-evolving-future-of-work/>
- Kayes, A. & Kays, C. (2021). Experiential learning: current contributions and future trends in practice. Oxford University Press's Academic Insights for the Thinking World. <https://blog.oup.com/2021/06/experiential-learning-current-contributions-and-future-trends-in-practice/>
- McGowan, S. (2021). Re-imagining experiential learning during the pandemic. University Affairs. <https://www.universityaffairs.ca/features/feature-article/re-imagining-experiential-learning-during-the-pandemic/>
- Ministry of Colleges and Universities. (n.d.). Career Ready Fund. <http://www.tcu.gov.on.ca/pepg/programs/careerreadyfund.html#examples>
- Ministry of Colleges and Universities. (2021). Ontario Invests in New and Expanded Rapid Training Programs. <https://news.ontario.ca/en/release/61236/ontario-invests-in-new-and-expanded-rapid-training-programs>
- Ministry of Colleges and Universities. (2021). Ontario Supports Hands-on Training Opportunities for Postsecondary Students. <https://news.ontario.ca/en/release/60618/ontario-supports-hands-on-training-opportunities-for-postsecondary-students>
- Ministry of Education. (n.d.). Cooperative Education - Expanded. <http://www.edu.gov.on.ca/morestudentsuccess/coop.html>
- Myklebust, J. P., & Smidt, H. (2021). What is the role of universities in global upskilling? University World News. <https://www.universityworldnews.com/post.php?story=20210129110449887>
- Ontario Undergraduate Student Alliance. (n.d.). Preparing Students for the Workforce. <https://westernusc.ca/wp-content/uploads/2019/11/OUSA-Preparing-Students-for-the-Workforce.pdf>
- Peters, D. (2021). Performance-based funding comes to the Canadian postsecondary sector. University Affairs. <https://www.universityaffairs.ca/news/news-article/performance-based-funding-comes-to-the-canadian-postsecondary-sector/>
- Pretti, T. & Etmanski, B. & Drewery, D. (2021). Development and validation of a future ready talent framework. 22. 369-383. https://www.ijwil.org/files/IJWIL_22_3_369_383.pdf
- Robertson, C. (2021). Defining Work-Integrated Learning. Lethbridge College. Centre for Teaching, Learning and Innovation. <https://learninginnovation.ca/defining-work-integrated-learning/>
- Sattler, P. (2011). Work-Integrated Learning in Ontario's Postsecondary Sector. Toronto: Higher Education Quality Council of Ontario. <https://heqco.ca/wp-content/uploads/2020/03/WIL1E.pdf>
- Seneca College. (n.d.). Work-Integrated Learning. <https://www.senecacollege.ca/employers/seneca-works/work-integrated-learning.html>
- Sheridan College. (n.d.). Co-op and Internship Programs. <https://www.sheridancollege.ca/employers/hire-a-co-op-student/co-op-and-internship-programs>
- Stirling, A., Kerr, G., Banwell, J., MacPherson, E. & Heron, A. (2020). A Practical Guide for Work-Integrated Learning. HEQCO. https://heqco.ca/wp-content/uploads/2020/03/HEQCO_WIL_Guide_ENG_ACC.pdf
- University of Illinois Chicago. (n.d.). The story of 15 work days. <https://engineering.uic.edu/about/coe-news/rise/fall-2021/news-briefs/the-story-of-15-work-days/>
- University of Toronto. (n.d.). Cooperative & Work-Integrated Learning (WIL). <https://www.uts.utoronto.ca/experiential/cooperative-work-integrated-learning-wil>
- University of Toronto. (n.d.). Experiential Learning Hub. <https://experientiallearning.utoronto.ca/faculty-staff/learn/course-and-program-resource/experiential-learning-101/>
- University of Toronto. (n.d.). Work-Integrated Learning (WIL). <https://uts.utoronto.ca/mgmt/work-integrated-learning-wil>
- University of Waterloo. (n.d.). Discover work-integrated learning. <https://uwaterloo.ca/edge/discover-work-integrated-learning>
- University of Waterloo. (n.d.). Future Ready Talent Framework. <https://uwaterloo.ca/future-ready-talent-framework/>
- Wilson, M. & Mackie K. (n.d.). Learning by Doing: Postsecondary Experiential Education. eCampusOntario Open Library Pressbooks. <https://ecampusontario.pressbooks.pub/adultedpseee/chapter/introduction/>

Shaping the Future Workforce is the fourth in a series of five Foresight Reports that expand on the VLS pillar of Being the Future by exploring maturing trends in the Ontario postsecondary sector and situating the VLS in the futures of virtual learning.

Foresight Reports are accompanied by a series of five Focus Reports, that tell data-driven stories about the VLS investment.

2021-22 VLS Reports Outline

● Focus Report

● Foresight Report



Launching the VLS



Connecting to Create



The Hybrid Futures



Tomorrow's Learners



Ontario Open



Lifelong Learning



Shaping the Future Workforce