FIRST WORK
ONTARIO'S YOUTH EMPLOYMENT NETWORK

The Robots are Coming!

Will Technology Kill Jobs or will it Create Opportunity?

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EXECUTIVE SUMMARY

The impacts of automation, robotics and AI on the workforce have been widely discussed and debated, but the COVID-19 pandemic has accelerated companies' technology adoption and brought to the forefront the disproportionate impacts of economic disruption on society's most vulnerable workers. Growing job polarization in Canada and globally has also meant the disappearance of middle-skilled jobs and a rise in high-skilled ones. The culmination of these forces are resulting in certain groups, including youth and those with lower educational attainment levels, being increasingly left behind or out of the labour force altogether.

This report focuses on the perspectives of and challenges faced by today's youth amidst the increasingly influential role of technology in the workplace and changing labour market demands. With the inevitable and continual automatization of work, strategic government intervention is urgently needed to prevent this trend from further deepening socioeconomic inequalities among our younger generation. This means ensuring that youth in sectors, regions, and jobs with declining employment prospects are supported in their reskilling and upskilling journeys and equipped to make the transition into in-demand jobs and careers.

As we rebuild the economy post-pandemic, policymakers should accelerate their efforts in supporting young people to prepare for the new world of work. Key among these initiatives are the provision of additional financial support and guidance for youth to pursue in-demand careers while offering work-integrated learning opportunities across all credential types to every student. By investing in young people, we are sending a message to youth from all walks of life that their contributions matter.

"BY INVESTING IN YOUNG PEOPLE, THEY ARE PROVIDED WITH A SOLID FOUNDATION TO BUILD UPON AS THEY IN TURN BECOME THE LEADERS OF TOMORROW."

INTRODUCTION

During the past year, the COVID-19 pandemic accelerated the use of technology at work, which resulted in significant changes to workplace practices and norms including the mass transition from in-person to remote work. These shifts have been particularly challenging for youth, particularly those in the heavily impacted service and hospitality sectors, those with lower levels of education, and those just beginning to find a foothold in the world of work. Beyond the pandemic, the susceptibility to these trends faced by youth will become increasingly urgent, as advancements in automation, robotics, and AI will play a growing role in shaping the nature of work and the availability and accessibility of employment opportunities.

Over the past several decades, technological advancements have enabled the replacement of human labour. Technology has presented many benefits for companies, including the performance of dangerous and mundane tasks, increased efficiencies, and cost savings, among others. With the abrupt disruption caused by the COVID-19 pandemic, the adoption of technology has accelerated as many workers transitioned to work remotely, and employers sought out ways to cut back on costs and minimize health risks for jobs performed physically in the workplace (Lund et al., 2021).

Research has revealed mixed views on technology's impacts on the availability and quality of employment.

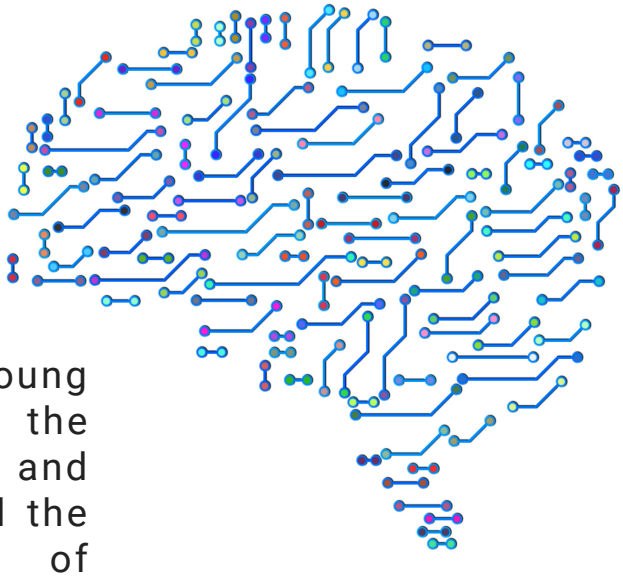
YOUNG WORKERS, WORKERS WITH LOWER LEVELS OF EDUCATION, AND LOW-INCOME WORKERS ARE AMONG THE MOST VULNERABLE TO THE RISK OF AUTOMATION AS THEY ARE MORE LIKELY TO WORK IN OCCUPATIONS WITH MORE ROUTINE TASKS (FRANK & FRENETTE, 2020).

However, the use of technology has also resulted in the creation of new jobs for workers to perform. **This phenomenon has been called job polarization, a labour market trend fueled by technological advancements and globalization, in which jobs in the economy shift from being "clustered in and around the middle of the skills-distribution to one in which they are increasingly concentrated at its upper and lower tails"** (Bezu and Speer, 2021, p. 5).

Job polarization in Canada is becoming more pronounced as highly skilled jobs grow in demand while the demand for middle-skilled jobs steadily declines (Bezu and Speer, 2021). This in turn contributes to growing socioeconomic inequality, as exacerbated and evidenced in Canada's K-shaped recovery (Regan, 2021).

As workers with higher levels of education generally work in high-skilled jobs, a frequently cited recommendation in the literature is focused on the advancement of skills for unemployed or low-skilled workers; however, individuals looking to make a work transition face multiple barriers, including developing an accurate understanding of the labour market in order to make informed, demand-driven educational investments to upskill or reskill. It has also been found that **low-skilled Canadians are least likely to engage in ongoing training** (Employment and Social Development Canada, 2020).

The challenges presented by technological advancements are complex and vary across sectors, geographies, and occupations. Thoughtful intervention from all levels of government and employers may prove necessary to ensure the creation of a future with better jobs for all.



OBJECTIVE

This report reveals findings from young people across Ontario to learn about the ways they believe robotics, AI and automation will impact employment and the workplace. It provides all levels of government with policy recommendations to create equal opportunities for young people to compete in the labour market and participate in increasingly technologically advanced workplaces, as well as areas for exploration in considering the risks and harms that may accompany new forms of work.

METHODOLOGY

A focus group was conducted with youth aged 15-29 from across Ontario, who were recruited through First Work's employment service providers network. The majority of youth were from the Greater Toronto Area, ranging from postsecondary students to young professionals. This report is based on a combination of findings from the focus group and the authors' secondary research, and may not be representative of the diverse perspectives of all Ontario youth. Although these opinions are not representative of all youth, they are in alignment with the issues and recommendations found across a range of research literature.

INSIGHTS AND FINDINGS

This focus group was attended by eight youth who were interviewed by two facilitators. Both facilitators were members of the First Work Youth Council. While focus group participants were hopeful about the possibilities in workplaces and employment that can result from robotics, AI and automation, they also expressed some concerns. The following insights are based on the opinions of a small focus group, which does not represent all youth in Ontario. However, these concerns align with other research, suggesting that they hold some validity and provide valuable perspectives. Below is a summary of the major themes identified from this discussion.

UNEQUAL ACCESS TO OPPORTUNITY

The increasing need for technology in the workplace could lead to greater employment opportunities, but it also has the potential to reduce them. Work opportunities that require technology such as internet routers, phones and laptops are not accessible to everyone. As such, those with access to these specific technologies, resulting from automation in the workplace, will become more competitive in the job market, and those without access will be at a disadvantage.

"[AUTOMATION HAS] CREATED EQUAL OPPORTUNITIES IN ONE WAY, BUT IT'S ALSO WIDENED THE GAP FOR PEOPLE WHO DON'T HAVE ACCESS TO HIGH-SPEED INTERNET AND OPPORTUNITIES AND INFRASTRUCTURE THAT ALLOWS FOR THAT."
- FOCUS GROUP PARTICIPANT

Youth in the focus group believe that technological advances have created more equal access to employment opportunities in some ways. For instance, job seekers can now apply to jobs online and numerous learning opportunities that improve one's employment prospects can also be accessed online. Remote work can also save time and money spent on transit. However, youth noted that not everyone will be able to access or afford the tools required for remote work or online education, especially in the case of those with low incomes or for those living in rural communities.

TRAINING TO INCREASE EMPLOYABILITY

While training and education can increase the odds of employment, the learning opportunities available may not always match the demands of the job market. Learners also require flexible and high-quality learning experiences to increase their employability.

Focus group participants felt that more demand-led and flexible education opportunities were needed. As certain jobs sectors become increasingly digitized, opportunities to learn skills must meet these needs. In addition, more hands-on, project-based learning opportunities in the classroom could improve the value of these experiences for the learner. **A focus group participant suggested, "courses that are interactive for the kids in middle school -- so that kids can grow up understanding tech more".** It was also noted that funding could be provided to those who do not have the financial resources to acquire new skills through education or training.

SHARED SPACES FOR WORK

Focus group participants also discussed the lack of shared spaces in which to engage in employment related activities, especially as quiet or work-conducive spaces are also not available to everyone. As one participant noted:

"I THINK [INTERNET CAFES ARE] SOMETHING THAT WE NEED TO EXPLORE, BECAUSE NOT EVERYONE CAN WORK FROM THEIR HOMES...NOT EVERYONE HAS THE SAME EQUAL ACCESS TO GOOD INTERNET AND GOOD SUPPORT AND GOOD INFRASTRUCTURE".

It was noted that work places like public libraries usually require silence, while shared spaces allow for audible speech and provide internet access, which would be useful. **Another participant noted that shared spaces also provide a sense of community.** These suggestions are similar to the idea of co-working spaces, or public spaces that can be rented by workers. These spaces are typically used by people who work independently, including self-employed persons and small business employees. Individuals can work and socialize in these spaces, sharing ideas and forming communities (Bouncken & Reuschl, 2016). This topic was of particular interest to the focus group participants, but is beyond the scope of this report. The focus of this paper assesses youths' thoughts and opinions on the availability—or lack thereof—of work due to increased automation. However, additional exploration into dedicated co-working spaces for young people may be warranted as a potential solution to soften the impacts of the growing technology divide.

VARIABILITY IN IMPACTS OF AUTOMATION

Trends in employment do not always follow a singular pattern. Some participants felt that AI and automation might create employment opportunities in the near term, especially while new technologies are being implemented; however, once the wave of automation begins to settle, significant job losses might occur. As one participant stated:

"IN THE SHORT TERM, IT'S GOING TO CREATE MORE JOBS, IT'S GOING TO CREATE MORE OPPORTUNITIES AS WE'RE CREATING THE SYSTEMS OF AUTOMATION, BUT THEN IN THE LONG RUN, ONCE EVERYTHING'S AUTOMATED, WE DON'T REALLY NEED THE PEOPLE ANYMORE. SO THERE WILL BE [FEWER] JOBS."

Another commented on how this is resulting in an increase in people obtaining further education and qualifications. A third participant observed that these trends vary based on the sector.

RECOMMENDATIONS AND CONCLUSION

A number of themes emerged from the focus group findings. Youth were hopeful about the opportunities that come with technological advancement in the workplace, but clearly concerned with their ability to keep up with changing educational and employment demands. In line with the first of five priorities recommended by the ESDC's Future Skills Council, the focus group's insights alluded to the importance of grounding policy and programming decisions in timely, localized labour market information (2020). Local economies each have their own characteristics in terms of the challenges faced and opportunities available to workers, as well as the makeup of their labour force. By making this data publicly available, individuals will be equipped to make informed career decisions and policymakers and service providers could in turn develop more tailored solutions to support those most vulnerable to technological advancements.

INCREASE WORK-INTEGRATED LEARNING OPPORTUNITIES

Governments should invest in work-integrated learning opportunities so all young people have access to paid work experience. **Youth participants agreed that learning through experience is an important way to gain skills, particularly those technology-based.** Investing in work-integrated (WIL) opportunities is a long-term investment for Canada's economy. In a survey on the impacts of the COVID-19 pandemic with 100,000 postsecondary students across Canada (Statistics Canada, 2020):

67%

Of students indicated they were very or extremely concerned about having no job prospects in the near future.

58%

Of students were very or extremely concerned about loss of jobs in the future.

Research has shown that **students who participate in WIL were more likely to find a job suited to their qualifications and to their field of study compared to graduates who did not participate in WIL** (Work-Integrated Learning during Postsecondary Studies, 2015 Graduates, 2020). In Ontario, the provincial government recently introduced a performance-based funding model for postsecondary institutions, which places a greater weight on employment outcomes instead of the previous focus on enrolment (Government of Ontario, 2020).previous focus on enrolment (Government of Ontario, 2020).

Despite the value placed on gaining relevant work experience, in a 2018 survey of graduating students by the Canadian University Survey Consortium, **only 48% of these graduating students reported that they had gained work experience and 37% had volunteered in their desired field of employment (2018).** To prepare workforce-ready youth, provincial and federal governments should increase investment into the infrastructure and funding for individual opportunities to develop a sustainable WIL program across all credential offerings by academic institutions. By implementing sustained WIL programs, every learner will have the opportunity to take part in at least one quality learning experience before completing their studies.

ADDRESS ACCESS GAPS THROUGH INFRASTRUCTURE INVESTMENTS

Governments must accelerate investments in broadband infrastructure and technology access for barriered youth to negate long-term impacts from inequality of access. Youth noted a lack of equal access to the internet, which is needed to compete in the labour market and participate in the workforce. The Ontario government has begun the Broadband and Cellular Action Plan, but disparities continue to plague many Canadian youth. Despite the $300 million that Ontario has dedicated to improving high-speed internet access, efforts may not be enough to meet the needs of diverse regions (Basen, 2021). Many youth, including those living in rural, Northern, and Indigenous communities, lack proper internet service. Reliable, high-speed internet is necessary to actively engage in online work and learning.

APPROXIMATELY 24% OF INDIGENOUS HOUSEHOLDS HAVE SUFFICIENT ACCESS TO THE INTERNET. ESTIMATES RANGE BETWEEN 34% - 46% FOR RURAL HOUSEHOLDS (BASEN, 2021) (BROADBAND FUND: CLOSING THE DIGITAL DIVIDE IN CANADA | CRTC, 2021) (MA, 2020).

Lack of internet access also impacts employment opportunities by limiting a region's ability to " attract...employers, including high-tech manufacturers" (Basen, 2021). Communities may wish to invest in better internet services, but government funding requirements can create barriers (Basen, 2021). The government can review these requirements to make sure they are not disadvantaging youth whose communities need funding the most. It is important that the government can respond to unique and changing needs for connectivity. Providing shared spaces with reliable high-speed internet may be a helpful solution for youth living in more remote areas.

FUND ACCESSIBLE EDUCATIONAL OPPORTUNITIES FOR BARRIERED YOUTH

Flexible funding in learning opportunities should be prioritized by governments, to ensure young people are not left behind in the rapidly changing workforce.

There was a strong consensus among the focus group that **more flexible learning options and funding** will both be necessary to improve the accessibility of education in preparation for the impact of automation on employment. These considerations are especially critical given the growing importance of lifelong learning throughout one's career and to better prepare for mass technological disruptions that could potentially displace workers from entire occupations or sectors. In terms of educational affordability, the percentage of graduates with student debt has steadily grown over the past 15 years according to Statistics Canada's National Graduates Survey (2014). Moreover, the survey's findings were reported prior to the budgeted $670 million reduction in OSAP grant/loan funding in 2019, which had simultaneously reduced the grants provided to low-income students (McCabe, 2019). Lack of funding impedes access to potentially life-changing learning opportunities, not only through formal education, but also through the technological tools that bridge the divide to an increasingly digitized learning and working world. Additionally, as the skills demanded by employers adjust to accommodate enhanced digitization, governments should explore and provide guidance regarding alternative learning pathways, such as micro-credentialing, to further reduce barriers to education.

While beyond the scope of this report, there are **two additional areas of research** related to technology's impact on the quality of working conditions that warrant further exploration. One is **the impacts of workplace technology on worker well-being in the remote work environment.**

While beyond the scope of this report, there are **two additional areas of research** related to technology's impact on the quality of working conditions that warrant further exploration. One is **the impacts of workplace technology on worker well-being in the remote work environment.**

Although automation can eliminate jobs which expose humans to situations of high stress or danger, the emerging forms of work as a result of technological advances can also have detrimental effects on physical and mental health. In the remote work environment, the focus group cited eyestrain and reduced movement as examples of negative physical effects that can result from greater use of technology, while extensive screen time and the blurring of boundaries between work and home life can impact mental health. However, research has also shown that technology can also have a positive impact on health, such as reminding workers to stay physically active while working (Stephenson et al., 2017).

Another concerning perspective that was not vocalized during the discussion, is employer use of algorithmic technology to exert increasing organizational control on their workers (Christin et al., 2020). Both of these topics should be taken into account in future research as technology continues to play an increasingly central role in our working lives.

In conclusion, youth from the focus group shared perspectives and concerns about automation's impact on the availability of work. These perspectives, viewed through the lens of secondary research, highlight important issues that have or may arise, as well as possible ways to address these issues. Research should continue to explore changes that automation will bring to employment opportunities, while incorporating the opinions of youth. Last, research can be used to inform initiatives to improve employment opportunities for future generations.

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ABOUT FIRST WORK

First Work is Ontario’s employment network: a leading membership organization bringing together the best providers of employment programming and services, business leaders, academia, and government to develop and advance evidence-led solutions for employment. Our membership community positions us at the bridge between job seekers and employment, bringing innovative partnerships with industry partners to the workforce development space. Our direct engagement with job seekers, youth and employment services providers ensures our services are relevant, timely and apply an intersectional lens. Our continued advocacy at all levels of government supports progressive policy development for the benefit of all job seekers.

ABOUT FIRST WORK'S YOUTH COUNCIL

First Work's Youth Council is comprised of a diverse group of young people (under 30) from across Ontario. This council convenes bi-monthly to ensure First Work's dedication and work for young jobseekers is reflective of their wants and needs. This cohort has supported the development of First Work's first ever full-day Youth Summit, which took place at Futures: National Workforce Development Conference in 2020. This cohort has also supported the development and design of career exploration events through First Work's youth-voice, Aspire.

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