Supporting young persons with disabilities in the future of work

Top-ranked strategies based on a three-year Delphi study

Institute for Work & Health
Research Excellence
Safe Work
Healthy Workers

Accessibility Standards Canada

Disclaimer

This document is not intended to be a substitute for professional advice. Conclusions drawn from, or actions taken on the basis of, information included in this document are the sole responsibility of the user.

In addition, it is the responsibility of users to adhere to relevant standards, legislation and regulations in their jurisdiction.

The Institute for Work & Health is an independent, not-for-profit organization that conducts and mobilizes research that supports policy-makers, employers and workers in creating healthy, safe and inclusive work environments.

The Institute operates with the support of the Province of Ontario. The views expressed in this publication are those of the Institute and do not necessarily reflect those of the Province of Ontario.

Please direct questions and reprint requests to:
Institute for Work & Health
400 University Ave., Suite 1800
Toronto, Ontario M5G 1S5
info@iwh.on.ca
www.iwh.on.ca

Table of contents

Executive summary

Social, technological, economic, environmental, and political trends are changing the nature and availability of work at a rapid rate (1). These changes will bring challenges and opportunities for young persons living with disabilities who are entering the working world. Importantly, these changes will necessitate the design of innovative solutions that promote greater disability inclusion.

In the summer of 2021, researchers at the Institute for Work & Health launched a three-year, multi-phase study to explore the future of work. The study's aim was to anticipate changes to the working world and examine the implications of those changes for the employment inclusion of young persons living with a disability. The study sought to generate actionable solutions that could be used to ensure greater employment inclusion of persons with disabilities and enhance resilience in the design of policies, programs, and strategies to address changes in the future of work.

A Delphi survey was used to develop consensus on ideas for actionable solutions, drawing on the perceptions of diverse respondents across Canada with lived experience of a disability and expertise on the employment opportunities and challenges facing persons with disabilities. Experts included policy-makers, disability employment service providers, labour market experts, and futurists.

In the Delphi survey, participants were also asked about strategies that might ensure young people with disabilities can find and sustain employment in the decades ahead. Six key challenge areas that might shape the future of work were identified. Participants also suggested specific strategies to promote the inclusion of young people with disabilities in the labour market that they believed might be resilient to future of work changes. Discussions focused on the impact of the digital transformation of the economy, artificial intelligence (AI) in human resource decision-making, digital globalization, cultural tensions around workplace inclusivity, climate change, and external shocks that could increase the pace of change.

In the next part of the study, a consensus-building approach was used where respondents ranked the strategies that were proposed in the first survey according to their perceived likelihood of supporting employment inclusion across each of the six challenge areas. The top-ranked strategy for each challenge area is presented in Table 1.

Challenge 1: Impact of advanced digital technologies	**Strategy:** Help youth and young adults with disabilities learn new job skills by providing greater access to life-long training
Challenge 2: Artificial intelligence in human resource decision-making	**Strategy:** Apply a diversity, equity, inclusion and accessibility lens to the design and application of AI in HR programs
Challenge 3: Digital globalization	**Strategy:** Enforce a minimum standard for accessibility and employment rights internationally
Challenge 4: Cultural tensions around workplace inclusivity	**Strategy:** Build employer confidence to create disability inclusive workplace cultures
Challenge 5: Climate change	**Strategy:** Increase options for remote work and flexible work arrangements
Challenge 6: External shocks speeding up the pace of change	**Strategy:** Facilitate employment in stable jobs that may be less affected by shock events

Table 1. Top-ranked employment inclusion strategy for each future of work challenge area.

Strategies described by participants spanned workplace, social policy, and educational settings. These strategies ranged from inclusive job skills-building initiatives to developing disability confident employers. Many of the strategies generated can be implemented in the current working context, while also being relevant in the future.

This report summarizes the Delphi survey methodology that was utilized and describes the different strategies that were identified by participants. We provide a description of how the three top-ranked strategies for each challenge area can be implemented in practice. We also describe promising practices that currently exist in the field and can be used as exemplars.

Overall, the practical insights presented in our report can be used by policy-makers, employers, employment service providers, and others to develop approaches that advance disability inclusion employment policies and programs for young persons. Overall, the findings can help in addressing barriers to employment participation and foster inclusion in the future of work.

Background

Across all industries and occupations, the world of work in Canada is changing at a rapid rate and will look very different within the next decade. Social, technological, environmental, economic, and political trends are shaping working conditions, potentially changing the way in which work is performed in the future (2-4). This can create both challenges and opportunities (5).

In this report, we examine the implications of the future of work for young persons with disabilities, a segment of the labour market that has historically been excluded from high-quality employment opportunities and continues to face fragmented pathways to career growth (6-8).

We describe findings from a Delphi survey conducted in Canada. The study aimed to identify key challenges that young workers with disabilities will likely face in the future of work and determine corresponding strategies that can promote inclusive employment.

Findings from this report are relevant to diverse practitioners, who are designing employment support programs for persons with disabilities, as well policy-makers aiming to identify and address challenges to employment engagement that are on the horizon.

Defining the future of work

The future of work is characterized by the dramatic change to every industry and occupation that is driven by a range of trends (2, 3) and represents a significant transformation to the nature and availability of work. Changes in the future of work are occurring at a larger scale and at a quicker pace when compared to past periods of change (9).

A horizon scan conducted in 2021 identified nine trends that have the potential to impact work. These include: the digital transformation of the economy, artificial intelligence (AI)-enhanced automation, AI-enabled human resource management systems, skill requirements for the future of work, Globalization 4.0, climate change and the green economy, Gen Zs and inclusive work environments, populism and the future of work, and external shocks that accelerate the changing nature of work (7).

Trend	Description
Digital transformation of the economy	Advancement and application of novel digital technologies that contribute to hyperconnectivity, advance telepresence, automate work, and increase reliance on mobile apps.
AI-enhanced automation	Digital systems that replicate human intelligence and behaviours, automate job tasks, and make predictions to perform complex work. The growing adoption of AI increases the requirement for humans to work alongside smart machines.
AI-enabled human resource management systems	Algorithms used to inform the initial parameters of AI-enabled hiring and performance management systems have the potential to reinforce existing social conditions within a workplace.
Skill requirements for the future of work	Workers across all industries are required to possess advanced technical competencies, digital literacy, and soft skills to obtain jobs of the future.
Globalization 4.0	Advancement of technologies will facilitate exchange of ideas, services, and goods within physical and virtual environments across the globe.
Climate change and the green economy	Extreme weather events will disrupt employment and contribute to lost productivity. The climate crises may contribute new job opportunities.
Gen Zs and inclusive work environments	Growing numbers of Gen Zs who value inclusivity, diversity and social responsibilities will enter the workforce.
Populism and the future of work	Rejection of the establishment, elites, and expertise by a growing community of people coupled with frustration and anxiety about the future among people who may hold populist sentiments.
External shocks that accelerate the changing nature of work	Work significantly affected by external shocks such as an economic recession, natural disaster, or global pandemic.

Table 2. Description of potential trends driving changes in the future of work

The intersection of these various trends can contribute to a number of changes to the world of work, including evolving physical and psychosocial work conditions, a requirement for workers to possess new job skills that meet employer demands, and shifting work arrangements (7, 10).

Some studies suggest that the future of work could be marked by widening labour market inequity, such as the erosion of standard employment opportunities (e.g., full-time permanent jobs) and growth of non-traditional employment (e.g., freelancing, gig work), coupled with wage stagnation (11-14).

Changes that are expected in future of work also have the potential to contribute to productivity gains, lead to the creation of new occupations, and enable new working situations in ways that can increase employment opportunities and demand for diverse workers (11-15).

Those who have been traditionally disadvantaged in the labour market face the threat of being further marginalized by changes that are expected in the future of work (7). Research indicates that changes in the future of work may increase the risk of certain vulnerable groups being displaced from their existing employment or forced into more precarious employment situations, which may include experiencing wage instability, job insecurity, and unsafe working conditions (16, 17).

Young persons living with disabilities represent a particularly vulnerable segment of the labour market and may benefit from strategic thinking that aims at understanding emergent challenges and opportunities to employment (4, 6-8). It is important to research how trends that shape the future of work will impact persons with disabilities.

The research presented in this report utilizes the nine trends as a foundation to inform thinking on the specific challenges that might impact the employment of persons living with disabilities.

Employment inclusion of persons living with disabilities in Canada

According to the 2022 Canadian Survey on Disability, young persons living with disabilities face systemic barriers to accessing inclusive employment opportunities. To begin, 24% of working-age adults reported having a disability, an increase of 4% from 2017 (18). Furthermore, 62% of adult Canadians with disabilities, aged 25 to 64 years old, were employed, compared with 78% of persons without disabilities in the same age group (18). Moreover, 74% of persons with milder disabilities, aged 25 to 64 years, were employed, while 42% of persons with more severe disabilities, aged 25 to 64 years, were employed (18). Accordingly, young persons living with disabilities represent an untapped segment of the labour market that may benefit from a supportive work environment (18).

Young persons living with disabilities who obtain paid work opportunities experience lower quality employment compared to their counterparts without disabilities (19) and are more likely to report working fewer hours, making less income, experiencing more lost productivity, and facing greater barriers to career advancement (19). Working in low quality employment means that young persons with disabilities may lack the workplace supports and accommodations needed to sustain productive employment (20) and may mean that they are at risk of entering the future of work in a more disadvantageous position (1, 21).

A review of existing strategies to support the inclusive employment of persons with disabilities

Dedicated strategies implemented at community, workplace, and policy levels are beneficial in addressing barriers to the inclusive employment of young persons living with disabilities (22-24).

In this section, we provide a brief, high-level overview of research on the importance of existing strategies that are associated with the employment engagement of young persons living with disabilities.

Within postsecondary educational (e.g., universities and colleges) and community-based settings, employment placement and support services have been shown to be important initiatives (1, 24-27). They offer paid competitive work opportunities for young persons with different disabilities and deliver tailored job skills development and training that individuals need (28). Similarly, studies highlight the importance of co-operative educational programs and/or work-oriented learning initiatives within universities and colleges (29, 30). These learning opportunities provide practical labour market experiences required by employers that can offer individuals greater employment readiness and self-confidence. This can be important for the sustained employment of persons living with disabilities. Young persons with disabilities who participate in these programs and who report having job skills and career readiness are also more likely to report future paid employment (26, 27, 31).

Within the workplace, inclusive human resource (HR) management practices that create equitable entry-points for job applicants through accessible job postings and interview processes have been shown to increase the likelihood of recruiting and retaining employees living with disabilities (32, 33). Similarly, purposeful organizational strategies that increase accessibility within the workplace, also increase employment engagement of persons living with disabilities (22). For instance, research indicates that initiatives critical in supporting the productive employment of persons with disabilities are those that remove barriers in the physical work environment, strengthen interpersonal relationships and communication within an organization, address workplace discrimination, encourage job autonomy, offer scheduling flexibility, and facilitate healthcare access through extended health benefits (28, 34, 35). On the other hand, the absence of these strategies can contribute to missed workdays, reduced productivity, and greater workplace activity limitations for persons with disabilities.

Of concern, many Canadian employers report lacking disability confidence, meaning that they do not have the knowledge and skills to consistently meet the needs of diverse workers with disabilities (36). A lack of disability confidence can create inconsistent design and implementation of job accommodations and workplace supports, hindering the creation of an inclusive employment environment (36).

The legislation of inclusive employment of persons living with disabilities can create a broader culture of accessibility and offer clear mandates for employers. Human rights and anti-discrimination legislation that apply to Canadian workplaces, coupled with duty-to-accommodate legislation at the federal and provincial levels, have been shown to reduce the societal and workplace structures that create barriers to finding and sustaining employment (37-39).

The 2019 *Accessible Canada Act (ACA)* is one example of legislation aiming to foster inclusive employment and remove barriers to the employment of persons with disabilities (40).

The enactment of the ACA has brought Canada one step closer to its commitment of furthering the rights of persons with disabilities, which it endorsed under the 2010 United Nations Convention on the Rights of Persons with Disabilities (UN CRPD) (41). The ACA aims to achieve a barrier-free Canada by 2040; it identifies seven priority areas, including employment, in which Canadians will benefit from the proactive identification, removal, and prevention of accessibility barriers (41-43).

Research on strategies to ensure inclusive employment of young people with disabilities has been developed within the context of existing labour markets. It is unclear whether the strategies described in this section may be relevant to a working world that is rapidly evolving.

Changes in the future of work necessitate the redesign and innovation of diverse and future oriented strategies–including policies and programs at the workplace, policy, and community levels (44, 45). These can be implemented to ensure that young people living with disabilities can obtain and maintain high-quality work, as well as find opportunities for advancement in the world of work (46).

Delphi survey

To develop strategies for the inclusive employment of young persons living with disabilities, we took a Delphi survey approach. Delphi surveys are a research method implemented to gather insights from diverse subject matter experts and establish consensus on solutions that address a topic of concern. The method uses structured, multi-round surveys, each building on one another (47, 48). Anonymous expert opinions and feedback are collected and used to facilitate an unbiased debate with the goal of reaching agreement. Initially developed by the RAND Corporation in the 1950s for technological forecasting in U.S. military research applications, Delphi surveys have been increasingly applied to the development of policies and programs in many sectors, such as finance, health, education, and technology, to support decisions, policies, and programs that are adaptable to possible future changes (49, 50).

Delphi surveys have several advantages. The rapid approach to collecting and combining expertise from diverse subject matter experts from across different geographical regions is a low-cost planning approach. The online anonymous format also reduces the effects of group dynamics on study outcomes and limits biases that can occur during in-person focus groups or meetings (e.g., account for a situation where a small number of individuals dominate the dynamics of large group discussions) (51).

Another benefit of the Delphi survey is that participants can think about the questions at hand over several rounds to reassess and adjust their views while considering information provided from the previous round. As all input is anonymous, participants use independent thought, encouraging honesty, creativity, and impartiality.

Objectives

This report describes findings from a Delphi survey methodology, completed by young persons with the lived experience of a disability, as well as policy-makers, disability employment service providers, educators, clinicians, and futurists. The main objective is to examine strategies to foster inclusive employment relevant to the future of work. Specific objectives of the study were to:

1. Explore future changes to the world of work and potential strategies for the employment inclusion of young people living with disabilities.
2. Identify and build consensus on specific future-oriented strategies that can improve the accessibility and inclusion of young people with disabilities in the future of work.
3. Develop concrete recommendations for employers, policy-makers, community-based organizations, and other stakeholders to apply the identified future-oriented strategies into practice.

Of importance, while this study was conducted within the context of Canada's labour and social policy context, findings will provide insights for other industrialized countries, particularly other signatories to the UN CRPD.

Methods

An online Delphi survey was implemented to develop strategies for inclusive employment that are relevant to the future of work (52). This section summarizes how the study team implemented the Delphi methodology and analyzed the results. Additional details about the study method have been described in a recent publication authored by the research team (53).

All study procedures were reviewed by the research ethics board of the University of Toronto (research ethics board #40727). Data collection and analysis was performed in accordance with research ethics guidelines and regulations for research on human subjects. Of note, all participants were presented with detailed study material and provided informed consent before participating in the study. All data collected was anonymized and stored on a secure digital server.

For this study, two separate advisory panels were developed: one composed of young people with lived experience of a disability, and one composed of representatives from national non-profit disability organizations. The panels were consulted at all phases of the study; they provided insight into study design and accessibility of data collection approaches and aided with recruitment of participants. The panels also helped with the interpretation of findings from both rounds of the survey.

Sample recruitment

A critical component in the development and implementation of the Delphi survey was the selection of participants with subject matter expertise on the barriers and facilitators to the employment of young persons with disabilities or on the changing world of work. Participants recruited for this study included young people with lived experience of a disability, as well as policy-makers, disability employment service providers, educators, clinicians, and futurists. By engaging a diversity of insights from participants, we could produce a robust set of future-focused strategies that might be relevant to a broad range of persons living with disabilities and different employment contexts.

To be eligible, participants had to be above 18 years of age and consent to take part in the research. Eligible participants also had to be willing to offer insights on the future of work and the strategies that might be used to promote the employment inclusion of young persons with disabilities.

All participants were recruited purposively. Representatives from both advisory panels helped identify eligible participants. Additionally, representatives from not-for-profit and governmental organizations were contacted and asked to participate. We also used a snowball recruitment strategy: We asked participants who completed the survey to identify other individuals who would be eligible to participate.

Delphi survey description

Two rounds of accessible online surveys were administered to participants either in English or French. Two rounds were ideal for this study to minimize participant fatigue and dropout while also encouraging participants to explore their underlying assumptions regarding the future of work. The convenience of online formats allowed participants to complete surveys at their own time and pace. Online formats were also compatible with many assistive devices and thus could be accessed by participants with various types of disabilities (54-56).

Surveys were developed through multiple stages of pilot testing with members of the advisory panel to ensure content validity was met (i.e., the survey measures what it's supposed to measure); reduce respondent burden (e.g., the survey could be completed in 25 minutes or less); and ensure the survey used language that could be understood by its diverse target audiences. Pilot testing also ensured that the survey format was accessible to participants with different disabilities and compatible with various assistive devices.

First Delphi survey

The first survey was administered to participants over the winter of 2021. The focus of the first survey was on the generation of ideas and collection of diverse strategies for the inclusive employment of young people with disabilities within the context of the future of work. As part of the first survey, participants were randomly allocated four of nine future of work trends (introduced in the background section) that could unfold over the next 15 years. Participants were provided with a short description of the trend and presented with a series of questions.

The first question asked participants to rate the importance of the trend in influencing the inclusive employment of young people with disabilities. Next, open-ended questions were posed to participants about workplace, community-based or policy supports and strategies that could help young people with disabilities in the labour market. Participants were encouraged to be creative and write about any potential strategy that they thought could be helpful in addressing barriers to employment inclusion. Lastly, an open-ended question provided participants with the opportunity to add any other reflections on the future of work and its implications for young people living with disabilities.

Analysis of first round of Delphi survey

Once the first round of the Delphi survey closed, two members of the research team coded all open-ended results from the survey using thematic analysis to inductively examine themes emerging from the data. They then constructed an understanding of the different strategies of inclusion put forward by participants.

Throughout the analytical process, the research team held meetings in which codes and themes that emerged from the first survey were discussed. Discrepancies emerging from the thematic analysis were brought forward and resolved by consensus. Through the analytical process, the team identified six key challenge areas that were of specific relevance to the inclusive employment of young people with disabilities. A list of strategies relevant to each challenge area was also produced.

A summary of findings was outlined in a short report (7), which was evaluated by the advisory panel to ensure findings were relevant to the inclusive employment of young persons living with disabilities.
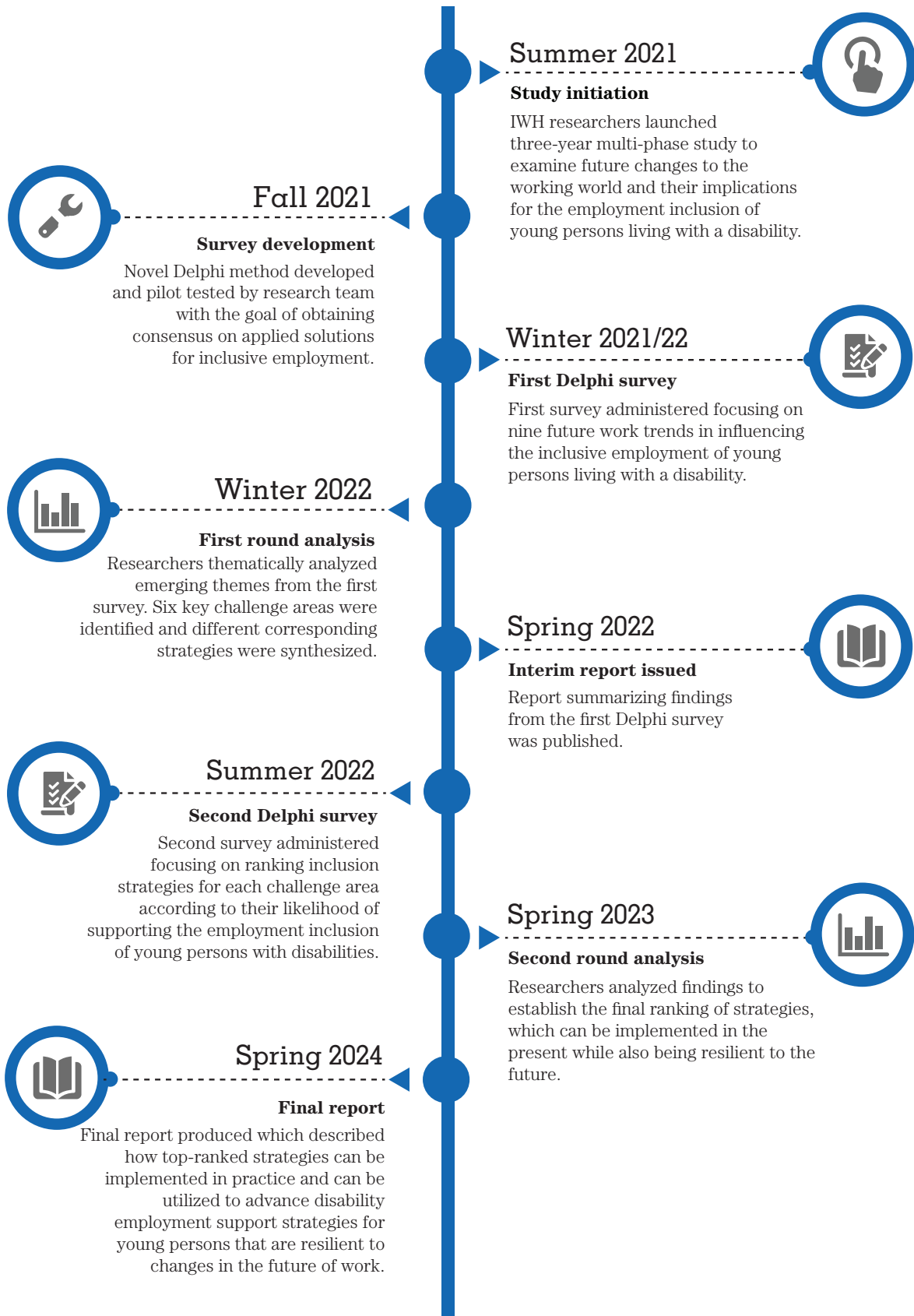
Second Delphi survey

The second and final survey was distributed in the summer of 2022. Participants were recontacted and asked if they would be willing to continue to participate in the study. Those who consented to continuing their involvement were required to read the short report (7) describing the six key challenges from the first survey and the corresponding strategies for employment inclusion. Additionally, they were invited to watch short, three-minute videos (57) developed to summarize the findings from the first survey and complement the short report (7).

In the second Delphi survey, study participants were presented with a list of strategies for each of the six future of work challenge areas. They were asked to rank each strategy from most to least important for promoting employment inclusion. Lastly, participants were provided with an open-ended question and asked to offer any additional perspectives on their responses.

Findings from the second round of the survey were analyzed using descriptive statistics to establish the final ranking of strategies. Also, a measure of agreement (Kendall's Tau) (58) was calculated to determine the extent of consensus of ranked strategies amongst participants.

Summer 2021

Study initiation

IWH researchers launched three-year multi-phase study to examine future changes to the working world and their implications for the employment inclusion of young persons living with a disability.

Fall 2021

Survey development

Novel Delphi method developed and pilot tested by research team with the goal of obtaining consensus on applied solutions for inclusive employment.

Winter 2021/22

First Delphi survey

First survey administered focusing on nine future work trends in influencing the inclusive employment of young persons living with a disability.

Winter 2022

First round analysis

Researchers thematically analyzed emerging themes from the first survey. Six key challenge areas were identified and different corresponding strategies were synthesized.

Spring 2022

Interim report issued

Report summarizing findings from the first Delphi survey was published.

Summer 2022

Second Delphi survey

Second survey administered focusing on ranking inclusion strategies for each challenge area according to their likelihood of supporting the employment inclusion of young persons with disabilities.

Spring 2023

Second round analysis

Researchers analyzed findings to establish the final ranking of strategies, which can be implemented in the present while also being resilient to the future.

Spring 2024

Final report

Final report produced which described how top-ranked strategies can be implemented in practice and can be utilized to advance disability employment support strategies for young persons that are resilient to changes in the future of work.

Results

Summary

Over 125 participants completed the first round of the Delphi survey. Of these, close to 70 participants went on to complete the second round of the Delphi survey. Participants included young people with a lived experience of disability (38%). The remaining participants included policy-makers, disability employment service providers, educators, clinicians, and futurists from across Canada (62%).

Six key challenges in the future of work emerged from the first Delphi survey. These were areas that survey participants indicated could pose barriers to the employment inclusion of young people with disabilities but may also offer opportunities for greater labour market engagement. The six areas included:

Challenge 1: Impact of advanced digital technologies	Across all industries and occupations, advances in diverse digital technologies will lead to increased automation of work and closer connection between workers, digital devices, and data.
Challenge 2: Artificial intelligence in human resource decision-making	Artificial intelligence (AI) is increasingly used to support human resource decisions, including whether employees are hired, how the quality and efficiency of their work is evaluated, and how they are assessed for promotions.
Challenge 3: Digital globalization	Greater adoption of advanced digital technologies will lead to labour markets being more integrated around the globe. That means a broader range of jobs can be completed from any part of the world, opening up local labour markets to global labour competition.
Challenge 4: Cultural tensions around workplace inclusivity	Social movements and new generational perspectives are changing workplace norms and cultures, driving workplaces to be more inclusive, diverse, accessible, and socially responsible. At the same time, certain forces are reacting against this trend toward greater workplace inclusion and may lead to limited work opportunities for some groups.

Challenge 5: Climate change	Job opportunities and job conditions in the future of work are increasingly affected by climate change. Extreme weather events caused by climate change can create work disruptions and contribute to poor health and illness. Addressing climate change will cause some industries to decline, while others will grow and expand as we shift towards a green economy.
Challenge 6: External shocks speeding up the pace of change	Major external shocks such as economic recessions, natural disasters and global pandemics can significantly affect work environments and the speed with which the world of work changes in response.

Strategies were proposed within each of these six areas to promote the inclusion of young people with disabilities in the future of work. Some examples of proposed strategies include: strengthening employer accessibility practices; enhancing workplace approaches to diversity, equity and inclusion; providing disability-specific job skills training; and demanding greater transparency about how workplaces are using technology. We draw from the insights provided by participants in the first round of the Delphi survey in the sections below. A comprehensive description of the findings from the first round of the Delphi survey are outlined in this short report (7).

In the following section, we recap each of the challenge areas that make up the future of work for persons living with disabilities, as well as the specific strategies that were proposed by participants. We then present how participants ranked the proposed strategies and supports to address employment inclusion within the context of each of the six key challenge areas. We outline the consensus-based recommendations on policy and program supports that emerged from the study. For the three top-ranked strategies in each challenge area, we offer some additional insight on how policy-makers and program developers can implement the recommendations. We also spotlight some promising practices that can serve as examples of strategies for the employment inclusion of persons with disabilities that are resilient to the future.

Challenge 1: Impact of advanced digital technologies

Challenge 1: Impact of advanced digital technologies

Work environments across all industries are undergoing a rapid digital transformation characterized by the advancement and application of diverse advanced digital technologies (1, 10, 44, 59). These can include AI systems, Internet of Things devices, smart sensors, and cloud-based storage, among others. The digital transformation of the economy represents one of the most frequently described catalysts of change to the nature and availability of work (1). This increasing reliance on digital technology will contribute to a hyperconnectivity between people, businesses, digital devices, and data, and require workers to work more closely with machines that may be gaining intelligence (10).

The advancement and application of digital technology can offer benefits to persons living with disabilities through the innovation of assistive devices (60-62). Also, the increasing use of virtual collaboration technology and cloud-based tools has facilitated a growth in hybrid work arrangements (63-65). This has been beneficial to persons with disabilities who face limitations commuting to work or maintaining the traditional 9-to-5 work schedule (66). As another example, advanced robots within physically demanding sectors can offer greater assistance to persons facing physical activity limitations to perform a greater range of job tasks (67).

Studies suggest that the benefits of advanced digital technology will not be available to all workers with disabilities. Those working precariously may be particularly affected by technological disruption (68). The growing reliance on digital technologies can also contribute to the automation of jobs, potentially exposing persons living with disabilities to job displacement or forcing them into more precarious work arrangements where they may experience job insecurity, income instability or unsafe working conditions (69). Also, those working in occupations characterized by low-skilled or routinized job skills may also be more likely to face automation (e.g., cashiers, factory line workers) (70). The advancement and application of AI may mean that a greater range of white- and blue-collar jobs are also susceptible to partial or full automation (71).

The digital transformation of the economy will be associated with the creation of new jobs and thus new pathways for persons with disabilities to enter the labour market (72, 73). Access to these new jobs will require specialized skills (74). For instance, the growing use of AI increases the need for workers with job skills that can enable them to work with and alongside the technology (74).

Summary of findings from first Delphi survey

36% of participants indicated that advanced digital technologies could have a positive impact

- New jobs could be created in applying digital technologies and AI in different jobs and sectors.
- Barriers to work could be reduced, including the need to commute or be present in physical workspaces.
- More opportunities may be available to make workplace processes and physical spaces accessible.

16% of participants indicated that digital technologies could have a negative impact

- There may be fewer jobs for those without access to digital spaces and tools, or without the technical skills to use digital tools or work with intelligent machines.
- Precarious work could be a by-product of the increased automation of work.
- Organizations may face new challenges designing and implementing accommodations for workers within digital work environments and an AI-enabled economy.
- Virtual work may increase social isolation due to remote work, as well as hyperconnectivity to work which may lead to increased workloads, employee burnout, and reduced work-life balance.
- Employers may have more opportunities to track employees, resulting in privacy loss.

Results of second Delphi survey

Findings from ranking exercise for strategies of inclusion in Challenge 1

01 Help youth and young adults with disabilities learn new job skills by providing greater access to life-long training

02 Raise employer awareness about new accessibility and accommodation challenges created by digital technologies

03 Ensure technology is affordable for all

04 Strengthen social safety nets for persons with disabilities who lose their jobs due to technology

05 Emphasize the need for work-life balance and the right to disconnect from digital devices

06 Strengthen laws to protect worker privacy in the face of routine and mass collection of personal data

07 Increase opportunities for face-to-face interactions and social connections among workers

There was a modest amount of agreement (Kendall's $\tau = 0.29$) in the ranking scores.

Strategy 1: Help youth and young adults with disabilities learn new job skills by providing greater access to life-long training

The digital transformation of the economy will require all individuals to upskill (i.e., update or learn new skills to progress in their career path) or reskill (i.e., learn new skills to do a different job) to access employment opportunities that emerge (75-77).

Findings from the Delphi study indicated the need to ensure that disability employment service organizations, educational institutions, and employers in Canada offer upskilling and reskilling opportunities that are fully accessible to young persons with disabilities.

The digital transformation of the economy can increase employer demand for workers to possess advanced technological skills including coding, development and maintenance of different technology, and AI prompt engineers (77). Soft skills (e.g., collaboration, creative thinking, and critical thinking) are also critical in a working world reliant on digital technology, as they cannot be performed by machines at this time (78-80).

Persons living with disabilities can face obstacles to gaining the skills required to compete for jobs that require advanced technological skills. It is recommended that the training needs of persons with disabilities should be at the forefront of upskilling and reskilling initiatives (73). Strategies that can be taken to ensure that job skills development initiatives are fully accessible to persons living with disabilities include:

- Ensuring that in their design and delivery, job skills training initiatives offered in response to an economy undergoing a digital transformation are fully inclusive to persons with disabilities (46). Educators and disability employment service providers ought to consider an ongoing examination of barriers that may emerge for learners and take steps to mitigate them through formal and informal supports.

- Educational developers should place an emphasis on flexible learning formats such as weekend and evening learning, distance learning, and part-time learning. Having these options may help address barriers to participating in upskilling and reskilling initiatives and provide the opportunity to better balance the demands of living with a disability and fulfilling other life roles.

- Regular access to technological resources at home (e.g., high-speed internet, access to a personal computer) enable young people with disabilities to participate in upskilling and reskilling initiatives that are increasingly delivered virtually (73). Studies suggest that persons with disabilities are more likely to report financial and other barriers to accessing these technological resources at home (73). All job skills training initiatives, especially those designed for persons with disabilities, should aim to address resource barriers (81). Offering financial support, such as subsidies or grants, may benefit young people with disabilities in supporting their participation in job skills training initiatives.

Strategy 2: Raise employer awareness about new accessibility and accommodation challenges created by digital technologies

The increased use of digital technologies will inevitably impact the work environment and the way work is performed (83). Also, the design of new technologies will give rise to new accessibility considerations, which may benefit the working lives of some individuals and disadvantage others (46). Workplaces ought to be more attentive to this issue and address the impact that every new technology that is implemented will have on workers.

Employers should be encouraged to take a disability lens to evaluate new technology to ensure that all workers benefit from their application and that new challenges are not created for persons living with different disabilities (84). Applying a disability lens will also require workplaces to consider the diversity of lived experiences among persons with disabilities and assess how they may be affected by the adoption of new technology (85). Workplaces should also increase their awareness of how the implementation of technology may disrupt and reshape work environments, the performance of work tasks, and the use of existing accommodation practices.

Applying a disability lens can ensure that the use of new technology does not disproportionately disadvantage persons living with disabilities and can bring to light the need for dedicated accommodations or require dedicated assistance to address emergent accessibility challenges.

Strategy 3: Ensure technology is affordable for all

As digital advances allow workplaces to move further into hybrid or fully virtual work environments, there is a need to ensure that all workers with disabilities have access to essential digital resources. As noted earlier in this section, digital resources include digital devices (e.g., smartphones, tablets, and computers) as well as high-speed internet access that can enable persons with disabilities to participate in a digital economy (73).

Of concern, research indicates that Canadians with disabilities are more likely to report living below the poverty line when compared to those without a disability; they may therefore face greater financial obstacles to accessing essential digital resources (86). Steps should be taken to address these financial

constraints. Governments may regulate the price of digital resources to ensure financial accessibility for persons living with disabilities; they may also enhance digital infrastructure within the community (87). As an example, offering affordable or free wireless internet access can enable persons with disabilities to participate in jobs that require virtual teleconferencing or cloud-based collaboration tools. Governments may also require employers to provide all digital technology needed to complete a job task including assistive tools so that workers do not have to bear the personal financial burden of obtaining these technologies.

Challenge 2: Artificial intelligence in human resource decision-making

Challenge 2: Artificial intelligence in human resource decision-making

Workplaces are already using artificial intelligence (AI) to support their human resource (HR) management practices; this practice will likely continue in the future of work (88, 89). AI tools are helping employers make HR decisions that were previously made by humans, at greater speed and lower cost (90). Some employers are using AI to monitor the performance and productivity of their workers (91). Others are using AI in their recruitment processes to screen and rank résumés, or to analyze responses, facial expressions, gestures, or voice characteristics during interviews (92, 93).

Proponents of AI make the case that the technology can be a neutral decision-maker and can be used to recruit candidates who have been traditionally marginalized (94, 95). However, the design of AI can play a big role in how it functions in practice (96). Biases may emerge from both the design of algorithms and the data used to train the AI. These biases can put persons with disabilities at a greater disadvantage in the workforce by excluding them from job opportunities or career advancement processes (97, 98). Examples can include AI image classification tools used in the job interview process; these may exclude neurodivergent individuals from consideration, as they may respond to interview questions differently from neurotypical individuals (99). AI résumé-screening tools may penalize applicants based on explicit or implicit keywords that suggest that they are living with a disability, regardless of the job skills or training that may make them suitable for a position (100).

In addition to its impact on work outcomes, the use of AI in HR practices can contribute to several other challenges for persons with disabilities, including greater stress to meet productivity markers determined by AI. The use of AI tools to gather data from employees and monitor workers' productivity can also raise privacy concerns (101).

Summary of findings from first Delphi survey

63% **of participants indicated that artificial intelligence in human resource decision-making would have a negative impact**

- There could be a greater potential for misuse of AI tools if those using them are unaware of their potential effects on employees.
- Inequalities in hiring would increase, especially if HR decisions are made exclusively with AI tools.
- Workplaces may become less diverse, if diverse lived experiences are not integrated into the design and implementation of AI-related HR systems.

11% **of participants indicated that artificial intelligence in human resource decision-making would have a positive impact**

- Hiring decisions could be based on an applicant's skills rather than their visible characteristics.
- HR computerized systems may make it simpler to access employment opportunities, especially for people who prefer not to meet in person.

Results of second Delphi survey

Findings from ranking exercise for strategies of inclusion in Challenge 2

01 Apply a diversity, equity, inclusion and accessibility lens to the design and application of AI in HR programs

02 Balance the use of AI with human input in HR decisions

03 Be transparent in how workplaces use AI in their HR practices

There was limited consensus (Kendall's τ = 0.0837) in the ranking of the different strategies for inclusion.

Strategy 1: Apply a diversity, equity, inclusion and accessibility lens to the design and application of AI in HR programs

Participants in our Delphi survey indicated the need to ensure that designers make diversity, equity, inclusion and accessibility (DEIA) a central component of the design and application of AI HR tools. By applying a DEIA framework, AI can be better leveraged to ensure that the application of AI does not harm young persons with disabilities as they are entering the working world. Inclusive processes when developing and applying AI equitably and inclusively (102) can be established in three ways (103):

• When designing algorithms that underpin AI function, developers should include safeguards to account for workers' backgrounds, experiences, and personal characteristics that can shape how individuals may participate in job application processes or complete job tasks (102). Developers creating these tools should consist of diverse individuals who can incorporate their lived experience into the algorithm design. Also, the design of AI tools should be built in ways that can consider outliers–the minorities that are most often marginalized when design decisions are made for the majority (104).

• Data plays an important role in training AI and underlies how it learns and evolves over time. Yet, developers often train AI using data that reflects population averages, ignoring outliers with unique lived experiences (105-107). The data used to inform AI should be representative of all workers to ensure that it does not disadvantage individuals who encounter AI technology at different phases of the working life cycle.

• It is essential to continuously test datasets and AI decisions for bias and make adjustments as necessary (108). Canadian employers play a critical role in ensuring the AI-based programs they use, advance DEIA principles by leading regular audits of AI algorithms and data for any negative effects that may emerge, impacting workers with disabilities (109). It is also recommended that persons with disabilities play an integral role in any audit to help identify how the AI may create employment inclusion challenges and play a role in creating solutions (109).

Promising practice: Diversity, equity and inclusion tool for the design of AI

IBM's AI Fairness 360 toolkit fosters a diversity, equity and inclusion focus on the design and application of AI in human resources (110). AI Fairness 360 is an open-source toolkit that is designed to help organizations examine, report, and mitigate biases in AI systems, with a particular emphasis on promoting fairness, transparency, and accountability in human resource processes. AI Fairness 360 includes various algorithms and metrics that allow organizations to address bias and discrimination in AI-based human resource programs, such as résumé screening, candidate selection, and performance evaluations. This is helpful in the human resource context, as AI Fairness 360 can identify disparities in the treatment of different candidates based on their demographic grouping, such as their gender, race, and/or age.

Strategy 2: Balance the use of AI with human input in HR decisions

Exclusive reliance on AI tools can lead to various employment inequity concerns, especially in the context of HR decision-making (97). Employers should ensure that humans, especially those with training in disability inclusion practices, lead HR decision-making regardless of whether AI tools are used or not. Such an approach will better ensure that a range of considerations are taken into account when making HR decisions, not just those pre-programmed into an algorithm (111, 112). The collaboration between humans and machines can also be an important means to calibrate AI for the inclusion of persons with disabilities (113). For instance, companies using AI-powered tools to monitor productivity can continue to refine algorithms to capture the ways in which job tasks can be completed rather than imposing a uniformed approach.

Strategy 3: Be transparent in how workplaces use AI in their HR practices

As noted earlier in this section, data privacy and surveillance issues are major concerns for persons living with disabilities who are exposed to AI HR decision-making tools (97, 101). Employers should be aware of legislation in their jurisdiction that governs the use of AI technology (114).

Companies should be clear with employees and job candidates that they are using AI (115); they should also consider making the design of the AI transparent, including how it has been developed and what data is used to train the AI. Additionally, employers should be clear about how their hiring and people management decisions are made–with AI tools, human input or with both (116). Greater transparency can prevent the misuse of the AI and catch errors that may emerge with its application (117).

When using AI in their recruiting processes, employers should consider accommodations for applicants and workers with disabilities, especially if the AI tools used are not proven to have DEIA as part of their design (118). The same goes for AI tools used to monitor productivity. Transparency in HR decision-making, especially when related to the use of AI tools, can ensure fairness, build employee trust, and provide persons with disabilities with equal opportunities for employment in the future workforce (97, 101, 119).

Challenge 3: Digital globalization

Challenge 3: Digital globalization

Fostered by the widespread adoption of advanced digital technology across different industries and occupations (as described in Challenge 1), the global economy is becoming increasingly interconnected across both virtual and physical spaces (120). A range of occupations are now being completed from any location using advanced digital technologies (121). Also, an increasing number of job tasks that make up different occupations are being broken up and performed by freelance workers across different geographic locations (122). As more work can be completed virtually, competition for employment opportunities will increase as a greater number of workers from different locations bid for such jobs (123).

The use of augmented reality can foster virtual collaboration through a shared virtual workspace. Using augmented reality-powered teleconferencing, employees can visualize and interact with 3-D models, share information, and collaborate as if they were physically present (124-126).

As work opportunities are increasingly made available across geographic boundaries, worker access to labour protections may be diminished. Businesses may turn to workers who are willing to accept lower wages and fewer benefits (127). With greater digital connectivity across workplaces in different locations, workers in domestic labour markets could experience greater competition and face job displacements (123).

Young persons with disabilities have the potential to benefit from new pathways to employment opportunities as virtual and augmented work increases across the globe (128-130). However, the increasing competition for a limited number of jobs could mean that persons living with disabilities face further exclusion. Also, an erosion of domestic standards and secure employment arrangements caused by the increased use of digital technologies may adversely affect young persons with disabilities, who may benefit most from job security and supportive work. Choosing to work for an employer outside of Canada may mean these young persons living with disabilities are being excluded from local labour standards, social support, and policies that encourage disability inclusion (131).

Summary of findings from first Delphi survey

40% **of participants indicated that digital globalization would have a positive impact**

- Fewer geographic constraints on those looking for employment and greater access to job opportunities in a wide range of occupations.
- Greater motivation for employers to adopt digital work arrangements and provide flexible working conditions.
- More opportunities for upskilling and training to meet the labour demands of a global economy.
- Greater diversity in the skills valued by employers, including soft skills that cannot be replaced by computers.

26% **of participants indicated that digital globalization would have a negative impact**

- Greater competition for jobs from candidates across the globe, resulting in fewer opportunities for people with disabilities who lack the required job skills, training, or education.
- Short-term labour market needs of employers potentially ahead of the long-term career goals of workers in skills training programs.
- Greater unemployment and job insecurity for workers resulting from employers relocating facilities to countries where the costs of business are lower.
- Greater potential for discrimination or exploitation as people with disabilities work for employers in countries with weaker labour laws and fewer supports.

Results of second Delphi survey

Findings from ranking exercise for strategies of inclusion in Challenge 3

01 Enforce a minimum standard for accessibility and employment rights internationally

02 Provide financial support to young people with disabilities to help them compete for jobs

03 Update educational curriculums to meet the demands of a global economy

04 Promote the hiring of local workers

05 Regulate job outsourcing e.g., giving jobs to workers outside Canada

There was limited consensus across participant rankings (Kendall's τ = 0.0718).

Strategy 1: Enforce a minimum standard for accessibility and employment rights internationally

To foster inclusive employment within an economy that is being reshaped by digital globalization, participants in the Delphi survey highly ranked the importance of setting and enforcing international accessibility standards that applies to virtual work environments. Canadian workers engaged in the digital international marketplace may find themselves working for companies or clients in various parts of the world, with different accessibility standards. Workers with disabilities in this situation, especially those at the early career phase, could be at greater risk of discrimination and mistreatment in unregulated work environments. Setting and enforcing international accessibility standards for virtual work can be achieved in three ways:

- Increased globalization in virtual and physical workspaces require improved policies that address barriers to inclusion (132-134). Yet, most existing legislation is not well-suited to a working world where companies may operate across geographical boundaries and through digital channels. For instance, of the 164 countries or regional integration organizations that have signed the United Nations Conventions on the Rights of Persons with Disabilities (UN CRPD), only 121 countries have passed some form of law that aims to promote the inclusion of persons with disabilities within the working world (135, 136). Integrated international accessibility standards should be set that establish minimum requirements for worker rights and accessibility within a global and virtual marketplace (137).

- The UN CRPD was developed to foster inclusion within a more traditional working situation where employees are required to go to physical workplaces (135). To meet the demands of a virtual work environment, accessibility and inclusion standards need to be developed that align with the UN CRPD and are directly relevant to a labour market that is defined by digital globalization.

- The *Accessible Canada Act* (ACA) (138) represents critical legislation to remove barriers to employment for persons with disabilities that aligns with Canada's obligations as a signatory of the UN CRPD (139). Currently, the ACA is only enforceable to workers in applicable organizations based in Canadian contexts and has limited enforceability for remote workers employed by the same organization in another country. A company should be required to take steps domestically, as well as internationally, to address disability inclusion and barriers to employment participation for workers with disabilities.

- Similarly, enforcement mechanisms should also exist for international companies that provide goods and services in Canada but rely on workers from different geographic regions. These companies should also be required to follow existing disability inclusion standards and be required to provide consistent supports and accommodations across their operations (131). In sum, to promote employment inclusion in the future of work, accessibility standards ought to cross international boundaries to ensure universal inclusive employment.

Promising practice: Enforcing a minimum standard for international accessibility rights

The *European Accessibility Act* is an enforcement of minimum accessibility standards and employment rights on an international scale (137, 140). The legislation, adopted by the European Union, mandates that products and services, particularly in the digital economy, meet specific accessibility requirements to ensure they are accessible to persons living with disabilities. This proactive approach sets a precedent for international efforts to ensure that all citizens, regardless of disability, have equal opportunities and rights, and in turn emphasizes the importance of universal accessibility in the workforce and society at large.

Strategy 2: Provide financial support to young people with disabilities to help them compete for jobs

Young persons with disabilities in Canada need to ensure they have the job skills to access and sustain high quality accessible employment opportunities within a highly competitive and digitally connected global work environment (141). As noted in our discussion on Challenge 1, this includes the acquisition of technological and soft skills that will be demanded by Canadian employers (78, 80, 103). These skills can help ensure that workers with disabilities are resilient to the growing practice of sending work offshore (142). As we described in Challenge 1, there is a need to offer financial supports to address potential resource barriers to accessing job skills development opportunities that persons with disabilities may face (143). In addition to this, financial supports can enable workers with disabilities to obtain inclusive upskilling opportunities. The improved skills of the labour market will ensure that Canadian employers can recruit employees from within the country rather than having to look to international labour markets (144).

Strategy 3: Update educational curriculums to meet the demands of a global economy

Similarly, as we described in Challenge 1, community-based organizations and educational institutions should continue to update their training programs to better support skill development for workers to compete for jobs of the future (29, 30). Educators should continue to scan for potential changes to the working world (145, 146) and ensure that the training provided to workers with disabilities is up-to-date and responsive to the changing needs of Canadian employers.

Challenge 4: Cultural tensions around workplace inclusivity
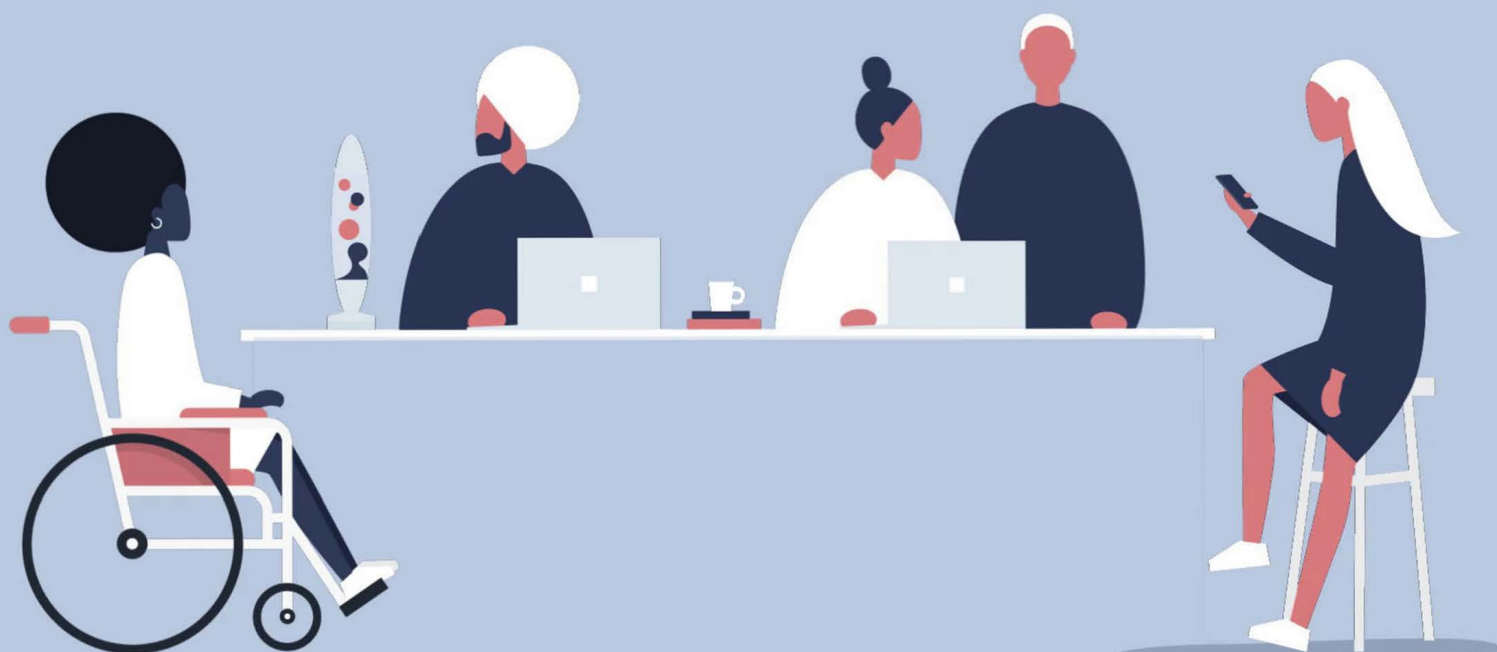
Challenge 4: Cultural tensions around workplace inclusivity

Broader social movements and new generational perspectives are changing workplace norms and cultures, in turn creating tensions around inclusivity (147-149). The Canadian workforce is becoming more diverse. To attract and retain talent, organizations are being forced to take steps to become more welcoming to different groups (150).

Fully inclusive work environments provide all workers with an equal opportunity to participate and contribute to organizational goals (151, 152). For persons with disabilities, a more inclusive work environment may bring greater attention to the employment barriers they face and foster strategic thinking regarding how to address barriers through the implementation of practices and policies (153).

For persons with disabilities, increasingly inclusive workplaces will offer the support and flexibility to sustain employment and provide equal access to opportunities for career advancement which may be particularly beneficial as a person is entering the labour market (154).

At the same time, there is mounting tension as growing social movements are resisting workplace inclusion. This resistance (or backlash) has emerged from groups that have traditionally benefitted from holding positions of power (155). As workplace initiatives that support diversity, equity, inclusion and accessibility can create significant changes to the structure of an organization, members of traditional majority groups may feel a "status threat." They may assume they will suffer losses as other groups benefitting from these initiatives make gains (155). The rising tension created by the growth of these populist movements could in fact strengthen the rejection of greater workplace inclusion, with great implications for vulnerable workers such as young workers with disabilities (155).

Summary of findings from first Delphi survey

41% **of participants indicated that cultural tensions around workplace inclusivity would have a negative impact**

- Fewer job opportunities for people with disabilities if negative populist attitudes influence hiring decisions.
- Growing disability-related workplace discrimination, ranging from increased harassment to fewer promotion opportunities.
- Greater hostility towards those who require additional supports at work, which could in turn cause employers to limit accessibility and workplace accommodations.
- Reduced government funding for social supports and safety nets for people living with disabilities as populist sentiments exert pressure on program decisions.

39% **of participants indicated that cultural tensions around workplace inclusivity would have a positive impact**

- More job opportunities can be created for people with disabilities as new generations of workers influence workplaces to embrace diversity and social justice in their workplace practices.
- Access to job accommodations and flexible work arrangements could become more common.

Results of second Delphi survey

Findings from ranking exercise for strategies of inclusion in Challenge 4

01 Build employer confidence to create disability inclusive workplace cultures

02 Update existing anti-discrimination laws and policies

03 Counteract negative attitudes that are spread by populist movements

04 Strengthen government oversight of social media platforms

There was a modest amount of agreement (Kendall's τ = 0.25) in the ranking scores.

Strategy 1: Build employer confidence to create disability inclusive workplace cultures

As a result of the growing diversity of the Canadian workforce, there is a push for workplaces to build or cultivate inclusive cultures (156). For workers with disabilities, creating an inclusive workplace involves taking the steps to identify and address the different workplace and societal barriers that can restrict employment participation (157). Yet, many employers continue to lack the skills and training needed to create disability inclusive workplaces (158, 159).

Participants in our Delphi survey highlighted the requirement to build employer capacity to create inclusive workplace cultures for persons with disabilities. "Disability confident" workplaces are those where managers and staff recognize the important contributions that persons with disabilities can make to a workplace. A disability confident employer often also engages in an ongoing process of identifying barriers to inclusion for persons with disabilities and recognizing the benefits that greater accessibility can have for workers and the organization as a whole (160). Additionally, a disability confident employer inserts a disability lens into all core business strategies to ensure that programs and policies that support disability inclusion are at the forefront of all organizational activities, including recruitment, onboarding, retention, and accommodation of persons with disabilities (161). Greater disability confidence showcases an organization's commitment to inclusive work environments and signals internally and externally that a company is open to all workers (161).

While there is no one-sized-fits-all approach to building disability confidence, there are several steps that ought to be taken by organizations:

- Reinforce the business case for greater diversity by leveraging growing research that shows that the hiring of persons with disabilities can benefit workplace culture and contributes to greater profitability and productivity when compared to companies that do not take a disability inclusion lens (162).

- Continue to highlight the benefits of a disability inclusive environment for all workers. Research shows that workplaces that employ persons with disabilities are more socially cohesive and empathetic (163). They also contribute to an overall culture of support that benefits all workers (164). In the long-term, a more inclusive work environment has the potential to create organizational conditions where all workers feel like they can bring up concerns to senior leadership without fears of a negative reaction and where they are offered instrumental and social support (165).

- Offer training to all workers on how to recognize and address all types of discrimination towards workers with disabilities (164). This can provide workers with the practical tools to reinforce an organizational mandate of inclusion and create a workplace where individuals at all levels are accountable for their behaviours (164).

- Increase the representation of persons with disabilities across all levels of an organization, including management and non-management (164). The representation of persons with disabilities ensures that lived experience is directly integrated into the development of workplace practices and policies that address bias and advance equity and fairness within the organization (164). Increasing representation enables workers across all levels to directly learn about the benefits of different strategies that promote disability inclusion (164).

> **Promising practice: Employer-focused programming to build inclusive workplace cultures**
>
> An example of an organizational initiative that helps build employer and worker capacity to create inclusive workplace cultures is the US Department of Labor's Office of Disability Employment Policy, through its Employer Assistance and Resource Network on Disability Inclusion (EARN) (166, 167). EARN's primary focus is promoting disability inclusion in the workplace and offers free consultation, technical assistance, and resources to employers, workers, and other stakeholders. EARN provides training programs, webinars, and workshops for both employers and workers to enhance their knowledge of disability inclusion and promote best practices. EARN also offers a wide range of resources, including toolkits, guides, and case studies, to help employers and workers understand the benefits of disability inclusion and implement strategies to create more inclusive work environments. Lastly, EARN collaborates with various organizations, including disability advocacy groups, to leverage resources and expertise in advancing disability inclusion in the workplace.

Strategy 2: Update existing anti-discrimination laws and policies

In Canada, federal and provincial human rights and disability legislation protects persons with disabilities from discrimination and requires workplaces to offer reasonable accommodation to persons with disabilities (168). As described earlier, the *Accessible Canada Act* (138) has recently been passed and represents an important step toward identifying and eliminating barriers to inclusion for persons with disabilities. Across all existing legislation, the scope and application of existing policies remain limited; the onus is on persons with disabilities to initiate complaints, rather than on employers to create more inclusive work environments (169).

Updating and reinforcing disability inclusion policies can ensure that employers take the steps necessary to address cultural tensions and discrimination within all aspects of their organizational processes. Educating employers about their duties–the legal requirement to make reasonable accommodations for disabled individuals who are negatively impacted by a policy or practice, up to the point of undue hardship–and educating workers and those seeking employment about their rights (i.e., the right to request reasonable accommodations) can further promote inclusivity and equal opportunities.

Strategy 3: Counteract negative attitudes that are spread by populist movements

The growth of populist sentiments may play a role in exacerbating ableist views that perceive persons with disabilities as a group that receive a disproportionate amount of organizational support and resources at the expense of other workers (170). Other ableist views include the perception that persons with disabilities are unable to complete diverse physical and cognitive job tasks, require costly accommodations, or disrupt workflow with the additional support they need.

However, many of these stereotypes have been proven to be false. For example, findings from HR management literature show that upfront costs related to most accommodations can be minimal for employers, and long-term ongoing costs can be even lower, especially when accommodations are provided earlier in the employment lifecycle (171). Other studies consistently show that the inclusion of persons of disabilities provides benefits to workplace culture and can increase productivity overall (172).

Companies can implement strategies to address and counteract negative attitudes towards workers with disabilities by implementing management-led policies and programs (170). By adopting inclusive practices, senior leadership can have a wide-ranging impact on addressing negative attitudes across the organization and can promote employees to be more open and to combat discrimination, bias, and harassment (173). Employers should also provide workers with ongoing education and training focused on disability and accessibility issues, raising awareness, and changing attitudes (174).

Challenge 5: Climate change

Challenge 5: Climate change

Climate change–broadly defined as long-term changes to a region's weather conditions (175)–is expected to dramatically alter job opportunities and working conditions in the future of work (176). While all workplaces can be affected, some workplaces are particularly susceptible. These include workplaces located in geographic regions more prone to climate emergencies (e.g., coastal areas, regions prone to heavy rainfall and flooding, and forests and grasslands susceptible to wildfires) (177).

Rising temperatures will inevitably place workers at risk for extreme heat exposure whether they work indoors or outdoors. Even workers with climate-controlled workspaces can face risks associated with climate change when commuting to and from work. Growing emissions coupled with an increasing number of wildfires contribute to rising air pollution for workers across both rural and urban settings (178). The increased frequency and intensity of extreme weather events (i.e., floods, droughts, heavy rainfall) can damage infrastructure and cause work disruptions, impacting employment opportunities and contributing to unsafe working conditions (176).

Climate change can be particularly pronounced for workers with disabilities when compared to workers without disabilities. Some studies indicate that persons with disabilities are more adversely affected when employed in industries and occupations that are more susceptible to climate change (127). Persons with disabilities may also face barriers to accessing social protections (e.g., income support, sick leave) that are necessary to buffer the harmful effect of climate change on a person's job (127).

Concerningly, the diverse needs of workers with disabilities can be an afterthought in the design of climate change preparedness planning (179). For example, emergency warning systems, which often rely on cell phone alerts, may lack accessible design in communicating information to a person who is deaf or has a vision impairment (180). This can leave a person with a disability at a particular disadvantage during an extreme weather event (181, 182). Persons living with disabilities, who are more likely to live below the poverty line than those without a disability, have fewer resources to move from regions most susceptible to climate events or may be less likely to change occupations (182).

A green economy has emerged in response to the climate emergency. A green economy is defined by economic activity that produces outputs with a low carbon footprint, is resource efficient, and can be socially inclusive (183). In the future of work, employment opportunities will change as new jobs are created and industries adapt and grow in the green economy (184). Drawing from discussions in response to the different challenge areas presented in this report, there is a risk that young persons with disabilities may face barriers to upskilling and reskilling that could limit their access to new green job opportunities (127).

Summary of findings from first Delphi survey

28% of participants indicated that climate change would have a negative impact

- People with disabilities working in regions or industries affected by climate events may experience more job loss and insecurity.
- Climate change may result in unsafe and stressful conditions, especially for those required to work outdoors or who need to commute to work.
- As more resources are redirected to address climate change and climate emergencies, fewer resources would be available for creating accessible workspaces.

9% of participants indicated that climate change would have a positive impact

- More employers would implement remote working arrangements, reducing the need to commute to physical work environments.
- Moving towards a green economy would create new job opportunities.

Results of second Delphi survey

Findings from ranking exercise for strategies of inclusion in Challenge 5

01 Increase options for remote work and flexible work arrangements

02 Make public transit more accessible for people living with disabilities

03 Incentivize workplaces to develop climate change plans that are fully inclusive of people living with disabilities

04 Support workers with disabilities in industries that are at greater risk of being affected by climate change

There was a limited consensus across participant rankings (Kendall's τ = 0.186).

Strategy 1: Increase options for remote work and flexible work arrangements

To foster inclusion in a changing working world shaped by climate change and extreme weather events, participants in our study indicated that remote and flexible work arrangements, provided by employers, represent a top strategy.

A body of past research has shown that flexible work arrangements and the opportunity to work remotely can enable persons with disabilities to manage activity limitations that they may face, and support sustained and productive work (185-187). Within the context of climate change, by offering scheduling flexibility, employers can ensure that workers with disabilities can adapt their schedules based on environmental conditions that could impact their well-being.

Flexible work arrangements can be offered in several ways, including modifying the location of work (e.g., hybrid work opportunities) or work schedules (e.g., shifting start and end times, splitting work shifts) (188). For instance, for workers with disabilities required to work outdoors, the opportunity to adapt schedules to avoid the hottest times of the day could be an important strategy to support sustained employment (188). Remote work can also minimize the need for persons with disabilities to have to commute to work and be exposed to potentially harmful outdoor conditions (189). Remote work opportunities can also enable workers with disabilities to live in regions that are less prone to extreme climate events regardless of the location of their work.

There are several strategies that employers can take to expand their offering of flexible work arrangements and remote work opportunities within the context of climate change.

- Workplaces should conduct an ongoing evaluation of all occupations and job tasks that can reasonably be completed remotely or with greater flexibility, and continuously look for opportunities to support workers with disabilities amidst climate emergencies.

- Organizational policies regarding scheduling flexibility and remote work opportunities should be designed and implemented equitably to ensure that all workers, especially those who require dedicated support, can access these benefits (190) to protect themselves from the effects of climate change.

- As noted in previous sections of this report, the digital transformation of the economy can lead to a growing range of job tasks, across different occupations and industries, moving to hybrid or virtual environments. To foster flexible work arrangements, employers should be encouraged to adopt the digital tools and assistive technologies necessary to allow workers to perform job duties remotely (191).

Promising practice: Flexible and environmentally conscious workspaces

Smart Work Centers are shared and collaborative spaces where employees from different organizations can flexibly work (192, 193). Smart Work Centers are an example of an initiative that aims to increase options for remote work and flexible work arrangements. Smart Work Centers can be designed with environmental sustainability in mind (193). They can incorporate energy-efficient technologies, eco-friendly materials, and green building practices to reduce their carbon footprint. Additionally, they can prioritize accessibility, making sure that individuals with disabilities can easily access and work within these spaces. This includes providing accessible facilities, equipment, and technology. More often than not, Smart Work Centers are typically equipped with technology and infrastructure that enable remote work and flexible work arrangements (194). This may include high-speed internet, video conferencing facilities, and comfortable workspace options.

Strategy 2: Make public transit more accessible for people living with disabilities

In our survey, improving the accessibility of public transportation systems was seen by participants as a critical strategy to promote inclusive employment opportunities within the context of climate change.

Research shows that persons with disabilities are motivated to use all types of transportation (e.g., bus, air, ferry, rail) to commute to work or for work-related purposes (195). Yet, despite the presence of duty to accessibility legislation that applies to public transit, barriers to transportation are commonplace for persons with disabilities (196).

Inaccessible physical design, high travel costs, and inconvenient timetables can all be barriers to public transit utilization (197). Improving transit accessibility can ensure that persons with disabilities are able to fully utilize public transit to get to and from work while also participating in climate change mitigation strategies (198).

To achieve this strategy, transit providers should continue to take steps to ensure that their respective transit and para-transit systems are fully accessible to persons with disabilities (199). Strategies include evaluating all aspects of a transit system and urban planning infrastructure and making changes to enable persons with disabilities to complete door-to-door routes (200). Crowdsourcing efforts may also be helpful in engaging persons with disabilities in the process of identifying barriers within a transit system (201). Transit providers can also provide accessibility features (e.g., accessible parking and washrooms, snow clearing from bus stops or station platforms, elevators and ramps at all stations, courtesy or priority seating on vehicles) and communicate these features through accessible formats on their websites and mobile apps (202). Transit providers should also communicate public announcements in multiple formats (e.g., displaying train times using an LED board and announcing schedules) to ensure they can be reached by many people, including those with various disabilities (203). Transit providers can ensure trained customer service representatives are available to provide help with wayfinding, ticket purchasing, and finding route connections (204). Transit providers may also review travel patterns to ensure sufficient service outside of rush hour (203).

Strategy 3: Incentivize workplaces to develop climate change plans that are fully inclusive of people living with disabilities

Businesses and governments are creating policies and actions plans to prepare for extreme weather events related to climate change (205). Currently, most preparedness plans are developed without a disability lens and without input from persons with disabilities. As a result, the format or delivery of plans tend to lack an inclusion perspective and may not be well-suited for individuals with different disabilities (206). When developing, reviewing, and updating policies, governments and workplaces should consistently use a disability inclusion lens and ought to identify the needs of different persons living with disabilities. Examining the potential barriers faced by persons with disabilities within preparedness plans should be at the forefront of the plan (207).

Within the workplace, disability inclusive climate action plans should be developed by employers in direct collaboration with workers with disabilities to inform strategies regarding how accessibility and inclusion can be supported (208). As an example, organizational evacuation plans and emergency warning systems should be designed to include details on how workers with different disabilities can be alerted in the event of an emergency, receive appropriate amounts of information, and safely evacuate a workplace. Plans may also include emergency access to resources (e.g., income, health care, food) to alleviate disruptions to health and quality of life for persons living with disabilities (182). Existing plans should be regularly assessed and continuously updated (209).

Challenge 6: External shocks speeding up the pace of change
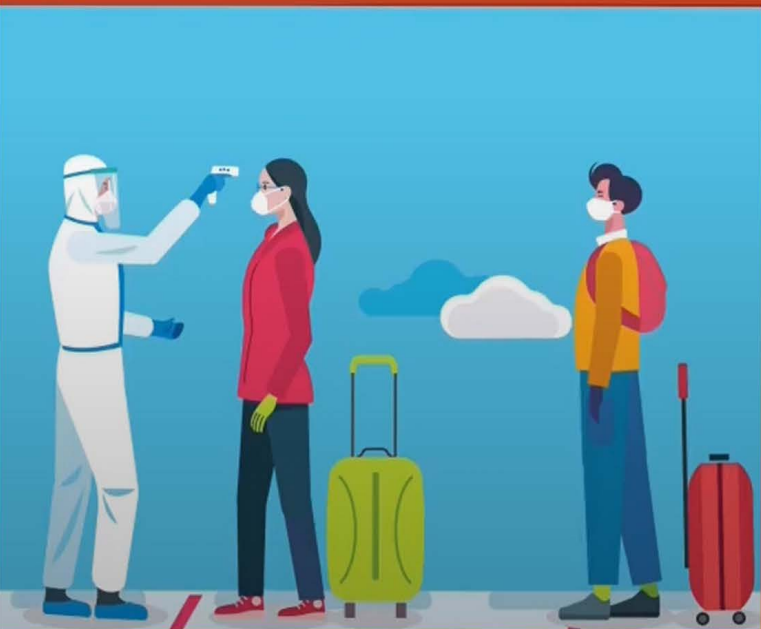
Challenge 6: External shocks speeding up the pace of change

External shocks refer to any large-scale event that can alter the trajectory of the labour market and speed up the pace of change to working conditions (127). Examples can include natural disasters, global pandemics, or periods of economic recession. Some external shocks can catalyze a range of social, technological, economic, environmental, and political trends, which also exacerbate the pace and magnitude of change (210).

Persons with disabilities may be particularly susceptible to a shock event (211). One reason is they often find themselves in low quality, low wage, or precarious employment (212). These lower quality jobs are associated with inadequate protections to buffer the impact of a disruption to an individual's working situation (20), including job security, union protections, paid leave, or other benefits (213). What is more, precarious workers–those holding temporary or part-time working contracts–are often among the first to be laid off or have their work hours reduced during an economic slowdown and less likely to access policy supports (214).

Low wages and inconsistent income may mean workers with disabilities who are in low quality precarious jobs lack the savings they need during times of financial hardship caused by a shock event. Of concern, as we have described in previous sections of this report, persons with disabilities may also face barriers to accessing job skills training opportunities or educational qualifications that provide pathways into higher quality employment opportunities that tend to fare better during an external disruption to work.

As an example, the COVID-19 pandemic represented a significant shock to the economy and to the work environment (215). The pandemic led to the closure of a number of physical workplaces and resulted in the rapid adoption of remote work (216). The COVID-19 pandemic also contributed to workplace investments in digital technologies that hastened the transformation of the economy and the growing automation of work (217). At the same time, workers with disabilities were more likely than those without disabilities to experience work disruptions during the COVID-19 pandemic or be forced into the unsafe and unstable working situations (218). Persons with disabilities also faced barriers to obtaining adequate income support benefits to buffer the economic disruptions caused by the pandemic (219).

Summary of findings from first Delphi survey

66% **of participants indicated that major shocks speeding up the pace of change would have a negative impact**

- Unemployment would hit some workers harder than others, particularly those already facing barriers and lacking resources such as workers with disabilities.
- Workers would find fewer job accommodations and experience greater job demands as employers face greater financial pressure.

3% **of participants indicated that major shocks speeding up the pace of change would have a positive impact**

- Work becomes more accessible as employers are motivated to shift work to virtual environments in response to shocks.

Results of second Delphi survey

Findings from ranking exercise for strategies of inclusion in Challenge 6

01 — Facilitate employment in stable jobs that may be less affected by shock events

02 — Ensure workplaces are prepared to meet the needs of workers with disabilities during a shock event

03 — Offer financial aid to people with disabilities who lose their jobs due to external shocks

04 — Offer training and funding support to small and medium-sized employers

There was a limited consensus across participant rankings (Kendall's $\tau = 0.0799$).

Strategy 1: Facilitate employment in stable jobs that may be less affected by shock events

Participants in the Delphi study indicated that obtaining stable, high-quality employment that offers job security and better wages represents the top strategy to protect workers during a shock event and to promote inclusive employment in the future of work.

Past studies of persons living with disabilities indicate that they are more likely to be employed in a low-quality job when compared to their peers without a disability (20). Also, persons with disabilities are often exposed to a system of organizational practices that may limit the ability to find and sustain full-time employment (220). These adverse employment practices could be particularly challenging during a time of rapid change.

There are several strategies that can be taken to improve job stability and offer supports that can help persons with disabilities navigate external shocks:

- Governments, community organizations and employers should seek to create and support pathways that persons with disabilities can access to obtain higher quality work (221). Strategies noted in previous sections of this report include offering upskilling and reskilling programs that are relevant to the future of work and have the potential to lead to jobs and career advancement opportunities (222). For young people living with disabilities who are entering the labour market, tailored career counselling and work-oriented learning opportunities can be offered (223).

- Through collective bargaining, organized labour can play an important role in improving the working lives of those in precarious positions (224) and increase the likelihood of improving labour standards (e.g., livable wage, sick leave) that may be particularly beneficial during times of an external shock (225).

Promising practice: Creating opportunities to obtain stable employment through inclusive action planning

One example of a government plan aimed at helping persons with disabilities work in stable jobs and reduce the impact of an external shock is Canada's Disability Inclusion Action Plan, part of the Canadian federal government's COVID-19 Economic Response Plan (226). This plan included measures to help individuals with disabilities find and maintain employment during the recent pandemic. One of the plan's central features was the provision of wage subsidies to employers that hired individuals with disabilities. Also, the plan increased funding for disability-related support services including accessible remote work opportunities for persons living with disabilities.

Strategy 2: Ensure workplaces are prepared to meet the needs of workers with disabilities during a shock event

Employers should create preparedness plans that explicitly support workers with disabilities during a shock event. Drawing from earlier sections in this report, preparedness plans developed by employers should involve an evaluation of vulnerabilities persons with disabilities could face and a thoughtful plan to buffer the effects, including providing diverse supports to sustain employment (e.g., access to flexible scheduling, provision of job accommodations and other resources). Supports should be made available

regardless of whether a worker is employed in a full-time permanent or contract job. Preparedness plans should be adaptable to different potential external events that could interrupt employment.

Strategy 3: Offer financial aid to people with disabilities who lose their jobs due to external shocks

Persons with disabilities in low quality work or precarious work may experience reduced hours or job loss during an external shock and may not have financial savings to prevent hardship. Adequate income support and benefits (e.g., supplementary health care coverage, paid leave) can help during times of a work disruption (227).

Governments can ensure inclusive financial supports are ready to be implemented during external shocks to allow workers to manage unexpected job loss. As an example, the Canadian Emergency Response Benefit provided during the COVID-19 pandemic offered financial support to workers whose employment was affected by the closure of businesses (228). Of note, eligibility criteria for accessing the emergency benefit often excluded persons with disabilities (229) who were covered by existing, less generous benefit schedules (230). Based on the gaps highlighted in the literature, benefit levels and eligibility criteria can be reassessed to ensure they can support the quality of life of persons living with disabilities.

Another example, emerging research highlights the potential importance of portable benefits to buffer the impact of an external shock. Portable benefits are connected to the individual rather than their places of employment and stay with the individual as they change jobs or face displacement (231). They are universal and can be made available to workers regardless of the type of employment arrangement they possess (232).

Discussion

The world of work is changing at a rapid rate and has the potential to leave behind the most vulnerable segments of the labour market. The future of work also holds opportunities for groups of workers who have traditionally been excluded from employment opportunities. In this report, we highlight the implications of the future of work for young persons living with disabilities and aim to build consensus on strategies that can support inclusive employment. Findings can be utilized to support disability employment policies for young persons at the start of their careers and can be resilient to changes in the future of work.

We took a Delphi approach where persons with lived experiences of a disability and other subject matter experts were surveyed over two rounds to identify key challenges that can impact the employment of persons living with disabilities. We identified six specific areas of the future of work that represent challenges for persons with disabilities. They included the impact of the digital transformation of the economy, AI in human resource decision-making, digital globalization, cultural tensions around workplace inclusivity, climate change, and external shocks speeding up the pace of change.

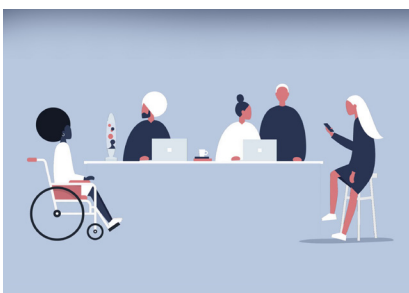## Challenge 1:
Impact of advanced digital technologies
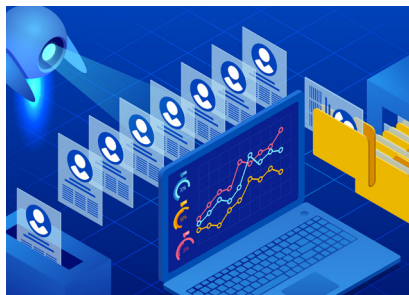
Challenge 2:
Artificial intelligence in human-resource decision-making

Challenge 3:
Digital globalization

Challenge 4:
Cultural tensions around workplace inclusivity

Challenge 5:
Climate change

Challenge 6:
External shocks speeding up the pace of change

For each challenge area, participants identified and ranked strategies that could be used to promote employment inclusion. A key finding from our research was the importance of strategies to promote better quality employment for persons living with disabilities. Higher quality employment, in high-demand fields, with secure employment contracts and access to workplace supports, can be protective in times of rapid change. Our findings point to the importance of creating pathways that can be accessed by persons with disabilities to such employment.

The COVID-19 pandemic taught us the importance of creating contingency plans that are ready to be implemented during times of significant disruption to the working world. In the face of an emerging climate crisis or unpredictable shock events, our study highlights the importance of setting preparedness plans with a disability inclusion focus. This can include anticipating the impact of a work disruption or a shift to the work environment on persons with disabilities. A disability inclusion lens to preparedness planning can ensure that persons with disabilities are not disproportionately disadvantaged when there is a change to the working world.

Persons with disabilities are among the most vulnerable to changes in the future of work. The implications could be most significant for this population, who are more likely to live below the poverty line and may have more significant cost of living expenses to manage their disability. Our study highlights the importance to advancing social safety nets to soften the potential blow that job disruption caused by a change in the future of work can have on persons with disabilities.

Overall, our research points to an overall system of inclusion that permeates workplace, community, and educational settings. Indeed, system-wide change can create an overall culture of accessibility where persons with disabilities are prioritized in the design of all policies and programs. A system of inclusion can be particularly beneficial to young workers with disabilities as they navigate the challenges of transitioning to the world of work and offer benefits that track across their careers.

The findings from our study should be utilized to inform strategic planning efforts for the employment inclusion of young persons living with disabilities. It is encouraged that insights be utilized as a tool to inform conversations regarding the approaches that can be implemented presently, that are resilient to the social, technological, economic, environmental, and political changes in the future of work. Researchers at the Institute for Work & Health have developed diverse scenarios to reflect alternative futures for young persons living with disabilities (4). Persons with disabilities and diverse stakeholders aiming to promote their employment should examine how the various strategies identified in this report are relevant to the different alternative futures. These discussions can foster a future-forward perspective and identify approaches that are resilient to a changing nature of work.

There are limitations to consider when interpreting findings from the Delphi study. The reliance of our online survey had the potential to introduce barriers for people who may not have access to technological resources (e.g., internet access or availability of a personal computer) (233). While we offered other options to administer the survey (e.g., over the phone, in-person), it is possible that our study format may have posed a barrier to some potential participants. The multi-phase process, key to the Delphi survey methodology, can raise the risk of dropouts, due to the time commitment and hiatus between rounds (234). To address this limitation, we chose to conduct two rounds of surveys to minimize participant fatigue and dropout (235). At the same time, additional rounds could have enabled the study team to move closer to achieving consensus.

Of note, strategies recommended in this report were developed by taking a broader definition of disability. While an inclusive design approach can mean that policies and programs should be accessible to all individuals, it is possible that individuals require more specific supports that meet the demands of their disability. We acknowledge that in certain cases, the program and policy supports described in this report should be tailored to individual needs and experiences to be successful. Relatedly, our report focuses on and elaborates on the top-ranked strategies. There were, however, a number of strategies identified in each challenge area that received lower agreement in terms of their importance. Additional research is required to study the impact of these lower-ranked strategies as they could hold promise for certain individuals living with disabilities.

Final remarks

In this report, we highlight a range of strategies that can be utilized to support the inclusive employment of young persons living with disabilities that are relevant to six key challenges that characterize the future of work. The different strategies are relevant to a wide range of stakeholders who take a future-focused approach towards addressing the barriers to employment participation as a person enters their career and across the working life course.

References

1. World Economic Forum. Future of jobs report 2023. Geneva, Switzerland; 2023 May 2023.
2. Scarpetta S. The future of work Journal of International Affairs. 2018;72(1):51-6.
3. World Economic Forum. The future of jobs report 2018. Geneva, Switzerland; 2018.
4. Jetha A. Three scenarios of a future working world. Institute for Work & Health; 2023.
5. Gartner. 6 ways the workplace will change in the next 10 years. 2022.
6. Jetha A, Bowring J, Furrie A, Smith F, Breslin C. Supporting the transition into employment: a study of Canadian young adults living with disabilities. Journal of Occupational Rehabilitation. 2019;29:140-9.
7. Jetha A, Nasir K. Strategies to ensure young persons with disabilities are included in the future of work. Internet Toronto, Ontario: Institute for Work & Health; 2022.
8. Morris S, Fawcett G, Brisebois L, Hughes J. A demographic, employment and income profile of Canadians with disabilities aged 15 years and over, 2017 [Internet]. Ottawa (ON): Statistics Canada; 2018 [updated 2018 Nov 28; cited 2023 Jan 22]. Available from: https://www150. statcan.gc.ca/n1/pub/89-654-x/89-654-x2018002-eng.htm.
9. Baldwin R. The globotics upheaval: Globalization, robotics, and the future of work. Oxford: Oxford University Press; 2019.
10. Manyika J, Chui M, Miremadi M, Bughin J, George K, Willmott P, et al. A future that works: Automation, employment, and productivity. Toronto, Ontario: McKinsey Global Institute; 2017.
11. Annunziata M, Bourgeois H. The future of work: how G20 countries can leverage digital-industrial innovations into stronger high quality jobs growth. Economics. 2018;12(1):20180042.
12. Balliester T, Elsheikhi A. The future of work: A literature review. ILO Research Department Working Paper. 2018;29:1-54.
13. Berger T, Frey CB. Structural transformation in the OECD: Digitalisation, deindustrialisation and the future of work. 2016.
14. George AS, George AH, Martin AG. ChatGPT and the future of work: A comprehensive analysis of AI's impact on jobs and employment. Partners Universal International Innovation Journal. 2023;1(3):154-86.
15. Autor D, Mindell D, Reynolds E. The work of the future: Building better jobs in an age of intelligent machines. Cambridge, Massachusetts: MIT Work of the Future; 2020.
16. Block S, Hennessy T. "Sharing economy" or on-demand service economy? A survey of workers and consumers in the Greater Toronto Area. Toronto, ON: Canadian Centre for Policy Alternatives; 2017.
17. Frank MR, Autor D, Bessen JE, Brynjolfsson E, Cebrian M, Deming DJ, et al. Toward understanding the impact of artificial intelligence on labor. Proceedings of the National Academy of Sciences. 2019;116(14):6531-9.
18. Statistics Canada. Canadian Survey on Disability, 2017 to 2022 2023. Available from: https://www150.statcan.gc.ca/n1/daily-quotidien/231201/dq231201b-eng.htm.
19. Rigg J. Labour market disadvantage amongst disabled people: a longitudinal perspective. 2005.
20. Shahidi FV, Jetha A, Kristman V, Smith PM, Gignac MAM. The employment quality of persons with disabilities: findings from a national survey in Canada [published online ahead of print April 12, 2023]. Journal of Occupational Rehabilitation. 2023:1-11.
21. Helbling LA, Sacchi S. Scarring effects of early unemployment among young workers with vocational credentials in Switzerland. Empirical Res Voc Ed Train. 2014;6(12):1-22.
22. Erickson WA, von Schrader S, Bruyère SM, VanLooy SA. The employment environment: Employer perspectives, policies, and practices regarding the employment of persons with disabilities. Rehabil Couns Bull. 2014;57(4):195-208.
23. Organization. WH. WHO policy on disability. 2021.
24. Theodorakopoulos N, Budhwar P. Guest editors' introduction: Diversity and inclusion in different work settings: Emerging patterns, challenges, and research agenda. Human Resource Management. 2015;54(2):177-97.
25. Readhead A, Owen F. Employment supports and outcomes for persons with intellectual and/or developmental disabilities: A review of recent findings. Current Developmental Disorders Reports. 2020;7:155-62.
26. JVS Toronto. Disability employment & inclusion programs. 2023. Available from: https://www.jvstoronto.org/find-a-job/disability-employment-services/.
27. usa gov. Job training and employment programs for people with disabilities. 2023. Available from: https://www.usa.gov/disability-jobs-training.
28. Jetha A, Shaw R, Sinden AR, Mahood Q, Gignac MAM, McColl MA, et al. Work-focused interventions that promote the labour market transition of young adults with chronic disabling health conditions: A systematic review. Occupational and Environmental Medicine. 2019;76(3):189-98.
29. Anderson E, Johnston N, Iles L, Mcrae N, Reed N, Walchli J. Co-operative education and student recruitment, engagement and success: Early findings from a multi-institutional study in British Columbia. Journal of Cooperative Education and Internships. 2012;46(1):58-76.
30. Kuh GD. Maybe experience really can be the best teacher. The Chronicle of Higher Education. 2010;57(14):A20.
31. Government of Canada. Job bank for persons with disabilities. 2023. Available from: https://www.jobbank.gc.ca/persons-with-disabilities.
32. Brouse. K. Accessible job postings -- The first step to inclusion. LinkedIn; 2023. Available from: https://www.linkedin.com/pulse/accessible-job-postings-the-first-step-inclusion-kate-brouse.
33. Ontario. Accessibility in Ontario: Information for businesses. King's Printer for Ontario; 2023. Available from: https://www.ontario.ca/page/accessibility-ontario-information-businesses#section-3.
34. Jetha A, Tucker L, Backman C, Kristman VL, Bowring J, Hazel EM, et al. Rheumatic disease disclosure at the early career phase and its impact on the relationship between workplace supports and presenteeism. Arthritis Care & Research. 2022;74(10):1751-60.
35. Padkapayeva K, Posen A, Yazdani A, Buettgen A, Mahood Q, Tompa E. Workplace accommodations for persons with physical disabilities: evidence synthesis of the peer-reviewed literature. Disability and Rehabilitation. 2017;39(21):2134-47.
36. The Conference Board of Canada. Employers' Toolkit: Making Ontario Workplaces Accessible to People with Disabilities, 2nd Edition. 2015.
37. Adams EM. Human rights at work: Physical standards for employment and human rights law. Applied physiology, nutrition, and metabolism. 2016;41(6):S63-S73.
38. Government of Canada. Rights in the workplace 2023. Available from: https://www.canada.ca/en/canadian-heritage/services/rights-workplace.html.
39. Ontario Human Rights Commission. Employment 2023. Available from: https://www.ohrc.on.ca/en/social_areas/employment#:~:text=The%20Code%20states%20that%20every,record%20of%20offences%2C%20marital%20status%2C.
40. Government of Canada. Justice Laws Website 2023. Available from: https://laws-lois.justice.gc.ca/eng/acts/A-0.6/.
41. Government of Canada. About an accessible Canada 2023. Available from: https://www.canada.ca/en/employment-social-development/programs/accessible-canada.html.

42. Assembly UG. Convention on the Rights of Persons with Disabilities. Ga Res. 2006;61:106.

43. Statistics Canada. Canadian survey on disability, 2017: Data visualization tool 2021. Available from: https://www150.statcan.gc.ca/n1/pub/71-607-x/71-607-x2019035-eng.htm.

44. Gartner. Future of work reinvented Gartner; 2023. Available from: https://www.gartner.com/en/insights/future-of-work.

45. Carmen Pages. Institutions, policies, and technologies for the future of work OpenMind BBVA; Available from: https://www.bbvaopenmind.com/en/articles/institutions-policies-and-technologies-for-the-future-of-work/.

46. Disability hubeurope. Making the future of work inclusive of people with disabilities 2019.

47. Goodman CM. The Delphi technique: a critique. Journal of Advanced Nursing. 1987;12(6):729-34.

48. Hasson F, Keeney S, McKenna H. Research guidelines for the Delphi survey technique. Journal of Advanced Nursing. 2000;32(4):1008-15.

49. De Loe RC. Exploring complex policy questions using the policy Delphi: A multi-round, interactive survey method. Applied Geography. 1995;15(1):53-68.

50. Goluchowicz K, Blind K. Identification of future fields of standardisation: An explorative application of the Delphi methodology. Technological Forecasting and Social Change. 2011;78(9):1526-41.

51. Donohoe H, Stellefson M, Tennant B. Advantages and limitations of the e-Delphi technique: Implications for health education researchers. American Journal of Health Education. 2012;43(1):38-46.

52. Jetha A, Nasir K, Van Eerd D, Gignac MAM, Ginis KAM, Tompa E. Inclusion of young people with disabilities in the future of work: Forecasting workplace, labour market and community-based strategies through an online and accessible Delphi survey protocol. BMJ Open. 2022;12(7):e055452.

53. Jetha A, Nasir K, Van Eerd D, Gignac MA, Ginis KAM, Tompa E. Inclusion of young people with disabilities in the future of work: forecasting workplace, labour market and community-based strategies through an online and accessible Delphi survey protocol. BMJ open. 2022;12(7):e055452.

54. Erffmeyer RC, Erffmeyer ES, Lane IM. The Delphi technique: An empirical evaluation of the optimal number of rounds. Group & Organization Studies. 1986;11(1-2):120-8.

55. Universal Design Center. Making accessible surveys. Available from: https://www.csun.edu/universal-design-center/making-accessible-surveys#:~:text=Avoid%20using%20question%20types%20that,survey%20takers%20with%20sight%20disabilities.

56. Micolaides A. Breaking down barriers: How accessibility improves online surveys 2023. Available from: https://decisionpointresearch.ca/blog/accessibility-online-surveys/.

57. IWH Research. Future of work: Six challenges for young people with disabilities: YouTube; 2022. Available from: https://www.youtube.com/watch?v=ldoYg6uFWkU&list=PLanDYKXtbrQy-0OrfAKFeA-1y6kLJLe40.

58. Kendall MG. A new measure of rank correlation. Biometrika. 1938;30(1/2):81-93.

59. Wyonch R. The next wave: Automation and Canada's labour market. CD Howe Institute, Diversity Institute, Future Skills Centre. 2020.

60. Stumbo NJ, Martin JK, Hedrick BN. Assistive technology: Impact on education, employment, and independence of individuals with physical disabilities. J Vocat Rehabil. 2009;30(2):99-110.

61. Thompson S. Mobile technology and inclusion of persons with disabilities. 2018.

62. Zyskowski K, Morris MR, Bigham JP, Gray ML, Kane SK, editors. Accessible crowdwork? Understanding the value in and challenge of microtask employment for people with disabilities. Proceedings of the 18th ACM conference on computer supported cooperative work & social computing; 2015.

63. Al-Sabbagh NA, Al-Alawi M, editors. The effect of cloud computing on organizational flexibility. The Importance of New Technologies and Entrepreneurship in Business Development: In The Context of Economic Diversity in Developing Countries: The Impact of New Technologies and Entrepreneurship on Business Development; 2021: Springer.

64. Ijaz U, Khalid H, Abubaker Ijaz AH, Butt I. Development of Cloud Computing Based Intranet Model for Banks and Financial Institutes to Use Resources Efficiently for Achieving Flexibility in Activities and Work Portability. NFC IEFR Journal of Engineering and Scientific Research. 2017;5.

65. Riskhan B, Muhammad R. Electronic Distance Education–A Proposed Model And Benefits By Using Cloud Base E Learning, Cloud Virtualization And Web Mining.

66. Raja DS. Bridging the disability divide through digital technologies. Background paper for the World Development report. 2016.

67. Burgstahler S. Working together: People with disabilities and computer technology University of Washington 2022. Available from: https://www.washington.edu/doit/working-together-people-disabilities-and-computer-technology.

68. Lewchuk W. The political economy of precariousness in an era of artificial intelligence: precarious work, or none at all. Canadian Lab & Emp LJ. 2018;21:239.

69. Doyle N. Artificial intelligence is dangerous for disabled people at work: 4 takeaways for developers and buyers: Forbes; 2022. Available from: https://www.forbes.com/sites/drnancydoyle/2022/10/11/artificial-intelligence-is-dangerous-for-disabled-people-at-work-4-takeaways-for-developers-and-buyers/?sh=5f65057f35d3.

70. U.S. Government Accountability Office. USGA. Which workers are the most affected by automation and what could help them get new jobs?2022. Available from: https://www.gao.gov/blog/which-workers-are-most-affected-automation-and-what-could-help-them-get-new-jobs.

71. Toshav-Eichner N, Bareket-Bojmel L. Yesterday's workers in tomorrow's world. Pers Rev. 2022;51(5):1553-69.

72. Foley A, Ferri BA. Technology for people, not disabilities: ensuring access and inclusion. Journal of Research in Special Educational Needs. 2012;12(4):192-200.

73. Jetha A, Bonaccio S, Shamaee A, Banks CG, Bültmann U, Smith P, et al. Divided in a digital economy: understanding disability employment inequities stemming from the application of advanced workplace technologies [published online ahead of print June 2, 2023]. SSM - Qualitative Research in Health. 2023:100293.

74. Petropoulos G. The impact of artificial intelligence on employment. Praise for Work in the Digital Age. 2018;119:121.

75. Elsafty A, Elzeftawy A. Towards effective mitigation of the digital transformation and COVID-19 risk on the unemployment in mobile operators in Egypt. International Journal of Business and Management. 2022;17(2):123-44.

76. Fears T, Heuss SC, Miller BT. Skills for digital transformation. Neues Wissen zur Digitalen Transformation. 2020:34.

77. Frankiewicz B, Chamorro-Premuzic T. Digital transformation is about talent, not technology. 2020 [1-6].

78. Gulati R, Reaiche CH, editors. Soft skills: A key driver for digital transformation. Proceedings of the ICDS; 2020.

79. Luo X, Qin MS, Fang Z, Qu Z. Artificial intelligence coaches for sales agents: Caveats and solutions. Journal of Marketing. 2021;85(2):14-32.

80. Santoso MB, Nurwati N, Apsari NC. Soft skills as the strength of millennial generation in the age of automation and artificial intelligence.

81. March of Dimes Canada. SkillingUp: A digital learning program for people with disabilities 2022. Available from: https://www.marchofdimes.ca/en-ca/aboutus/newsroom/whatsnew/wnarchive/Pages/SkillingUp.aspx.

82. March of Dimes Canada. Available from: https://www.marchofdimes.ca/en-ca.

83. JP Morgan & Chase Co. JMCa. Technology and the future of work 2019. Available from: jpmorganchase.com/institute/research/labor-markets/insight-technology-and-the-future-of-work.

84. Fiala E. A brave new world of work through the lens of disability. Societies. 2018;8(2):27.

85. Conway T, Advisors N, Fulay P, Hwang G. Accelerating disability inclusion in workplaces through technology. 2021.

86. Wall K. Low income among persons with a disability in Canada Ottawa, ON, Canada: Statistics Canada 2017. Available from: https://www150.statcan.gc.ca/n1/pub/75-006-x/2017001/article/54854-eng.htm.

87. Barr NG, Longo CJ, Embrett MG, Mulvale GM, Nguyen T, Randall GE. The transition from youth to adult mental health services and the economic impact on youth and their families. Healthc Manage Forum. 2017;30(6):283-8.

88. Sakka F, El Maknouzi MEH, Sadok H. Human resource management in the era of artificial intelligence: future HR work practices, anticipated skill set, financial and legal implications. Academy of Strategic Management Journal. 2022;21:1-14.

89. Yawalkar MVV. A study of artificial intelligence and its role in human resource management. International Journal of Research and Analytical Reviews (IJRAR). 2019;6(1):20-4.

90. Gartner. AI in HR: A guide to implementing AI in your HR organization. Available from: https://www.gartner.com/en/human-resources/topics/artificial-intelligence-in-hr.

91. American Psychological Association. 2023 work in America survey. 2023.

92. Deshpande KV, Pan S, Foulds JR, editors. Mitigating demographic Bias in AI-based resume filtering. Adjunct publication of the 28th ACM conference on user modeling, adaptation and personalization; 2020.

93. Kale DGT, Suryavanshi G, Jadhav S. Tensorflow based automatic personality recognition based on facial, tone and resume analysis. Journal of Scientific Research & Engineering. 2020;6(6):1-4.

94. Geetha R, Bhanu SRD. Recruitment through artificial intelligence: a conceptual study. International Journal of Mechanical Engineering and Technology. 2018;9(7):63-70.

95. Upadhyay AK, Khandelwal K. Applying artificial intelligence: Implications for recruitment. Strategic HR Review. 2018;17(5):255-8.

96. FraiJ J, László V. A literature review: artificial intelligence impact on the recruitment process. International Journal of Engineering and Management Sciences. 2021;6(1):108-19.

97. Nugent SE, Scott-Parker S. Recruitment AI has a disability problem: Anticipating and mitigating unfair automated hiring decisions. Towards Trustworthy Artificial Intelligent Systems: Springer; 2022. p. 85-96.

98. Tilmes N. Disability, fairness, and algorithmic bias in AI recruitment. Ethics and Information Technology. 2022;24(2):21.

99. International Labour Organization. Inclusion of persons with disabilities in the digital and green economy 2022.

100. Dastin J. Amazon scraps secret AI recruiting tool that showed bias against women Reuters; 2018. Available from: https://www.reuters.com/article/us-amazon-com-jobs-automation-insight/amazon-scraps-secret-ai-recruiting-tool-that-showed-bias-against-women-idUSKCN1MK08G.

101. Kim PT, Bodie MT. Artificial intelligence and the challenges of workplace discrimination and privacy. Journal of Labor and Employment Law. 2021;35(2):289-315.

102. Bastian R. AI bring opportunities and risks to workplace DEI efforts Forbes; 2023. Available from: https://www.forbes.com/sites/rebekahbastian/2023/05/08/ai-brings-opportunities-and-risks-to-workplace-dei-efforts/?sh=6ab0294f4b2a.

103. Guo A, Kamar E, Vaughan JW, Wallach H, Morris MR. Toward fairness in AI for people with disabilities SBG@ a research roadmap. ACM SIGACCESS Accessibility and Computing. 2020(125):1-.

104. Treviranus J. Medium2018. Available from: https://medium.com/fwd50/the-three-dimensions-of-inclusive-design-part-one-103cad1ffdc2.

105. PEAT. The challenge of fairness audits 2023. Available from: https://www.peatworks.org/ai-disability-inclusion-toolkit/ai-disability-inclusion-resources/the-challenge-of-fairness-audits/.

106. Treviranus J. Medium. 2019. Available from: https://medium.com/@jutta.trevira/inclusive-design-the-bell-curve-the-starburst-and-the-virtuous-tornado-6094f797b1bf.

107. Wald M. AI data-driven personalisation and disability inclusion. Frontiers in Artificial Intelligence. 2021;3:117.

108. Zhang H, Feinzig S, Raisbeck L, McCombe I. The role of AI in mitigating bias to enhance diversity and inclusion. Armonk, New York 2019.

109. Laurie A. Using AI for disability inclusion Disability:IN; 2021. Available from: https://disabilityin.org/business-case/using-ai-for-disability-inclusion/.

110. AI. IRT. AI fairness 360: IBM; 2023. Available from: https://aif360.res.ibm.com/.

111. Hunkenschroer AL, Kriebitz A. Is AI recruiting (un)ethical? A human rights perspective on the use of AI for hiring. AI and Ethics. 2023;3(1):199-213.

112. Roller A. AI hiring bias: How HR can understand and mitigate potential pitfalls HRMorning; 2023. Available from: https://www.hrmorning.com/articles/ai-hiring-bias-understand-and-mitigate/#:~:text=Human%20oversight%20and%20intervention,to%20avoid%20AI%20hiring%20bias.

113. Henneborn L. Designing generative AI to work for people with disabilities. Harvard Business Review 2023. Available from: https://hbr.org/2023/08/designing-generative-ai-to-work-for-people-with-disabilities.

114. Markel K, Mildner A, Lipson J. AI and employee privacy: Important considerations for employers. Reuters; 2023. Available from: https://www.reuters.com/legal/legalindustry/ai-employee-privacy-important-considerations-for-employers-2023-09-29/#:~:text=As%20with%20any%20software%20or,to%20ensure%20compliance%20with%20applicable.

115. Dey S. Why companies should stop AI-washing their products. Forbes; 2023. Available from: https://www.forbes.com/sites/forbestechcouncil/2023/08/17/why-companies-should-stop-ai-washing-their-products/?sh=195bc92129fa.

116. Lewis N. Report recommends transparency when using AI in hiring SHRM; 2023. Available from: https://www.shrm.org/resourcesandtools/hr-topics/technology/pages/report-recommends-transparency-when-using-ai-hiring.aspx.

117. Dignum V. Responsible artificial intelligence: designing AI for human values. 2017.

118. Trewin S, Basson S, Muller M, Branham S, Treviranus J, Gruen D, et al. Considerations for AI fairness for people with disabilities. AI Matters. 2019;5(3):40-63.

119. Blackman R, Ammanath B. Building transparency into AI projects. Harvard business review 2022. Available from: https://hbr.org/2022/06/building-transparency-into-ai-projects.

120. Ganievich K N, Abdukarimovna K F, Sherzodovich S S, Abdurasulovna P R, editors. Digital transformation of the economy as a new challenge to economic security. The 5th International Conference on Future Networks & Distributed Systems; 2021.

121. Ozimek A. The future of remote work. Available at SSRN 3638597. 2020.

122. Segal E. How and why the freelance workforce is setting new records.: Forbes; 2022. Available from: https://www.forbes.com/sites/edwardsegal/2022/12/13/how-and-why-the-freelance-workforce-is-setting-new-records/?sh=1907da84b181.

123. Stewart A. How remote work will change competing and paying for talent. Recruiter. Available from: https://www.recruiter.com/recruiting/how-remote-work-will-change-competing-and-paying-for-talent/.

124. Barakonyi I, Fahmy T, Schmalstieg D, editors. Remote collaboration using augmented reality videoconferencing. Graphics Interface; 2004.

125. Barakonyi I, Frieb W, Schmalstieg D, editors. Augmented reality videoconferencing for collaborative work. Proceedings of the 2nd Hungarian Conference on Computer Graphics and Geometry; 2003: Citeseer.

126. Regenbrecht H, Ott C, Wagner M, Lum T, Kohler P, Wilke W, et al., editors. An augmented virtuality approach to 3D videoconferencing. The

Second IEEE and ACM International Symposium on Mixed and Augmented Reality, 2003 Proceedings; 2003: IEEE.

127. Jetha A, Shamaee A, Bonaccio S, Gignac MA, Tucker LB, Tompa E, et al. Fragmentation in the future of work: A horizon scan examining the impact of the changing nature of work on workers experiencing vulnerability. American Journal of Industrial Medicine. 2021;64(8):649-66.

128. Benda P, Ulman M, Šmejkalová M. Augmented reality as a working aid for intellectually disabled persons for work in horticulture. AGRIS on-line Papers in Economics and Informatics. 2015;7(665-2016-45075):31-7.

129. McMahon D, Cihak DF, Wright R. Augmented reality as a navigation tool to employment opportunities for postsecondary education students with intellectual disabilities and autism. Journal of Research on Technology in Education. 2015;47(3):157-72.

130. Tan B-L, Guan FY, Leung IMW, Kee SY-M, Devilly OZ, Medalia A. A gamified augmented reality vocational training program for adults with intellectual and developmental disabilities: a pilot study on acceptability and effectiveness. Frontiers in Psychiatry. 2022;13:966080.

131. Burrow S, editor Globalization 4.0 must build a better world for working people. World Economic Forum; 2018.

132. Byrd MY. Creating a culture of inclusion and belongingness in remote work environments that sustains meaningful work. Human Resource Development International. 2022;25(2):145-62.

133. Howard J. Developing inclusive return-to-office or work-from-home policies InclusionHub; 2023. Available from: https://www.inclusionhub. com/articles/developing-inclusive-return-to-office-or-work-from-home-policies.

134. Hughes D, Warhurst C, Duarte ME. Decent work, inclusion and sustainability: A new era lies ahead. Taylor & Francis; 2021. p. 145-52.

135. United Nations Department of Economic and Social Affairs. Convention On The Rights Of Persons With Disabilities (CRPD). Available from: https://social.desa.un.org/issues/disability/crpd/convention-on-the-rights-of-persons-with-disabilities-crpd.

136. United Nations Department of Economic and Social Affairs. Disability laws and acts by country/area. Available from: https://www.un.org/ development/desa/disabilities/disability-laws-and-acts-by-country-area.html.

137. European Union of the Deaf. European Accessibility Act - Toolkit for transposition. Available from: https://www.eud.eu/eud/toolkits/ european-accessibility-act-toolkit-for-transposition/.

138. Government of Canada. Accessible Canada Act 2019. Available from: https://www.laws-lois.justice.gc.ca/eng/acts/A-0.6/page-1.html.

139. Federal Accessibility Legislation Alliance. Accessible Canada Act in plain language 2021. Available from: https://www.include-me.ca/federal-accessibility-legislation-alliance/resource/accessible-canada-act-plain-language.

140. EUR-Lex. Directive (EU) 2019/882 of the European parliament and of the council of 17 April 2019 on the accessibility requirements for products and services 2019. Available from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32019L0882.

141. Jetha A. For young adults with disabilities, the future of work can be hard to envision: Abilities. Available from: https://www.abilities.ca/ abilities-magazine/for-young-adults-with-disabilities-the-future-of-work-can-be-hard-to-envision/.

142. Jetha A, Shamaee A, Tompa E, Smith P, Bültmann U, Bonaccio S, et al. The future of work in shaping the employment inclusion of young adults with disabilities: A qualitative study. Equality, Diversity and Inclusion: An International Journal. 2023;42(9):75-91.

143. Ontario. Ontario Disability Support Program employment supports. Available from: https://www.ontario.ca/page/ontario-disability-support-program-employment-supports.

144. McDonough T, Oldham C. Why companies should pay for employees to further their education. Harvard Business Review; 2020. Available from: https://hbr.org/sponsored/2020/10/why-companies-should-pay-for-employees-to-further-their-education.

145. Gorbis M. Thinking about the future of work to make better decisions about learning today. Educause Review; 2016. Available from: https:// er.educause.edu/articles/2016/5/thinking-about-the-future-of-work-to-make-better-decisions-about-learning-today.

146. Herold B. The future of work is uncertain, schools should worry now. 2017.

147. Bohonos JW, Sisco S. Advocating for social justice, equity, and inclusion in the workplace: An agenda for anti-racist learning organizations. New Directions for Adult and Continuing Education. 2021;2021(170):89-98.

148. Germain M-L, Robertson P, Minnis S. Protests, rallies, marches, and social movements as organizational change agents. Advances in Developing Human Resources. 2019;21(2):150-74.

149. Strohmayer A, Bellini R, Meissner J, Mitchell Finnigan S, Alabdulqader E, Toombs A, et al., editors. #CHIversity: Implications for Equality, Diversity, and Inclusion Campaigns. Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems; 2018.

150. Daly S. How a diverse and inclusive culture can help you attract and retain top talent: Beamery; 2023. Available from: https://beamery.com/ resources/blogs/how-a-diverse-and-inclusive-culture-can-help-you-attract-and-retain-top-talent.

151. Shore LM, Cleveland JN, Sanchez D. Inclusive workplaces: A review and model. Human Resource Management Review. 2018;28(2):176-89.

152. Hamill L. What an inclusive workplace actually looks like, and seven ways to achieve it Forbes; 2019. Available from: https://www. forbes.com/sites/forbeshumanresourcescouncil/2019/02/04/what-an-inclusive-workplace-actually-looks-like-and-seven-ways-to-achieve-it/?sh=1bbaa1c6316b.

153. International Labour Organization. Taking disability inclusion further. Available from: https://www.ilo.org/infostories/en-GB/Stories/ Employment/The-win-win-of-disability-inclusion#taking-disability-inclusion-further.

154. Tillotson J, Laker B, Pereira V, Bhatnagar K. How to make workplaces more inclusive for people with invisible disabilities. Harvard Business Review. 2023.

155. Shuman E, Knowles E, Goldenberg A. To overcome resistance to DEI, understand what's driving it. Harvard Business Review 2023. Available from: https://hbr.org/2023/03/to-overcome-resistance-to-dei-understand-whats-driving-it.

156. Miller J. For younger job seekers, diversity and inclusion in the workplace aren't a preference. They're a requirement. The Washington Post. 2021;18.

157. Byrne-Haber S. The Digital Accessibility Maturity Model: DAMM Audit-Overview. Level Access.

158. Dume C. Our workplaces don't work for people with disabilities. The Varsity 202. Available from: https://thevarsity.ca/2021/09/18/workplace-disability-accessibility-jobs/.

159. Tompa E, Samosh D, Boucher N, editors. Skill gaps, underemployment and equity of labour-market opportunities for persons with disabilities in Canada 2020: Public Policy Forum.

160. Government. H. Being disability confident. Available from: https://disabilityconfident.campaign.gov.uk/.

161. Gov.UK. Level 2: Disability confident employer 2019. Available from: https://www.gov.uk/government/publications/disability-confident-guidance-for-levels-1-2-and-3/level-2-disability-confident-employer.

162. Lindsay S, Cagliostro E, Albarico M, Mortaji N, Karon L. A systematic review of the benefits of hiring people with disabilities. Journal of Occupational Rehabilitation. 2018;28:634-55.

163. Schur L, Kruse D, Blanck P. Corporate culture and the employment of persons with disabilities. Behavioral Sciences & the Law. 2005;23(1):3-20.

164. Dixon-Fyle S, Hunt V, Prince S. Diversity wins: How inclusion matters. United States; 2020.

165. Siyal S. Inclusive leadership and work engagement: Exploring the role of psychological safety and trust in leader in multiple organizational context. Business Ethics, the Environment & Responsibility. 2023;32(4):1170-84.

166. Employer assistance and resource network on disability inclusion (EARN) United States Department of Labor. Available from: https://www.dol.gov/agencies/odep/resources/earn.

167. About EARN: Employer Assistance and Resource Network on Disability Inclusion. Available from: https://askearn.org/.

168. Canadian Human Rights Commission. Human rights in Canada. Available from: https://www.chrc-ccdp.gc.ca/en/about-human-rights/human-rights-canada.

169. Yang J, Liu J. Strengthening accountability for discrimination. Economic Policy Institute; 2021. Available from: https://www.epi.org/unequalpower/publications/strengthening-accountability-for-discrimination-confronting-fundamental-power-imbalances-in-the-employment-relationship/.

170. Ontario Human Rights Commission. Policy on ableism and discrimination based on disability 2016. Available from: https://www.ohrc.on.ca/en/policy-ableism-and-discrimination-based-disability.

171. Bonaccio S, Connelly CE, Gellatly IR, Jetha A, Martin Ginis KA. The participation of people with disabilities in the workplace across the employment cycle: Employer concerns and research evidence. J Bus Psychol. 2020;35(2):135-58.

172. Tompa E, Mofidi A, Jetha A, Lahey P, Buettgen A. Development and implementation of a framework for estimating the economic benefits of an accessible and inclusive society. Equal Divers Incl. 2022;41(3):318-39.

173. Rivera C. Addressing ableism in the workplace by Catarina Rivera: Inclusively Contributor; 2021. Available from: https://www.inclusively.com/catarina-rivera-addressing-ableism-in-the-workplace/.

174. Accessible Employers. Inclusive training course: Create an accessible workplace: Accessible Employers; 2023. Available from: https://accessibleemployers.ca/resource/course-create-an-accessible-workplace/.

175. Ranney MA, Clark D. Climate change conceptual change: Scientific information can transform attitudes. Topics in cognitive science. 2016;8(1):49-75.

176. Montt G, Fraga F, Harsdorff M. The future of work in a changing natural environment: Climate change, degradation and sustainability. ILO Research Paper Series, Geneva: International Labour Office. 2018.

177. Canadian Centre for Occupational Health and Safety. Climate change: Workplace impacts. Ontario, Canada; 2023.

178. Greenstone M, Looney M. We are what we breathe: The impacts of air pollution on employment and productivity. Brookings; 2011. Available from: https://www.brookings.edu/articles/we-are-what-we-breathe-the-impacts-of-air-pollution-on-employment-and-productivity/.

179. Engelman A, Craig L, Iles A. Global disability justice in climate disasters: Mobilizing people with disabilities as change agents. Health Affairs. 2022;41(10):1496-504.

180. CBM International, Humanity & Inclusion, Alliance ID. Inclusion of persons with disabilities in humanitarian action. 2019.

181. Gamble J, Balbus J, Berger M, Bouye K, Campbell V, Chief K, et al. Ch. 9: Populations of concern. US Global Change Research Program, Washington, DC; 2016.

182. United States Environmental Protection Agency. Climate change and the health of people with disabilities 2022. Available from: https://www.epa.gov/climateimpacts/climate-change-and-health-people-disabilities#10foot.

183. UN environment programme. Green Economy. Available from: https://www.unep.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/green-economy.

184. Zurich. Green jobs: How will climate change impact employment trends? 2023. Available from: https://www.zurich.com/en/media/magazine/2021/5-green-jobs-of-the-future#:~:text=But%20the%20bigger%20picture%20is,construction%20and%20electrical%20machinery%20manufacturing.

185. Ameri M, Kurtzberg TR. Leveling the playing field through remote work. MIT Sloan Management Review. 2022;63(3):1-3.

186. Hickox SA, Liao C. Remote work as an accommodation for employees with disabilities. Hofstra Lab & Emp LJ. 2020;38:25.

187. Tassé MJ, Wagner JB, Kim M. Using technology and remote support services to promote independent living of adults with intellectual disability and related developmental disabilities. J Appl Res Intellect Disabil. 2020;33(3):640-7.

188. Kelloway EK, Gottlieb B, Barham E, Daly KJ. Flexible work arrangements: Managing the work-family boundary. The Canadian Journal of Infancy and Early Childhood. 1999;7(4):423.

189. Alexiou G. Remote work boosts employees with disabilities, research shows: Forbes; 2022. Available from: https://www.forbes.com/sites/gusalexiou/2022/10/27/new-research-confirms-boon-of-remote-working-for-disabled-employees-in-the-us/?sh=13c505585aa4.

190. Yang S, Zheng L. The paradox of de-coupling: A study of flexible work program and workers' productivity. Social Science Research. 2011;40(1):299-311.

191. Haldipur P. How employers can win at digital adoption 2023. Available from: https://www.infosys.com/iki/perspectives/employers-win-digital-adoption.html#:~:text=Digitalization%20is%20also%20a%20boon,measure%20employee%20performance%20and%20experience.

192. Boorsma B, Mitchell S. Work-life innovation smart work - A paradigm shift transforming how, where, and when work gets done 2011.

193. Errichiello L, Pianese T. Smart work centers as "creative workspaces" for remote employees. Journal of Experimental Innovation. 2018;2(1):14-21.

194. Errichiello L, Pianese T, editors. Transforming the workplace: Smart work centers as the new frontier of remote work arrangements. First RGCS Symposium, 'Work and Workplace Transformations: Between Communities, Doing, and Entrepreneurship; 2016.

195. Mathis WJ. Costs and benefits. Phi Delta Kappan. 2003;84(9):679-86.

196. Lau S, Nirmalanathan K, Khan M, Gauthier C, Maisel J, Novak A. A Canadian roadmap for accessibility standards. Canadian Standards Association. 2020.

197. Bettati A, Pazzato F, Sandri N. Fostering an inclusive urban-transit system. McKinsey; 2022. Available from: https://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/fostering-an-inclusive-urban-transit-system.

198. Aery A. Transit can lead the way for an accessible. Toronto Wellesley Institute. 2016. Available from: https://www.wellesleyinstitute.com/technology-health/transit-can-lead-the-way-for-an-accessible-toronto/.

199. Remillard ET, Campbell ML, Koon LM, Rogers WA. Transportation challenges for persons aging with mobility disability: Qualitative insights and policy implications. Disabil Health J. 2022;15(1):101209.

200. National aging and disability transportation center. Transit accessibility for people with disabilities 2019. Available from: https://www.nadtc.org/news/blog/transit-accessibility-for-people-with-disabilities/.

201. Hara K, Azenkot S, Campbell M, Bennett CL, Le V, Pannella S, et al. Improving public transit accessibility for blind riders by crowdsourcing bus stop landmark locations with google street view: An extended analysis. ACM Transactions on Accessible Computing (TACCESS). 2015;6(2):1-23.

202. UITP. How to make public transport accessible and inclusive for all 2021. Available from: https://www.uitp.org/news/how-to-make-public-transport-accessible-and-inclusive-for-all/.

203. Kovac L. Conventional public transit in Ontario Accessibility for Ontarians with Disabilities Act; 2019. Available from: https://aoda.ca/conventional-public-transit-in-ontario/#:~:text=Under%20the%20Transportation%20Standard%20of,Buses.

204. Toronto Transit Commission. Accessible customer service policy 2016. Available from: https://www.ttc.ca/accessibility/accessible-customer-service-policy.

205. Government of Canada. Government of Canada Adaptation Action Plan 2023. Available from: https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/national-adaptation-strategy/action-plan.html.

206. Global Change. Climate Health 2016. Available from: https://health2016.globalchange.gov/low/ClimateHealth2016_09_Populations_small.pdf.

207. Dragicevic N, Thirgood J. A path forward: Advancing disability inclusion in Canada: CSA Group 2023. Available from: https://www.csagroup.org/article/public-policy/a-path-forward-advancing-disability-inclusion-in-canada/.

208. Kostishack P. Persons with disabilities need to be included in the climate conversation Alliance 2021. Available from: https://www.alliancemagazine.org/blog/persons-with-disabilities-need-to-be-included-in-the-climate-conversation/.

209. United Nations Climate Change. Climate plans remain insufficient: More ambitious action needed now 2022. Available from: https://unfccc.int/news/climate-plans-remain-insufficient-more-ambitious-action-needed-now.

210. Reed E. Economic shocks: Definition and examples SmartAsset; 2023. Available from: https://smartasset.com/financial-advisor/economic-shock.

211. McAlpine DD, Alang SM. Employment and economic outcomes of persons with mental illness and disability: The impact of the Great Recession in the United States. Psychiatr Rehabil J. 2021;44(2):132.

212. Jetha A, Martin Ginis KA, Ibrahim S, Gignac MAM. The working disadvantaged: The role of age, job tenure and disability in precarious work. BMC Public Health. 2020;20(1):1900.

213. Work Rights Centre. What is precarious work? Available from: https://www.workrightscentre.org/what-is-precarious-work.

214. Mai QD, Song L, Donnelly R. Precarious employment and well-being: Insights from the COVID-19 pandemic. Work and Occupations. 2023;50(1):3-21.

215. Jaramillo M, Ñopo H. Covid-19 and external shock: Economic impacts and policy options in Peru. UNDP Latin America and the Caribbean. 2020.

216. Howe DC, Chauhan RS, Soderberg AT, Buckley MR. Paradigm shifts caused by the COVID-19 pandemic. Organizational dynamics. 2021;50(4):100804.

217. McKinsey & Company. How Covid-19 has pushed companies over the technology tipping point - and transformed business forever 2020. Available from: https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/how-covid-19-has-pushed-companies-over-the-technology-tipping-point-and-transformed-business-forever.

218. National Governors Association. Governors' role in promoting disability employment in COVID-19 recovery strategies.

219. The Conversation. CERB helped Canadians during COVID-19 - but not the most vulnerable 2021. Available from: https://theconversation.com/cerb-helped-canadians-during-covid-19-but-not-the-most-vulnerable-173217.

220. Cavanagh J, Bartram T, Meacham H, Bigby C, Oakman J, Fossey E. Supporting workers with disabilities: a scoping review of the role of human resource management in contemporary organisations. Asia Pacific Journal of Human Resources. 2017;55(1):6-43.

221. Ontario. Ontario launches free job training for people with disabilities 2023. Available from: https://news.ontario.ca/en/release/1003114/ontario-launches-free-job-training-for-people-with-disabilities.

222. Government of Canada. Government of Canada invests in training for persons with disabilities to create a more inclusive workforce and stronger economy 2021. Available from: https://www.canada.ca/en/employment-social-development/news/2021/08/government-of-canada-invests-in-training-for-persons-with-disabilities-to-create-a-more-inclusive-workforce-and-stronger-economy.html.

223. Murugami MW, Nel N. A developmental career guidance and counselling process for learners with disabilities: Preparation for employment. Educational Research. 2012;3(4):362-70.

224. Government of Canada. What we heard: Developing greater labour protections for gig workers 2023. Available from: https://www.canada.ca/en/employment-social-development/corporate/portfolio/labour/programs/labour-standards/reports/gig-workers-what-we-heard.html.

225. Denk O, Garnero A, Hijzen A, Martin S. The role of collective bargaining systems for labour market performance. Negotiating Our Way Up. 2019:105.

226. Government of Canada. Canada's Disability Inclusion Action Plan. Available from: https://www.canada.ca/en/employment-social-development/programs/disability-inclusion-action-plan.html.

227. Mitra D, Ranjan P. Social protection in labour markets exposed to external shocks. Making Globalization Socially Sustainable: WTO iLibrary; 2011. p. 199-231.

228. Government of Canada. Canada Emergency Response Benefit (CERB): Closed 2023. Available from: https://www.canada.ca/en/services/benefits/ei/cerb-application.html.

229. Saba R. CERB and CRB discriminated against Canadians with disabilities, new charter challenge claims 2021. Available from: https://www.thestar.com/business/cerb-and-crb-discriminated-against-canadians-with-disabilities-new-charter-challenge-claims/article_deff4d4b-9a23-5b8c-8824-5c10351c960a.html#:~:text=Business-,CERB%20and%20CRB%20discriminated%20against%20Canadians%20with%20disabilities%2C%20new%20Charter,discriminatory%20toward%20workers%20with%20disabilities.

230. World Economic Forum. Pathways to inclusion: Learning from the COVID-19 policy response. 2022.

231. Ontario. Consultation: Portable benefits program 2022. Available from: https://www.ontario.ca/page/consultation-portable-benefits-program.

232. Steward S. Designing portable benefits: A resource guide for 2019.

233. Stewart F, Mann C. Internet communication and qualitative research: A handbook for researching online. Internet Communication and Qualitative Research. 2000:1-272.

234. Donohoe HM, Needham RD. Moving best practice forward: Delphi characteristics, advantages, potential problems, and solutions. International Journal of Tourism Research. 2009;11(5):415-37.

235. Santaguida P, Dolovich L, Oliver D, Lamarche L, Gilsing A, Griffith LE, et al. Protocol for a Delphi consensus exercise to identify a core set of criteria for selecting health related outcome measures (HROM) to be used in primary health care. BMC Family Practice. 2018;19(1):1-14.

Accessibility Standards Canada

Institute for Work & Health
for Work &
Health

Research Excellence
Safe Work
Healthy Workers

Institute for Work & Health
400 University Ave., Suite 1800
Toronto, Ontario M5G 1S5

T 416 927 2027
F 416 927 4167
E info@iwh.on.ca

iwh.on.ca

Follow us on Twitter:
twitter.com/iwhresearch

Connect with us on LinkedIn:
linkedin.com/company/institute-for-work-and-health

Subscribe to our YouTube channel:
youtube.com/iwhresearch

Sign up online for our monthly e-newsletter
iwh.on.ca/subscribe