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COMMUNITY READINESS

FOR THE FUTURE OF WORK AND LEARNING

Paper for the Waterloo Region Future of Work & Learning Coalition
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Key contributors

The Work-Learn Institute at the University of Waterloo is the only institute in the world dedicated to research on co-operative education and other forms of work-integrated learning. Founded in 2002 (as Waterloo Centre for the Advancement of Co-operative Education) on the basis that, with the largest co-operative education program in the world, we have the largest dataset to study, understand and continue to advance its practice. Learn more at uwaterloo.ca/work-learn-institute/.

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What motivated this work?

The Future of Work & Learning Coalition was established in November 2019 under the leadership of Communitech in the Region of Waterloo. The coalition includes a group of multi-sectoral stakeholders from government, education, and industry interested in exploring what it means for a community to be "future ready". Guided by this multi-sectoral group, a number of working groups were established to explore different aspects of future readiness.

For many organizations within the region, there is a strong desire to prepare for the changes related to the future of work and learning, but also a lack of understanding around what that involves. These organizations need a way to identify gaps and chart progress. As the coalition's activities got underway, it became clear that there is a need to track and monitor the impact of initiatives on the local community. As a result, the research working group, with the support of the Work-Learn Institute at the University of Waterloo, took the lead on exploring the dimensions of the future of work and learning with the goal of developing measures for future-readiness. This provides a benchmark for monitoring, year over year, the impact of the coalition's work within the Waterloo Region.

This report presents the work done by the coalition's research working group with a goal of sharing the findings of this project as well as providing open access to the scorecard that was developed. It describes the predicted changes for the future of work and learning uncovered by reviewing existing research and reports and through key informant interviews. Also included in the report is a proposed scorecard developed to help communities, and the organizations within them assess their readiness for the future of work and learning. This tool can support communities in identifying a starting point to invest in future-readiness and support the development of healthy, equitable and resilient future-ready communities across Canada. The final section of the report outlines recommendations and next steps for this work.

What does it mean for a community to be "future ready"?

Review of existing research and reports

A research project was designed to uncover the key dimensions related to preparedness at a community level for the future of work and learning with a goal to develop a tool that could be used within communities to assess their future readiness. When beginning this project, the research team noticed that while there were many reports identifying expected disruptions related to the future of work, none examined future readiness for work from a community perspective.

The research began with a review of existing reports and research papers. Grey literature, which are reports produced by organizations outside traditional commercial or academic publishing, provided the most significant source of information as there is little academic research on the topic. The scope of the literature focused primarily on research produced by major North American research and academic institutions published between 2015 and 2020 (e.g. Brookfield Institute, Deloitte, World Economic Forum).
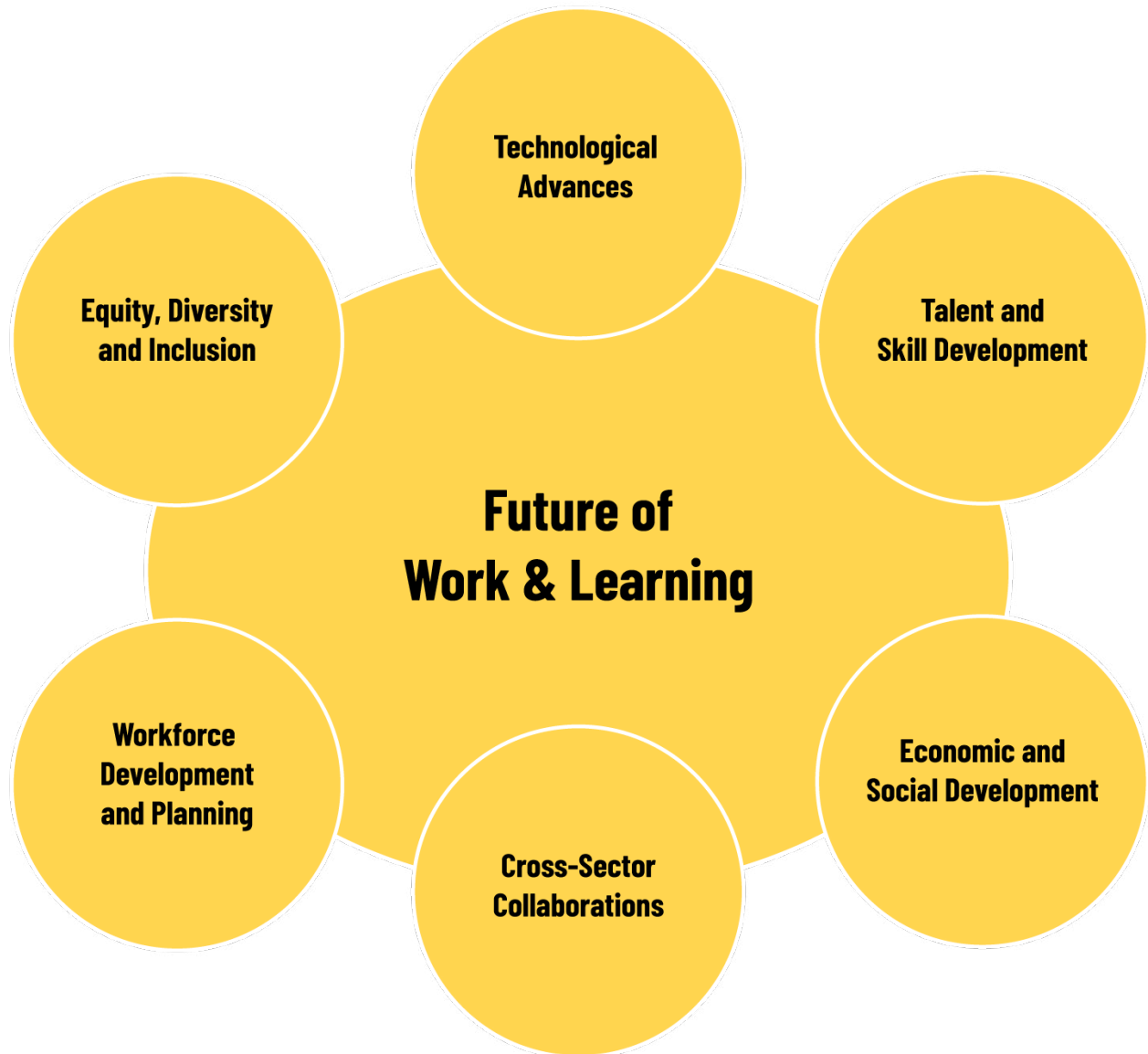
The search strategy used to obtain these reports was twofold: 1) a thorough search of websites of relevant organizations and 2) searches of online databases such as Google Scholar, the University of Waterloo library database, Wilfrid Laurier University library database, and Statistics Canada using search terms such as "future of work," "workforce development," and "innovation index". For the review, more than 50 reports were examined to identify future of work and learning trends

and a thematic mapping exercise was undertaken to synthesize overlap between reports. The sources reviewed can be found at the end of this report. In addition to identifying relevant reports, a search was also conducted for existing measurement tools that had been developed. While over 40 relevant indices were identified and provided potential measures, there was no existing tool that could be used to evaluate future of work and learning readiness across stakeholder groups within a community.

Future of work and learning themes

In the first phase of the research, there were six themes that were identified as critical for understanding and preparing for the future of work and learning as shown in Figure 1. These themes are not mutually exclusive, but interrelated. This section will provide a brief description of each area and its connection to the future of work and learning.

Figure 1: Future of work and learning themes

Technological Advances

Equity, Diversity and Inclusion

Talent and Skill Development

Future of Work & Learning

Workforce Development and Planning

Cross-Sector Collaborations

Economic and Social Development

Technological advances: Industry 4.0 (or the Fourth Industrial Revolution) is being characterized by automation and technological progress.[i] Advances in technology often favor those with higher levels of education and socioeconomic status.[ii] For example, today's workforce is experiencing a hollowing out of middle-class roles and tasks (e.g., accounting and tax software, simple data analytics, and online health diagnostics) through the means of increased automation.[iii] However, the substitution of human routine tasks, like cashier services, and repetitive manufacturing labour with robotics and artificial intelligence (AI) may present employees with opportunities to transition to lateral or more senior positions with creative and problem-solving attributes unique to humans.[iv] That said, these transitions will likely require that employees engage in learning and reskilling to adapt to new roles. While Canada is a global leader in higher education attainment, it lags behind a number of European countries in the participation of employees in training, and government and employer spending on training.[v]

With the rise in online and remote workplaces as a result of the global COVID-19 pandemic, communities experienced a significant rise in digital infrastructures, supply change management, e-commerce platforms, online communities, online experts, and the growth of virtual marketplaces.[vi, vii] The use of data and big data also allows organizations to monitor information and customers more extensively. However, many have concerns surrounding data privacy and information security.[viii] As automated workplaces continue to evolve, it will be important to analyze the cost versus benefit of technology adoption.[ix] Further research is needed to clarify the implications and best practices of incorporating technology in the workplace. Finally, research on how professions and workplaces may be affected by automation does exist, but the outcomes are inconsistent and require more data collection.[x]

Talent, skills, and lifelong learning: Some of the most discussed and researched trends within the future of work and learning are talent attraction, future skills, and opportunities for lifelong learning. Several organizations have attempted to predict the roles and tasks most vulnerable to automation, and which skills will be most desirable to employers given this reality. However, these predictions vary significantly between reports. Three key topics that emerged in this domain are recruitment, skills upgrading, and education and learning.[xi] Many reports highlighted the need for strong digital literacy and technical skills. However, an emphasis on the acquisition of durable skills, a label coined by coalition partner D2L, was also prevalent.[xii] Of notable concern amongst future of work and learning stakeholders and researchers appears to be the rate at which technical skills become outdated. This emphasizes the requirement of workers to transfer through professions and re-learning, while having an agile, versatile, and adaptable mindset.[xiii]

There are multiple pathways to becoming future-ready concerning skill development. Examples include online learning, career counselling, physical and virtual learning places, adult training, work-integrated learning, and mid-career micro-credentialing. Despite this, some reports note that the labour market is currently experiencing a disconnect between employers' needs and their ability to find adequate skills and talent.[xiv] One way to mitigate this issue is through the attraction of immigrant labour. However, sufficient services and opportunities required for settling are limited, especially in smaller, less urban areas.[xv] Geographical migration of talent closer to urban centers began decades ago, however, the implications of COVID-19 may have changed this trend.[xvi] There is a lack of existing literature on underemployed and unemployed populations. Lack of opportunities for these groups to join the labour market as a method to address the skills shortage should be explored in future research.[xvii]
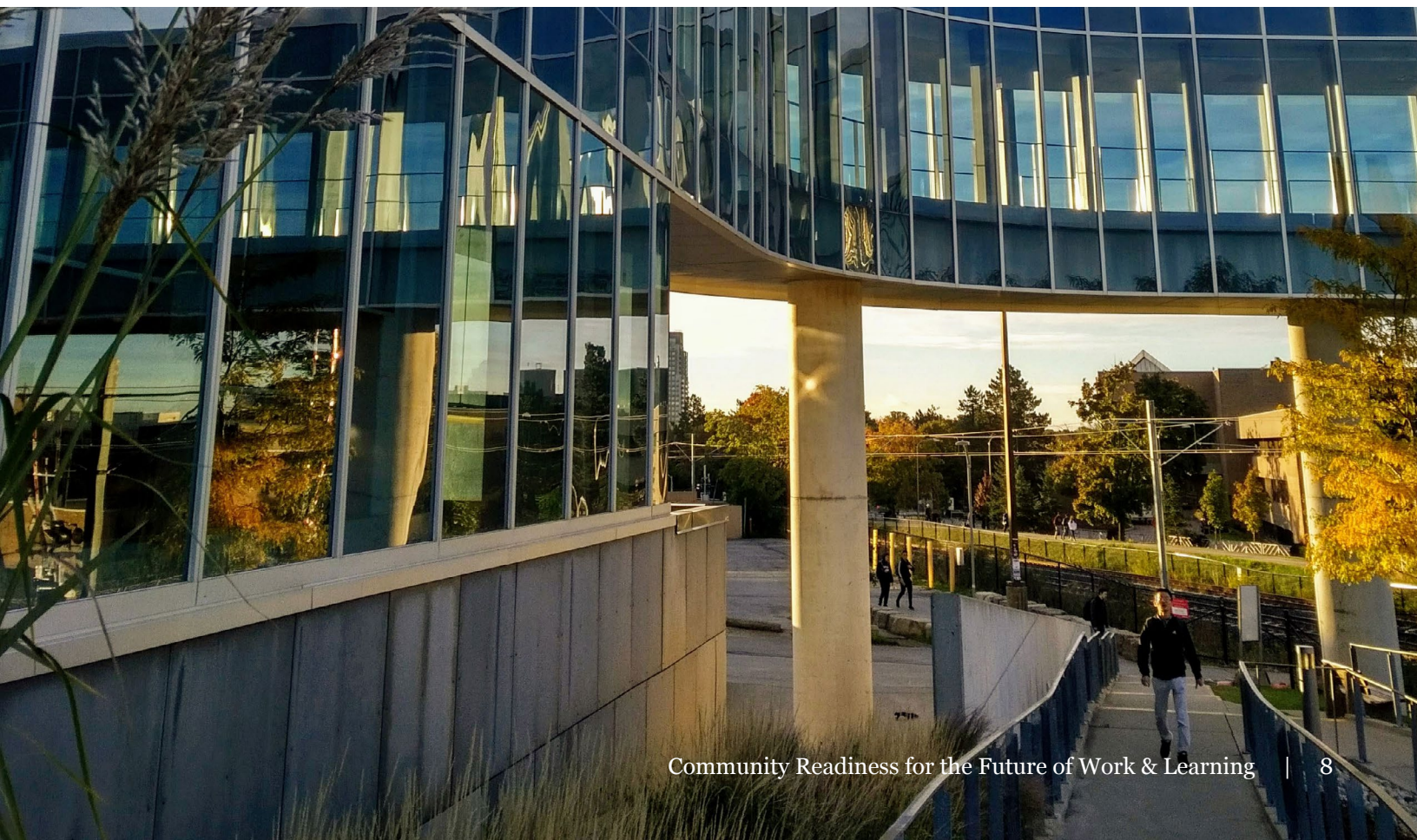
Economic & social development: The review of relevant literature highlighted three core themes related to social and economic development: economic and social planning, social innovation, and entrepreneurial activities and start-ups. For organizations and communities to be future-ready, they need to identify gaps in their strategy for future workforce development, provide resources, and support a community's quick and efficient adaptation to disruption in the future of work and learning. In other words, there is a need for organizations and communities to prioritize and commit resources to being agile and resilient.[xviii] Communities and all levels of government must commit to trust, transparency and accountability through varying tools and regulations.[xix] Future-ready practices need to be incorporated into management and governance models systemically.[xx] To support this, governments, institutions and organizations must also invest in civil society and non-profit organizations that seek to address future of work and learning-related focus areas.

In light of the COVID-19 global pandemic, small and medium businesses suffered significantly with respect to job and profit loss.[xxi] Several reports examined the impacts of the pandemic among various industries through the lens of technological adaptation, and in some cases, automation.[xxii] Although it is unlikely that human roles will be replaced fully by automation, partial substitution of human labour is taking place and anticipated to take place, and therefore requires that humans learn to work harmoniously with forms of AI.[xxiii] As technology advances, workers have increasing opportunities to work remotely. As a result, talent attraction and retention may potentially become harder to maintain, as talent competition becomes more global.[xxiv] Multiple reports also indicate the importance of focusing on sustainability goals on all levels of community, and incorporating disaster preparedness and management into governance policies and regulations.[xxv]

Equity, diversity and inclusion (EDI): After a careful review of the literature, it became evident that issues including EDI as well as the promotion and protection of human rights are among major areas of focus in the future of work and learning.[xxvi] However, a significant number of reports explored the roles and pathways in which the technology sector and large corporations approach the future of work and learning, but did not include focus on EDI. Reports addressing EDI emphasized the importance of fostering and actively providing opportunities for groups of persons often marginalized in learning and work including women and girls, LGBTQIA+ persons, Indigenous persons, visible and racialized minorities, persons with disabilities and immigrants and refugees.[xxvii] Recent attention has been drawn to the impact of COVID-19 on the service sector in addition to the impact on those who work in service-oriented roles. Significant job loss was noticed across the sector for persons involved in labour-intensive roles such as women or those with limited education.

These underrepresented and under supported groups exhibit an untapped diverse pool of labour resources for communities.[xxvii] Many organizations are increasingly prioritizing EDI, major policies, programs and resource commitments to this area are incorporated into overarching corporate responsibility strategies.[xxix] Despite the acknowledgement of the importance of EDI initiatives in many reports, some groups remain overlooked or underrepresented within these reports. People with disabilities were mentioned in just a few sources.[xxx] Similarly, Indigenous populations, LGBTQIA+, visible minorities and marginalized communities were briefly or not at all represented in the existing literature. This highlights the need to draw attention to these groups in research and policy development on the future of work and learning.

Workforce development and planning: In addition to the ways in which the workforce will be affected by technological changes and the need for reskilling and upskilling, there are many trends occurring that are affecting the structure of working arrangements including the increase in remote work. Traditional employment or full-time permanent work, with social protections such as extended health benefits and pensions is becoming more limited.[xxxi] The future of work is predicted to include an increasing amount of gig work.[xxxii] These types of employment contracts are often part-time or temporary, and usually do not provide social safety nets such as extended health benefits, parental leave, or pensions. To attract talent, employers and governing entities will need to be cognizant of employees' desire for flexible work arrangements, fair wages, benefits, a focus on EDI and a healthy work environment.[xxxiii]

Cross-sector collaboration: While many of the reports focused on specific organizations or sectors, several reports highlighted the importance of cross-sector collaboration in identifying and responding to the predicted disruptions for the future of work and learning. Reports recommended integrating partnership development, collaboration, networking, and knowledge sharing through cluster groups including government, innovative institutions, and private and not-for-profit sectors.[xxxiv]

The six themes identified in the review of future of work and learning reports are highly interconnected. The pace of technological advances is tied to the need for talent, skills and lifelong learning and significantly impacts workforce planning and development. Cross-sector collaborations enable educational institutions, workplaces and government to explore topics of mutual interest. For example, in EDI, cross-sector collaborations can ensure those from underrepresented groups are receiving the support they need for success.

Key informant interviews

The next phase of the research was to conduct interviews with key stakeholders as informants. Two distinct types of key informant interviews were facilitated: 1) interviews were conducted to support the refinement of key future of work and learning domains to inform the creation of a scorecard and 2) interviews were also conducted to explore the key elements in constructing a measurement tool.

Members of the Waterloo Region Future of Work & Learning Coalition were identified as potential participants and they were also asked to recommend key subject matter experts for participation in the interviews. A total of 21 interviews were conducted with stakeholders from the private sector in small, medium and large businesses; the public sector, particularly regional government and arms-length organizations; non-profit; research and policy hubs; and academia.

While the information collected through the interviews confirmed the importance of all six themes identified in the literature review, the participants emphasized three areas in particular: (i) fostering collaboration (ii) EDI and (iii) best practices and data. Interviewees mentioned the critical nature of multi-sector collaboration required to comprehensively inform, understand, and address community future-readiness, which requires interest and buy-in from diverse sectors and industry stakeholders. They also noted the importance of collaboration with these groups in advancing the field of future work and learning. This includes supporting community future-readiness with concern to the workforce and the skilling, recruitment, and retention gaps among indigenous, LGBTQIA+, people of color, women, those with disabilities, international persons (e.g. students) and new Canadians (e.g. immigrants and refugees). Finally, they discussed the potential design of an evaluative tool of future-readiness and the information sources that

they rely on to understand disruptions related to the future of work and learning. Interviewees identified industry leaders and higher education institutions publishing or collecting data relating to best practices and progress with respect to the future of work and learning. Additionally, some interviewees suggested a focus on further exploring data sources and other resources on traditionally marginalized groups in employment. These groups include those employed in mid-late careers, unemployed, underemployment, non-college educated, and seniors and youth who are traditionally marginalized from workforce growth.

The interviews that focused on advice for constructing a measurement tool revealed important information as well. The original idea for the project was to develop an index to measure community future of work and learning readiness. The information collected from those familiar with the development of indices revealed significant barriers to the development of an index for this project, in particular the time involved in the development and validation of the indicators. Those interviewed suggested that the development of an index would require a three-year commitment and deep expertise in each of the areas related to the future of work and learning. The key informants also cautioned that the evolving nature of the future of work and learning topic might lead to the index being out of date before it is finished. As a result of this information, the focus shifted to developing a scorecard rather than an index enabling the rapid development of a tool to stimulate cross-sector dialogue and give communities a guidepost for thinking and planning for the future of work and learning.

How do you assess community future readiness?

Development of scorecard

Based on the key themes identified in the first and second phase of this research, work was done to identify existing data sources and design survey questions that align with the themes. Three key stakeholder groups emerged as key elements for the scorecard were identified: government, higher education and training, and private sector as identified in Figure 2. Initial questions for the scorecard were grouped according to the three groups and focus groups were held with the coalition members in each of those three groups. Participants in the focus group provided feedback on the questions. The questions were revised and a second session was held with each group.
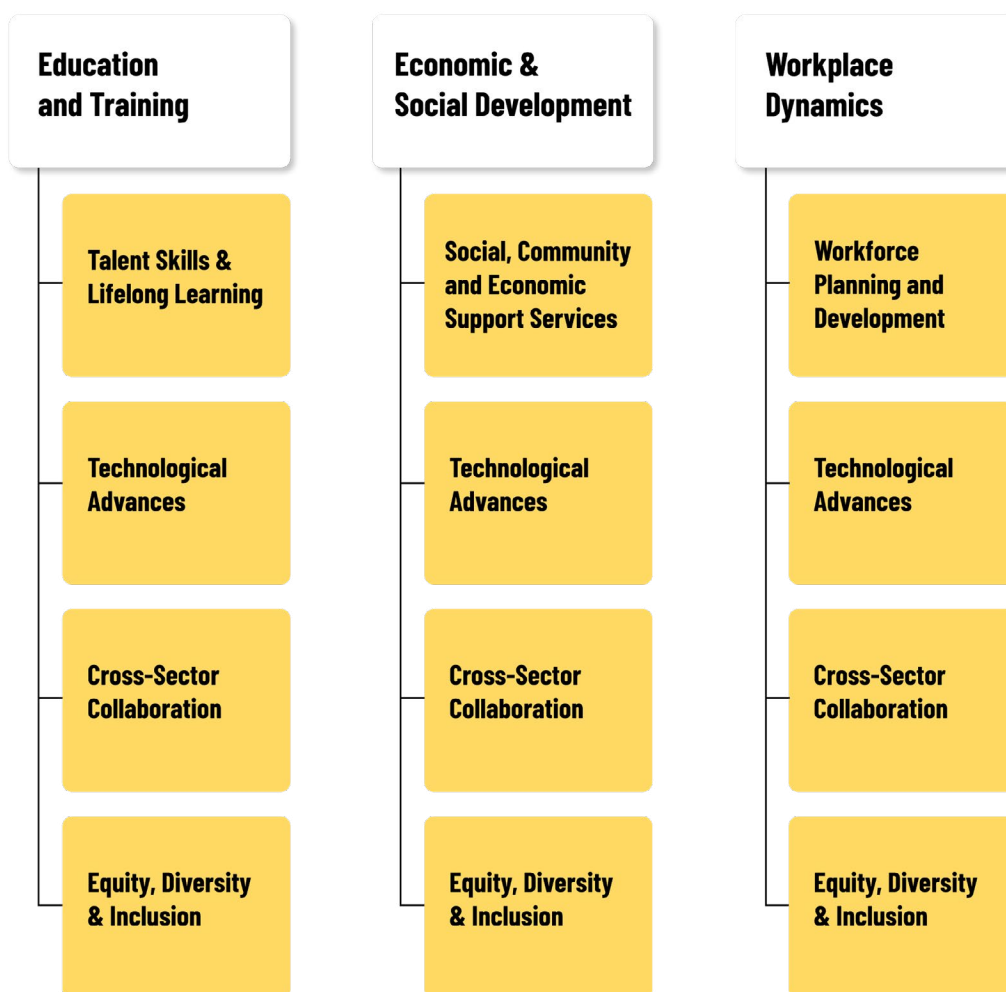
Figure 2: Stakeholder structure for scorecard
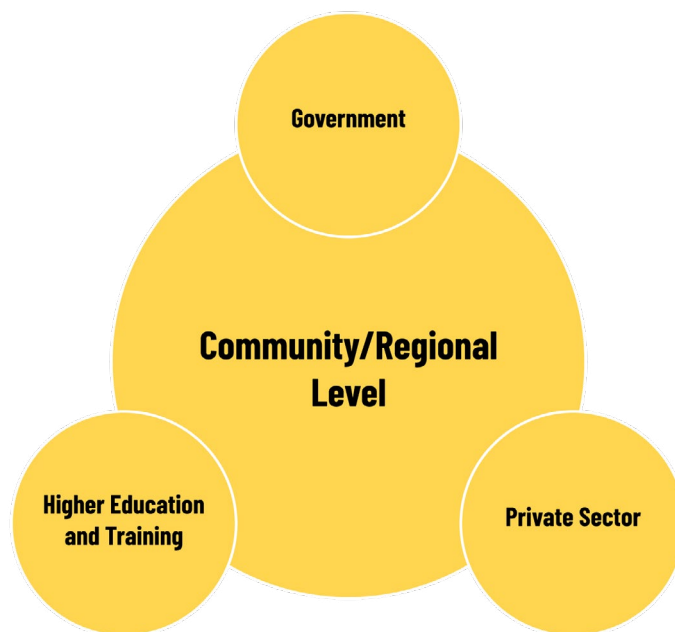
Community readiness for the future of work and learning scorecard v1.0

The interrelatedness of the six themes of the future of work and learning became clear as scorecard questions were developed. A structure emerged for the scorecard that aligned closely with the three key stakeholder groups with questions related to the other three themes cutting across those three organizing themes. The structure for the scorecard and its sections can be seen in Figure 3.

Figure 3: Scorecard structure

Education and Training	Economic & Social Development	Workplace Dynamics
Talent Skills & Lifelong Learning	Social, Community and Economic Support Services	Workforce Planning and Development
Technological Advances	Technological Advances	Technological Advances
Cross-Sector Collaboration	Cross-Sector Collaboration	Cross-Sector Collaboration
Equity, Diversity & Inclusion	Equity, Diversity & Inclusion	Equity, Diversity & Inclusion

Ways to use the scorecard

The scorecard is intended to be used as a tool by those interested in examining the ways in which their community is prepared for the future of work and learning. As mentioned in the previous section, there were three key stakeholder groups identified in relation to the future of work and learning: government, private sector, and education/training. As the scorecard was designed, it became clear that questions would target two different levels of detail depending on the viewpoint of the stakeholder completing the scorecard. One level of questions were questions written to capture an overall community-wide view of future readiness and another set of questions were designed to capture the view of future readiness from one of the key stakeholder groups identified. As such, the scorecard was designed with a general set of questions that could be answered from a regional perspective and a more targeted set of questions that could be completed by members of the three key stakeholder groups: municipal government, industry, education/training. The general survey can be used absent the responses from partners in key sectors to give users a general sense of the region's readiness. For a more granular view, sectoral partners can be asked to complete a sector specific survey.

From a regional perspective, the scorecard can be used to examine areas of future readiness of the community from a holistic viewpoint, considering factors across the three key stakeholder groups. Using the scorecard in this way will be useful for communities that may not have partners within each of the sector to complete the scorecard. For scorecard users that do have partners across each of the three sectors, the scorecard has been designed with more specific questions related to their areas of expertise.

The response scale for the scorecard questions is based on a maturity model scale. A maturity scale was selected as it represents the fact that becoming future-ready is an evolution and requires organizations and communities to mature their capabilities. That is, the questions ask participants to consider the degree to which specific elements of future readiness are being addressed, with one end of the scale being "no activity" occurring to the other end of the scale being "strategy funded for sustainability". In this way the collective responses to the scorecard questions will highlight areas of strength and areas for attention in preparing a community for the future of work and learning. Figure 4 shows a sample summary of results by completing the scorecard survey.

Figure 4: Sample scorecard output - Summary of results

Category	No activity related to this	Minimal activity related to this (adhoc or isolated projects)	Moderate activity related to this (multiple projects)	Strategy developed related to this	Strategy funded for sustainability
Talent, Skills and Lifelong Learning	20%	20%	20%	10%	30%
Economic and Social Development	10%	30%	20%	15%	25%
Workforce Planning and Development	15%	20%	25%	10%	30%
Technological Advances	20%	30%	20%	10%	20%
Equity, Diversity and Inclusion	30%	10%	20%	20%	20%
Cross-Sector Collaboration	25%	25%	25%	25%	0%
Overall	20%	23%	22%	15%	21%

There are a number of ways that are envisioned for analyzing the results from the scorecard. An individual organization's responses will raise awareness of possible gaps in strategy related to the future of work and learning. With responses from multiple stakeholder groups across the community, there will be an opportunity to examine the collective strengths and gaps, and to uncover where there may be best practices within a sector or organizations that could be shared across the community. There is also an opportunity to examine trends across communities and over time. Within Canada, both Halifax, Nova Scotia and Windsor, Ontario have expressed interest in adopting a coalition model. As such, the proposed scorecard may provide an opportunity to

compare the community readiness for the future of work and learning of these regions, among others who may choose to implement it.

For communities that are able to deploy the survey to multiple stakeholders, the scorecard can also be helpful in unearthing trends where there is a disconnect between stakeholders. For example, if education providers and private sector respond differently to a question regarding availability of industry-relevant training, the survey user can begin a conversation to identify and offer solutions.

The survey responses can also be used as a benchmark to measure progress year over year. As users begin to identify areas for improvement, this survey can provide insights whether or not the interventions are having a positive impact.

For organizations or coalitions in the early stages of grappling with how to gain funders or sponsors, the survey can be used to build out a strategy that identifies which areas will be addressed first, what the level of effort needed will be to move the needle, and which partners are needed at the table.

What are some lessons learned, and what are the next steps?

There have been a number of lessons learned through the execution of this project. The first lesson related to the topic of the project: future of work and learning. While there is quite a bit being written about the future of work and learning, for most people, there was little

LESSONS LEARNED

- Previous understanding of what the future of work and learning meant (and how to assess it) was limited

- There are benefits to viewing future-readiness from a wider (systemic) lens, rather than relying on one stakeholder

- Community-level future-readiness needs to be examined using a multi-sector collaborative approach

understanding of what it meant and how they might assess whether their organization and community was future ready. Another related lesson is that despite the amount being written, there is little support for organizations and communities wanting to assess and prepare for the predicted disruptions. As well, typically the burden for being future-ready falls on individual companies and organizations and is rarely viewed from a wider lens as a systemic responsibility.

The concept of exploring future readiness at a community level was both novel and important, as we believe the resulting scorecard is the first of its kind in Canada. The leadership of a multi-sectoral coalition was critical to the success of the project and resulting scorecard. The topic of community readiness for the future of work and learning is not something that can be examined from only one stakeholder perspective and thus required the different perspectives that each contributor brought to the discussion. That said, there is a need for ownership and leadership of this initiative going forward and the recommendation is that this is work that would be led at a regional level (e.g. municipal government, chamber of commerce, etc.) with the key stakeholder groups involved in mobilization. Regional oversight promotes representation amongst key sectors within a community to ensure changes are representative and reflective of all community members' needs, rather than limited to those from leading/overrepresented industry sectors.

RECOMMENDATIONS

- Create a multi-sectoral Future of Work & Learning Coalition

- Create a future of work and learning digital hub to share best practices

- Continue to emphasize a multi-sectoral, collaborative approach

- Lead future initiatives at the regional level

Through the research process, several recommendations emerged for communities wanting to explore future readiness for work and learning. The first recommendation is the creation of a Future of Work & Learning coalition to champion, create awareness and convene the cross-sectoral community stakeholders. The value of Communitech establishing and leading the coalition was a foundational element to the success of this project. They were the driving force of this work, as they provided the initial vision for this project, ensured continuity when involving coalition members from various industry sectors, and managed the development of coalition activities (e.g. scorecard creation). Now that the scorecard has been created the next step within the Waterloo region will be the piloting and validating the scorecard and adjusting as appropriate. It is proposed that the next version of the scorecard include stakeholder-specific data questions as well as open-ended questions which will enable participants to highlight examples of future-ready programs and initiatives. Tied to that, there is an opportunity to create a future of work and learning digital hub which could provide a dashboard of the data collected through the completion of the scorecard by key community stakeholders and profile best practices occurring within the various dimensions of the scorecard. The future of work and learning is a topic of great interest for companies, educational institutions and various levels of government but action and preparation requires a complex multi-sectoral approach. Engaging multiple stakeholders, with diverse interests and perspectives, provides the most comprehensive preparation for communities across Canada and globally to achieve future-readiness.

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