

Successful Workforce Development Is Vital for a Competitive and Prosperous North America

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The North American workforce suffers from alarming skills gaps and mismatches. If left unaddressed, these labor market deficits could undermine North American economic competitiveness and sow the seeds for greater social dislocation.

Long before the pandemic and the “great resignation,” employers in North America often struggled to identify employees who possess the skills needed. Conversely, employees often found it difficult to acquire the education and training they needed to access job opportunities. With the surge in hiring evident over the past two year, these mismatches continue to impede companies and sectors in Canada, Mexico, and the United States from realizing the potential inherent in the powerful production and commerce networks that their countries have been building since the early 1990s.

During the recovery from the pandemic, including the so-called “great resignation,” skills gaps and shortages, in [digital skills](#) and emerging technologies such as [electric vehicles](#), remain as a central challenge for the region. If the region is to cope with accelerating technological changes, adapt to shifting demographics, and create buffers against unexpected shocks, North American leaders should formulate and invest in a serious *North America workforce development agenda*.

The three countries have begun to address workforce development issues more consistently since 2020 when the US-Mexico-Canada Agreement (USMCA) came into effect and as workforce development was identified as [action area](#) by USMCA’s Competitiveness committee. The leaders of the three countries also made workforce development an important action item for the competitiveness work agendas approved by North American Leaders Summits (NALS) in [2021](#) and [2023](#). As part of the NALS follow up work, ministers and private sector representatives launched a specific workforce development program focuses on promoting the North American semiconductor industry in a June 2023 Washington [conference](#).. Also, the US and Mexico made workforce development a bilateral work topic since they revived the bilateral High Level Economic Dialogue ([HLED](#)) in 2021 and have organized specific workforce development [events and projects](#).

This is welcome progress. However, the United States, Canada and Mexico have not yet invested in a comprehensive North American Agenda to address systematically the skills gaps and mismatches that continue to hinder prosperity and the competitiveness of North America’s workforces and thus its productive potential. Studies continue to show that well-designed workforce development programs can boost and sustain [employment](#).

The North American workplace was changing well before the pandemic. Technology-driven shifts, dubbed “Industry 4.0” or the “Fourth Industrial Revolution,” are eliminating, redefining, and creating new classes of jobs across the continent. All three countries, and much of the world, have been forced to reconsider the “future of work.” Over the longer term, technological transformations are likely to contribute to the creation of more and better jobs; however, during difficult transitions across many industries, companies, individuals, and governments need to prepare for the shocks

that accompany “creative destruction.” By joining forces, North Americans can make more and better jobs a reality and ameliorate the disruptive effects of change.¹

Although technological change already posed significant challenges for the workforce, the COVID-19 pandemic accelerated, exacerbated, and reshaped the ways in which both production and business are conducted. Technological shifts and pandemic-related changes catalyzed a “double disruption” for workers globally, in the words of the World Economic Forum (WEF).² The pandemic forced businesses to reevaluate the role of technology in their workplaces, manage workers remotely, and rapidly expand internet commerce.³ Relatedly, the pandemic opened serious discussions about the resilience, robustness, and reliability of supply chains across North America and worldwide.⁴ Although the North American labor market recovered from the shocks of 2020 – though Mexico continues to suffer high rates of informality – employment returned in different forms and with some significant shifts in job sectors.⁵ These transformations have thrown into relief myriad gaps in workforce preparation.⁶

The emergence of ever more powerful tools using Artificial Intelligence (AI) has added additional concerns about further significant changes in jobs, skills, and the workplace across North America and [internationally](#), as part of the ongoing debate and discussion about how governments might best manage this powerful new technology and its effect on workers and businesses.

To better address these gaps, the United States, Canada, and Mexico need to increase and better target investment in the development, adjustment, and training of their workforces and to build cross-continental collaboration. Too often, the changes and challenges of North America’s labor forces have not been approached coherently, either nationally, sector by sector, or across the North American marketplace. However, given the close connections of the regional economies, workforce needs are interdependent.

If North America is to augment its regional competitiveness, it needs a strategy to develop and deploy a 21st century workforce. Much as the Biden administration framed its economic response to the COVID-19 pandemic as a “Build Back Better” approach, a “Build North America Back Better” perspective on workforce development would provide a foundation for future cooperation and prosperity among all three countries.

*A North American workforce development agenda, therefore, should focus on four areas: (1) work-based learning; (2) innovative use of transparent credentials; (3) labor market data collection and transparency; and (4) creating collaborative mechanisms to help prepare for changes ahead.*⁷

The implementation of this agenda depends on multistakeholder involvement, driven by collaboration among national and subnational governments, businesses, academia and education providers, unions, and nongovernmental organizations (NGOs). The three governments should lead the way, identifying successful partnerships and programs under way across the continent, and looking to expand them. This collaboration might start by responding to the needs of sectors of particular regional importance, such as the automotive sector and emerging “green” energy production. By cooperating on workforce development, North America will strengthen the depth and resilience of shared value chains; bolster the region’s ability to compete in a global

marketplace, including against powerhouses like China; and improve conditions for the continent's workers.

Workforce Development in North America

North America boasts one of the world's strongest trading and production networks. The United States, Canada, and Mexico combine for a population of nearly 500 million people and a gross domestic product (GDP) of over US\$31 trillion. This includes the world's largest, tenth-largest, and fifteenth-largest economies, respectively.⁸ The United States is the largest trading partner of Mexico and Canada, and those two countries are the United States' largest export markets. More than 50% of the trade within North America is in intermediate goods, reflecting the fact that the three countries build so much together.⁹ Since the early 1990s, trade within North America has grown by a factor of four; mutual investment is massive.

Since the 2020 launch of USMCA, North American [trade has grown](#) some 30%, averaging some \$3 million a minute and foreign direct investment has increased.

Workforce development challenges have significant consequences for workers, companies, and social stability across the region, too. Even before the COVID-19 pandemic, the forces of technological change and global competition were reshaping North America. North American industry was making or planning investments in innovations that surely will reshape employment, from warehouse automation to delivery robots.¹⁰ These changes will affect many high-employment sectors, suggesting needs for reskilling and upskilling large portions of the labor market, even those workers of mature age. Specific areas of interest will be discussed in greater detail below.

Mind the (Skills) Gap

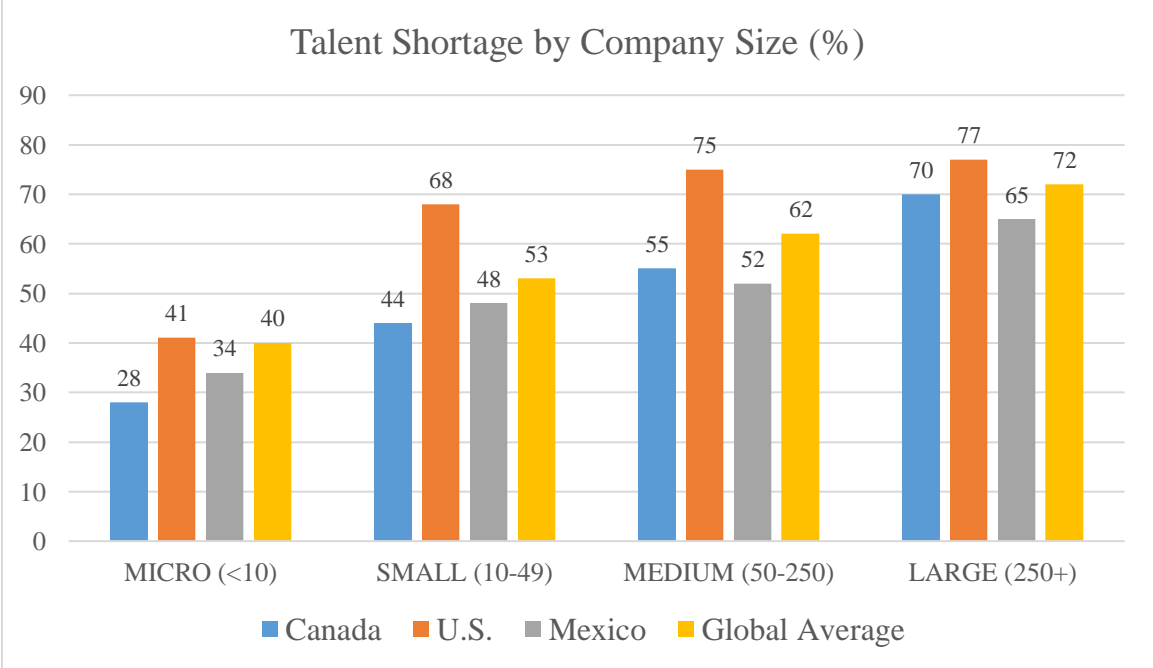
As noted above, the three North American economies face alarming skills gaps and mismatches. Employers are having an ever-harder time filling positions, with nearly two-thirds of Canadian and Mexican employers reporting difficulties, according to the Manpower Group's 2021 Talent Shortage Survey.¹¹ Skills gaps and mismatches are an important reason why. North American employers reported a lack of applicants, the lack of adequate or sufficient technical ("hard") skills, insufficient human/social ("soft") skills, and inadequate experience as the main reasons for their difficulty filling positions. These skills gaps and mismatches keep workers from attaining better jobs and harm companies' competitiveness and industrial performance. Together, this is a serious drag on the regional economy.

Worse, mismatches are only likely to grow as change in employment accelerates. This is due in part to the increasing pace of automation, which is erasing old categories of work while creating new types of jobs.¹² The Organization for Economic Cooperation and Development (OECD) estimates that 14% of jobs across its member countries could disappear as a result of automation in the next 15 to 20 years, and another 32% are likely to change radically.¹³ Core employment skills will change, increasing the demand for both "reskilling" (training for those displaced from jobs) and "upskilling" (training employees whose jobs are evolving).¹⁴ Digital literacy and foundational digital skills will be increasingly important: by 2030 an estimated 77% of jobs in the United States will require the use of technology.¹⁵

Automation has been changing the nature of work for a long time. But the pandemic has upped the pace. In a study of eight countries in 2021, McKinsey analysts found that the pandemic would increase the number of workers that likely need to switch occupations by 2030.¹⁶ The most affected include low-wage occupations, workers without a college degree, women, ethnic minorities, and younger workers. The impacts of the pandemic were concentrated in areas of the economy where people work in close proximity to each other: a) leisure and travel; b) retail and hospitality; c) computer-based work; and d) indoor production and warehousing. Meanwhile, labor demand is expected to increase further in other sectors: medical care, home support, personal care, transportation of goods, and outdoor production and maintenance. As a result, a skilled workforce is needed more than ever.¹⁷ Changes need to focus on the groups mentioned above to close skill and employment gaps; to do so, workers will also need to learn, or at best, improve “soft” and flexible skills to adapt to continuing changes. The pandemic also taught that emotional intelligence and ability to manage uncertainty and stress are needed.

Notably, these challenges and talent shortages are prevalent for all three North American countries, and they affect businesses of all sizes to varying degrees (Figure 1). The figures suggest that in all three countries—much like the global average—larger companies face more difficulty filling jobs. Of course, these companies are often the most regionally and globally integrated enterprises in North America.

Figure 1. Talent Shortage by Company Size



Source: Manpower Group, 2019 Talent Shortage Survey.

In later sections of the chapter, we will explore solutions for these labor-market shortages and mismatches. But it is worth noting that a mix of strategies will be needed, precisely because the challenges regarding employment and skills are so diverse. For example, the OECD estimates that 10.2% of U.S. workers are in occupations with high risk of automation and are therefore in need of “moderate training.” An additional 2.3% are in need of “important training” to avoid the risk of

losing their jobs because of automation.¹⁸ Likewise, about 8.5% of Canadian workers are in need of “moderate training” and 3.2% need “important training.”¹⁹ The OECD does not provide similar data for Mexico, but finds that the country ranks at the bottom 20% on most indicators of skills development.²⁰ Automation will hit sectors very differently: a Brookings study of automation risks in the United States suggests that while professional services and education have more limited potential for employment replacement by automation, nearly three-quarters of employee tasks in accommodation and food services and nearly 60% in manufacturing, transportation and warehousing could face automation.²¹

How to adapt? As new technological advances are expected to modify classes of jobs for which workers are being trained today, it will be essential to develop this culture of learning and innovation throughout a worker’s life. Both “hard,” or technical, skills and “soft” or human and social skills will be crucial to prepare workers for the future of work in “Industry 4.0.”²² Developing a workforce culture of learning and innovation is essential for success.²³ The World Economic Forum, for example, highlights “soft” skills that can be applied and adapted in a changing economy as the top skills. These include analytical thinking, active learning, creativity, problem-solving, leadership, and emotional intelligence alongside more technical, technological skills.²⁴ So, too, is incorporating a greater understanding of technology into workforce skill requirements.²⁵ Businesses are recognizing some emerging workforce needs and building them into their planning: 74% of companies surveyed by the WEF reported that talent availability will be the primary factor in determining the locations for new investments.²⁶ To win those investments, then, North America needs to make workforce development a priority.

That suggests just how important skills development will be for the development of the North American economy. Responding to skills gaps and preparing workers for technological change demands concerted action by North American governments, the private sector, and educational institutions. Although leading companies in the United States, Canada, and Mexico are adopting new technologies at comparable rates, public-private-academic collaborative efforts on training and workforce development still fall short.²⁷ Workforce resiliency should be a measure of its ability to adapt under varying and uncertain economic conditions. The United States, Canada, and Mexico will need agile and resilient workforces with public and private educational and training systems that better support current workers and prepare students for careers of the future. If no steps are taken in this direction, North America undoubtedly will face the social and political repercussions of displacement and unemployment.

Job Displacement: Trade and Technology

In recent years, U.S. political discourse has featured frequent argument that trade agreements—in particular, trade within North America—causes job losses. In specific cases, it is sometimes pointed out that trade has caused jobs to move between countries, as well as within the United States. The shift away from manufacturing employment goes beyond North America, in fact: across the OECD’s membership, employment in the manufacturing sector declined by 20% over the past two decades; in contrast, services jobs grew by 27%.²⁸ Though trade is often a political target, serious studies suggest that productivity improvements and new technology, as well as trade from China, have been much greater drivers of these manufacturing job losses.²⁹ A Ball State University study in 2017 found that more than 87% of manufacturing job losses from 2000 to 2010 could be attributed to productivity improvements rather than increased trade and globalization.³⁰

Whatever the causes, there is no doubt that too many workers and communities have been left behind in recent years. Programs instituted to help, such as the U.S. Trade Adjustment Assistance, have not produced the desired results.³¹ More job displacement is likely just over the horizon, with negative effects on unemployment concentrated in the same areas of the United States that suffered job losses in the first decade of this century. The pandemic appears to have added to these risks; a study of European economies suggests overlaps between pandemic-related job losses and the sectors most at risk of automation.³² Similar trends are likely to hold in North America, as the three economies struggle to emerge from the downturn sparked by the global pandemic.³³ Previous levels of assistance have been inadequate, and unless actions are taken in “at-risk” regions and sectors to mitigate the likely job displacement, the effects on U.S. society will be dire.³⁴ These changes are likely to be equally intense in Mexico, with two-thirds of Mexican workers employed in sectors with high risks of automation, according to a 2018 report from Mexico’s central bank.³⁵ Using the probabilities of automation for different types of occupations calculated for the United States, the Banco de México classified the risk of automation for different occupations in Mexico and developed three risk categories: (1) high risk, with a probability greater than 66%; (2) medium risk, with probability between 33% and 66%; and (3) low risk, with probability less than 33%. The sectors most likely to see jobs replaced by automation include the agricultural sector, hospitality and food services, construction, manufacturing, and financial services. Moreover, these occupations correspond to where employees often have lower levels of schooling, thus limiting their ability to adapt to the risks of automation. Other studies estimate that Mexico could lose some 2.7 million manufacturing jobs by 2030.³⁶ There is a strong geographic element, too, with the highest risk of automation concentrated in the Mexican states with the highest rates of economic and social inequality, including Chiapas, Guerrero, Oaxaca, Puebla, and Yucatán.³⁷ Except Yucatán, all other states have historically been a source of migrants to the U.S. The risks are clear, and Mexican analysts have called for greater investment, to adapt best practices implemented in other countries, and to improve middle and higher education.³⁸ So far, however, these calls have not been reflected in Mexican government spending.³⁹

Insufficient Workforce Development Budgets

Indeed, insufficient funding of workforce development is a region-wide concern. According to the OECD, North American countries trail other developed countries in such investment (Figure 2). Even though U.S. investment in skills already lagged most developed economies, a 2019 report noted that the U.S. Congress had cut funding for job training programs by some 40% since 2001.⁴⁰ Similarly, in 2018 the three countries were receiving middling to poor showings in estimates of automation readiness. Out of 25 countries assessed, the Economist Intelligence Unit ranks Canada 5th, the United States 9th, and Mexico 23rd.⁴¹ The best-ranked countries provide significant support for technology innovation and strategies to address the workforce effects of automation. But there are still few policies in place today in North America to address the challenges of artificial intelligence and robotics-based automation. Such policies should include educational aspects that incorporate multiple stakeholders, and which explicitly address the impact of automation and the need for vocational training and lifelong learning.

It is important to note that under the Biden Administration, the US significantly boosted its spending on economic [investment in America](#) including new funding for workforce development with three major pieces of legislation: the Bipartisan Infrastructure Law, the Chips and Science

Act and the Inflation Reduction Act. These pieces of legislation have funded a wide range of workforce development programs and [opened doors](#) for more. But many of are still being developed, implemented, and not yet funded.

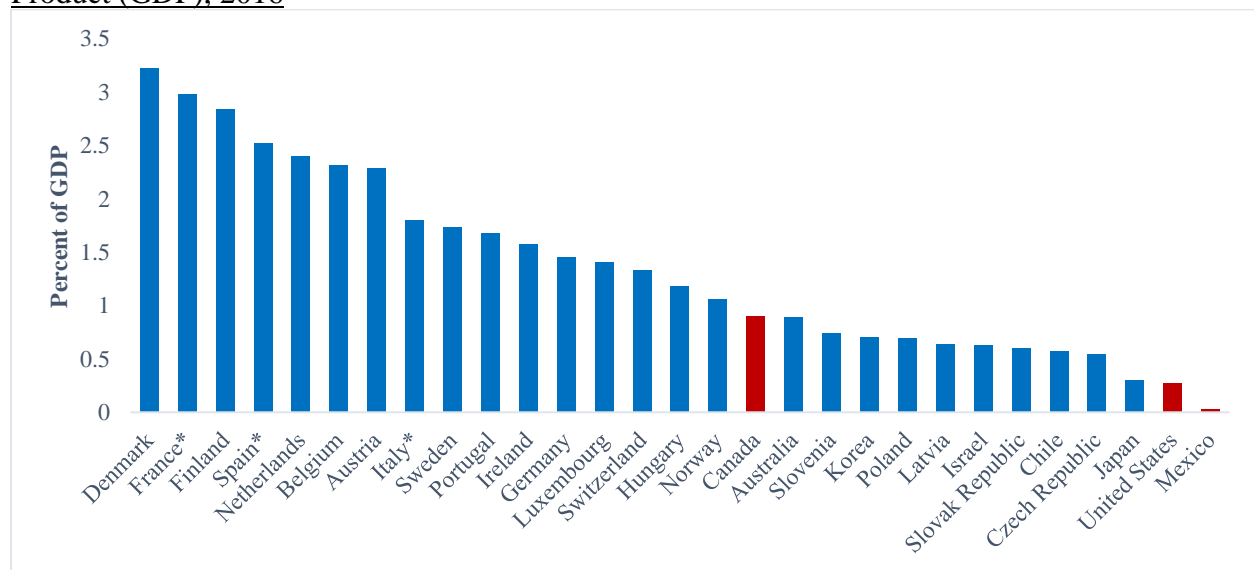
The US has invited dialogue and cooperation with Canada and Mexico in several related initiatives including in the semiconductor industry, but this has not yet produced an ongoing set of mechanisms for regular collaboration on workforce development. In addition, the United States has suggested that Mexico to improve its own policies and programs to help attract [investment](#) to Mexico including better skills training opportunities for its workers.

The latest OECD data available (through 2021) continue to show Mexico trailing all other OECD countries in public spending on active labor market policies as a percent of GDP (figure 2). This bottom of the pack rating holds true even when focusing on training programs, which includes the current Mexican administration’s vaunted youth training program, “[Youth Building the Future](#),”

While Canada ranks higher on per capita GDP basis than both of its neighbors, the US ranks low as a percent of GDP but significantly increased program outlays with the legislation mentioned above. Experts at the [Brookings Institution](#) argue that more funding is needed specifically focused on workforce development, however.

Update figure 2

Figure 2. Total Public Expenditure on Labor Market Programs as a Percentage of Gross Domestic Product (GDP), 2016



Source: OECD Stats, 2019, <http://stats.oecd.org//Index.aspx?QueryId=8540>.

Note: * Only 2015 data available. The information in this graph is based on OECD measures of total public spending on labor market programs include training, employment incentives, sheltered and supported employment and rehabilitation, direct job creation, start-up incentives, out-of-work income, maintenance and support, and early retirement.

Although the rankings indicate the need for improvement in all three North American economies, they make clear that much deeper change is warranted in Mexico. Mexico’s challenges mostly

involve the development and support of a culture of innovation and improvements to its labor market. Regarding fomenting a culture of innovation, Mexico’s research and innovation environment, infrastructure, and ethics and safety policies urgently need to be improved. In the labor market space, vocational training and linkages between educational institutions and economic sectors should be expanded. In contrast, according to this study, Canada needs to fine-tune policies to finance and support innovation, to facilitate workplace transitions, and to increase options for developing technical skills. The United States faces its largest challenges in the realm of education (early childhood, STEM [science, technology, engineering, mathematics], teacher training and curricular innovation), vocational training, and university transition to workplace in labor market. Policies must address education gaps among U.S. workers, particularly digital skills training.⁴² Advocacy groups are focusing on “digital literacy,” noting that nearly one in three workers lack foundational skills in this area.⁴³

Box 1. National Workforce Development Agenda in Canada

Canada’s direct investments in workforce development include scholarships and fellowships, research grants, wage subsidies, entrepreneurial support programs, and training benefits for mid-career workers. Examples of programs to incentivize private sector investments in people, skills development, and new jobs include the Innovation “Superclusters” Initiatives, a Strategic Investment Fund, and the Industrial Technology Benefits Policy.

Canada explicitly recognizes in its policies the need for collaboration and communication among stakeholders from all sectors to address workforce challenges. In 2018, the Canadian government created six Economic Strategy Tables, composed of industry CEOs, to investigate growth challenges within their sectors.⁴⁴ The Future Skills Centre, Council and Office, launched in 2019, is a multistakeholder undertaking to identify emerging skill demands; develop, test, and evaluate new approaches to skills development; and share results and best practices. The 2019 Canadian federal budget announced the creation of the Canada Training Benefit, which will help mid-career workers access upskilling opportunities, secure income support during training, and offer job protection while on training leave.⁴⁵ Canadian workforce development specialists highlight the need to measure and examine results.⁴⁶

Canada’s federal budget for fiscal year 2020/2021 provided CA\$922 million to help employers train workers and address local labor market needs through Workforce Development Agreements. Additionally, it offers nearly CA\$2.5 billion through Labor Market Development Agreements to support employers with employment insurance-funded skills training and other supports to help workers prepare for and find quality jobs. Lastly, it strives to support access to skilled trades by providing grants to nearly 73,100 Canadians through the Apprenticeship Grants Program.⁴⁷ The authors have not seen evaluations for the programs’ effectiveness but note the impressive amount of funds being invested.

Box 2: National Workforce Development Agenda in Mexico

In 2019, the president of Mexico and the secretary of labor and social welfare launched one of the largest apprenticeship/mentoring programs in the world, called “Youth Building the Future” (Jóvenes Construyendo Futuro).⁴⁸ The program’s objective is to increase productivity levels and economic growth by increasing job and training opportunities for 2.3 million young Mexicans aged 18 to 29 who are neither studying nor employed.⁴⁹ This mentorship program aims to train young people for up to one year with relevant work skills and link them to the private, not-for-profit, and public sectors. This initiative gives priority to applicants who live in marginalized areas, with high rates of violence and with a predominantly indigenous population.⁵⁰ Young people who join this program receive a monthly stipend of 3,600 Mexican pesos (around US\$180) and health insurance during their participation in the program. At the end of the training/mentorship year, young people will receive a certificate that describes the training received and the skills developed during the mentorship program, and then will be incorporated into the labor market. National Employment Service will monitor the program.⁵¹

Experts stress the need to see results, including the measured skills and competencies obtained, the development of recognized certificates, and the onward employment record. They also are concerned about the budget cuts being proposed for the program. Moreover, two limitations of this program must be noted. First, Mexicans Against Corruption (Mexicanos Contra la Corrupción), an independent nongovernmental organization, as well as others, have identified potential “irregularities” in the enrollment patterns of the program.⁵² Second, the program is not aimed at preparing young workers for jobs of the future, but rather for the standard jobs of today. The authors have not yet seen an evaluation of the program’s effectiveness.

Box 3: National Workforce Development Agenda in the United States During the Trump and Biden Administrations

Workforce development has been an announced priority for both the current and previous U.S. presidential administration. President Donald Trump’s administration established in July 2018 the President’s National Council for the American Worker.⁵³ The scope of the Council’s mandate encompassed key issues regarding skills, competencies and training.⁵⁴ The Council’s working groups provided recommendations in September 2019, including informing workers and students of training initiatives and calling for increasing data transparency.⁵⁵ The Trump Administration asked companies throughout the country to sign a “Pledge to America’s Workers.” Over 450 companies and associations committed to create some 16 million new education and training opportunities over the next five years.⁵⁶ The U.S. Administration said it aimed to facilitate the creation of at least 6.5 million training opportunities for American workers from high-school age to near-retirement, although the results are not clear.

In March 2021, President Biden proposed workforce investments as part of his American Jobs Plan, including a combined \$48 billion in American workforce development infrastructure and worker protection. Biden’s proposals include scaling up work-based learning programs with a focus on building a diverse workforce, through opportunities like registered apprenticeships, pre-apprenticeship programs and other labor-management training programs. The proposals discuss pathways for diverse workers to access training and career opportunities. The proposals also call for new investments in middle and high schools to connect underrepresented students to STEM and in-demand sectors. They also include significant investment in community college

partnerships to deliver jobs training programs based on in-demand skills.⁵⁷ Some new training [opportunities](#) are flowing from the US [infrastructure](#) law, but much of the original workforce agenda remains to be implemented.⁵⁸ US [experts](#) continue to call for more [investment](#) in workforce development programs.

A Proposal for Workforce Development in North America

With those challenges and needs in mind, we offer a proposal for workforce develop in the context of the North American regional economy. A regional approach makes sense because North America’s economies share workforce challenges – even if these challenges look a bit different in each country. A collaborative approach is necessary especially due to the commercial and economic integration of the three economies.⁵⁹ Massive cross-border production chains and trade networks have positioned the region as one of the most competitive in the world, helping it build products together.⁶⁰ Conversely, skills gaps and mismatches in one part of the region harm economic and industrial performance elsewhere, curtailing the region’s competitiveness. The proposal is also based on the long-standing relationships among Mexican, Canadian and U.S. universities and community colleges built over decades.

So far, the three countries have implemented different strategies for developing their workforces (see Boxes 1 to 3). In addition, a great deal of activity related to workforce development occurs at the subnational and local levels. Success stories exist across North America—training for a Siemens plant in Charlotte, NC., multi-stakeholder cooperation in Querétaro’s aeronautics hub, and a multifaceted “phased action plan” in British Columbia are just some of the good-news stories. Nevertheless, it is notable that the very strategies that have been identified as critical, including vocational training and transition to workplace, have not yet been granted prominent roles in national and regional policy efforts.

Simply implementing these kinds of programs is not enough, however. The three North American countries must also work to ensure that the public and stakeholders are aware of the programs’ existence and comprehend the benefits that participation creates for students, workers, and industry. They also need to build in careful examination of results.⁶¹ To do so, the United States, Mexico, and Canada should establish mechanisms to implement trilateral innovation strategies aimed at improving workforce development and formalize pathways to exchange lessons learned. Subnational, national, and regional policies need to be synchronized, with the cooperation of government, private sector, and educators at all levels. In the following section, we will highlight the need to develop regional/sectoral strategies—but importantly, these should build from successful local examples. We discuss these in relation to four priority issues: apprenticeships, credentials, data collection, and best practices.

Priorities for Action

The USMCA, especially its Committee on Competitiveness, provides a mechanism for building workforce-development cooperation. Although the USMCA negotiations did not address workforce development directly, the chapter on labor (chapter 23) specifically calls for sharing of best practices and developing cooperative activities, including on apprenticeships.⁶² The competitiveness chapter (chapter 26) outlines the parties’ shared interest in strengthening regional economic growth and calls for the establishment of a Committee on Competitiveness.⁶³ USMCA’s

Competitiveness Committee has begun a [dialogue](#) on workforce development and undertaken several events in 2022-23.

In the context of the North American Leaders Summit (NALS), the presidents of the US and Mexico and the Prime Minister of Canada approved a competitiveness work agenda for North America which has workforce development as an integral component. They convened a tripartite meeting of ministers and private sector representatives from the three countries met in Washington during May 2023 to discuss how to build a stronger semiconductor industry in North America. The conference highlighted the need for collaborative workforce development efforts in the semiconductor sector as one of its outcomes.

Similarly, the US-Mexico High Level Economic Dialogue has initiated a series of meetings and projects focused on workforce development as part of its ongoing agenda. These were a key pillar of the work reported at the [September](#) 2023 [HLED](#) and include training programs involving semiconductors, medical equipment regulation, technical skills education, and certification system, among others.

Through these avenues, all three USMCA countries are working to address the issues surrounding the future of work and of North America's competitiveness. As part of this effort, North America would benefit greatly from a public-private-academic process where governments (at all levels), the private sector, unions, educational institutions, and others could explore best practices on workforce development. Cut this sentence and current footnote 64 Several developments underscore this promise, notably the first meeting of the Competitiveness Committee agreed in December 2021, which agreed to pursue workforce issues, and the US-Mexico High Level Economic Dialogue launched in September 2021.⁶⁴

Issue 1. Expand Apprenticeships, Work-Based Learning and Technical Education

Work-based learning (WBL) or work-integrated learning programs encompass a wide range of models. Apprenticeships are a well-known example. The mix of academic instruction and on-the-job learning equips individuals with relevant capabilities to meet the demands of the labor market and provides businesses with the trained employees they need. These types of learning programs have positive impacts on the economy, facilitating the transition from school to the labor market, fostering productivity and higher wages, and encouraging workers to seek further education.⁶⁵ WBL also helps to fulfill the mission of educational institutions by being close to and relevant for improved quality of life and enhanced opportunities in their communities.

WBL approaches such as apprenticeship programs can address skills gaps by immediately placing workers in unfilled jobs, and the companies offering the apprenticeships can adjust the training to fit evolving needs.⁶⁶ WBL also provides a career path by offering workers paying jobs, certifications, and marketable skills.⁶⁷ However, apprenticeships and other WBL initiatives will need to evolve with the pace of technological change and workplace needs. The OECD recommends that its member countries move away from front-loaded education systems to a model where skills are continuously updated to match changing demand.⁶⁸ Each year of postsecondary education that a worker receives leads to an increase in per capita income of 4 to 7%.⁶⁹ Despite the benefits of WBL programs, negative stereotypes persist regarding vocational education and manufacturing careers.⁷⁰ Improving public appreciation of the importance of

technical and technological education appears to be an important agenda item for the new Committee on Competitiveness.

Great needs remain. That is especially true given that significant numbers of employees—as high as a quarter of Canadian, Mexican, and U.S. workers—could need a year or more of additional skills training.⁷¹ And workers want such upskilling, polling suggests.⁷² While many companies have not yet accepted the value proposition of mid-career on-the-job training,⁷³ this may be changing in today’s dynamic post-pandemic labor market. Surveys suggest that many employers are expanding reskilling and upskilling opportunities.⁷⁴ This should help them internally deploy many workers likely to be displaced by technological automation and augmentation (Figure 15).⁷⁵ However, small and mid-sized businesses often find the cost of upskilling and reskilling programs to be prohibitive. Industry or sector partnerships with existing workforce stakeholders, especially government, can help smaller organizations to reap more benefits from training programs.⁷⁶ But access to public funds for the efforts seems limited, with only 21% of businesses reporting use of public funds to support their reskilling and upskilling efforts.⁷⁷ Public funding, conditioned to businesses performance improvements, could be a solution.

Bridging this gap is crucial for long-term North American competitiveness. The federal governments of Canada, Mexico, and the United States should agree to create shared standards for the following:

1. *Define apprenticeships and other major types of work-based learning (WBL), as well as minimum criteria and quality standards.*⁷⁸ Agreement should leave flexibility to adapt to national, regional, and local demands, while incorporating economic and technological changes and providing common professional skills attributes.
2. *Agree on broad guidelines assigning roles and responsibilities to governments, industry, and intermediaries regarding the development, implementation, and funding of apprenticeships and other WBL.*
3. *Create a trinational career and technical education and apprenticeship task force to identify best practices to promote apprenticeships and other WBL programs.*
4. *Agree on elements of a marketing strategy to increase public awareness of the advantages of WBL and change negative public misperceptions of such programs.*
5. *Build trinational spaces to foster ongoing dialogue between regional stakeholders to share best practices on WBL and training, and to strengthen public-private partnerships.* These spaces should include creating industry-academia dialogue platforms within and across countries that become part of the workforce ecosystem. Such platforms should also be implemented at the local and subnational level.
6. *Agree among the three countries on ways to incentivize and support companies, including small and mid-sized enterprises, to develop training and learning programs for reskilling and upskilling their workforces.* Such programs should emphasize training and learning about exponential technologies, such as Internet of Things, artificial intelligence, blockchain, intelligent transportation systems technologies, self-learning systems, and

sensors. Best practices in government programs and practices should be identified and include goals for incorporating disadvantaged populations.

Issue 2. Address the Recognition, Portability, and Transparency of Credentials

Professional credentials provide a clear sense of what skills a worker has, facilitating labor market mobility, reducing selection costs for firms, and leading to higher wages and quality of workers. Despite those possible benefits, the current, fragmented system for credentials across North America forms a barrier for workers of many skills levels.⁷⁹ This is a major challenge across national borders, where various nontransferable credentials leave skilled and well-educated individuals underemployed.⁸⁰ Higher education and employment services are disjointed across the continent and too often are disconnected from employer and industry needs.

Given the range of governmental jurisdictions and different regional and sectorial demands, addressing credentials is a complex task. The Mexican National Competencies Framework and the Canadian Red Seal Program are examples of national efforts to improve coordination and bring transparency.⁸¹ Although several efforts have been made to develop such a system in the United States, none has been widely accepted. Adding to those national-level challenges, differences in education and training systems across the region make it difficult to compare qualifications and assess skills of workers holding credentials from another North American country. Making credentials comparable, transferable, stackable, and more transparent would support North American competitiveness and to help overcome skills gaps and mismatches. More efforts to address these are already under way.⁸² Part of this task is getting employers to recognize education and experience from neighboring countries. The Pan-Canadian Framework for the Assessment and Recognition of Foreign Qualifications, for example, seeks to improve assessment and recognition of foreign qualifications so people can effectively use their skills in the Canadian labor market.⁸³ These types of changes are needed as education is transformed to encourage people to continuously update skills during their working lives.⁸⁴ The authors recommend the three North American countries work to build agreement on the following:

1. *Develop a common language about credentials and competencies to facilitate understanding, quality, transferability, recognition, and the ability to stack or accumulate them.* High-quality credentials should be industry-defined and competency-based to ensure they meet the needs of the labor market, are accepted, and used widely, and are comparable regionally.
2. *Develop or strengthen national competency frameworks and aligning them to the trilateral common language of credentials and competencies.* This process should involve revising and updating frameworks periodically to meet evolving labor market needs, as well as promoting the use of competency frameworks in hiring processes. These frameworks must take account of ongoing innovations such as micro-credentials and digital badges.⁸⁵
3. *Develop guidelines to assess and validate informal learning and professional experience, and to identify skills associated to such experience.* Share and emulate best practices.

Issue 3. Improve Labor Market Data Collection and Transparency

One of the biggest challenges is that neither public authorities nor the private sector and academia collect and share data on credentials, skills, workforce trends and training effectiveness. Improved data collection can allow people to make better-informed career decisions and can bring valuable transparency to the labor market.⁸⁶ The speed of change in the economy increasingly requires the development of real-time labor market information platforms, databases of in-demand skills and regular evaluation of skills programs.⁸⁷

To advance this transparency, regional leaders should create a North American Workforce Observatory (NAWO) as a tool for continued review and evaluation of the needs (quantitative and qualitative) of the North American workforce. NAWO would aid public policy makers, industry, and education institutions in making decisions about labor development, reskilling, and training. It also would provide relevant information for students and workers in the region. The three governments have already taken some steps in the direction. The U.S. Department of Labor's O*Net compiles training and development opportunities. The Canadian Education and Labour Market Longitudinal Platform facilitates transitions into the workforce, while the Labour Market Information Council strives to provide timely, reliable, and accessible employment information. Mexico's "Portal del Empleo" features job information, training, and counseling.⁸⁸

Deepened cooperation on data collection related to skills, jobs, education, and training across the continent and to strategic sectors could bring substantial benefits. The following elements should be agreed upon trilaterally through a collaborative process:

1. *Develop norms to collect real-time labor market data and information in a consistent and homogeneous way so it is comparable across countries and across the region as well as easily accessible.* The data collected could include a list of in-demand skills and competencies, longitudinal data to measure performance, and the return on investment of education and training programs and credentials, perhaps including information that addresses the development of hard (technical) and soft (employability) skills.
2. *Establish a North American Workforce Observatory (NAWO) aimed at developing a trilateral online platform (linked to national platforms) to serve as a hub for real-time labor market data in the three countries, and for best practices from the public and private sectors.*
3. *Develop guidelines to make the trilateral NAWO platform and data tools openly available to stakeholders, while allowing space for the development of private sector initiatives.*
4. *Develop guidelines for metrics to evaluate workforce development programs and propose improvements.*

Issue 4. Identify Best Practices to Approach/Prepare for "The Fourth Industrial Revolution"

The already rapid pace of change in the economy is likely to increase further; the result will be a complex process of massive job creation, destruction, and transformation of workplaces and work/lifestyles that has been dubbed Industry 4.0 or the "Fourth Industrial Revolution."⁸⁹ The pandemic has added new lessons and additional use of technology as reflected in more remote work and job shifts to new sectors.

The rapid development and use of Artificial Intelligence is likely going to complicate the elimination and emergence of new jobs and skills as part of the continuing transformation of the workplace and careers.

The World Economic Forum's [2023 Future of Jobs Report](#), for example, highlights how technology adoption, including AI, is likely to drive job and workplace transformation over the next five years. The 2023 WEF reports that employers anticipate a structural labour market churn of 23% of jobs in the next five years and that 44% of workers skills will be disrupted. The WEF report estimates that 6 of 10 employees will require training, but that only half of workers have access to adequate training opportunities today.

Broadly speaking, new technology can allow businesses and individuals to achieve higher levels of productivity, creativity, and economic growth, but it can also displace many workers and spark serious economic and social disruption. According to two studies of recent recessions, employers shed less-skilled workers and replaced them with technology and higher-skilled workers.⁹⁰ This trend posed society-wide public policy problems for governments faced with higher unemployment and for businesses seeking workers with the skills needed. The pandemic brought similar and new challenges, including more use of technology in production and in supply chains, more use of the internet for commerce, more cross-border data flows to help manage business, more management of different processes from afar, more provision of services via internet, and more need for new skills among workers.

The good news is that businesses have strong incentives to develop models that fully integrate new technology with investment in human capital.⁹¹ Companies that successfully integrate technology and human capital could increase profits by 38% and employment by 10%, on the average, by 2022, analysis by Accenture suggests. Despite that, relatively few CEOs plan to invest in training programs to retool workers.⁹² Specialists stress that quality training fosters higher productivity and loyalty, reducing turnover.⁹³ To assure potential gains, employers should invest more in agile job training programs.

These training and educational needs also underscore the vital importance of partnerships with educational institutions. Private, public, and academic sector leadership is needed to develop models of how to adapt to the pace of change. Without those adaptation, all three countries will face serious problems.⁹⁴ Such models need to include developing a 21st-century educational system to keep up with the demands of the labor market, a particular weakness for Mexico.⁹⁵ If Mexico is to establish an education-research-innovation-creativity system,⁹⁶ the policies and strategies in the Mexican Ministry of Public Education and the Mexican National Council for Science and Technology must be better aligned.⁹⁷ Across the region, much more emphasis is needed on providing educators with relevant training, tools, and skills to adapt their teaching and learning methods.

Equity, recovery, and resilience will likely remain be priorities for governments, especially because lower-skilled workers and traditionally disadvantaged workers may well face even greater barriers.

Workforce development needs to be better incorporated into economic and industrial policies going forward with better public-private-academic collaboration. Positive lessons from the pandemic and post-pandemic recovery should be built upon e.g., distance work could be

expanded across the continent when suitable; distance education/training should be continued and expanded. These successful models should be identified as “best practices” and scaled up.⁹⁸

The authors suggest trilateral initiatives in the following areas:

1. Identify successful examples of private and public collaboration, including showing how companies have been incentivized to invest in worker reskilling and upskilling, to provide mid-career training and learning opportunities, and to develop agile programs to ease transitions and improve the quality of work transformations.
2. Agree on approaches and strategies to encourage companies to collaborate with educational institutions, trade unions, sub-federal governments, and others to better align curricula with the evolving labor market needs, better connect graduates to the labor market, and foster the modernization of educational spaces. The North American Workforce Observatory could provide relevant information and trend analysis to support this work.
 - a. *Work to strengthen STEM education* as a strategic tool for creating a strong basis of skills for the development of strategic technical workforce skills.
 - b. *Emphasize training and learning about exponential technologies*, deemed critical for improving North American competitiveness.
 - c. *Recognize the social value of businesses that generate entry-level jobs* at scale and at multiple points along the skill curve, as well as of educational institutions that develop flexible, well-targeted curriculums.
 - d. *Foster curricula flexibility by allowing students to design their own studies based on their own expectations*. Modernized curricula should also enable students to attain intermediate skill/competence certificates during college and university studies. Such intermediate certificates could be aligned with apprenticeship programs.
 - e. *Develop gender-oriented programs aimed at incorporating more women into the workforce as well as programs aimed at incorporating other traditionally underrepresented sectors of the population*.
3. Build trilateral spaces to share best practices on “Industry 4.0” and lessons from the pandemic; on partnerships that link the priorities of business, academic, and government actors. Look for ways to maintain and expand models of remote or distance work that can work well across the continent and its value chains.
4. Identify best practices for small and mid-sized enterprises to keep up with technological changes and talent creation.
5. Establish trilateral research and innovation projects in strategic economic areas through grants and scholarships. Invest in evaluation to assess ongoing programs, future trends and prepare for future skills needs.⁹⁹
 - a. *Align competing frameworks* to help foster regional development, including across borders, through cluster-based innovation initiatives and connect them with the education sector to strengthen the chain of value.

- b. *Establish trilateral mechanisms to support the development and implementation of new technologies to increase trading opportunities and improve workforce competitiveness. Similarly, create trilateral collaboration that can identify, highlight and share emerging skills needs.*

Implementing the North American Agenda

The North American Workforce Development Agenda should be a collaborative effort that includes North American governments, private sector, educational institutions, unions, and nongovernmental organizations. The agenda should provide mechanisms to convene both federal and subnational governments to collaborate and innovate on best practices. Many of the successes and innovative approaches are being forged at local levels, and this culture of creativity needs to be encouraged across North America and is essential for workforce programs to succeed.¹⁰⁰

Even as the Biden Administration has prioritized “building back better” at home, working collaboratively with the United States’ immediate neighbors and largest economic partners will help assure prosperity and global competitiveness. The US recognizes this in its commitment to the implementation of USMCA which impressively grew trade among all three North American countries approximately 30% in its first [three years](#). The NALS agenda similarly holds great promise for boosting prosperity and well-being in North America as well as improved competitiveness vis a vis global competitors such as China, if seriously pursued.

To guide and support future progress, however, the three national governments need to invest more and more [smartly](#) in workforce development. They should establish an overarching senior level trilateral workforce development taskforce with substantial private sector and academic participation. The taskforce would name public/private/academic and federal/sub-federal working groups to develop specific action proposals in the four areas described above and ensure that programs are effectively communicated to the public to reach intended participants. As the process develops, specialized working groups should be formed, for example, on digital skills training or on how to better use community and technical colleges and institutions to supercharge workers with the skills they need. The three governments should also identify promising programs and models that should be scaled up early as priority best practices.

The trilateral task force and working groups should be connected to the ongoing work of USMCA’s competitiveness committee and bilateral efforts such as the HLED. They also should operate as an integral part of a broader competitiveness agenda for North America established by the three national leaders at the 2021 North American Leaders’ Summit.¹⁰¹

The bottom line is that North America’s workers and businesses will benefit greatly from pursuing an active dialogue and enhanced cooperation on workforce development to improve the economic, social, and political well-being of the United States, Mexico, and Canada.

North American Workforce Development Agenda 2.0

Elements that should be agreed among the three countries in a public-private multistakeholder process

Issue 1. Investing in Apprenticeships and Other Work-based Learning and Education

1. Define apprenticeships and other major types of work-based learning (WBL), as well as minimum criteria and quality standards.
2. Agree on broad guidelines assigning roles and responsibilities to governments, industry, and intermediaries regarding the development, implementation, and funding of apprenticeships and other WBL.
3. Create a trilateral Career and Technical Education (CTE) and apprenticeship taskforce to identify best practices in strategies to promote apprenticeships and other WBL programs.
4. Agree on elements of a marketing strategy to increase public awareness of the advantages of WBL in order to change negative public misperceptions of such programs.
5. Build spaces to foster ongoing dialogue between regional stakeholders in order to share best practices on WBL and training, and to strengthen public-private partnerships.
6. Agree among the three countries on ways to incentivize and support companies, including small and mid-sized enterprises, to develop training and learning programs for reskilling and upskilling their workforces.
Issue 2. Addressing Credentials and Related Issues
1. Develop a common language about credentials and competencies to facilitate understanding, quality, transferability, and recognition.
2. Develop or strengthen national competency frameworks and align them to a shared trilateral common language regarding credentials and competencies.
3. Develop guidelines to assess and validate informal learning and professional experience, and to identify skills associated to such experience. Share and emulate best practices across the continent.
Issue 3. Improving Labor Market Data Collection and Transparency
1. Develop norms to collect real-time labor market data and information in a consistent and homogeneous way so it is comparable across countries and across the region as well as easily accessible.
2. Establish a North American Workforce Observatory (NAWO) aimed at developing a trilateral online platform (linked to national platforms) to serve as a hub for real-time labor market data in the three countries, and for best practices from the public and private sectors.
3. Develop guidelines to make the trilateral NAWO platform and data tools openly available to stakeholders, while allowing space for the development of private sector initiatives.
Issue 4. Learning Best Practices for “The Fourth Industrial Revolution” and the Future of Work
1. Identify successful examples of private and public collaboration, with emphasis on highlighting promising steps and tools to incentivize companies to invest in worker reskilling and upskilling, to provide mid-career training and learning opportunities, and to develop agile training and learning programs to ease the transition and improve the quality of work transformations.
2. Agree on approaches and strategies to encourage companies to collaborate with educational institutions, trade unions, and other interested parties to better align curricula with the evolving labor market needs, better connect graduates to the labor market, foster the modernization of educational spaces, and promote larger participation of women and other underrepresented populations in the workforce.
3. Build trilateral spaces to share best practices from pandemic work experiences, the implementation of Industry 4.0 and existing partnerships to better link the priorities of the business, academic, and government actors.
4. Identify best practices for small and mid-sized enterprises to keep up with technological changes and talent creation.

5. Establish trilateral research and innovation projects in strategic economic areas through grants and scholarships. Invest in evaluation to assess future trends and prepare for future skills needs.

Endnotes

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