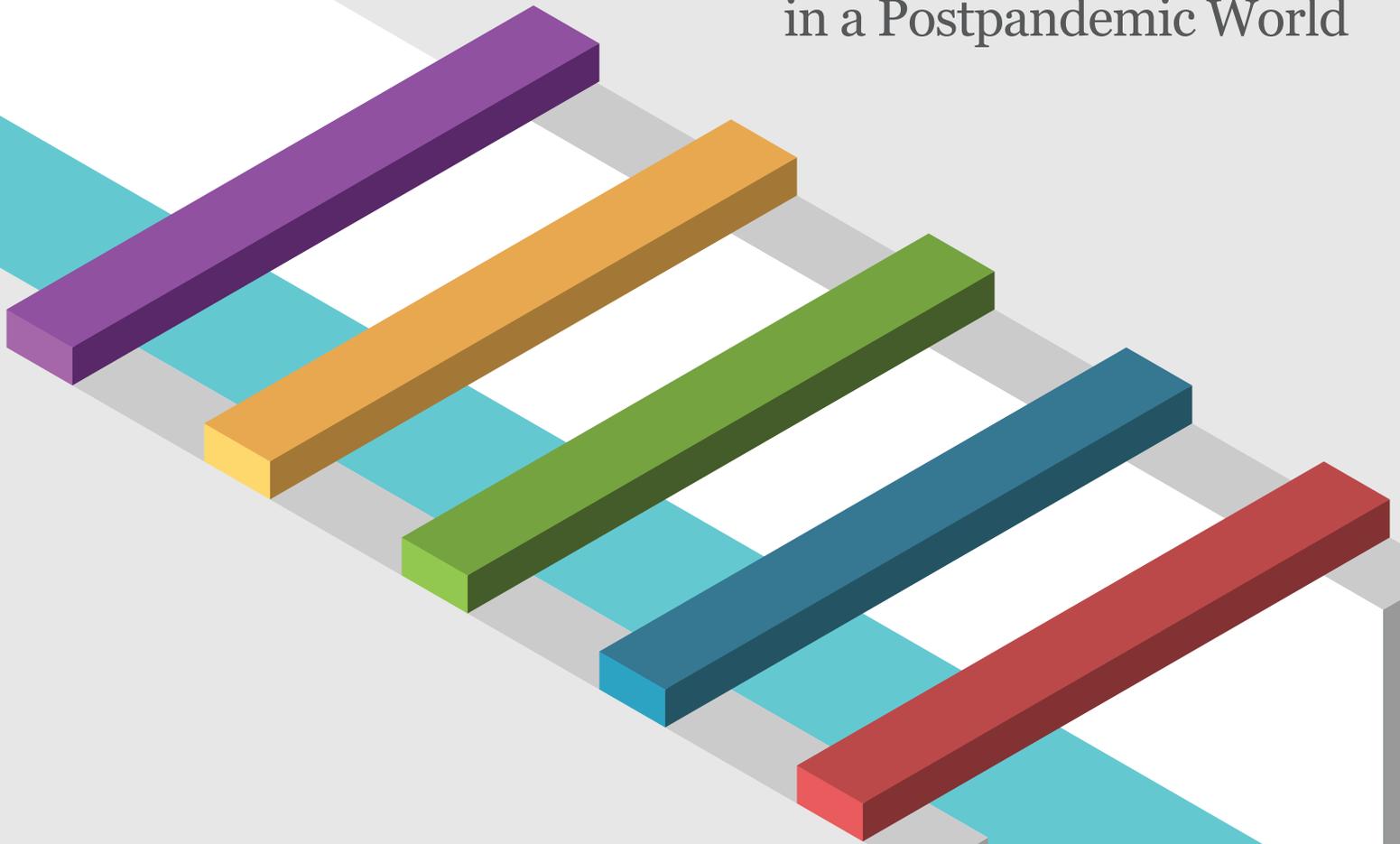


# Bridge Builders:

How Intermediaries Can  
Connect Education and Work  
in a Postpandemic World



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# Executive Summary

The 2020 global pandemic, accompanying economic distress, and growing concern about racial inequity have generated unprecedented demand for improved coordination between education and work in the United States. This report focuses on the pressing need to create and improve *intermediaries* — bridge builders that play a vital role in connecting local and regional educators, employers, policymakers, learners, and workers, helping them to speak a common language and tackle common challenges.

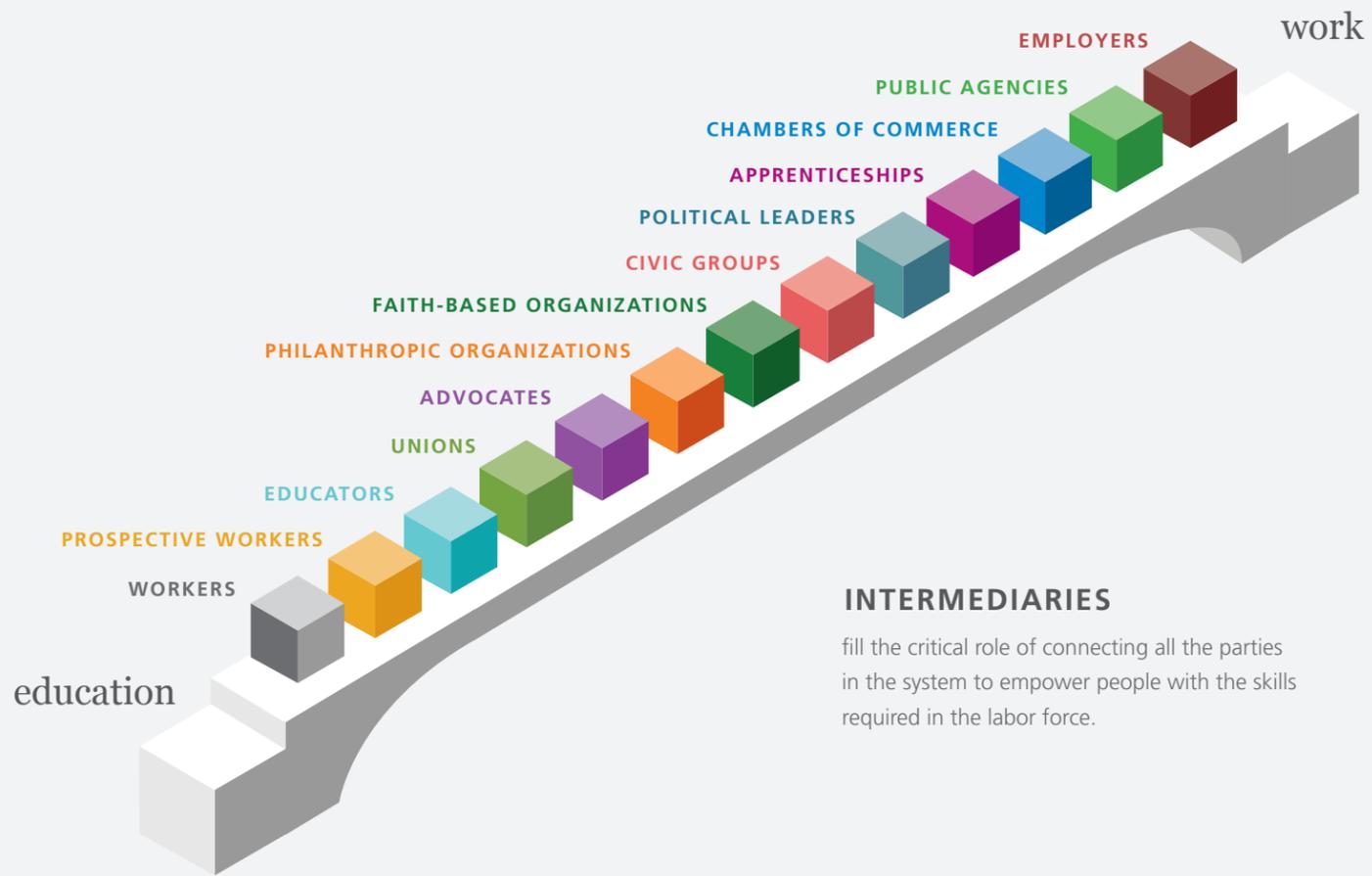
“Bridge Builders: How Intermediaries Can Connect Education and Work in a Postpandemic World” demonstrates the tremendous potential of intermediaries by looking at promising models from around the world, including many in the United States. It shows how these bridge builders can connect a diverse group of stakeholders to create an education-employment system that will help the economy thrive while increasing opportunities for all, not only during the current global pandemic, but long after. The report grew out of a working group of 10 of the world’s leading education and workforce experts brought together in early 2020 by Strada Education Network and Lumina Foundation to discuss how promising efforts from around the globe might inform plans in the United States to better align postsecondary education and training with workforce needs.

“Bridge Builders” explores lessons learned and strategies for building stronger bridges between education and work, and it offers practical guidance for those who want to create, improve, or expand the role of intermediaries.



## WHAT ARE INTERMEDIARIES?

**Intermediaries — also referred to as bridge builders, boundary spanners, conveners, and other names — fill the critical role of connecting all the parties in the system to empower people with the skills required in the labor force. Those parties generally include employers, educators, workers, and prospective workers. Within these categories may fall many other interests, such as unions, philanthropic and faith-based organizations, advocates for low-income people and racial and ethnic minorities, civic groups, chambers of commerce, political leaders, schools that place students in apprenticeships, and public agencies that help people find jobs. Intermediaries in the United States and globally include quasi-government entities such as New Zealand’s new Workforce Development Councils, nonprofits such as the Mobile (Alabama) Area Education Foundation, employer groups such as the Australian Industry Group, business associations such as the U.S. Chamber of Commerce, and higher education groups such as Britain’s Civic University Commission.**



## The Challenges

Intermediaries must address multiple obstacles clogging the two-way pipeline between education and work in the United States:

- In the midst of an **economic recession**, jobs are likely to be both abruptly eliminated and quickly added, with roles shifting dramatically, requiring workers to rapidly acquire additional training and skills.
- There is **inequitable access to successful pathways** between education and work, a disparity that is especially limiting for Black, Latino, and low-income learners.
- Learners seeking to navigate a dizzying array of credentials are hampered by the **absence of a common language** to match the skills they have or can learn with the skills demanded by employers.
- A **persistent disconnect between the supply of and demand for skilled workers** hampers effective local and regional responses to the fast-changing labor market as the country weathers and recovers from the global pandemic.
- The wide variety of key players in this landscape — students, workers, education providers, employers, industry groups, and governing bodies — makes it **difficult to define roles and structures** for coordinated efforts.

## The Role of Intermediaries

This report details, through examples that range from the United Kingdom and Singapore to Montana and Detroit, how bridge building and bridge builders can confront challenges across those five major areas and recommends related actions intermediaries can take.

Whether led by government, business, higher education, or nonprofits, these bridge builders offer practical ideas for other groups to explore:

### 1. The Economic Imperative:

In a new recession, with especially high unemployment among some types of workers that varies dramatically by region, intermediaries can help spur lower-cost, shorter-term training with a local focus.

- **Government-Led:** In the United Kingdom, the Greater Manchester Combined Authority teamed up with LinkedIn to analyze the profiles of 614,000 users who live in greater Manchester, identified a gap in local residents with digital skills, and created a Greater Manchester Digital Skills Action Plan, with the goal to improve digital training in area schools, universities, and workplaces.
- **Business-Led:** Under the U.S. Chamber of Commerce Foundation's Talent Pipeline Management campaign and its six-step strategic process, chambers, their spinoffs, and affiliated business organizations in more than 30 states have started bringing together industry associations, employers, and economic development agencies.

IN THE MIDST OF AN ECONOMIC RECESSION, JOBS ARE LIKELY TO BE BOTH ABRUPTLY ELIMINATED AND QUICKLY ADDED, WITH ROLES SHIFTING DRAMATICALLY, REQUIRING WORKERS TO QUICKLY ACQUIRE ADDITIONAL TRAINING AND SKILLS.

## 2. The Equity Imperative:

Underserved populations continue to have unequal access to education and jobs, and the system is confusing and hard to navigate, including for working adults with families. At a time of renewed attention to social justice, intermediaries can simplify and promote paths to quality employment with a focus on advising, apprenticeships, and internships for students at all levels.

- **Higher Education-Led:** Britain's Civic University Commission has produced a Civic University Network of more than 100 universities working to prioritize the economy and local quality of life with the support of philanthropic and government funding.
- **Nonprofit-Led:** In Alabama, the Mobile Area Education Foundation is tackling racial inequality and educational inequity through a campaign called Graduate Ready. Overseen by an independent 30-member commission composed of educators, employers, clergy, elected officials, and others, the campaign has led to internships and apprenticeships for students at all levels, fostered programs of study that sync with workplace needs, and simplified college transfer processes.

## 3. Speaking a Common Skills Language:

Intermediaries can push education providers and employers to communicate more effectively — with one another and with learners in general.

- **Government-Led:** SkillsFuture Singapore, part of that country's Ministry of Education and overseen by a national board that includes trade unions, employers, and educators, provides subsidies for workers to learn new skills through mostly short-term training programs and has created a framework listing what skills are required for which jobs and where people can acquire them.
- **Business-Led:** Detroit Drives Degrees, or D3, led by the regional chamber of commerce, is trying to raise the proportion of adults with postsecondary education to 60 percent by 2030 by creating a common language among previously disparate players and requiring all stakeholders to come up with their own action plans, including ways for employers to help their existing workers.

## 4. Connecting Supply With Demand:

Intermediaries can track labor market demand using active online job postings rather than other traditional sources that lag real time, help employers understand credentials such as certificates that may be sufficient for hiring, and help applicants themselves understand what skills they already have and how those fit with available work.

- **Government-Led:** Montana has connected its university system, private colleges, Department of Labor and Industry, Workforce Innovation Board, and Department of

AT A TIME OF RENEWED ATTENTION TO SOCIAL JUSTICE, INTERMEDIARIES CAN SIMPLIFY AND PROMOTE PATHS TO QUALITY EMPLOYMENT WITH A FOCUS ON ADVISING, APPRENTICESHIPS, AND INTERNSHIPS FOR STUDENTS AT ALL LEVELS.

supply

intermediary

demand

Revenue to identify and narrow gaps between the supply and demand of labor. This effort helps education providers decide what subjects to keep or cut, and consumers see the demand for various careers and what the highest-paying jobs are.

- **Business-Led:** The Australian Industry Group, or Ai Group, has created a so-called "higher apprenticeship" model focused on applied technology, which — in collaboration with Australian universities and training providers — offers a diploma through vocational education and training institutions, followed by an associate degree accredited by universities.

## 5. Working Together:

Intermediaries can provide the leadership that's currently fragmented and craft shared interests and commitments to connect the various players in the education and employment process, as well as hold them accountable for the results.

- **Government- and Industry-Led:** New Zealand's Workforce Development Councils, currently being established with government funding, will convene industry-appointed employer boards to project skills demand and then design and set standards for education and training for six groups of industries.

These WDCs will advise the country's Tertiary Education Commission on how, and how much, to invest in vocational education, with the secondary effect of increasing employers' ownership of and interest in the process.

The challenges and lessons identified in the examples throughout this report suggest opportunities and strategies that can be viewed as part of a menu most effective when adapted to specific needs and places. Figure 1 on the following page outlines these opportunities and strategies according to the five major factors analyzed in this report. Intermediary leaders can use this to identify the top challenges they face and prioritize strategies that have proven effective in other places.

The work is hard, but experiences from around the world show it can be done. And it has to be done. Whatever particular problems a given city, region, or community is trying to solve, intermediaries that tailor efforts to the unique needs of time and place — individual, institutional, and economic — will have the best prospect of lifting these places to more prosperous futures. The ultimate goal of intermediaries in every case is not only to address the obvious and critical economic need of educating people for available jobs, but also to fill the very human one of helping the workers the existing vacuum often leaves behind. ■

FIGURE 1

FACTORS	CHALLENGES	ACTIONS FOR INTERMEDIARIES
 <p>The Economic Imperative</p>	<ul style="list-style-type: none"> <li>• Pandemic-related recession.</li> <li>• High youth unemployment/faster turnover.</li> <li>• Regional differences.</li> <li>• Lack of qualified local talent.</li> </ul>	<ul style="list-style-type: none"> <li>• Motivate providers to add lower-cost, shorter-term education programs and to help students combine these offerings into stackable credentials.</li> <li>• Identify clear incentives for all prospective participants.</li> <li>• Focus on unique economic needs and conditions of a particular region.</li> <li>• Foster partnerships with industry and education providers to identify key occupations and create training opportunities for students and workers.</li> </ul>
 <p>The Equity Imperative</p>	<ul style="list-style-type: none"> <li>• Access and social mobility barriers for underserved populations.</li> <li>• Difficulty understanding existing education options and connections to work.</li> </ul>	<ul style="list-style-type: none"> <li>• Leverage social justice movement to increase awareness and motivation for groups to collaborate for social mobility.</li> <li>• Illuminate career pathways for the underserved, coupled with a focus on advising.</li> <li>• Promote flexible options such as online learning for older adults with families and jobs.</li> <li>• Create more seamless work-study sequences.</li> <li>• Coordinate efforts for businesses to design programs of study that sync with workplace needs.</li> <li>• Promote internships and apprenticeships for students at all levels.</li> <li>• Send employees into schools.</li> <li>• Simplify the transfer process.</li> <li>• Lead campaigns to share information about opportunities with target populations.</li> </ul>
 <p>Speaking a Common Skills Language</p>	<ul style="list-style-type: none"> <li>• Mindset of traditional education faculty differs from employers'.</li> <li>• Unclear expectations for occupations and skills.</li> <li>• Need for common terminology and skills definitions across stakeholder groups.</li> </ul>	<ul style="list-style-type: none"> <li>• Provide clear information about local supply and demand.</li> <li>• Develop a common language and define skills required for local jobs.</li> <li>• Bring together representatives of all stakeholder groups who don't usually talk to one another.</li> <li>• Ensure means and goals are in sync and explained precisely and practically, without the usual human resources or academic jargon, ambiguity, and vagueness.</li> <li>• Foster the use of "pracademics" — academics who come from or spend time in the career field they are teaching.</li> </ul>

FACTORS	CHALLENGES	ACTIONS FOR INTERMEDIARIES
 <p>Connecting Supply With Demand</p>	<ul style="list-style-type: none"> <li>• Lack of qualified workers to fill local jobs.</li> <li>• Emphasis on bachelor's degree as the gatekeeper.</li> <li>• Lack of clarity around how credentials match with skills and jobs.</li> <li>• Evolution of technology.</li> <li>• Growth in number of occupations.</li> <li>• Systems updated yearly while labor market changes daily.</li> <li>• Unclear forecast of future labor market needs.</li> <li>• Lack of ability to align educational offerings with employer demand in real time.</li> </ul>	<ul style="list-style-type: none"> <li>• Build on existing momentum to recognize and provide credit for life and career experience.</li> <li>• Collaborate to remove false barriers and focus on matching skills to job needs.</li> <li>• Standardize what certificates represent (skills-based credentialing).</li> <li>• Highlight flexible virtual education options for older adults with families and jobs.</li> <li>• Outline needed skills for in-demand jobs in a region.</li> <li>• Create a transparent inventory of applicants' skills to better match jobs with workers.</li> <li>• Provide research and data around skills gaps and opportunities.</li> <li>• Use real-time data from active online job announcements to connect education with demand locally.</li> <li>• Promote more effective use of real-time online data instead of out-of-date labor market data to eliminate unnecessary programs.</li> </ul>
 <p>Working Together</p>	<ul style="list-style-type: none"> <li>• Lack of leadership.</li> <li>• Lack of will.</li> <li>• Competing priorities.</li> <li>• Need to identify key roles.</li> <li>• Lack of consistent, cohesive plan to guide collaborative work.</li> <li>• Need for clear guidelines and guardrails for common efforts.</li> <li>• Need for funding mechanisms.</li> </ul>	<ul style="list-style-type: none"> <li>• Focus on a shared commitment to a concrete agenda reflecting common interests and the strategic benefit of change.</li> <li>• Cultivate collaborative relationships for the betterment of a community.</li> <li>• Take proactive steps to address the required culture shift to make this work effective.</li> <li>• Build strength in numbers through complementary collaborative efforts.</li> <li>• Empower an effective leader, with a credible reputation and strong relationship-building and advocacy skills.</li> <li>• Include stakeholder group leaders with authority, including those with political/fiscal authority.</li> <li>• Focus on three major elements: money, metrics, and leadership.</li> <li>• Provide a clear and effective funding mechanism.</li> <li>• Outline metrics for success and accountability.</li> <li>• Create ongoing feedback loops that foster trust.</li> </ul>

# Setting the Stage

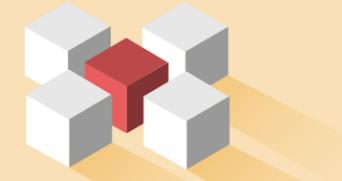
The need to better prepare people for work is as urgent as it is universal. Work everywhere is becoming more complex. So is education. To navigate these, people all over the world need help they often can't find or don't get. Many governments, educators, and employers — all presumably responsible for coordinating demand with supply — don't have a formal way to do it. They have largely relied on the market to somehow fill gaps, or on haphazard efforts by education providers and employers who speak different languages and have divergent interests. And all of these problems are now made more pressing by a global recession.

The coronavirus pandemic has given still greater urgency to connecting the supply of qualified employees with the demand for them. The fact that there's a gap between this supply and demand is well established. But it's also geographically uneven, unexpectedly nuanced, and surprisingly persistent — with dire implications for cities, states, and rural areas that don't address it. At a time of

renewed attention to social and racial justice, this disconnect particularly affects low-income racial and ethnic minorities whose families are less likely to have finished postsecondary education and who themselves earn college and university degrees at lower rates than higher-income whites.<sup>1</sup> They're left to find their own way, with little guidance.

With no tradition of centralized, federal-level planning and investment in nationwide labor market policies, it's no surprise that the United States invests less in active labor market policies than any industrialized country except Mexico.<sup>2</sup> In any case, examples of effective workforce policy show it's best coordinated from the bottom up, and not the top down. Economies from one community to another are different. What all of them need are bridge builders — intermediaries that can bring together education and training providers, employers, and workers who today fail to communicate well (if they talk to one another at all) in a crowded and chaotic marketplace of occupations and credentials.

**THE CORONAVIRUS PANDEMIC HAS GIVEN STILL GREATER URGENCY TO CONNECTING THE SUPPLY OF QUALIFIED EMPLOYEES WITH THE DEMAND FOR THEM.**



## DEFINING INTERMEDIARIES

**Intermediaries — also referred to as bridge builders, boundary spanners, or convenors — fill the critical role of connecting all the parties in the system that produces people with the skills required in the labor force. Those parties generally include employers, educators, workers, and prospective workers themselves. Within these categories may fall many other interests, such as unions, philanthropic and faith-based organizations, advocates for low-income people and racial and ethnic minorities, civic groups, chambers of commerce, political leaders, schools that place students in apprenticeships, and public agencies that help people find jobs. All have a stake in better coordination of the system, but few practical ways of achieving it alone. Indeed, intermediaries may play two roles at once: They are themselves stakeholders and have also taken an imperative leadership role in organizing the full set of interested parties.**

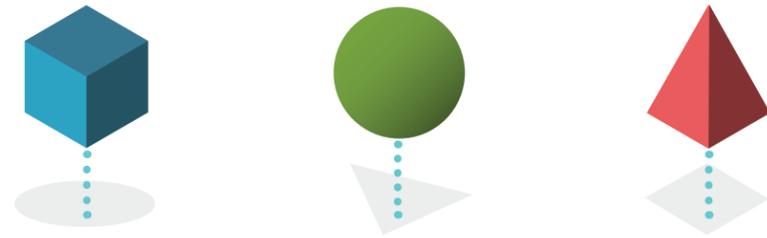
Without intermediaries, prospective workers have to contact employers one by one to find out what jobs are open, as well as individual universities and colleges to see which of them teach those fields and skills. Apprenticeships are often arranged on a teacher-by-teacher and workplace-by-workplace basis. Employers have to reach out to dozens of school districts, colleges, and universities, one at a time, to push for programs to provide the graduates they need.

Intermediaries cut through this static to determine workforce needs and plan and carry out strategies to fill them. Many focus on just one or another industry, such as health care, information technology, or advanced manufacturing, though some instead address the full range of workforce demands in a given

geographic area. They have many functions, such as:

- Working with employers to determine what positions are available, and what skills they demand, and furnishing this information to education providers that can equip graduates with those proficiencies and to advisors who can pass the information to prospective students.
- Encouraging students to complete their educations and providing job-readiness and career counseling.
- Encouraging people from underrepresented groups to follow education pathways that will lead to good jobs.
- Helping hiring managers identify the people with the skills they need.
- Coordinating apprenticeships and internships.
- Supporting administrative and communications tasks such as paperwork and marketing.
- Setting standards for and monitoring how all of these participants perform at these tasks — whether high schools are graduating students, for example, or universities are accepting transfer credit.

There are many examples of these worldwide in various forms. Intermediaries in the United States and globally include quasi-government entities such as New Zealand's new Workforce Development Councils, nonprofits such as the Mobile (Alabama) Area Education Foundation, employer groups such as the Australian Industry Group, business associations such as the U.S. Chamber of Commerce, and higher education groups such as Britain's Civic University Commission. These and other examples are detailed in this report.



# The Problem

In Germany, employers and industry groups are responsible for the standards and testing of training provided in collaboration with public vocational schools. That means they already know what skills are represented by the credentials workers earn, which makes the German apprenticeship system — now being emulated in American states including Colorado — a particularly effective example of collaboration among educators and employers.<sup>3</sup>

However, the German approach is often criticized as overly vocational and tailored to the immediate needs of a profession, compared with the Anglo-Saxon model more widely practiced in America. Under the Anglo-Saxon model, universities and colleges require general education in broad lifelong skills they say make people more adaptable in their careers than detailed training in specific occupations that might change or die off. Both have pros and cons. The German model is an unusual example of effective collaboration among educators and employers, and the Anglo-Saxon model gives graduates the foundational education they need to navigate a fast-changing labor market.

“Germany has a well-developed vocational and apprenticeship system. Because training takes place in companies and in colleges, there is a direct link to well-paying jobs in industry, commerce, and the craft sectors,” said Strada-Lumina Working Group member Ellen Hazelkorn, an international education consultant and joint managing partner of BH Associates. “The Anglo-Saxon experience focuses on graduates having broad knowledge. This is meant to encourage people to be open to different job opportunities, although it may often mean graduates lack sufficient or appropriate skills.”

The challenge is to combine the best of each approach, Hazelkorn said. “The Germanic model has led many countries, such as Ireland and New

Zealand, to encourage colleges and universities to engage more closely with employers. This may include involvement in curriculum development, internship programs, work-based learning, and career guidance. Greater acknowledgment that the world of work is changing all the time is also forcing colleges and universities to provide the Anglo-Saxon form of education that equips graduates with the broader educations that they need to be adaptable.”

Whatever the model, local and regional partnerships offer promise for building bridges in the context of a given place. This report explores lessons learned and strategies for building better bridges between education and work, based on input from 10 of the world’s top workforce education experts. (For a list of working group members, see Appendix A.) Some are drawn from other countries. Some come from the United States, showing that such change isn’t just aspirational for this country but is already taking place in some communities that can serve as models for others.

These intermediaries include different instigators and approaches: grassroots groups, nonprofit organizations, business and industry, government, or some combination of these. It’s not that no place has one. It’s that every place needs one — especially at a time of renewed attention to economic recovery and growth.

The variety of proven American intermediary efforts strongly suggests that, in the United States, bridge building must be tailored to local circumstances. And while each case has unique attributes, all share a common element: the presence of a strong intermediary function connecting education with industry. To that end, this report includes practical guidance for those who want to create, improve, or expand intermediaries.

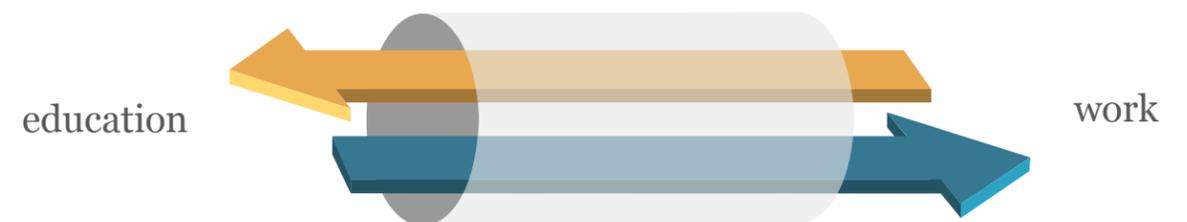
Intermediaries face myriad entrenched problems clogging the the two-way pipeline between education and work in the United States:

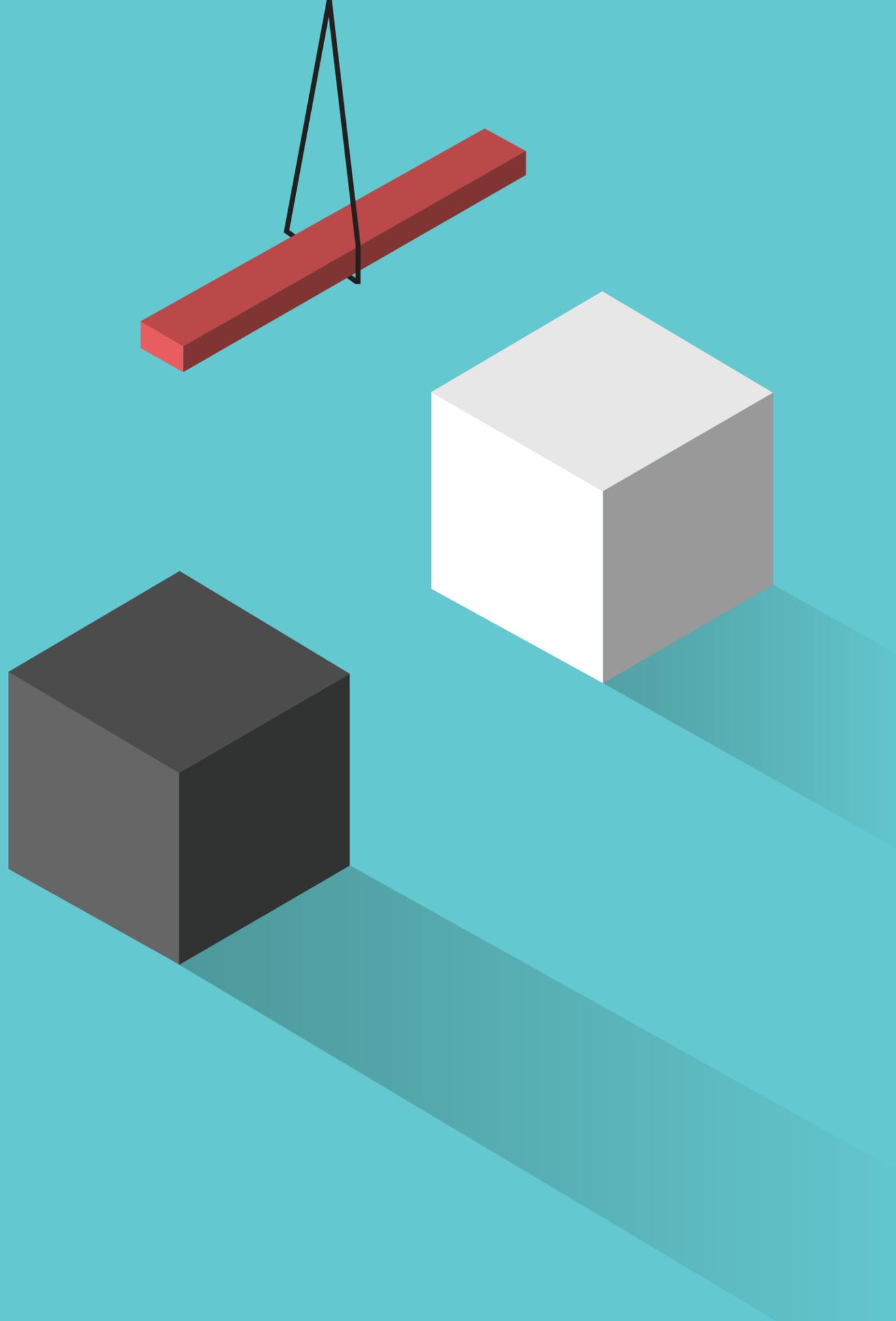
- With yet **another economic recession now underway**, jobs are likely to be both abruptly eliminated and quickly added, and roles will shift dramatically, requiring more training, the National Governors Association says.<sup>4</sup>
- There is **inequitable access to successful pathways** between education and work, a disparity that is especially limiting for Black, Latino, and low-income learners. The 40 percent of undergraduate students who attend community colleges are at a particular disadvantage in finding their way, considering the broad range of subjects available to them and the comparatively limited guidance they receive. Many are the first in their families to pursue a higher education.<sup>5</sup> More are Black, Hispanic, or from other racial and ethnic backgrounds than are white.<sup>6</sup>
- At a time when economic changes increasingly require education and training after high school, the **information and skills mismatch** can confound workers seeking to navigate the dizzying array of available credentials, some more valuable than others. The **absence of a common language** among the players complicates a shared understanding of local needs and opportunities.

- A **persistent disconnect between the supply of and demand for skilled workers** hampers effective local and regional responses to the fast-changing labor market as the country weathers and recovers from the global pandemic.
- The wide variety of key players in this landscape — students, workers, education providers, employers, industry groups, and governing bodies and officials — makes it **difficult to define roles and operating structures** for coordinated efforts in an increasingly political environment.

Significant evidence and feedback from industry, academia, and government detail the depth of these challenges. To learn more, see [Appendix B: Challenges in the Education-to-Work Pipeline](#).

There are plenty of good ideas to fix these problems. But all require something that the market has so far *not* been very good at: creating more effective alignment between the need for skills, both specialized and general, and the supply of workers who possess them, in a way that’s tailored to the singular demands of cities, states, and regions. This work of intermediaries also ensures that people — including those without ready access to networks and information — can find good work quickly and that all employees can acquire what they need to move ahead in their careers.





# Building Bridges: The Role of Intermediaries

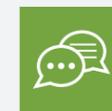
Given the huge need to get people back to work, shortages of talent in important knowledge industries, and the decentralized nature of its workforce development system, the United States has a particular imperative to look around the world for lessons from intermediaries, along with considering valuable examples already in place across the country. The examples detailed below illustrate how bridge building can be used to confront challenges that the United States has in common with many other countries:



The Economic Imperative



The Equity Imperative



Speaking a Common Skills Language



Connecting Supply With Demand



Working Together



# The Economic Imperative

## CHALLENGES

- Pandemic-related recession.
- High youth unemployment/faster turnover.
- Regional differences.
- Lack of qualified local talent.

## ACTIONS FOR INTERMEDIARIES

- Motivate providers to add lower-cost, shorter-term education programs and to help students combine these offerings into stackable credentials.
- Identify clear incentives for all prospective participants.
- Focus on unique economic needs and conditions of a particular region.
- Foster partnerships with industry and education providers to identify key occupations and create training opportunities for students and workers.

At a moment when substantial parts of the economy have stalled, paying attention to what challenges have grown over the past decade gives educators, lawmakers, and employers a running start to address them now. (For more on historical insights, see Appendix C: Lessons From the Last Recession.) “Preexisting shortages in the workforce exposed an acute need for rapid reskilling in high-demand fields,” the National Governors Association warned as the spring’s pandemic shutdowns hit their peak.<sup>7</sup> With so many people out of work and scrambling for options and advice, local intermediaries can be most quickly positioned to steer them toward these areas of high demand by sharing data and information about job needs and the technical and soft skills required.

The goal is to not only serve Americans who are otherwise unemployed or underemployed, but also to ensure an efficient pipeline of people with skills at all levels of the economy. Thousands of job openings have persisted into the pandemic for such well-compensated workers as software developers, quality assurance engineers, and testers. Many of the openings are at businesses and institutions that quickly had to move operations online or whose services were in high demand, according to the Computing Technology Industry Association, or CompTIA. Economic disruption or not, hiring is expected to accelerate for software development, IT support, cloud infrastructure, cybersecurity, and other technology occupations.<sup>8</sup> Median salaries in these fields are double the median national wage.<sup>9</sup> The glaring need is for intermediaries to better connect would-be workers with these opportunities.



## WHERE IT'S WORKING

### Boosting the Economy in Manchester, England

A onetime world capital of textile manufacturing, Manchester, England, has — like cities all over the world — struggled to make the shift to a knowledge economy. Its population is divided between educated workers in well-paid digital and creative jobs and lower-income residents who haven’t received the education they need to do those sorts of jobs. Despite the affluence of its tech employees, Manchester remains the fourth most deprived metropolitan area in England.

So the Greater Manchester Combined Authority teamed up with LinkedIn to analyze the profiles of 614,000 LinkedIn users who live in greater Manchester. It found that while some locals languished in poverty, 2,000 people a month were moving to the city from London and other places to take some of the best jobs in digital marketing, user interface design, and TV and video production. That armed government officials with the information they needed to create a Greater

Manchester Digital Skills Action Plan, with the goal of enlisting nearby schools, universities, and workplaces to improve digital training of people who already live in the area.<sup>10</sup>

Greater Manchester has already begun to increase the number of children considered to be ready to learn when they start school;<sup>11</sup> recruited 1,200 “STEM ambassadors” from among workers in science, technology, engineering, and math professions to work with students;<sup>12</sup> and created 22,250 apprenticeships, including in small businesses.<sup>13</sup> It has provided 16- to 18-year-olds free bus transportation to apprenticeships and jobs; created a local skills plan to better connect area employers with schools;<sup>14</sup> opened new one-stop careers and apprenticeships offices for young people; underwritten apprenticeships, including in small businesses;<sup>15</sup> and offered free digital skills training programs delivered by CompTIA, Raytheon Professional Services, and others.<sup>16</sup>



## Chambers of Commerce Stepping Up

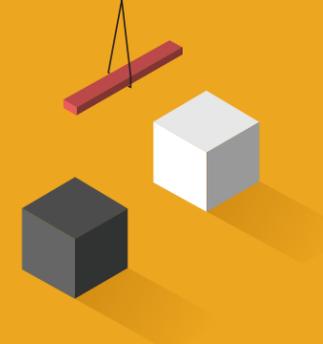
In the same spirit of connecting educators, learners, and employers, among the most active American intermediaries are local and statewide chambers of commerce. Under the U.S. Chamber of Commerce Foundation's Talent Pipeline Management campaign, chambers, their spinoffs, and affiliated business organizations in more than 30 states have started bringing together industry associations, employers, and economic development agencies.

The Talent Pipeline Management idea follows six steps. First is to organize employer collaboratives; most of the efforts focus on one industry apiece or several related industries. Second, these industries assess demand — the types of jobs available that they expect to be created, and how many. Third, they create an easily understandable list of skills and credentials the available jobs require. Fourth, they identify current and potential future sources of talent, from university programs to on-the-job retraining of their existing employees. Fifth, they figure out which training providers are the best among these sources and help build a pipeline from education to work. And sixth, they continually monitor and fine-tune the process.<sup>17</sup>

In Houston, where projected skills gaps are particularly wide, industries and employers identified the need for more trained workers in the oil industry and pushed for a 32 percent increase in the number of petrochemical courses at area community colleges. Working through the Greater Houston Partnership,

which is made up of local business leaders, and using the Talent Pipeline Management approach, they also provided more than \$1 million for scholarships. Petrochemical program enrollments have doubled, and graduation rates are up. Faculty members from the colleges meet annually in a formal summit with industry executives. Similar efforts have been undertaken in Houston by the local Associated Builders and Contractors and Associated General Contractors of America to recruit and prepare more commercial and industrial construction workers, including through apprenticeships for high school juniors and an on-the-job training program for women to become pipe fitters. Regional health systems are working with education providers to produce more medical assistants and other types of workers whose skills are in need.

Further west, Arizona has a shortage of nurses. It needs an estimated 20,508 more by 2025. Nine hospitals together, organized by the Greater Phoenix Chamber Foundation, narrowed down their most urgent requirements to six practice areas and collaborated with the Maricopa County Community College District to expand nursing education for roles that require less than a four-year bachelor's degree. The hospital consortium has helped develop programs, including for a new certificate in critical care to be taken by nurses transferring to intensive care. More such credentials are planned, including in oncology, telemetry, and home health.<sup>18</sup>



## The Equity Imperative

### CHALLENGES

- Access and social mobility barriers for underserved populations.
- Difficulty understanding existing education options and connections to work.

### ACTIONS FOR INTERMEDIARIES

- Leverage social justice movement to increase awareness and motivation for groups to collaborate for social mobility.
- Illuminate career pathways for the underserved, coupled with a focus on advising.
- Promote flexible options such as online learning for older adults with families and jobs.
- Create more seamless work-study sequences.
- Coordinate efforts for businesses to design programs of study that sync with workplace needs.
- Promote internships and apprenticeships for students at all levels.
- Send employees into schools.
- Simplify the transfer process.
- Lead campaigns to share information about opportunities with target populations.

While shorter-term credentials such as certificates and certifications can be quicker and more sharply focused ways to meet workforce needs, more than half of employers hiring for middle-skill jobs say they won't consider candidates without bachelor's degrees, even for jobs that haven't traditionally required one.<sup>19</sup> At a time when concerns about racial justice and diversity are as pronounced as anxiety about COVID-19, this particularly disadvantages Black and Hispanic Americans, who are less likely to earn bachelor's degrees or higher. Thirty-five percent of whites age 25 and older have at least a bachelor's degree, compared with 21 percent of Blacks and 15 percent of Hispanics.<sup>20</sup>

If the experience of previous economic downturns holds true, the recession eventually may send more people back to school. The higher education sector, facing a financial crisis, may be far more motivated to add comparatively low-cost, short-term training programs, or lure midcareer learners by recognizing and providing credit for their life and career experience.

The shift to virtual education forced by the pandemic has shown the flexibility and value online learning can provide for older adults with families and jobs. And heightened attention to racial diversity means employers at least say they're willing to consider new ways of finding talent that do not rely on educational credentials disproportionately earned by whites. In fact, 35 million Americans with high school diplomas but no four-year

college degrees already have skills that match what many employers actually need, the advocacy organization Opportunity@Work contends.<sup>21</sup> Global and domestic intermediaries are addressing opportunity gaps like these by better connecting workers with the specific skills they need to perform good local jobs, whether or not their formal credentials align with traditional requirements.



WHERE IT'S WORKING

## Britain's Civic University Network

British universities won the right to charge tuition in 2004, but — to address political opposition and concerns that only rich white students would be able to attend — it was conditioned on a requirement that they set and meet goals for enrolling more low-income, racial and ethnic minority, and first-generation applicants. So even as the cost of higher education grew, many universities managed to increase the proportion of their enrollment in these categories. The extra cost is generally offset by the additional revenues that come with higher fees.<sup>22</sup>

When an independent commission looked more closely, however, it found that getting into college did not equate to fully obtaining the advantages of it. Students from ethnic minority and disadvantaged backgrounds were more likely to drop out, for instance (though

much less likely than they are in the United States).<sup>23</sup> Without equal access to networks or knowledge of what employers want, graduates from lower-income families still trailed their wealthier classmates in earnings by about 25 percent.<sup>24</sup> And, to compound this problem, universities had largely lost their connections to the communities around them.

That's because these institutions, many built on local patronage, had over time become financed and regulated by the national government and beholden to whatever students paid their tuition and whichever funders supported their research. Activities of local benefit fell far down their lists of objectives. A survey showed that 35 percent of people couldn't name one thing their local university had done for their communities. Nearly 30 percent said they were indifferent

## WHERE IT'S WORKING Britain's Civic University Network

to their universities, and fewer than 60 percent that they were proud of them. Adult education, a role of a particularly local nature for universities, had declined by 42 percent since 2012 for students over 30.

The Civic University Commission, which unearthed these problems, has produced a Civic University Network of more than 100 universities that "reaffirmed their commitment to their local communities by pledging to put the economy and quality of life in their hometowns and cities at the top of their list of priorities." The effort is being backed by philanthropic funding (the government also has chipped in the equivalent of \$67,000). The commission — made up of university officials, students, faculty, and representatives of charitable groups — has promised to serve as an intermediary by connecting the universities with other sectors to improve equity in particular and the economy in general and to promote the sharing of good ideas among them.<sup>25</sup>

A full year of fact-finding preceded what was to have been the start of meaningful reforms by members of the network, but the final report was issued just as the COVID-19 pandemic hit. Many universities shifted to the more immediate need to respond to the health crisis and help their local economies recover. But some also have started work.

The first completed civic agreement, released in July 2020 by Nottingham Trent University and the University of Nottingham in collaboration with local governments,

hospitals, and business partners, commits to increasing college-going in the region by, among other things, training educators. An already existing "Children's University" has helped improve standardized test results in math and reading. The universities also promise to ensure that "our local partners and the people they represent can more easily and effectively access the expertise and talent available" on campus and "to invest in the convening role the universities play in bringing together ideas, people and partners in response to local challenges and opportunities."<sup>26</sup>

As for the rest of the network, its plans intersect with policy proposals by the current government to focus more research-and-development spending on solving local problems. It has called for less focus on some things on which universities are measured, such as postgraduate income, which penalizes them when their graduates take lower-paying jobs in labor markets outside major cities or work for themselves. And it has called for a five-year, £500 million fund to support universities in helping economically and socially vulnerable places and for permission to use university money to support spinoff companies and apprenticeships for students.<sup>27</sup>

The pandemic has accelerated one other option in the U.K.: so-called short courses to build career skills. They are often offered online and as certificates or through apprenticeships, which take from three months to two years to finish as opposed to three years for a bachelor's degree.



## WHERE IT'S WORKING

### The Conductor in the Orchestra in Mobile, Alabama

Mobile, Alabama, has done an enviable job of luring big employers. It landed the European aircraft manufacturer Airbus, the Norwegian engineering company Aker Solutions, and the Finnish stainless-steel producer Outokumpu. One thing that drew these businesses was Mobile's deep-water port, ninth biggest in the United States by tonnage. But another was the seeming success of the local education infrastructure. The public schools bragged of high graduation rates, and local boosters pointed out that there were two public community colleges and a public university, the University of South Alabama, that was putting up lots of new buildings.

All was not as it seemed, however. The locals started hearing from the companies they'd persuaded to move there that they couldn't find talent. On closer look, the school system had been vastly inflating the high school graduation rate, which was 20 percentage points below the national average. Few students who did manage to graduate from high school were encouraged to go on to college, and most of those who did go dropped out or tried to transfer, only to find their credits weren't accepted. An embarrassingly low 11 percent to 14 percent of students at one of the community colleges had earned a degree within three

years, and only 1 of every 4 Black students enrolled at either of them ever graduated,<sup>28</sup> perpetuating racial inequality and educational inequity. And the university campus may have been expanding, but only 43 percent of students at the four-year institution were finishing within even six years.<sup>29</sup>

Alabama's demand for qualified workers promised to quickly outstrip supply, a task force appointed by the governor found.<sup>30</sup> Hard-to-replace baby boomers were about to retire in huge numbers, and skill levels of the younger people coming up behind them weren't keeping pace with increasingly complex requirements. The statewide worker shortfall was projected by the University of Alabama to reach 219,000 by 2030. By then, almost 2 out of 3 jobs would require some sort of postsecondary credential, but only 44 percent of Alabamians have one — the fourth-lowest proportion in the country, ahead of only Arkansas, Nevada, and West Virginia.<sup>31</sup>

Increasingly unequipped for the jobs available, people started simply dropping out of the labor force. The share of the working-age population that had or was looking for a job fell during the last recession from 61 percent to 57 percent. Many never went back, the Alabama Workforce Council said.<sup>32</sup>

## WHERE IT'S WORKING **The Conductor in the Orchestra in Mobile, Alabama**

This perpetuated not only a skills shortage. In Mobile, while good jobs went wanting, more than 1 in 5 residents lived in poverty<sup>33</sup> — double the national average.<sup>34</sup>

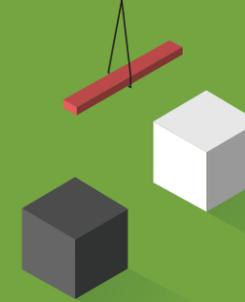
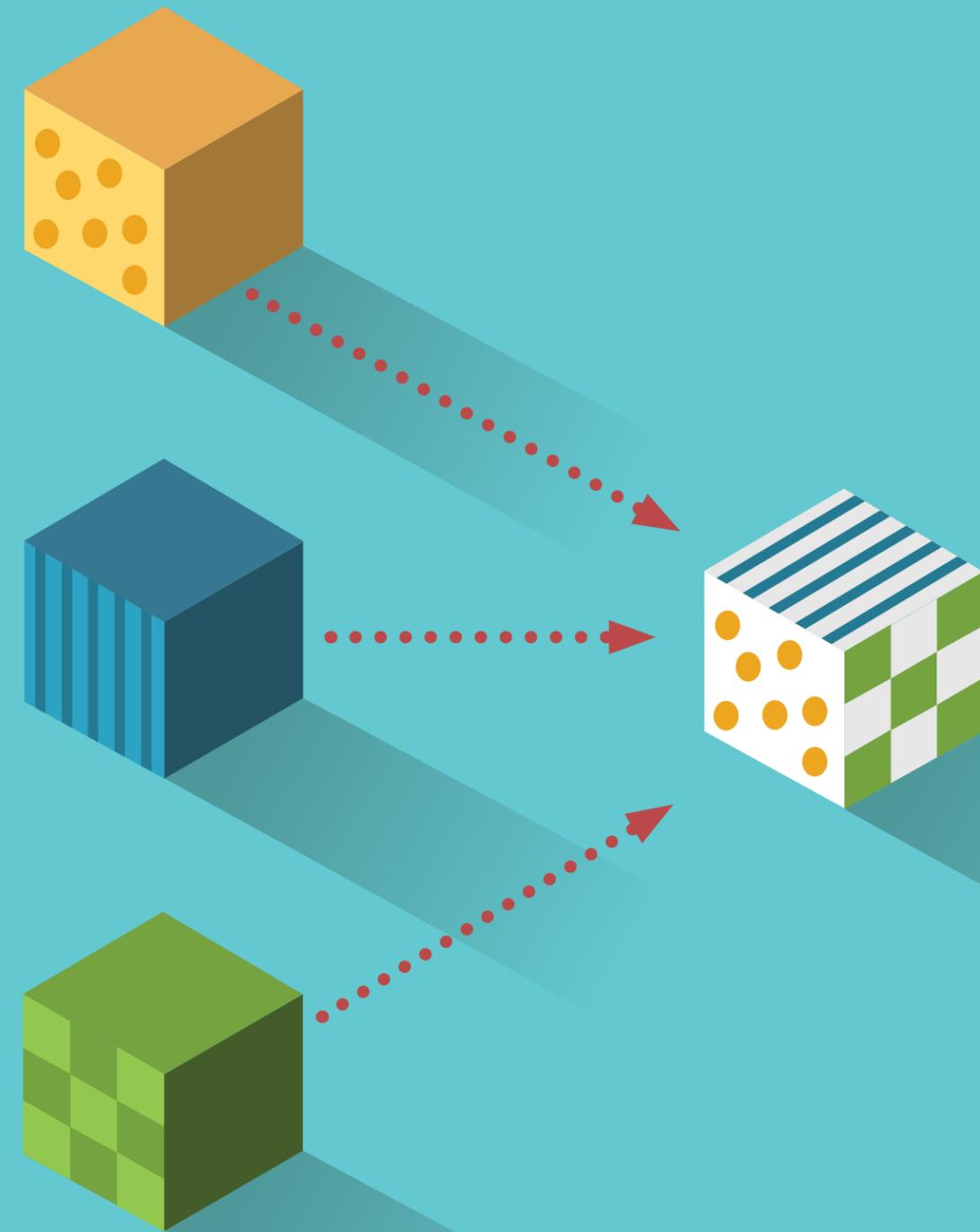
It was with a sense of moral outrage that community members stepped in. Civic organizations, industry associations, and even churches leaned on the public schools and higher education institutions to improve success rates. They set a goal of having 75,000 Mobile residents earn new degrees by 2030. A small nonprofit called the Mobile Area Education Foundation helped coordinate all of these various constituencies into a campaign called Graduate Ready, overseen by an independent 30-member commission composed of educators, employers, clergy, elected officials, and others.

Businesses helped design programs of study that sync with workplace needs, added internships and apprenticeships for students at all levels, and sent employees into schools as reading buddies. Volunteers nagged parents at high school football games to fill out the form their children need to get federal financial aid for college. The university simplified the process for students

to transfer from the community colleges — a hurdle that was derailing many of them. Without advising to avoid it, those students had spent time and money piling up credits that didn't count toward a degree. What advice they had received included taking 12 credits a semester, since that was easier than taking more and kept them eligible for federal financial aid. But it also meant they couldn't possibly graduate on time, so counselors started pushing them to take 15 credits a semester, speeding them more quickly toward a marketable credential. Transfer students are moved up in priority for registration so they can get the courses they need without having to wait.<sup>35</sup>

High school graduation rates are up in Mobile, from 55 percent before this work began to 86 percent in 2018, the last year for which the figure is available.<sup>36</sup> The number of students successfully transferring from the community colleges to the public university has more than tripled.<sup>37</sup> By contrast, university dropout rates nationwide have fallen barely 2 percentage points in the past 10 years.<sup>38</sup> And the community commission continues to push for more. "We're like the conductor in the orchestra," one member said.<sup>39</sup>

**THE NUMBER OF STUDENTS SUCCESSFULLY TRANSFERRING FROM THE COMMUNITY COLLEGES TO THE PUBLIC UNIVERSITY HAS MORE THAN TRIPLED.**



## Speaking a Common Skills Language

### CHALLENGES

- Mindset of traditional education faculty differs from employers'.
- Unclear expectations for occupations and skills.
- Need for common terminology and skills definitions across stakeholder groups.

### ACTIONS FOR INTERMEDIARIES

- Provide clear information about local supply and demand.
- Develop a common language and define skills required for local jobs.
- Bring together representatives of stakeholder groups who don't usually talk to one another.
- Ensure means and goals are in sync and explained precisely and practically, without the usual human resources or academic jargon, ambiguity, and vagueness.
- Foster the use of "pracademics" — academics who come from or spend time in the career field they are teaching.

A cultural divide often hinders local efforts to collaborate in connecting education to work. Some university and college faculty don't like to talk about what they do in terms of vocational outcomes, or they spend years creating new programs when the labor market needs immediate results. Employers have trouble describing exactly what they need or finding the right people to approach for help in complex academic bureaucracies.

"It was tough to get a seat in the room to talk to higher ed, because there was this sense of, 'The business community doesn't belong here.' It's a threat. You'd think I was the devil in the room. It was like the barbarians were at the gates," recalls Jason Tyszko, vice president of the Center for Education and Workforce at the U.S. Chamber of Commerce Foundation.<sup>40</sup> More than half of members of the Society for Human Resource Management said in a survey that education systems have done little or nothing to help close the skills gap.<sup>41</sup>

The examples that follow demonstrate how effective intermediaries can bridge this cultural divide through a focus on defining skills and breaking down the jargon and ambiguity that too often thwart collaboration.



WHERE IT'S WORKING

## A Focus on Skills in Singapore

Small and densely populated and with sparse natural resources other than its massive port, Singapore is heavily dependent on talent, innovation, and entrepreneurship. Amid the hypercompetitive economies of Asia, the country is more reliant than many other nations on keeping ahead of workforce requirements through constant training and retraining. It also has suffered labor shortages in the service sector and some other fields.

The country has responded with SkillsFuture Singapore, which is part of its Ministry of Education and overseen by a national board that includes trade unions, employers, and educators. Since 2016, SkillsFuture has provided subsidies to workers 25 and older to learn new skills through mostly short-term training programs. The framework it has developed lists what skills are required for which jobs and where people can acquire those skills, emphasizing high demand in emerging fields such as

machine learning, data analytics, and entrepreneurship. The information also is used to make sure that education providers are responding to workforce demand.

During the pandemic, SkillsFuture has expanded an apprenticeship-style program it calls “work study,” in which students are hired into jobs while studying toward degrees in the same fields. This involves collaboration not only between a university and an employer, but often among several universities. For example, Ngee Ann Polytechnic and Singapore Polytechnic will jointly confer a Bachelor of Technology in computing to students who will work simultaneously as junior analysts at the global internet company Sea. Thirty percent of credits toward the degree will come from workplace learning, and trainees who successfully complete the program will automatically have jobs.<sup>42</sup>

It's one of 130 such work-study sequences SkillsFuture and its partners have created in

For more on frameworks in the American context, see Appendix D: Skills Frameworks in the United States.

WHERE IT'S WORKING A Focus on Skills in Singapore

## BY 2005, THE AGENCY HAS PROMISED TO RESKILL AND PLACE DOUBLE THE NUMBER OF JOB-SEEKERS IN THEIR 40S AND 50S AS IT DID BEFORE THE PANDEMIC.

emerging and growth sectors. Employers can sign onto a website to participate, post job openings, or hire trainees. Learners in Singapore don't need to be 18 to 24 or spend years getting degrees to hop onto opportunities like this one. There are shorter so-called “midcareer pathways” — courses of generally six months or less that provide skills in areas such as advanced manufacturing and jobs at companies including Siemens.<sup>43</sup> SkillsFuture in the spring teamed up with Google and others to create yet more opportunities, including three-month training programs in digital marketing or cloud technology followed by six months of paid on-the-job experience. They'll wind up with internationally recognized professional certificates.<sup>44</sup> By 2025, the agency has promised to reskill and place double the number of job seekers in their 40s and 50s as it did before the pandemic.<sup>45</sup>

Singapore's is among the most proactive government-led efforts to provide skills

to workers for available and anticipated jobs. About half a million, or nearly 10 percent of Singaporeans, have participated — certainly attracted by the \$500 subsidy. But 86 percent of participants also said the Singaporean program had improved their work performance.<sup>46</sup>

It's a unique example, given that Singapore is an island city-state with a population smaller than that of Minnesota and with relentlessly centralized control. But in other countries, governments also play an intermediary role to fit local circumstances. Ireland's Network of Regional Skills, for instance, provides decentralized and decidedly local labor-market information that is used to develop training programs.<sup>47</sup> And the European Union's Smart Specialisation program also concentrates on regional skills and training needs, bringing together local educators, businesses, and government to consider their competitive advantages and use EU funding to develop them.<sup>48</sup>



WHERE IT'S WORKING

## The Virtuous Cycle in Detroit

In Detroit, one effort underway to build homegrown talent is Detroit Drives Degrees, or D3. Led by the Detroit Regional Chamber, the program is trying to raise the proportion of adults with postsecondary education to 60 percent by 2030<sup>49</sup> in an urban area whose economy has shifted dramatically from manufacturing to high technology — yet where only 13 percent of city residents have bachelor's degrees or higher.

More than 18 percent of Detroiters over 16 live in poverty, even though a third of them work full time.<sup>50</sup> Twenty- to 24-year-olds are more likely than older workers, and Blacks more likely than whites, to be unemployed.<sup>51</sup> After the last recession, when the near collapse of the automotive industry resulted in an unemployment rate that peaked at 15 percent,<sup>52</sup> Detroit added 173,000 new jobs. But most were in industries requiring greater education: information technology, financial and insurance services, and health care.

The chamber saw that conversations among employers and educational providers in the area were spotty and disjointed, said Greg Handel, vice president for education and talent. "Individual institutions do often convene employers around needs or even

specific programs, but it wasn't coordinated around the region."<sup>53</sup> Leveraging the influence of the private sector, the chamber brought together representatives of public schools, colleges and universities, and businesses — and not just low-level functionaries, but superintendents, institution presidents, and corporate CEOs who didn't usually talk to one another — for regular meetings that kept steady pressure on their underlings.

The first challenge was to create a common language among these disparate players, who don't always speak one. Melanie D'Evelyn, D3's director, said its role is often to be an "interpreter" and "translator" among the stakeholders, making sure that means and goals are in sync and explained precisely and practically, without the usual human resources or academic jargon, ambiguity, and vagueness that so often muddle these discussions. "Even within companies there is not always a common understanding between the CEO and the HR department" about what abilities they want new hires to have, D'Evelyn said.<sup>54</sup>

It's a delicate balance in the best of circumstances. Employers also may be "one contract away from needing more people with a particular skill versus fewer people

WHERE IT'S WORKING **The Virtuous Cycle in Detroit**

with a particular skill," Handel said. On the other side, he said, "We've heard from college presidents that sometimes in the past they've been told there's demand for something, they created programs in it, and they've seen graduates not able to get employed."

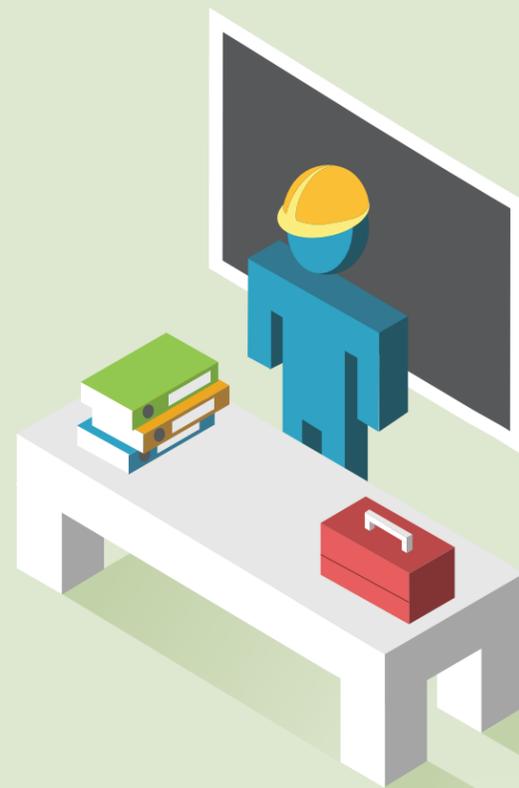
D3 requires all of its stakeholders to come up with their own action plans, including ways for employers to help their existing workers. "That's one way we have been able to effectively align industry needs with production of talent because if an employer is paying for one of their employees to go back to school, they have an investment in making sure it's relevant to their work," D'Evelyn said. In Detroit, the momentum behind this work is an outgrowth of a kind of civic pride in a city that is rebounding, against long odds, from bankruptcy and ruin. "You move at the speed of trust — trust with the state, with our employers, with our higher education partners," D'Evelyn said. "And that really has been relevant to all of the progress that we've made."<sup>55</sup>

Business groups can cheerlead, scold, and mobilize constituencies. The Detroit chamber

coordinated a campaign to significantly increase the number of high school students who completed the Free Application for Federal Student Aid, or FAFSA, which many weren't previously doing. It provides advisors to help older-than-traditional-age students find job prospects and the education and training they need to get those jobs. It also provided the financial aid, child care, and housing they require to complete that education. The chamber conducts independent research and can use its influence to expose such glaring failures as the fact that fewer than 10 percent of Detroit high school students are considered college-ready based on their SAT and ACT scores — a figure educators don't like to broadcast. It has also made the more hopeful projection that if metro Detroit reaches the point where 60 percent of residents have a postsecondary credential by 2030, the region will see an estimated return on investment of \$42 billion. Numbers like those "get the attention of business leaders," said Richard Hampson, Michigan president of Citizens Bank,<sup>56</sup> which begins a virtuous cycle in which business leans even harder on the interests that can help to make that change.

**"EVEN WITHIN COMPANIES THERE IS NOT ALWAYS A COMMON UNDERSTANDING BETWEEN THE CEO AND THE HR DEPARTMENT ABOUT WHAT ABILITIES THEY WANT NEW HIRES TO HAVE."**

— MELANIE D'EVELYN, D3'S DIRECTOR

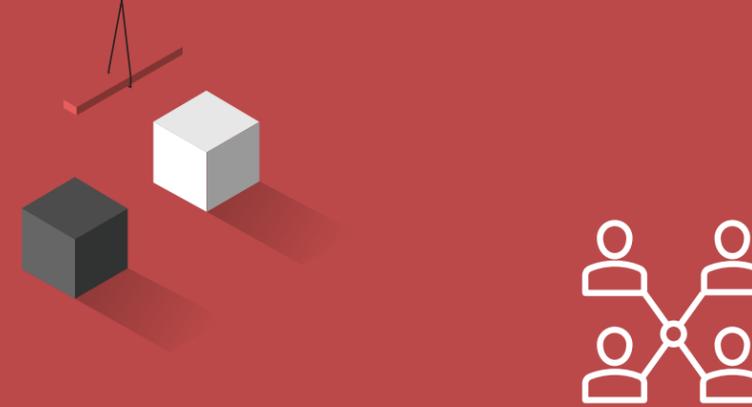


## The 'Pracademic'

"Pracademics" are academics who come from or spend time in the workplaces for which they're educating students, learning for themselves what tangible skills employers need. The word is a combination of "academics" and, depending on who's defining it, "practitioner" or "practical." And it's getting new attention.

Many university adjuncts are pracademics. While there's controversy over the increase in their numbers — full-time faculty complain universities keep hiring more adjuncts because they're cheaper to pay and easier to fire — there are also calls for more of them, to bridge the gap between the classroom and the workplace and to serve as living links connecting training providers and employers.

A British nonprofit, AdvanceHE, has called for universities to hire more pracademics, "recognising the added value that they bring to the student experience by drawing on their practitioner knowledge, skills, experience and values, and accessing employer networks." It has also launched a "Pracademia Network" to bring together academics and practitioners worldwide.<sup>57</sup>



# Connecting Supply With Demand

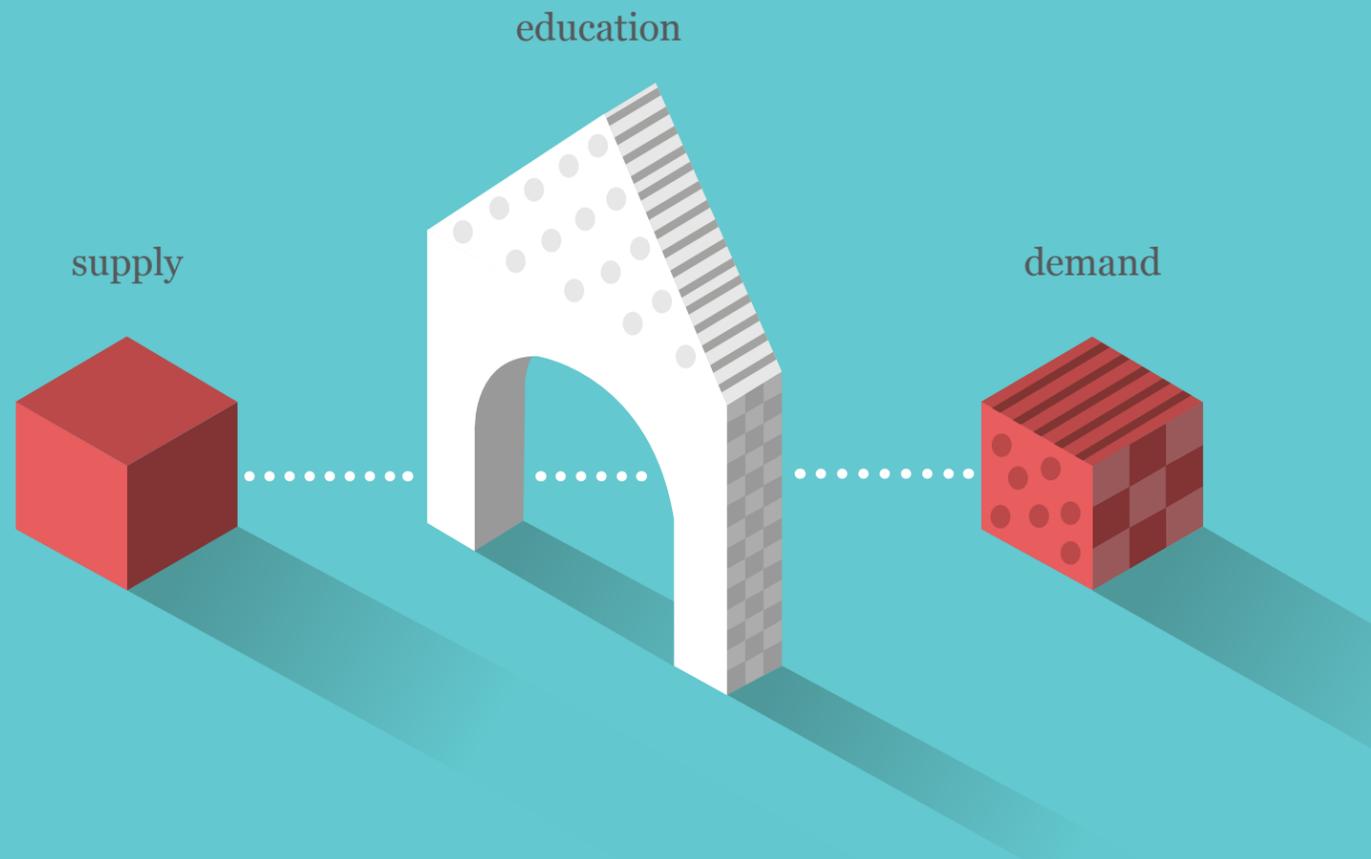
## CHALLENGES

- Lack of qualified workers to fill local jobs.
- Emphasis on bachelor's degree as the gatekeeper.
- Lack of clarity around how credentials match with skills and jobs.
- Evolution of technology.
- Growth in number of occupations.
- Systems updated yearly while labor market changes daily.
- Unclear forecast of future labor market needs.
- Lack of ability to align educational offerings with employer demand in real time.

## ACTIONS FOR INTERMEDIARIES

- Build on existing momentum to recognize and provide credit for life and career experience.
- Collaborate to remove false barriers and focus on matching skills to job needs.
- Standardize what certificates represent (skills-based credentialing).
- Highlight flexible virtual education options for older adults with families and jobs.
- Outline needed skills for in-demand jobs in a region.
- Create a transparent inventory of applicants' skills to better match jobs with workers.
- Provide research and data around skills gaps and opportunities.
- Use real-time data from active online job announcements to connect education with demand locally.
- Promote more effective use of real-time online data instead of out-of-date labor market data to eliminate unnecessary programs.

The abrupt shift to virtual commerce, work, and education during the COVID-19 pandemic has exposed the acute need for digital skills — and how many people didn't have them. As medical care moved to remote telehealth, for instance, nearly a third of U.S. health and social work employees turned out to have little or no technological literacy, as measured by the Organization for Economic Cooperation and Development Program for the International Assessment of Adult Competencies. Neither did many manufacturing, construction, retail, or hospitality workers.<sup>58</sup>



The workplace hasn't only gotten more complex; it's become more granular. The number of occupations measured by the Bureau of Labor Statistics has increased from about 270 in 1950 to about 800.<sup>59</sup> And while automation is wiping out some (especially low-skilled) jobs, it is also likely to result in a net gain of even more new kinds of tasks requiring still more specific talents. Eighty-five percent of the professions that will exist in 2030 haven't been invented yet, the Institute for the Future has predicted.<sup>60</sup>

A lot of the existing jobs are proving increasingly difficult to fill, even with so many Americans out of work. Chronic shortages in health care were glaringly exposed by the pandemic, when hospitals

had to beg experienced workers to come out of retirement and pitch in. The Association of American Medical Colleges projects a shortfall of 105,000 physicians by 2030 — a time during which the number of people 65 and older, who need more care, is projected to rise by 55 percent. About a third of nurses are expected to retire by then. There's plenty of interest among potential replacements, but in this case the problem has been limited capacity in nursing schools that are turning applicants away.<sup>61</sup>

Intermediaries are the critical bridge builders for illuminating the local links between supply and demand that can help new and displaced workers achieve gainful employment.



WHERE IT'S WORKING

## The 'Higher Apprenticeship' Model in Australia

Apprenticeships seemed a fast and efficient way to produce trades and technician workers with the skills required by manufacturing, construction, and infrastructure companies in Australia, which were growing and changing so quickly vocational and university programs were having trouble keeping up. But as demand for higher-level trades skills integrating new technologies continued to increase, conventional apprenticeships were falling short. Hiring managers found what was being taught varied from one place to the next, and apprenticeships didn't always cover new technologies, management, or problem-solving. Plus, the number of people in apprenticeships was dropping, down 45 percent between 2012 and 2016.<sup>62</sup>

So the Australian Industry Group, or Ai Group, has created a so-called "higher apprenticeship" model focused on applied technology, which — in collaboration with Australian universities and training providers — provides a vocational diploma through the vocational education and training system, followed by an associate degree accredited by universities. This makes the skills learned more consistent from one program to another and ensures that apprentices actually learn what they need to know. Fields covered include mechanical engineering, networking, big data, cloud computing, and digital control systems, and

the universities provide education in science, technology, math, business, and design, along with accountability and standards. The associate degree can later stack into a bachelor's degree.<sup>63</sup>

A successful pilot with partners Siemens and Swinburne University of Technology from 2017 to 2019 led to a rollout across a number of Australian states in the spring of 2020. That means it's too early to gauge results. The COVID-19 crisis has triggered predictions that the number of apprenticeships will fall, prompting the Australian government — after heavy lobbying from Ai Group — to cover half the wages of apprentices of all kinds, nationwide. That's the equivalent of another \$1 billion commitment on top of \$2.8 billion the Australian government already spends to subsidize apprenticeships.<sup>64</sup>

Employers, along with higher education institutions and individual learners, haven't historically assessed their own needs in thoughtful ways that can help make training and education more efficient. But examples like this and others from around the world show that businesses and industry associations can become key players in solving their own problems. A variety of intermediaries can connect employers with education and training providers and either lead or share the work of narrowing skills gaps.



WHERE IT'S WORKING

## The 'Montana Network'

Governments have a singular advantage in connecting labor demand with worker supply: They have all the data, from payroll records to tax returns to public university enrollment figures. But this vast wealth of information has so far not been broadly used to track job demand and earnings and educational program outcomes. Often that's because of interagency friction and mistrust. "How often do you get the board of regents in a state actively working with the department of labor to review their own system?" asked Barbara Wagner, chief economist for the Department of Labor and Industry in Montana, a state that has quietly figured out a way to do it.<sup>65</sup>

In a model rare in the United States, Montana has seen state government play a leading role in bringing together talent supply and demand. The state has connected its university system, private colleges, Department of Labor and Industry, State Workforce Innovation Board, and even Department of Revenue to identify and narrow skills gaps in the labor market. It uses payroll records to see which college majors lead most directly to jobs, and how much those jobs pay. Because the Revenue Department is involved, it can even track the self-employed — 15 million people nationwide, or 10 percent of all workers,<sup>66</sup> and more in Montana (14 percent) than any other state.<sup>67</sup> These self-employed workers

don't show up on corporate payrolls, which often vastly complicates such efforts to track them.

This information helps the universities and colleges decide what subjects to keep or cut, and consumers see the demand for various careers and what the highest-paying jobs are. Certificate and degree programs have been added in public health and data science, for example, and doctorates have been added in occupational therapy and nursing practice. There were shortages of graduates in construction, but too many graduates in education and public administration. Hospitality and culinary arts offerings were expanded. Energy technology programs turned out to be producing more majors than the alternative energy industry needed, so a moratorium was placed on those. In all, 45 new programs have been added by the public universities collectively, and 76 taken off the books.

The salary figures also showed that students with bachelor's degrees in some occupations generally could have earned as much or more, five years after graduating, with shorter and less expensive associate degrees<sup>68</sup> — something no one had ever bothered to point out to them.

"We knew we had shortages because of the grapevine. Now we have information

WHERE IT'S WORKING The "Montana Network"

about the geography of those shortages, the details of those shortages, the wages of graduates going into those fields," said Joseph Thiel, director of academic policy and research for the Montana University System. "Universities and campuses are trying to figure out their program mix based on what the labor market information and communities tell them."<sup>69</sup>

The number of much-in-demand nursing graduates soon rose by 200 a year. Health care professionals helped to tweak the curriculum, and the time to receive a nursing credential was reduced by a semester. Registered apprenticeships have also been expanded. Because the data revealed that nursing shortages were most persistent in rural areas, where residents prefer to stay close to home for their educations, the state is piloting a "hub-and-spoke" approach, in which students do their in-person training and receive advising and other services at local community colleges while taking their principal courses online from the larger universities.

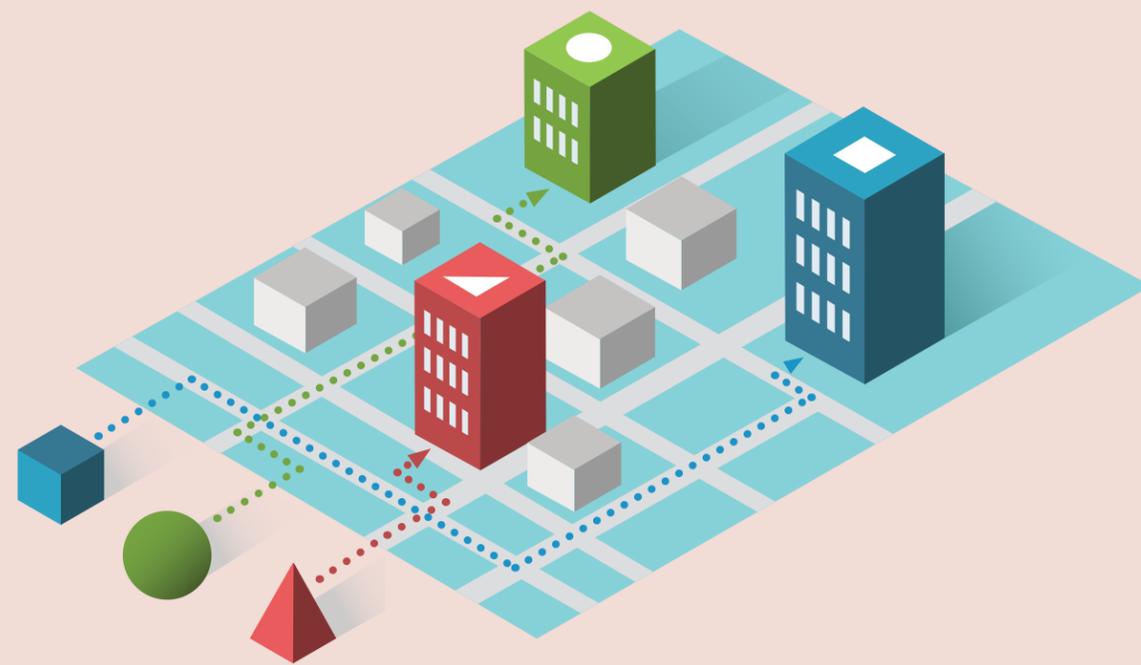
In some areas, there turned out to be labor demand but not student demand. Among those is manufacturing, which has an image problem among job seekers nationwide.<sup>70</sup> The state is trying to get industry to work harder on recruitment and show prospective workers the return on an education in the field. "The question is, how do you orient people who don't view this as a career pathway? We're not necessarily the most convincing group. We're a government agency," Thiel said. "The most convincing person is someone who's a few years out of

high school (who works as a welder) and has a house and a boat."

Montana's success at this is partly due to what locals call the "Montana network." The state may be more than 147,000 square miles, but it has a population of barely a million, among which there are notably few degrees of separation. Wagner, for example, previously worked at the Department of Revenue. "Relative to other states, we do have an ability to get stuff done," Thiel said. "It's easier to get people into a room. Choose your area, whether it's on the campus side or the industry side, and it's a pretty thick network."

Now, as the new recession sets in, there are plans among these state officials to reach out to residents with some college credits who have filed unemployment claims, using various agencies' records to evaluate what credential they're closest to earning in whatever subject is in most demand, where they can get it, and what wages to expect. That access to records even makes it easier to locate the residents' mailing addresses, a cinch for government but often a struggle for independent actors. It's an expansion of an existing campaign to draw those dropouts back to college, called Become an Alum.<sup>71</sup>

There's a consensus among the people who do this work that a principal ingredient is trust. In Montana, that comes from a six-degrees-of-separation landscape with a lot of interpersonal connections and comparatively few political divisions. For government-led efforts to succeed, trust among the agencies and other parties is essential.



## Mapping the Local Workforce System

An Ann Arbor, Michigan-based coalition of government, business, and community groups, called the Corporation for a Skilled Workforce, collaborates to connect workforce demand and supply. CSW maintains an elaborate map of the local workforce system, including educational attainment, employer needs, and the availability of training programs, which it has used to develop a talent “master plan” overseen by regional industry councils. It taps into online job postings and other real-time sources to share immediate data about supply and demand, not months-old projections. This helps colleges and universities speed up the development of new short-term programs needed to produce graduates with skills in near-term demand. It promotes career pathways for workers to gradually gain the education and experience they need to get good jobs — in health care, for example, starting as a medical biller before moving up to medical assistant and ultimately registered nurse,<sup>72</sup> or in manufacturing from welder to machinist to engineer. And it provides them with career coaching and advising along the way.<sup>73</sup>

“This is at the stage where you want a lot of people trying to play a role, trying to create a tool, trying to change behavior,” said Larry Good, president and CEO of CSW, which has expanded nationwide. The organization is now taking its model to other cities, to create what it calls a lifelong learning system that not only encourages more young people to stay on the education and training track, but helps older workers keep up with the skills they need. “We’re at Step 3 of 20 steps on that right now, but we’re into it,” Good said. “Getting one system talking to another is in the service of better economic mobility for the individual. And the systems right now do not work for the individual, in any way, shape, or form.”<sup>74</sup>



## Working Together

### CHALLENGES

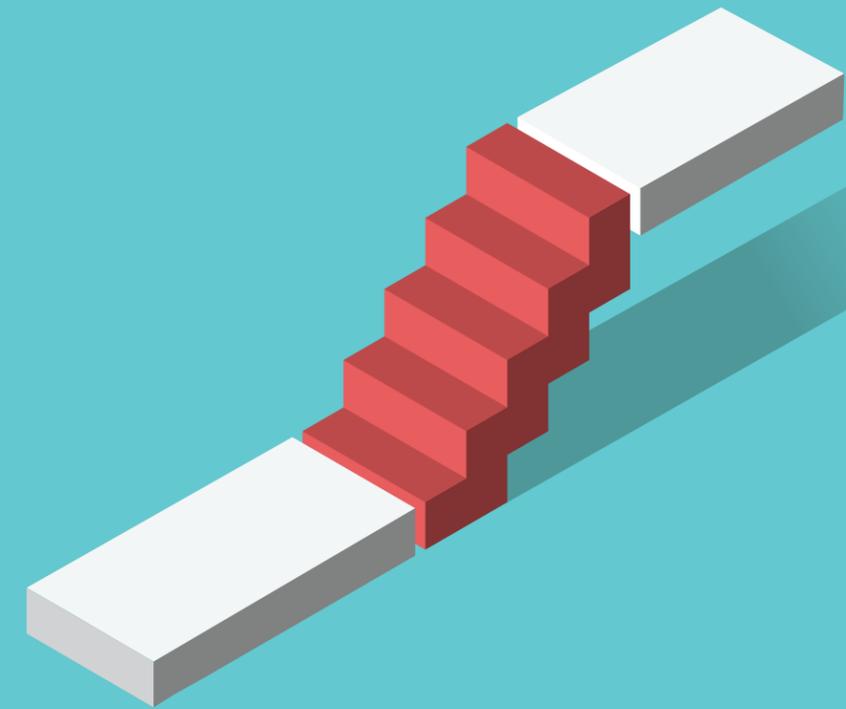
- Lack of leadership.
- Lack of will.
- Competing priorities.
- Need to identify key roles.
- Lack of consistent, cohesive plan to guide collaborative work.
- Need for clear guidelines and guardrails for common efforts.
- Need for funding mechanisms.

### ACTIONS FOR INTERMEDIARIES

- Focus on a shared commitment to a concrete agenda reflecting common interests and the strategic benefit of change.
- Cultivate collaborative relationships for the betterment of a community.
- Take proactive steps to address the required culture shift to make this work effective.
- Build strength in numbers through complementary collaborative efforts.
- Empower an effective leader, with a credible reputation and strong relationship-building and advocacy skills.
- Include stakeholder group leaders with authority, including those with political/fiscal authority.
- Focus on three major elements: money, metrics, and leadership.
- Provide a clear and effective funding mechanism.
- Outline metrics for success and accountability.
- Create ongoing feedback loops that foster trust.

As all of the examples in this report show, a range of bridge-building structures can prove effective in a given local context. Intermediaries serve urban and rural areas. Some are grassroots efforts, led from the bottom up. They’ve been organized by nonprofit coalitions, business and industry associations, and government agencies.

In fact, government is both among the bridge builders and among the entities that have to be brought to the table with education and industry in collaborative partnerships. In some other countries, government plays a strong role in creating centralized frameworks and systems for employers and education providers. It’s true that the American public doesn’t immediately think of government when asked who should close the skills gap. Only 11 percent say that’s the government’s job, the same proportion who believe employers



should do it. Thirty-nine percent believe it should be the responsibility of the education system, and that same percentage say it should fall to consumers themselves.<sup>75</sup> If government is to do this intermediary work, it's local and regional governments and agencies that prove most effective in the United States, given the size, diversity, and fiercely decentralized nature of the country.

Whether led by a government agency, business, higher education, or nonprofit or community organizations, an effective structure with clear roles and accountability is critical to the success of an intermediary. Individual and organizational leadership within this structure ensures participants are committed and have a sense of shared ownership that drives the work.



WHERE IT'S WORKING

## Workforce Development Councils in New Zealand

Government policy often places business at the center of talent initiatives in other countries. These governments generally convene employer boards to project demand and then design and set standards for education and training. In New Zealand, new Workforce Development Councils for each of six groups of industries have been handed this responsibility.<sup>76</sup> These WDCs will even advise the country's Tertiary Education Commission on how, and how much, to invest in vocational education to serve the six broad industries: manufacturing, engineering, logistics, and technology; creative, cultural, and recreation; primary industries, meaning agriculture and farming; service industries; health, community, and social services; and construction and infrastructure. That has the secondary effect of increasing employers' ownership of and interest in the process, said Grant

Klinkum, chief executive of the New Zealand Qualifications Authority and a member of the Strada-Lumina Working Group. "The creation of WDCs will ultimately lead to a greater sense of ownership of vocational education by employers, more relevant qualifications, and increased learner mobility between modes of delivery and across geographical regions," Klinkum said. "Businesses and learners need to be at the heart of the reform process."<sup>77</sup>

The initiative has been speeded up by almost a year in response to the new recession. "We need a strong, unified, sustainable vocational education and training system to help lessen the social and economic impacts of COVID-19," the government said. The private sector, it said, "will set a vision for the workforce and influence the vocational education and training system."<sup>78</sup>



individual learners



employers



government

## How To Pay

Coordinating business and education providers is a relatively low-cost affair. Providing education and training, however, is expensive. In some places, employers provide tuition assistance, but that is of course limited to their own workers. In others, governments pick up the tab. In the United States, it's mostly left to learners and employers. The U.S. government spends about \$19 billion a year on workforce training through 47 different employment and training programs housed in 15 separate agencies, according to the Council of Economic Advisors. That's less than what employers spend.<sup>79</sup>

Some American employers, including Walmart and Starbucks, have paid for their workers to get further education, but there are often conditions. First, of course, the employees have to be on these companies' payrolls. Second, they are often limited to a single provider — in the case of Starbucks, for example, Arizona State University's online program. Some employers limit the educational opportunities to programs directly related to the workers' jobs, meaning they aren't always transferable. Employees are often required to use federal financial aid first, meaning taxpayers are subsidizing these corporate benefits. And providers such as Arizona State usually agree in negotiations with high-volume customers to offer discounts.

## How To Pay

Major companies including Microsoft and Linux have created their own training programs, often in collaboration with online providers such as edX, the MIT-Harvard online platform. These don't just teach the highly specialized skills students need to work for the companies providing them, but offer the education all employees require in common, including such abilities as critical thinking and collaboration. But the trend underscores the fragmented nature of the American educational systems: It is largely because they're impatient with colleges and universities to provide this training that employers started doing it themselves.<sup>80</sup>

Some other countries incorporate funding models into the way they have set up their intermediaries, most commonly through one or both of two divergent models: providing subsidies directly to learners or employers, or charging employers a levy to help cover the cost. Where there are expenses not already covered by state and local education budgets, training levies charged to businesses have been proven to work in other countries (there are none in the United States<sup>81</sup>) when the employers who pay them get a say over how the money is deployed.

In Australia, the Training Fund Authority pays employers to help develop skills in short supply in building and construction. Underwritten by a levy of 0.2 percent on building and construction, it also supports employees already working in those industries who want training, as well as educational institutions that provide it.<sup>82</sup> British employers with payrolls of more than £3 million pay an apprenticeship levy.<sup>83</sup>

Brazil charges a training levy to employers, too, in a program managed by an authority independent of the government. The authority, called Serviço Nacional de Aprendizagem Industrial, got credit for much of the growth in employment and incomes in that country in the first half of the past decade. SENAI determines what training will be offered based on workplace demand. Before the country's economic and political crises that began in 2016, this helped result in an 80 percent job-placement rate for graduates, including many from low socioeconomic backgrounds who were elevated into middle-class jobs.

"The huge advantage of the private sector managing the levy and the training" in Brazil, an observer from the World Bank noted, "is that there is better alignment of the skills with private sector needs."<sup>84</sup>

# Conclusion: Actions for Intermediaries

No matter who they are — civic groups, nonprofit organizations, education providers, business associations, or government — bridge builders must achieve the broad goals of connecting education and training to workforce needs and mapping explicit pathways to lifelong learning. And they must achieve these goals in a way that's tailored to their cities, states, and regions, and to today's unique economic moment. They need to bring together, in an accessible and simple way, the options available to a variety of learners seeking to recover from the economic crisis quickly, efficiently, and cheaply.

Existing intermediaries in the U.S. and abroad demonstrate how connecting these parties doesn't cost much beyond time and will. However, the work to effectively structure an intermediary and drive the trusting collaborative environment required for success is nuanced. **The question now: What can**

**aspiring or existing intermediary organizations do to achieve results?** The examples and analysis here add up to a series of concrete actions for intermediaries. These tools can help them address each of the five major challenges we face: economic woes, inequity of opportunity, a lack of a common skills language, the need for better connections between supply and demand, and difficulties in overcoming fragmented leadership in working together.

The challenges are widespread. The needs are urgent. And bridge-building intermediaries won't be able to drive such an ambitious range of changes overnight. But this report shows how and why they're a vital tool for reform. If we build on existing models to create more effective, tailored solutions to local and regional needs, success is well within our reach.

EXISTING INTERMEDIARIES IN THE U.S. AND ABROAD DEMONSTRATE HOW CONNECTING THESE PARTIES DOESN'T COST MUCH BEYOND TIME AND WILL.

# Digging Deeper

## Appendix A: The Strada Education Network – Lumina Foundation Global Postsecondary Workforce Initiative

This report is based in large part on input from a group of 10 of the world's leading workforce education experts, convened just before the COVID-19 crisis by Strada Education Network and the Lumina Foundation. This working group met in Washington, D.C., for two days in early 2020 to discuss promising examples from around the world linking education with workforce needs that might be effectively emulated in the United States. There, and in months of follow-up correspondence, it focused on four areas: postsecondary education and career preparation; the role of employers; the importance of place; and policy solutions. Within these, the group explored important additional issues — most notably, how to expand opportunity, with equity at the center, and the critical role of intermediaries in this work. As the COVID-19 crisis unfolded, the most prevalent need that emerged from the working group became even more pressing: the need for bridge building.

Working group members focused on models from abroad, seeking to cast a broad net for solutions with a view to identifying policies and practices that offer promise in the U.S. context. All of these examples offer options that American workforce ecosystems might consider. And while each case has unique attributes, all share a common element: the presence of a strong intermediary connecting education with industry. These intermediaries might be led by community organizations or higher education institutions, employers or industry boards, government agencies or authorities. But another lesson arose from the working group discussion: In the United States, bridge building must be tailored to entirely local circumstances.

The working group discussed many challenges in this landscape, including a labor market that often fails to send clear signals about how educational institutions can tailor their offerings to student and employer needs. The group also explored how bridge-building intermediaries can narrow existing

gaps in knowledge and know-how, bringing together the parties that must collaborate if opportunity is to be expanded and the economy to rebound and continue moving forward.

### International Experts

- Marcela Escobari, senior fellow, Brookings Institution.
- Montserrat Gomendio, CEO and co-founder, Skills WeGo.
- Ellen Hazelkorn, joint managing partner, BH Associates.
- Anna-Maria Karl, former head of global talent sourcing, Daimler.
- Grant Klinkum, chief executive, New Zealand Qualifications Authority.
- Santosh Mehrotra, human development economist.
- Jamil Salmi, global tertiary education expert.
- Jee-Peng Tan, freelance consultant.
- Alex Usher, president, Higher Education Strategy Associates.
- Anne Younger, general manager, education and training, Australian Industry Group.

### Research/Writing

- Jon Marcus, higher education editor, The Hechinger Report.

### Lumina and Strada Participants

- Courtney Brown, vice president of impact and planning, Lumina Foundation.
- Chauncy Lennon, vice president of learning and work, Lumina Foundation.
- Beth Bean, former vice president of national engagement, philanthropy, and policy, Strada Education Network.
- Ben Wildavsky, senior vice president for national engagement, Strada Education Network.

### Consultant

- Jocelyn Pickford, senior affiliate, HCM Strategists

## Appendix B: Challenges in the Education-to-Work Pipeline

On the eve of the COVID-19 pandemic, an estimated 7 million U.S. jobs were unfilled because of a shortage of people with the skills employers said they wanted.<sup>85</sup> More than 9 in 10 corporate executives reported that workers aren't as skilled as they need to be. This affects not only workers, but the economy; nearly half of those executives said the shortage was hindering their companies' growth.<sup>86</sup>

Like much about connecting workforce supply and demand in the United States, this perceived skills gap is more complicated than it seems. For example, there's ample evidence that some of the gap results from excessive credential expectations by businesses (see sidebar). What's more, college and university transcripts that list the names of courses taken aren't much help in describing what skills they taught.

"Learners are unable to demonstrate to employers what they know and can do because they lack the right credentials or signals," a seminal analysis of this disparity reported. And "employers struggle to articulate and communicate the nature of the skills they value most, which heightens the challenge for educational institutions and training providers trying to keep pace with employer demand."<sup>87</sup>

### Shortage Areas and Skills Gaps

Along with the signaling challenges that characterize the credential/skills mismatch, there are real shortages in skills themselves. Take health care. Existing chronic shortages were glaringly exposed by the COVID-19 crisis, when hospitals had to beg experienced workers to come out of retirement and pitch in. The Association of American Medical Colleges projects a shortfall of 105,000 physicians by 2030 — a time during which the number of people 65 and older, who need more care, is projected to rise by 55 percent. About a third of nurses are expected to retire by then. There's plenty of interest among potential replacements,

but in this case the problem has been limited capacity in nursing schools that are turning applicants away.<sup>99</sup>

In other fields, large and small, gaps in skills are already having an impact, and more shortages loom. In rural areas, there are shortages of large-animal veterinarians and people who can repair sophisticated new farm equipment. And more than half the nation's skilled tradespeople are over 45,<sup>100</sup> meaning lots of them will need to be replaced when they retire — recession or not.

More broadly, the abrupt shift to virtual commerce, work, and education with the onset of the pandemic has also further exposed the acute need for digital skills — and how many people don't have them. As medical care moved to remote telehealth, for instance, nearly a third of health and social work employees turned out to have little or no technological literacy, as measured by the Organization for Economic Cooperation and Development Program for the International Assessment of Adult Competencies. Neither did many manufacturing, construction, retail, or hospitality workers.<sup>101</sup>

More than half of members of the Society for Human Resource Management said in a survey that education systems have done little or nothing to help close the skills gap.<sup>102</sup> High school students have been left largely to their own devices in a marketplace that fails to provide them with clear information about which fields are in most demand. Many have seen the value of science, technology, engineering, and math education, with more saying they want to pursue those subjects. But their numbers fall off in college, while the availability of on-the-job apprenticeship programs actually declined after the last recession, a 2015 Deloitte study found. A result: The number of job postings in STEM occupations outnumbered the supply of candidates 2-to-1.<sup>103</sup>

## Credential Inflation and Confusion

One of the most confounding and fast-expanding problems in the American labor market isn't that workers are undereducated for the jobs they want. It's that they're often overeducated for the jobs they get, according to research conducted at the University of Pennsylvania's Wharton School.<sup>88</sup> While shorter-term credentials such as certificates and certifications can be faster and more sharply focused ways to meet workforce needs, more than half of employers say they won't consider candidates for middle-skills jobs without bachelor's degrees, even for jobs that haven't traditionally required one.<sup>89</sup>

It's not entirely employers' fault. Education providers also have an incentive to keep tuition-paying students enrolled as long as possible, as opposed to offering fast and low-cost training, noted Montserrat Gomendio, former deputy director of the Directorate for Education and Skills at the Organization for Economic Cooperation and Development and a member of the Lumina-Strada working group. This contributes to the problem of workers spending more time in the education system than they need to.

These providers include everything from coding boot camps to research universities. Collectively they offer a mind-numbing 738,428 different credentials in the United States, including degrees, certificates, and badges. That's a number so big, it "contributes to confusion and uninformed decision-making," according to the advocacy organization Credential Engine, which came up with the figure.<sup>90</sup> The number of higher education offerings has increased steadily in the past decade. With their enrollments declining since 2012 as employment rebounded and the number of high school graduates dropped, universities and colleges desperate for students added 41,446 more degree or certificate programs, a 21 percent increase.<sup>91</sup>

"Today's ecosystem of postsecondary credentials is complex, fragmented, and multilayered, and presents significant challenges to learners, employers, and policymakers," the Georgetown Center on Education and the Workforce found.

"We don't know enough about the learning and competencies required to receive specific credentials. ... (Employers) are unable to assess the value of different credentials and want to know how their underlying competencies match job requirements."<sup>92</sup>

Career-oriented microcredentials such as short-term certificates seem a good solution to the need for focused skills, fast. Nearly a million certificates are now being awarded annually, up by more than 50 percent since the number started to be tracked in 1995.<sup>93</sup> Some surveys show that adults with certificates and no degrees had better luck finding and keeping jobs and higher incomes than their counterparts without them.<sup>94</sup> But other research raises questions about how much employers want, understand, or are able to keep up with these credentials. An analysis by the labor analytics firm Burning Glass Technologies found that, of 16 million job openings that did not require professional licenses, only 0.8 percent listed a certificate among the qualifications.<sup>95</sup> A separate study found that earnings gains for workers from certificates vary widely and may be only temporary.<sup>96</sup>

The long-term typical financial payoff to a bachelor's degree is well established. But 35 million Americans with high school diplomas but no four-year college degrees already have skills that match what employers actually need, the advocacy organization Opportunity@Work contends.<sup>97</sup> It's simply easier to use a degree as a filter than it is to inventory and define specific qualifications that are needed for a job. That's frustrating for workers who are quickly eliminated from a hiring process that gives a higher priority to formal educational credentials than to their experience and relevant abilities. By comparison, professions that require licenses or certification exams, for which the precise skills required are already spelled out and assessed, have shown no such credential inflation.<sup>98</sup>

One important role for intermediaries is to define the skills required for jobs and eliminate these false credential barriers.

That's a big drag on the modern economy. Seven in 10 manufacturing employers say a shortage of workers with the right technical skills has kept them from meeting consumer demand. The talent shortage depresses annual earnings by 11 percent for the average U.S. manufacturer, or \$14,000 per year per unfilled position.<sup>104</sup> Every day an IT job remains open costs a typical employer \$407.<sup>105</sup> Anticipating and addressing skills gaps are other major roles requiring the outside intervention of an intermediary.

### **Leaving Workers Who Need Education To Fend for Themselves**

In one of the most obvious signs of a disconnect that needs to be bridged, 96 percent of chief academic officers think they are sufficiently preparing graduates for the workplace,<sup>106</sup> while only 11 percent of business leaders in a Gallup poll said college graduates were ready for careers.<sup>107</sup> This doesn't mean degrees don't have market value, of course. A person with a bachelor's degree is more likely to be employed and makes a median of \$24,900 a year more than someone with only a high school diploma.<sup>108</sup> Workers with associate degrees also earn more than high school graduates. But these results depend on the field of study. Associate degree holders in engineering, for example, make a median of from \$30,000 to \$40,000 a year more than those who major in education or fine arts.<sup>109</sup> Students have little help in understanding the difference, and employers in interpreting what skills they've learned.

Though often useful, new and fast-growing forms of education, such as competency-based and online, add to the incomprehensibility of all these options, which comprise "an explosion of choices and decisions that make it hard for people to navigate in and out of college and careers," the Georgetown University Center on Education and the Workforce says.<sup>110</sup> "Dear Colleges, Please Do Not Build More Degree Programs in this Time of Crisis," Michelle Weise, then the head of Strada's Institute for the Future of Work, implored as the pandemic closed in.<sup>111</sup>

The 40 percent of undergraduate students who attend community colleges are at a particular disadvantage in finding their way through this crowded landscape, considering the broad range of subjects available to them there and the comparatively limited guidance they receive. Many are the first in their families to pursue a higher education.<sup>112</sup> More are Black, Hispanic, or from other racial and ethnic backgrounds than are white.<sup>113</sup> Midcareer learners also face a daunting array of choices that they are largely left to navigate alone.

If they do want information about postgraduate placement and earnings, consumers of all kinds of education and training will have trouble finding it. Placement rates of graduates, for instance, are often based on unscientific email surveys of alumni,<sup>114</sup> and the federal government lists these on its College Scorecard website without independently corroborating them.<sup>115</sup> There's little or no career advising in most high schools, which is among the reasons nearly a third of students in higher education change their majors at least once, and 10 percent two or more times.<sup>116</sup> That, in turn, contributes to the problem that just 4 in 10 finish college in four years. Many of the rest never do.<sup>117</sup> Accurate and independent guidance is essential, and intermediaries can help provide it.

### **A Tower of Babel**

Some university and college faculty don't like to talk about what they do in terms of vocational outcomes, or they spend years creating new programs when the labor market needs immediate results. Employers have trouble finding the right people to approach for help in complex academic bureaucracies or struggle to describe exactly what they need.

It can be a Tower of Babel. "Our education and employment systems don't speak the same language or communicate effectively," the U.S. Chamber of Commerce Foundation says. "Employers can't share what they need and individuals can't share what they can do in a way the other understands. Against

that backdrop, the burden of charting a path to economic opportunity often falls on individuals, who are poorly equipped to do that."<sup>118</sup>

The bottom line, says former Michigan Gov. John Engler: "People are getting training for jobs that don't exist or aren't open, and skilled jobs are sitting unfilled."<sup>119</sup>

### **The Urgency of Navigating Today's Recession**

With yet another recession now underway, jobs are likely to be both abruptly eliminated and quickly added, and roles will shift dramatically, requiring more training, the National Governors Association says. Yet "state education and workforce systems lack critical alignment with the evolving needs of industry, driven in large part by continuous technological disruption. The result is poorly targeted or outdated investments that do not keep up with the changing needs of industry."<sup>120</sup>

The system is "outdated," says the Markle Foundation, whose Rework America campaign is pushing employers to shift to skills-based hiring. It's "broken," the U.S. Chamber of Commerce Foundation laments, "limiting both economic opportunity for individuals and economic growth for companies."

The truth is more harsh: In too many places, there really isn't a system at all.

## Appendix C: Lessons From the Last Recession

The recession that began in late 2007 did enduring damage to an already disjointed workforce ecosystem. By the time it ended, 2 million more Americans were working less than full time than when it started. More than a third of jobs had become temporary, freelance, or part-time. The proportion of people who were underemployed more than doubled, from about 8 percent before the recession to 17 percent afterward. As the COVID-19 shutdowns neared, it was still around 10 percent.<sup>121</sup> Those who started their careers during and after the recession had lower earnings, for as long as 10 years, than their counterparts who got into the workforce before it.<sup>122</sup> And while jobs appeared to have returned, the proportion of the population that had one fell to 59 percent before the new recession started, down from 63 percent before the last one.<sup>123</sup>

The intervening years also saw fast-paced technological changes, only likely to accelerate now. Nearly 3 in 4 workers say they've already had to learn new skills to keep up with changes in their jobs.<sup>124</sup> As the COVID-19 recession set in, a third of Americans said they'd need more education to find a comparable position if they were laid off.<sup>125</sup>

History points to more troubling portents. Credential inflation spiked during and after the last recession, when rising unemployment meant more applicants

to choose from. The share of job postings that required a bachelor's degree or higher rose by more than 10 percentage points between 2007 and 2010. By 2013, almost a third of employers said they had increased their education requirements for new workers. Positions for which a high school diploma had been sufficient suddenly required postsecondary education.<sup>126</sup>

The same thing appears to be happening in the pandemic recession. In fact, there's already evidence that employers now are leaning toward preferring master's or doctoral degrees. Although the number of job postings overall has fallen steeply since the pandemic started, there's been a bigger dent in those that call for undergraduate or high school educations than for jobs that require more advanced degrees.<sup>127</sup> At a time when concerns about racial justice and diversity are as pronounced as anxiety about COVID-19, this particularly disadvantages Black and Hispanic Americans, who are less likely to earn bachelor's degrees or higher.<sup>128</sup>

The silver lining? There are lessons evident from these experiences, which in the blur of the gradual economic recovery tended to be overlooked except by workforce policy experts (and the people who had trouble getting jobs they wanted). Now they're front of mind.

## Appendix D: Skills Frameworks in the United States

Standardizing job skills is not a new idea. In the U.S., the National Skills Standards Act of 1994 was meant to create a National Skills Standards Board that would create universal standards for job skills. It was passed in 1994. Eight years later, the board was still soliciting comments about how to create these standards. It gave up and stopped convening in 2002.<sup>129</sup>

Another big federal effort to address these issues was the Workforce Innovation and Opportunity Act, which in 2014 replaced the Workforce Investment Act of 1998. The WIOA built on the work of its predecessor, creating Workforce Development Boards made up of representatives from business to track and respond to labor and demographic trends and tasking One Stop centers to help people find jobs. But Congress wanted these boards to use technology to more nimbly track workforce needs and supply the training people needed to get available jobs. Years later, that plan was still mired in the bureaucracy of a program accountable to three different federal departments — labor, education, and health and human services — with sometimes overlapping or conflicting reporting requirements and limits on data-sharing among the state agencies that administer the services.<sup>130</sup>

Meanwhile, funding for programs that now fall under the WIOA has been reduced by 25 percent since 2009, when adjusted for inflation.<sup>131</sup>

Even with federal help, skills frameworks are best defined locally in the United States, as workplace needs are different from one region to another. "You can do this centrally in Singapore or New Zealand but not most other countries," said Santosh Mehrotra, a human development economist, professor of economics at the Centre for Informal Sector and Labour Studies at Jawaharlal Nehru University in India, and a member of the Strada-Lumina working group. However, there is a way to accomplish similar goals using the policy tools on hand in the U.S. context. Other sectors have managed to find common languages, the Chamber of Commerce Foundation notes. The system of consumer credit, for example, depends on merchants, banks, and credit card companies all communicating faultlessly.<sup>132</sup>

In the diversity of the American marketplace, skills frameworks are best defined regionally, with local intermediaries driving this work.

## Endnotes

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