Practical Guidance for Aligning Career Pathways to Labor Market Data in the Time of COVID-19

Introduction

A marker of a high-quality career pathway is its alignment to high-skill, high-wage, in-demand occupations, as evidenced by state, regional and/or local labor market information (LMI). Such alignment is a win-win proposition — it ensures that learners have the greatest opportunities waiting from them after completing their career pathways and that industry can find the talent it needs to thrive. It is therefore no surprise that in recent years states and local institutions have increased their focus on ensuring strong alignment between their career pathways and labor market demand to meet the dual purposes of supporting learners and industry. These efforts have been further amplified and accelerated by the Strengthening Career and Technical Education for the 21st Century Act (Perkins V), which includes several new requirements aimed to advance such alignment.

Many states and communities now have systems in place to regularly consult LMI and have developed criteria for identifying high-skill, high-wage and in-demand occupations.[1] States and regions have also encouraged and supported local leaders and practitioners in accessing LMI by providing user-friendly websites or tools. State and local leaders, such as state agencies, mayors' offices and local workforce boards, have been working to convene

*A **career pathway** is a progressive sequence of at least three courses that is aligned to a high-skill, high-wage, in-demand occupation; spans secondary and postsecondary; reinforces academic learning with related work-based learning experiences; and embeds opportunities for students to earn both related postsecondary credit in a degree-granting program and industry-recognized credentials.*

stakeholders, review data, and make determinations about the fit of current career pathways to the labor market and whether modifications to career pathway offerings are needed.

These efforts, which aim to instill confidence in the quality and economic returns of career pathways, were struck with uncertainty in 2020, as the COVID-19 (coronavirus) pandemic caused an economic crisis and major disruptions to the workforce and labor market.

ADVANCE CTE
State Leaders Connecting Learning to Work

ESG Education Strategy Group
ACHIEVING GREATER IMPACT

NEW SKILLS READY NETWORK

In just a matter of months, from February to April 2020, the pandemic drove the United States unemployment rate up from 3.5 percent to 14.7 percent, with individuals of color, women and other marginalized individuals disproportionately affected.[2] As summer turned into fall, the unemployment rate lurched downward to 6.7 percent in November — a significant improvement, but one that masks vastly discrepant effects on different sectors of the economy and across race, age and education levels.[3] By the end of 2020, almost 70 million Americans, or about 40 percent of the labor force, had filed for unemployment benefits during the pandemic.[4] There is ongoing discussion and analysis of which jobs will come back and what those jobs will look like when they do come back.

The crisis raised complex questions for those responsible for developing and supporting career pathways that aim to prepare learners for further education and family-sustaining careers, such as: What can we expect? Has this crisis changed the economy for good? How can we equitably prepare learners for the evolving economy? Can and should we trust what labor market projections are showing in a time of constant upheaval?

This brief draws from current research and interviews with leaders from across the country. It aims to provide practical advice for state and local leaders on how to design and support the career pathways that best prepare learners for resiliency and lifelong success, while continuing to meet industry's needs.

What the Research Says

Even before the pandemic, the United States economy was undergoing a strong shift — what some call the Fourth Industrial Revolution.[5] Digital technology was disrupting and changing systems at a pace never seen before. Artificial intelligence (AI), e-commerce, automation and the demand for virtual work skills were already affecting the job market and overall economy. The virus has simply intensified their influence.
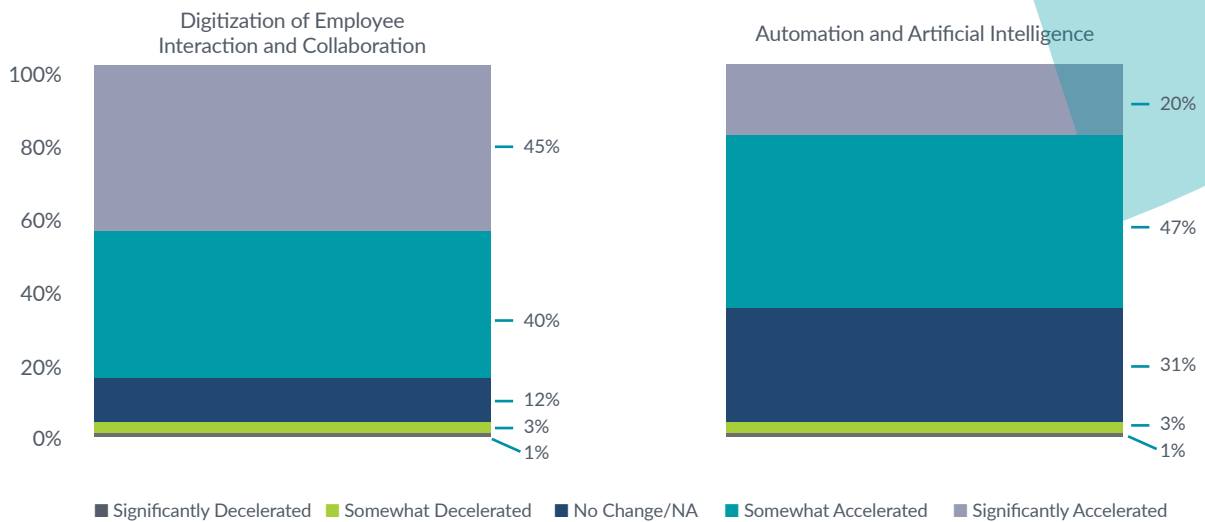
As states and communities assess their existing career pathways and any plans to develop new ones, the current research points to two major themes:

- The increasing importance of foundational and transferable skills that can apply across all industries and occupations; and

- The continuation of pre-coronavirus trends — but at an accelerated pace.

Equity Implications of Digital Skills

Thirty-one percent of American workers today have limited or no digital literacy skills, and workers of color are disproportionately affected by digital literacy skill gaps. Among Black workers, 50 percent have limited or no digital literacy skills, and 57 percent of Latinx workers have limited or no digital literacy skills. As state and local leaders attend to these critical skills, they must do so with an equity lens to ensure that they are reaching and supporting historically marginalized learners.[6]

Digitization of Employee Interaction and Collaboration

- 45%
- 40%
- 12%
- 3%
- 1%

Automation and Artificial Intelligence

- 20%
- 47%
- 31%
- 3%
- 1%

■ Significantly Decelerated ■ Somewhat Decelerated ■ No Change/NA ■ Somewhat Accelerated ■ Significantly Accelerated

The Importance of Foundational and Transferable Skills

One clear finding from the research is the increasing importance of skills that can ensure resiliency and adaptability in the workplace. There is a large research base around the competencies that are increasingly demanded and valued in the workforce. An analysis completed pre-pandemic found that the top in-demand cognitive competencies were (1) communication, (2) teamwork, (3) sales and customer service, (4) leadership, and (5) problem solving and complex thinking, with communication having the highest demand across all occupations.[7]

Similarly, research by Burning Glass and the Business-Higher Education Forum identified a set of foundational skills that will be critical to workers' success in the new digital economy:

- *Human skills:* Critical thinking, creativity, communication, analytical skills, collaboration and relationship building;

- *Digital building block skills:* Analyzing and managing data, software development, computer programming, and digital security and privacy; and

- *Business enabler skills:* Project management, business process, communicating data and digital design.[8]

Importantly, these foundational skills are at low risk of automation and therefore are of particular importance for learners to gain through their career pathways to ensure resiliency in the workforce.

While these studies preceded the coronavirus, there are strong reasons to believe these skills will be only more valuable going forward, especially the focus on digital skills. Digital skills are both cognitive and technical, and they are increasingly necessary for carrying out work tasks. Remote work practices such as the use of online meeting and collaboration tools

> "I can't even answer whether we need to pivot right now, but we'll have conversations based on the data, and discuss whether the changes are temporary or permanent."
>
> *State Leader*

and effective online communication have become common and will likely continue to be standard practice.[9] Digital skills are also vital for success in both college and careers.[10] Applying to and attending postsecondary programs now requires digital skills, as does searching, applying and even interviewing for jobs. The pandemic has made clear that those without these skills and access to technology are disadvantaged as never before, which is why it is so critical that all individuals have "the awareness, skills, agility, and confidence to be empowered users of new technologies and adapt to changing digital skill demands."[11]

The Continuation of Trends — With Some Acceleration

What has not changed during the coronavirus pandemic are long-term job projections and the trend toward automation. In just the past 50 years, there has been a sharp shift from blue-collar employment (down from 40 percent of American workers in 1970 to 21 percent in 2019) to professional and technical occupations (from 27 to 44 percent of employment). This trend is expected to continue. More broadly, the importance and value of education and training beyond high school will only increase in the years to come. One projection predicts that 70 percent of all jobs will require workers to have at least some postsecondary credential or training beyond high school by 2027, an increase from 65 percent in 2017.[12] The same projection predicts that 30 percent of all jobs will require a credential other than a four-year degree.[13]

The occupations projected to grow the most from 2019 to 2029 include those in health care (such as nurse practitioners, occupational therapy assistants and physician assistants) and information technology (due to growing demand for security, digitization and software development), building on the trends from the previous decade.[14]

A growing body of research demonstrates that the pandemic further accelerated shifts to automation. One report found that 44 percent of all work activities have the potential to be automated between 2016 to 2030. In May 2020, McKinsey and Company found that consumer and business digital adoption had advanced five years over just eight weeks at the beginning of the pandemic.[15] This finding was further supported by a survey McKinsey and Company conducted of 800 global employers that revealed that 67 percent of companies have accelerated automation and AI since the beginning of the coronavirus pandemic.[16] This result has great implications for career pathways and which ones will continue to have labor market demand in the future.

How States and Communities Can Move Forward

Given the messiness of real-time labor market data, which may show wild swings in employment within sectors and reflect short-term realities that will eventually ebb once the country returns to its "new normal," using LMI may feel complicated and uncertain. However, it is critical that states and local leaders continue the work of scaling up career pathways aligned with careers that are truly in demand and valued in the economy — and scaling down those that no longer align with good opportunities. With this lens in mind, four major themes emerged from conversations with national, state and local leaders regarding their efforts to ensure that their career pathways and other Career Technical Education (CTE) programs continue to align to their state and local labor markets:

- Remain committed to using labor market data and making data-driven decisions;

- Continue ongoing and regular engagement with key industry and workforce partners to enhance the data;

- Be intentional about how labor market data is communicated; and

- Accelerate efforts to build critical foundational skills across career pathways and to develop career pathways in emerging sectors.

Remain Committed to Using Labor Market Data and Making Data-Driven Decisions

One major takeaway from the interviews and research is to not over-react to the short-term spikes but to consider the data in the context of pre- and post-pandemic trends. While pivoting career pathways based on the short-term data may be tempting, states and communities should do so only when reliable data is driving that decision.

Many states have been using and disseminating LMI to inform career pathways development and implementation for some time, which puts them in a strong position to monitor and weather the current storm. For example, the **Kentucky** Center for Statistics, or KYSTATS, was created in 2012 to house the state's longitudinal data system. The system incorporates data from multiple Kentucky agencies, including labor market data. Starting in 2015, the Kentucky Office of Career and Technical Education partnered with other state agencies, including the Cabinet for Economic Development and the Kentucky Workforce Investment Board, to review all the career pathways in the state for labor market alignment. The process included touring the state to meet with local workforce boards to assess their agreement with the LMI and with school districts to determine alignment between career pathways standards and content and the LMI. By the end of 2018, numerous career pathways were modified or phased out, and 100 percent of career pathways were aligned with high-skill, high-wage and in-demand occupations.[17]

This prior work on data-driven program review positioned Kentucky well for the uncertain times of the pandemic. The state has a one-stop shop for data sources and processes in place to determine if changes are needed to career pathways and what those changes should be. Leaders are now consulting the data on a monthly basis and will stay the course of supporting and funding only those career pathways identified as aligned to good careers until the data directs them otherwise.

In **Michigan**, the Bureau of Labor Market Information and Strategic Initiatives (BLMISI), which is part of the state's Department of Technology, Management, and Budget, has also made labor market data accessible for some years. BLMISI provides an online, annual "Ten-Year Regional Career Outlook" and monthly "Job Demand Snapshots" for each of the state's Prosperity Regions. BLMISI contracts work with CTE leaders from the individual regions to help interpret and analyze the data. The data has been an important component of state-level approval of new career pathways. Like Kentucky, Michigan is not yet seeing dramatic shifts in the data that might prod changes in career pathways going forward. Rather, it is seeing an affirmation of where the state needs to support CTE pathways. The state's priority industry sectors — agriculture, construction, energy, health care, information technology and manufacturing — have remained the same.

South Carolina has been reviewing its LMI and enrollment data with an eye toward equitable participation and outcomes. For example, having reviewed its enrollment in science, technology, engineering and math programs, which is nearly 80 percent male and about two-thirds White

> **"We are definitely dipping into the data more frequently than ever before"**
>
> *State Leader*

learners at the secondary level, the state has expanded its credential offerings to provide more options for learners. South Carolina is also in the process of conducting a landscape report focused on computer science, reviewing the past five years of enrollment data, outcome data and labor market demand to identify strategies for increasing the pipeline in high school career pathways for female, Black, Latinx and other historically marginalized populations.

Regularly Engage Key Industry and Workforce Partners to Enhance the Data

Even absent the current uncertainty, LMI is not always completely reliable and comprehensive, which is why it is critical for career pathways leaders to engage stakeholders and partners to understand the full picture. Having regular engagement with key partners provides opportunities to not only fill in gaps but also ensure that all stakeholders are on the same page regarding how the LMI can and should be used in the short term, particularly at the regional or local level.

Kentucky has multiple venues for incorporating the knowledge and expertise of industry partners into decision making on career pathways. The Kentucky Workforce Innovation Board provides regular input and updates, even more so during the pandemic. The state has also established Business and Education Alignment Teams that meet annually. There are currently teams for 11 different industry areas (agriculture, automotive and transportation, business and marketing, computer science/information technology, construction, engineering/aviation, family consumer sciences/teaching and learning, health science, law and public safety, manufacturing and media arts). The teams include national and regional business and industry representatives and instructors, who review the career pathways being offered in their field as well as career pathway content, curricula and related certifications to ensure relevance to the labor market and raise awareness about shifts in competencies or technical knowledge needed.

In **South Carolina**, regions completed their Comprehensive Local Needs Assessment (CLNA) for Perkins V in April 2020 with the original intent that the CLNAs would serve as maps for career pathways programming for the following two years.[18] However, the South Carolina Office of Career and Technical Education decided to re-engage the state's 12 regions to see if the pandemic was necessitating any revisions and hired a new business and industry liaison — in partnership with the Department of Employment and Workforce — to help facilitate those discussions. A number of regions revamped their career pathways and supports based on updated data and input from their industry and workforce partners. Rock Hill Schools, for example, decided to add a drone remote pilot certification program, which is a new four-course career pathway, as well as an aerospace career pathway after re-engaging in the CLNA process and reviewing data with an eye toward recession-proof opportunities. The state has also decided to expand its health science offerings to add a program in public health in response to the pandemic and robust interest from both learners and industry partners.

Be Intentional About Communicating Labor Market Data

As the local workforce intermediary based in **Indianapolis, Indiana**, EmployIndy aims to increase access to and success in career pathways for Marion County residents, while supporting employers' talent needs. In this role, EmployIndy has a history of providing labor market studies and reports on key sectors. The current focus, in light

> **"The trends will be similar, but the stories behind the trends will be different. … [LMI] is an art rather than a science."**
>
> *Local Workforce Leader*

of the coronavirus pandemic, is to build out the data tools and capacity to make the information as actionable as possible to both industry and education partners. From the partners' perspective, the labor market data collected last year — through a variety of national and state sources — was not particularly useful and sent mixed messages about the long-term career opportunities in the region and state. As such, EmployIndy has invested in its internal capacity to collect LMI and conduct its own research to better communicate what the LMI says with regards to the changes in the jobs themselves and the competencies demanded within those jobs.

By starting with the data and then engaging employers and other key partners, EmployIndy plans to add more nuance and explanation to the data, enabling the organization to help both education and industry partners better leverage the data to support learners, career pathways development, hiring and training.

Accelerate Efforts to Build Critical Foundational Skills and Emerging Career Pathways

Even before the pandemic, many efforts were underway to develop and strengthen career pathways in digital career fields, as well as to better incorporate digital skills across all career pathways. For example, **South Carolina** was spurred to pursue new career pathways in AI fields by a recent report showing high workforce exposure to AI in South Carolina relative to other states.[19] Thus, South Carolina is developing an AI-focused career pathway that can be piloted as early as the 2021-22 school year. But because AI potentially spans all Career Clusters®, the state is also exploring how to add content and instruction in AI to all career pathways.

As another example, **Kentucky** has an existing career pathway in automation engineering, which has not been widely offered across the state. Now, the Department of Education is collecting job-posting data for automation engineers across

> "Production operator is on our list of top occupations and has been in demand for a long time. ... [T]he change is what that operator does today versus five years ago and in the future."
>
> *Local Workforce Leader*

Kentucky to share with the Workforce Innovation Board and industry partners to determine if and how the program should be scaled.

Final Thoughts

2020 was a time of great upheaval in the nation's economy. It is still unknown to what degree some of the shifts seen in industries and workplaces — where people work and how they work — will be temporary or permanent. Still, the research and individuals consulted for this brief offer a steady path forward. State and local leaders should:

- Continue to **make data-informed decisions** about which career pathways to build and support and which ones to transform or phase out. In the face of major economic upheaval, while responding to real-time changes may be tempting, focusing on the longer-term trends and consulting multiple data sources and stakeholders are critical. This is a key time to focus on those career pathways in sectors that will reliably provide good opportunities for learners and scale down the career pathways aligned with jobs that were hard hit in the pandemic and are unlikely to return.

- **Address equity within any LMI tools, supports and decisions.** As states and institutions invest in their labor market systems and platforms, presenting the data with an equity lens is critical to better inform investments and arm

learners with actionable information. For example, learners and other key stakeholders should be able to understand the value and outcomes of career pathways offered within their communities, such as job placement and wages, and how those outcomes might differ based on a learner's race or ethnicity, gender, educational background or other demographics.

- Take this opportunity to **streamline existing labor market data** to make it more usable and accessible for policymakers, local partners, instructors and learners themselves. Many states and communities draw on multiple sources, and this is an ideal time to build consensus over which LMI is trusted and how it will be used within and across regions. *New Skills ready network* sites Indianapolis, Indiana, and Dallas, Texas, are both undertaking efforts to streamline multiple LMI sources into a more coherent model.

- Build **capacity within the system** to improve labor market data literacy. With the complexities of labor market data and increased frequency of the data being reviewed at the state, region and community levels, leaders at all levels — including counselors and advisers — need a better understanding of what they are looking at and how they should interpret the data to best support learners.

This resource was developed through JPMorgan Chase & Co.'s *New Skills ready network*, a partnership of Advance CTE and Education Strategy Group.

New Skills ready network, launched by JPMorgan Chase & Co. in 2020, bolsters the firm's efforts to support an inclusive economic recovery, as part of both their $350 million, five-year New Skills at Work initiative to prepare people for the future of work and their new $30 billion commitment to advance racial equity. Advance CTE and Education Strategy Group are working with sites to improve student completion of high-quality career pathways in six US communities.

The six *New Skills ready network* sites are: Boston, Massachusetts; Columbus, Ohio; Dallas, Texas; Denver, Colorado; Indianapolis, Indiana; and Nashville, Tennessee. These sites are formulating new partnerships between local school systems, higher education, employers and government entities to develop pathways and policy recommendations that give underserved students access to higher education and real-world work experiences that lead to high-wage, in-demand jobs.

Acknowledgments

[1] See Advance CTE's 2020 *Aligning to Opportunity* report for information on how various states have defined these terms and the data sources they are using and disseminating to measure the alignment of local programs. https://careertech.org/resource/aligning-opportunity

[2] U.S. Bureau of Labor Statistics. (2020, May 8). *Employment situation news release* [Economic news release]. https://www.bls.gov/news.release/archives/empsit_05082020.htm

[3] U.S. Bureau of Labor Statistics. (2020, December 4). *Employment situation news release* [Economic news release]. https://www.bls.gov/news.release/archives/empsit_12042020.htm

[4] Kelly, J. (2020, December 23). 803,000 A*mericans filed for unemployment last week: 70 million sought unemployment benefits since the pandemic.* Forbes. https://www.forbes.com/sites/jackkelly/2020/12/23/803000-americans-filed-for-unemploy-ment-last-week-70-million-sought-unemployment-benefits-since-the-pandemic/

[5] Schwab, K. (2016). *The Fourth Industrial Revolution: What it means, how to respond.* World Economic Forum. https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/

[6] National Skills Coalition. (2020). Applying a racial equity lens to digital literacy. https://www.nationalskillscoalition.org/wp-content/uploads/2020/12/Digital-Skills-Racial-Equity-Final.pdf

[7] Carnevale, A. P., Fasules, M. L., & Peltier, K. (2020). *Workplace basics: The competencies employers want. Georgetown University Center on Education and the Workforce.* https://cew.georgetown.edu/cew-reports/competencies/

[8] Burning Glass & Business Higher-Education Forum. (2018). *The new foundational skills of the digital economy: Developing the professionals of the future.* https://www.burning-glass.com/wp-content/uploads/New_Foundational_Skills.pdf

[9] Burning Glass & ExcelinEd. (2020). *Credentials matter COVID-19 case study: Examining the effect of the COVID-19 pandemic on career and technical education and associated industry credentials.* https://www.burning-glass.com/wp-content/uploads/2020/09/Credentials-Matter-Phase-2-Report-COVID-19-2020.pdf

[10] Bergson-Shilcock, A. (2020). *The new landscape of digital literacy.* National Skills Coalition. https://www.nationalskillscoalition.org/wp-content/uploads/2020/12/05-20-2020-NSC-New-Landscape-of-Digital-Literacy.pdf; Digital US Coalition. (2020). *Building a digitally resilient workforce: Creating on-ramps to opportunity.* https://digitalus.org/wp-content/uploads/2020/06/DigitalUS-Report-pages-20200602.pdf

[11] Digital US Coalition. (2020). *Building a digitally resilient workforce: Creating on-ramps to opportunity.* https://digitalus.org/wp-content/uploads/2020/06/DigitalUS-Report-pages-20200602.pdf

[12] Advance CTE. (2020, August 27). *CTE's role in the future of our economic recovery.* https://cte.careertech.org/sites/default/files/webinars/documents/AdvanceCTE_Econ_Recovery_SLSAugust2020.pdf

[13] *Ibid.*

[14] U.S. Bureau of Labor Statistics. (2020, September 1). *Employment situation news release* [Economic news release]. https://www.bls.gov/news.release/ecopro.nr0.htm

[15] Southern Regional Education Board. (2020). *The pandemic's dual threat for vulnerable workers.* https://www.sreb.org/sites/main/files/file-attachments/pandemic_brief.pdf?1609858659

[16] McKinsey Global Institute. (2020). *What 800 executives envision for the post-pandemic workforce.* https://www.mckinsey.com/featured-insights/future-of-work/what-800-executives-envision-for-the-postpandemic-workforce#

[17] Advance CTE. (2018). *New Skills for Youth. Kentucky 2018 snapshot.* https://careertech.org/resource/kentucky-2018-nsfy-snapshot

[18] Advance CTE. (2019). *A guide for state leaders: Maximizing Perkins V's Comprehensive Local Needs Assessment & local application to drive quality and equity in CTE.* https://cte.careertech.org/sites/default/files/Maximizing_Perkins_Local_Needs_Assessment_March2019.pdf

[19] National Alliance for Partnerships in Equity. (n.d.). S*outh Carolina education equity in 2020.* https://napequity.org/wp-content/uploads/South-Carolina-2020.pdf