

TRUST, STRATEGY AND CREATIVITY

Breaking Through Data Barriers in Pathway Design

INTRODUCTION

In communities nationwide, high schools, colleges, and industry partners are coming together around a shared urgency to put young people on a more direct path to college degrees and careers. They're working together to identify the career pathways that provide the most economic mobility, ensure that students take college courses leading to those careers while in high school, and develop work-based learning that gives students hands-on experience.

Creating these pathways requires not only a common vision, but cross-sector data systems that inform decision-making and enable partners to understand ongoing needs, successes and areas for growth. A number of states have invested in high-quality, publicly available data dashboards highlighting metrics across the education-to-workforce pipeline. Yet often, regional partners building accelerated pathways are operating in challenging and siloed data landscapes. Some examples of the data challenges that hinder high-quality pathway development:

- ❑ Labor market data is based on historical data, so future predictions may miss major, emerging labor market demands
- ❑ Industry partners tracking the supply side of the workforce typically do not include high school career technical programs
- ❑ High school and postsecondary partners use separate data systems that aren't designed to communicate or align
- ❑ Educational data systems aren't built to track interim measures that matter such as participation in work-based learning



Yet, when united by a commitment to charting a better path for their youth, and when operating from a foundation of trust, regions are offering rich, diverse examples of troubleshooting such barriers. This brief tells the story of how five regions in the Accelerate ED community are surmounting typical cross-sector data challenges with creative and solutions-oriented approaches. When they hit a wall in their data work, they didn't stop—they strategized.

CREATING IMPERATIVE AND MOMENTUM FOR CHANGE

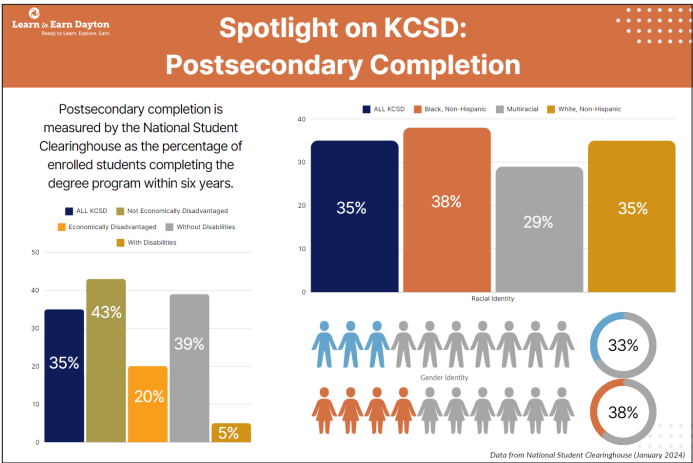
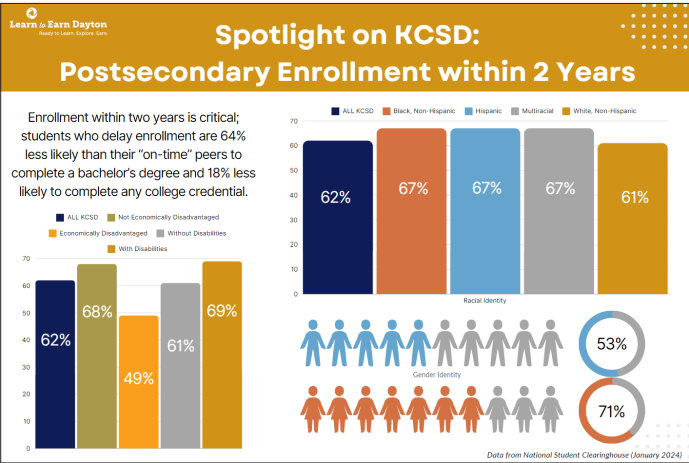
Data storytelling to demonstrate value of programs

THE CHALLENGE: To increase buy-in and unify stakeholders around the region’s Pathways for Accelerated College and Career Experience (PACCE) model, Learn to Earn Dayton facilitated a data walk with Kettering City School District (KCSD) including the superintendent, curriculum director, career navigator, CTE principal, and high school department chairs. Before the data walk, some staff had raised concerns with school leadership about whether a pathways approach was in the best interests of the students and the school district.

THE APPROACH: Learn to Earn Dayton, which tracks key metrics for the Dayton region from cradle to career, set out to present data for the district and allow participants to draw their own conclusions. Learn to Earn Dayton shared a selection of indicators (e.g., postsecondary completion rates) for all districts in the county, and then further disaggregated the data for KCSD. The data walk incorporated occupational demand data for Ohio, wage data by educational level for the state, and KCSD students’ YouScience interest and aptitude results by occupational sector.

THE OUTCOME: The data exercise helped teacher leaders and administrators see the efficacy of and need for the pathway model approach. One teacher leader shared with Learn to Earn Dayton that the data session was the most meaningful professional development they had ever received. Enabling district stakeholders to generate their own conclusions from the regional data—rather than simply telling them what their data was saying—ultimately strengthened buy-in and momentum for pathways that put students on a more direct and supported route to a degree.

One set of data points that surprised participants and sparked productive discussion illustrated the gaps between students’ postsecondary enrollment and postsecondary completion—while 62% of KCSD students were enrolling within two years of high school, only 35% earned a degree within six years, with much lower completion rates for economically disadvantaged students and students with disabilities. Participants hadn’t seen the full picture of which students they were losing across the education and workforce pipeline.



Learn to Earn Dayton used these and other data boards to spark discussion among district stakeholders about which students they are losing across the education and workforce pipeline, and how to serve them better.

Strategically selecting and prioritizing pathways

THE CHALLENGE: Leaders at ElevateEdAZ, an initiative of the Greater Phoenix Chamber Foundation, knew that to truly put the region’s young people on a path to greater prosperity, they had to invest only in the education pathways leading to occupations with strong wages and growth. Yet they also knew that historically, high school CTE programs of study had not always been identified based on alignment to high-wage, high-demand jobs.

THE APPROACH: To address this mismatch as they embarked on a major expansion plan, ElevateEdAZ evaluated its data collection, sharing, and reporting practices to frame a new approach that was both meaningful and achievable. To understand which career pathways offer the most return on investment for both students and the regional economy, ElevateEdAZ took the long view of looking at different criteria to inform pathway selection. ElevateEdAZ focused on specific occupations, rather than industries, to develop a new landscape analysis that identified occupations that pay 80% of average wage and have long-term projected growth—10% over the next 10 years. ElevateEdAZ will use these criteria to reevaluate pathways annually, and is determining whether they can switch from sourcing district data to accessing state data to ensure variables and data reporting elements from different school districts are standardized.

THE OUTCOME: In this work, ElevateEdAZ is using forward-looking data to frame the often difficult conversations about phasing out longtime pathways that aren’t benefiting students. One example from the landscape analysis: the Arizona Department of Education promotes a dental assisting program of study, which leads to an occupation with high growth but not high wages, with the mean hourly wage at \$23.19—below the 80% threshold. On the other hand, dental hygienist, which requires slightly higher educational requirements, reflects high growth and high wages yet is not a program offered by the department. ElevateEdAZ plans to advocate for the development of a dental hygienist program of study as “the long-term economic benefits for the student can be life-changing.”

Example from ElevateEdAZ Landscape Analysis: Targeted Occupations by ElevateEdAZ Career Pathways

EEAZ CAREER PATHWAY: HEALTH SCIENCES				
EEAZ Supported CTE POS	Targeted Occupation (SOC)	Annual Mean Hourly Wage	Overall Occupation Demand	10 Yr Projected Overall Change (2022-32)
Bioscience/ Biomedical	Clinical Lab Technician (29-2010)	\$30.97		27.2%
	Epidemiologist (19-1041)	\$31.49	Limited	34.8%
	Biomedical Engineer (17-2031)	\$59.12	Limited	39.1%
	Biological Technician (19-4021)	\$25.84	Limited	16.8%
Emergency Medical Technician	Paramedic (29-2043)	\$24.36		24.1%
Nursing	Licensed Practical Nurse (29-2061)	\$32.58		28.7%
	Registered Nurse (29-1141)	\$44.49		24.0%
Sports Medicine	Athletic Trainer (29-9091)	\$32.71	Limited	24.7%
	Physical Therapist Assistant (31-2021)	\$29.00	Limited	52.1%
	Physical Therapist (29-1123)	\$48.24		33.9%
	Occupational Therapist (29-1122)	\$45.53		31.8%

For each CTE program of study, the landscape analysis zoomed in on occupations to examine their wages and projected growth. One result was that ElevateEdAZ eliminated its pathway ending in an EMT credential due to low wages and is revamping the EMT pathway to lead to a paramedic position. Full details are available in the landscape analysis.

“Our biggest challenges will be phasing out programs of support and how that will be received at schools and districts in our network. We believe the process of developing the landscape analysis will mitigate some of that risk,” said Jennifer Mellor, Chief Innovation Officer at the Greater Phoenix Chamber Foundation. The full ElevateEdAZ team spent time thoroughly reviewing the landscape analysis and related impacts from some of the key decision points to build organizational buy-in for how they selected the pathways they are supporting, why they are not supporting others, and a communications plan on how these changes will be rolled out with schools and districts.

BRIDGING THE GAP BETWEEN PARTNERS THAT GENERATE DATA AND THOSE THAT NEED IT

Progress monitoring for continuous improvement

As the engine for career-connected learning for public school students in New Orleans, YouthForce NOLA knows the importance of gathering data to inform strategy and improve programming. YouthForce NOLA compiles data on career-connected learning experiences on its checklist, including career exposure, soft skills development, dual enrollment, industry-based credential attainment, internships, and professional networking. “Everything we do with data feeds into longitudinal analysis that allows us to understand student outcomes and continuously improve programming,” said Alicia Dagostino, Director of Impact Evaluation at YouthForce NOLA. “We really want to know if what we’re doing now, those career-connected learning activities, are leading to that vision of having public school New Orleans grads in high-wage and high-demand jobs. How we get there is through progress monitoring.”

THE CHALLENGE: YouthForce NOLA faced three big challenges common to cross-sector data collaboration: data privacy laws, hesitation to opt in from stakeholders, and incomplete data. But what isn’t common is how YouthForce NOLA persisted in overcoming these barriers, leaning into strong relationships and a shared commitment to complying with data privacy considerations.

THE APPROACH: When partners are hesitant in sharing data, Dagostino probes with partners about what they are comfortable sharing, and often they can provide a proxy analysis or other aggregated data to advance shared goals for student success.

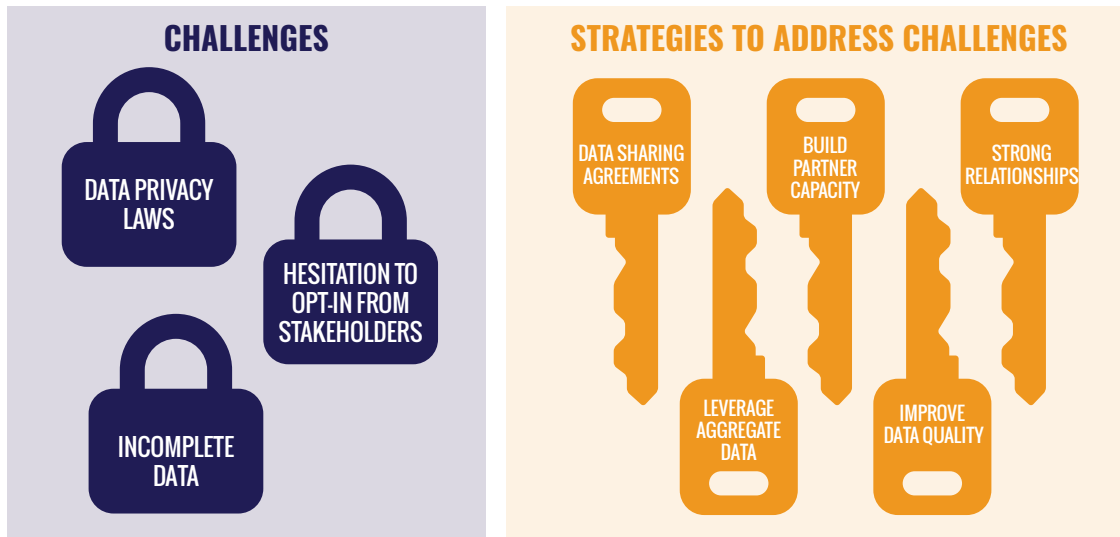
One example of a productive shift: YouthForce NOLA pivoted from obtaining student-level data on dual enrollment and employment outcomes to improving data quality in state systems so agencies can run these reports to provide all stakeholders—including the Louisiana Department of Education, New Orleans Public Schools, individual schools and training providers, and YouthForce NOLA—with reliable, accurate data sets. With partners at the Louisiana Department of Education and Louisiana Board of Regents, YouthForce NOLA established a twice-yearly data flow cadence to match Board of Regents data on dual enrollment participation and completions to student transcript data that reveals participants’ school and grade level.

YouthForce NOLA Career-Connected Learning Checklist

- ▣ Career Exposure
- ▣ Soft Skills
- ▣ Industry Credentials
- ▣ College Credits/Dual Enrollment
- ▣ Internships
- ▣ Professional Networks



THE OUTCOME: Critically, YouthForce NOLA invests in building partner capacity to use their data to optimize resources and advance career-connected learning. A working group convened by YouthForce NOLA has supported the development of comprehensive relationships. YouthForce NOLA acts as a trusted partner that streamlines data in an accessible way and advises schools to make data-informed decisions that unlock financial resources from the state. Last fall, YouthForce NOLA launched a Pathway Data Working Group of school leaders to give feedback on and use a set of planning tools that guide leaders in leveraging historical and current data to increase the number of students in dual enrollment and advanced credential pathways each year.



YouthForce NOLA identified three major barriers “locking” their access to data to improve strategy and programming, and the keys they used to unlock them.

Influencing behavior of key individuals in the education enterprise

THE CHALLENGE: With employers and training partners, Colorado Succeeds has been tackling the talent shortage in Colorado’s construction and skilled trades sector by developing a comprehensive, streamlined pathway to good jobs in the construction industry. A key partner, Careers in Construction Colorado (CICC), is tasked with expanding construction career preparation and work-based learning in high schools statewide. To meet the goal of filling more than 30,000 Colorado construction trades jobs by 2030, CICC needs to expand programming across the state with both high schools and employers. And to do that, CICC needs to be armed with a deep understanding of its program outcomes to make the case to learners, families, and employers.

THE APPROACH: Colorado Succeeds’ data work with CICC set out to track participants’ postsecondary outcomes and better understand their wage and employment outcomes. “Without an overall belief and culture around data, or effective process and tools to collect and analyze data, it would be nearly impossible for all partners involved to understand the true benefits of training programs like CICC in setting up young people for success as they embark on their postsecondary or career journey after high school,” said Madison Knapp, Director of Implementation at Colorado Succeeds. Colorado Succeeds published insights from the construction pathway data work in [a brief](#) to inform other pathways efforts as well as the development of the state’s Statewide Longitudinal Data System.

In its graphic below, Colorado Succeeds illustrates how understanding wage and employment outcomes of the construction pathway benefits all stakeholders. Students and families gain awareness of the long-term potential of careers and pathway options. Workforce training providers at both the high school and postsecondary levels are able to celebrate their impact on participants' careers while identifying opportunities for continuous improvement. State agencies and advocacy organizations can pinpoint what's working and advance effective policy.



To support CICC expanding programming across the state with both high schools and employers, Colorado Succeeds developed and piloted a graduate tracking system for CICC that included a new alumni survey protocol to collect employment and retention data, internal data collection processes with three new data tracking tools, alumni engagement strategies including incentives, and the development of data sharing agreements and privacy protocols. The work involved building a culture of trust around data collection and use and clear communication about the data's purpose and value. Colorado Succeeds also leveraged multiple existing state data sources (Department of Labor and Employment, Community College System, Department of Higher Education) so not everything had to be built as “new.”

THE OUTCOME: In implementing the tracking system, the partners noted these insights and lessons:

- ▣ **Effectiveness of incentives:** Offering instant gift cards significantly boosted participation.
- ▣ **Program insights:** A strong majority of graduates have either entered the construction workforce or pursued further education in the trades, reinforcing the program's impact.
- ▣ **Student feedback:** Many alumni expressed gratitude for the hands-on experience they gained, noting that it set them apart in job interviews and helped them secure employment quickly.
- ▣ **Engagement upticks:** Since launching the survey, CICC has seen increased alumni interaction and interest in staying connected with CICC, and will formalize alumni engagement using the new database.

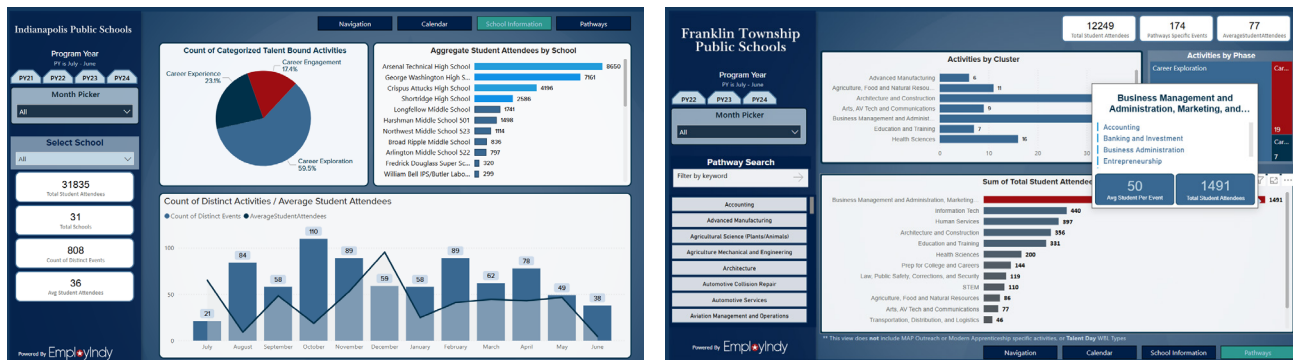


Informed decision-making by multiple stakeholders

THE CHALLENGE: In its role brokering career-connected learning in the Indianapolis region, EmployIndy sought to empower its partner school districts with tools to understand the scale and impact of their programs and foster more effective employer collaboration. EmployIndy's career-connected learning initiative, Talent Bound, identifies a continuum of work-based learning activities, such as talent talks, mock interviews, and modern apprenticeship. But many of its school partners lacked the tools and capacity to effectively measure and track their career-connected learning activities. Without clear metrics and a standardized system for recording participation and outcomes, schools struggled to capture the full impact of their career-connected learning programs. That made it difficult for them to evaluate the success of their initiatives or share meaningful data with external partners, including employers and funders.

THE APPROACH: The focus of EmployIndy's data work was twofold: It focused on refining EmployIndy's internal data systems to better integrate career-connected learning data, such as improving its business intelligence and data systems to manage, extract, visualize, and share data more effectively. The EmployIndy team tackled initial technical limitations and developed solutions for collecting and visualizing key program outcomes, employer engagement, and student participation across various school districts.

Then, critically, EmployIndy set out to create tailored data dashboards for school districts that measure real-time metrics on different types of work-based learning along the continuum and make it easier for school leaders to identify areas for improvement and expansion. The dashboards provide detailed insights into career pathways, student participation, and employer engagement, supporting schools in monitoring the effectiveness of their career-connected learning initiatives. EmployIndy collaborated closely to ensure that the data provided were useful to school administrators and CTE leaders, incorporating continuous feedback loops and offering ongoing training on both technical use and interpreting data for program improvement.



EmployIndy developed customized dashboards for partner school districts so school leaders could more easily identify areas to improve and expand their work-based learning programs.

THE OUTCOME: In reflecting on lessons learned from the project for other organizations enhancing their data systems, EmployIndy emphasized a focus on impact and collaboration: Ultimately, the true measure of any data system's success is the impact it has on the intended beneficiaries. For EmployIndy, this means not only improving career readiness and educational outcomes for students but also strengthening partnerships with schools to ensure shared commitment and meaningful integration of data-driven strategies.

LESSONS LEARNED: TRANSFORMING DATA CHALLENGES INTO OPPORTUNITY

- ✓ **Strong data collaboration is built on trust and relationships.** When asked if their top data development priorities center on the technology, the data or the people, Accelerate ED communities overwhelmingly said they are focused on the people and creating a strong data culture across their organization, region, and state. Continuous relationship building takes time and is not always perceived as a direct part of data work, but leaders across these five sites emphasized their work could not happen without establishing a common purpose for data collection and sharing, building a culture of trust, and adding value through helping partners use the data well.
- ✓ **Tackle what is realistic.** Sites scaffolded their data work, so that if they couldn't do it all, they were able to garner significant wins that move toward their goals and leverage existing systems in new ways. For example, when YouthForce NOLA hit roadblocks in establishing a student-level data sharing agreement, they pivoted to strategies for incorporating meaningful aggregate state data alongside the student-level data YouthForce NOLA could collect or access.
- ✓ **Think expansively about what roles different types of data play.** Colorado Succeeds found that while training providers were eager for scalable solutions like datasets that provide employment data across all graduates, this work also revealed the need to activate their alumni network and conduct outreach to graduates. While a dataset may reveal graduates' employment status, outreach from the agency reinforces its relationships with graduates and surfaces additional insights about where graduates are working, their job retention, and their degree of satisfaction and belonging in their job.
- ✓ **Identify processes others can replicate.** One challenge leaders identified was turnover among partners and the ongoing need to reorient new stakeholders to the data culture of the region. These five Accelerate ED sites have not only forged an infrastructure for cross-data collaboration, but developed tools and processes that document it. ElevateEdAZ pointed out that bringing together diverse thinkers on which pathways they will continue to support is a task that other communities will likely face as they scale. ElevateEdAZ built consensus through multiple meetings focused on the selected pathways and the affected ones, creating a collaborative document where each director could view, comment, and share in the project meetings, creating a blueprint for how to evaluate the program for the next year.

Acknowledgments

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About Accelerate ED

Accelerate ED has brought together two dozen teams of regional stakeholders to design accelerated pathways leading to high-value degrees and careers in the local economy. These pathways enable high school students to take, at minimum, a semester of college courses related to a high-wage, in-demand career of their interest. Each team is coordinated by a regional intermediary that provides the backbone for coordination and scale. Teams went through a Blueprint design sprint to assess community needs, gather student and family voices, and design and plan a regional pathway strategy, setting a foundation for cross-sector coordination and trust that enabled the data collaborations described here. Accelerate ED is funded by the Gates Foundation and managed by Education Strategy Group.