



K-12



POSTSECONDARY



WORKFORCE

THE STATE OF CAREER TECHNICAL EDUCATION: IMPROVING DATA QUALITY & EFFECTIVENESS

Executive Summary

Career Technical Education (CTE) is a priority of nearly every governor, and many state policymakers recognize that it is a critical strategy to expand access to opportunity and train the workforce of the future. But as CTE continues to gain recognition and priority within the states, state leaders must improve the quality and effectiveness of their CTE data to demonstrate impact, improve the quality of their programs, and ensure equitable access to high-quality opportunities.

At this moment, states have a lot of room for improvement. Less than half of State CTE Directors say their CTE data systems provide the information they need to assist in making decisions about CTE program quality and initiatives at both the secondary and postsecondary levels. Having access to this information should be an urgent priority for states. With growing attention and investments in CTE, State Directors will face new pressure to be transparent and demonstrate impact. They – and other CTE stakeholders – must have confidence in their data to make informed decisions about CTE.

In fall 2018, Advance CTE conducted a survey of State Directors to understand the quality and effectiveness of career readiness data. The survey was conducted in partnership with the Data Quality Campaign; the Workforce Data Quality Campaign, a project of the National Skills Coalition; Education Strategy Group; and the Council of Chief State School Officers. It was generously funded by JPMorgan Chase & Co. through the New Skills for Youth initiative. A total of 51 State Directors responded to the survey, representing 48 states, two territories and the District of Columbia.

The survey illuminated shortcomings across state CTE data systems and lends new urgency to states' efforts to improve data quality and use. The survey found that:

- **States are hesitant to use their data for high-stakes decisionmaking.** The most common use of career readiness data across a variety of measures is to inform technical assistance to local programs and institutions or inform program improvement efforts. Using data to provide targeted support to local institutions is certainly a best practice. However, the survey shows that states are opting for a "carrot" rather than a "stick" approach when it comes to program improvement. While 71 percent of State Directors report using two or more measures of career readiness to inform technical assistance and program improvement at the secondary level, only 43 percent report using at least two measures to transform or phase out CTE programs. At the postsecondary level, 57 percent of states report using two or more measures of career readiness to inform technical assistance and program improvement, whereas only 35 percent report the same for transforming or phasing out programs. This finding indicates that states either are not maximizing their data to hold local institutions accountable for learner success or do not trust the quality of their data enough to make high-stakes decisions.

- **CTE data systems are not aligned across the secondary, postsecondary and workforce sectors.**

CTE sits at the intersection of secondary education, postsecondary education and the workforce — yet each sector often operates in its own silo. All too often, states use different data systems, measures and collection cycles for these sectors, even when they serve the same population of learners. Alignment is strongest at the secondary level, but even in that sector only 49 percent of State Directors report that their CTE data systems are mostly or fully aligned with secondary data systems. Twenty-eight percent of State Directors report that their CTE data systems are mostly or fully aligned with postsecondary data systems, and only 18 percent report the same for workforce data.

As State Directors are increasingly called on to align and embed CTE within cross-sector career pathways, there will be an urgent need to improve and align data systems to better monitor and evaluate learner outcomes. According to State Directors, the barriers to improving data systems are more a function of technology than leadership and political will. Eighty-eight percent of State Directors report that separate data systems or inconsistent definitions are a major barrier to alignment. Establishing cross-sector data sharing partnerships requires time, money and commitment across state agencies, but it can pay off immensely by improving the reliability and validity of data, reducing the reporting burden on local institutions, and providing better access to information across sectors.

- **Many states rely on self-reported measures of career readiness and do not often use rigorous validation processes.**

This report examines four primary measures of career readiness: completion of a work-based learning experience; attainment of a recognized postsecondary credential, including industry-recognized credentials and postsecondary degrees; completion of dual or concurrent enrollment; and successful transition to further education, employment or the military. A handful of states have adopted rigorous processes to collect and validate these measures. For example, 12 percent of states collect credential attainment data for secondary students directly from credential providers, and 10 percent of states do so for postsecondary students. But many continue to rely on outdated or unreliable methods. At the secondary level, 61 percent of states use student surveys, which have notoriously low response rates and are difficult to validate, to identify whether learners secure post-program employment. Thirty-three percent use the same method at the postsecondary level.

That said, several states have successfully restructured and improved their data systems, putting in the time and effort to secure meaningful partnerships, collect and validate high-quality data, align data systems across sectors, and leverage career readiness data to transform career pathways and improve outcomes for young learners. Their examples are highlighted throughout this report to provide a roadmap for other states.

The survey lends new urgency to states' efforts to improve data quality and use.

Executive Summary

At this point in time, State Directors do not have enough confidence in their data to use them in making decisions about data quality and other initiatives. But states have cause for optimism. With the reauthorization of the Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV) – retitled the Strengthening Career and Technical Education for the 21st Century Act (Perkins V) – in 2018, states are charged to redesign and restructure their strategic visions and plans for CTE, many for the first time in more than a decade. This opportunity gives states the chance to realign and improve their CTE data systems in a truly impactful way. Perkins V includes new requirements for accountability and reporting, data collection and data-driven decisionmaking, and states should seize the opportunity to examine and improve the quality and effectiveness of their data. This work includes:

- Realigning state data systems around a unifying state vision for career readiness;
- Auditing data collection processes and identifying opportunities to improve data quality;
- Committing to transparency and using CTE data to ensure equity across all learner populations; and
- Taking bold steps to connect data with program approval and funding decisions.

This report unpacks in more detail key trends from the State of CTE survey and charts a path for states to improve their CTE data systems.

Introduction

Career Technical Education (CTE) prepares each and every learner to have the confidence and skills to enter the world of work and ensures that employers have a pipeline of talent to close critical skill gaps. To meet these ends, all stakeholders — particularly those in the secondary, postsecondary and workforce sectors — must work together to put learner success first.

Critical to achieving this vision is a strong, inter-connected data system that can follow learners as they move from secondary to postsecondary education and into the workforce. Data systems are powerful tools that can improve the quality of and access to meaningful career readiness opportunities. State CTE Directors can use data to identify and close equity gaps in CTE programs, continuously improve CTE programs and programs of study, evaluate learner outcomes and program impact, and hold institutions accountable for learner success.

How effective are state CTE data systems at meeting these objectives? To address this question, Advance CTE — in partnership with the Data Quality Campaign; the Workforce Data Quality Campaign, a project of the National Skills Coalition; Education Strategy Group; and the Council of Chief State School Officers and with generous funding from JPMorgan Chase & Co. — conducted a national survey in fall 2018. A total of 51 State Directors responded to the survey, representing 48 states, two territories and the District of Columbia.¹ This report draws on information from that survey to examine the quality of state CTE data systems and unpack common challenges and promising solutions from across the country.

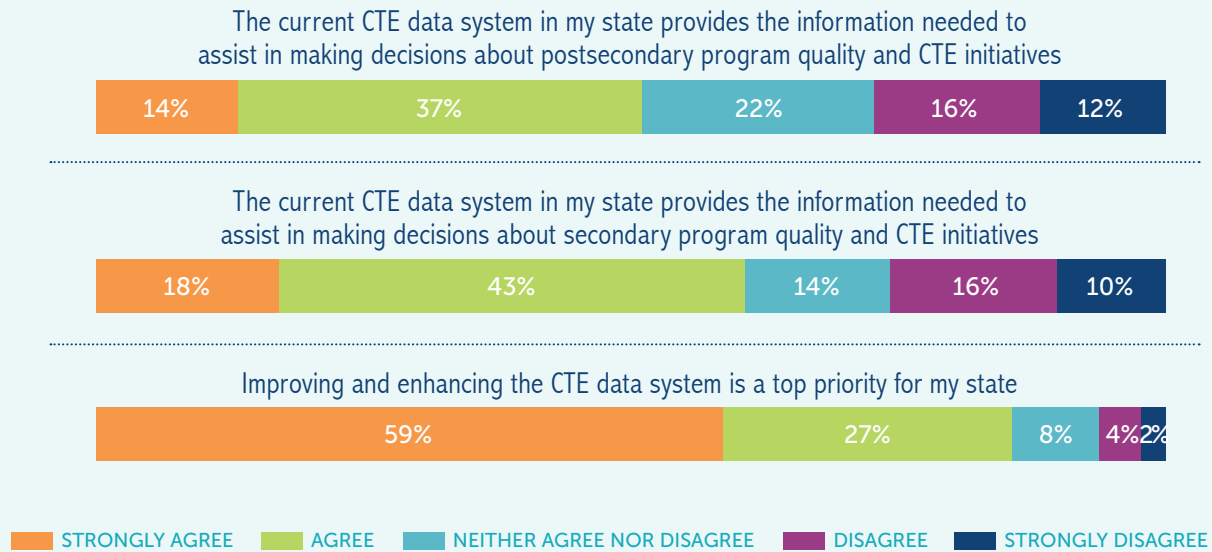
Overall, 86 percent of State Directors say that improving and enhancing their state CTE data systems is a top priority. Yet, the data systems they currently use are insufficient to meet 21st century educational needs. **Only 45 percent of State CTE Directors report that their CTE data systems provide the information they need to assist in making decisions about CTE program quality and initiatives at both the secondary and postsecondary levels.**

Why are State Directors unable to access the data they need? For one, state CTE data systems are not sufficiently aligned with data systems in other sectors, making following learners as they progress from high school to college and into the workforce challenging. Addressing this issue is an urgent priority. As state and federal policymakers recognize the value of postsecondary education and the demand for a highly skilled workforce, they are pushing secondary, postsecondary and workforce leaders to work more collaboratively to achieve common goals. As of 2018, 40 states had adopted measures of career readiness in their state or federal accountability systems for high school students.² And nearly every state has set goals around postsecondary credential attainment, leading statewide strategies to scale career pathways that culminate in a credential of value.³ These strategies cut across sectors and require partnership and data sharing to effectively measure success.

Another barrier is the quality of CTE and career readiness data. States often rely on self-reported information to identify learners who earn industry-recognized credentials, complete a work-based learning experience, earn postsecondary credit in high school, or go on to further education or employment.

Overall, 86 percent of State CTE Directors say that improving and enhancing their state CTE data systems is a top priority.

FIGURE 1: THE STATE OF CTE DATA SYSTEMS



Without proper validation protocols, stakeholders cannot make fully informed decisions about policy, program improvement and funding.

This report comes at an opportune time. With the reauthorization of the Carl D. Perkins Career and Technical Education Act in July 2018, states will need to make adjustments to their CTE data systems to comply with new federal requirements. Specifically, Perkins V:

- Includes a new definition for CTE concentrators at the secondary and postsecondary levels that will require most states to adjust their methodology for counting these individuals;
- Requires states to disaggregate CTE performance and participation by new special populations;
- Shifts performance accountability metrics and directs states to define their own measures of secondary CTE program quality;
- Requires local recipients to use data to inform their comprehensive local needs assessment and their local application; and
- Has a renewed focus on equity in both state and local planning.⁴

While Perkins IV successfully pushed states to collect and report performance data for CTE students, often for the first time, Perkins V aims for a renewed focused on data-driven decisionmaking and expanding opportunity and access. At the same time, CTE is being challenged to meet the needs of a rapidly growing economy. States have an opportunity under Perkins V to enhance the quality of their data systems and leverage CTE data to improve program quality and secure equitable outcomes for all learners. As states prepare new visions and plans for the future of career preparation — looking beyond CTE to K-12 education, workforce development and more — they will need to enhance their data systems accordingly. But they must seize the opportunity and make the most of Perkins V implementation before it is too late.

How Are States Using Their Career Readiness Data?

Common Measures of Career Readiness

Learners can demonstrate career readiness in many ways, from assessments of learning to documented work experience and industry mentorship. States define and measure career readiness through different approaches, some outlined specifically in federal statute and some by states themselves. Table 1 demonstrates different requirements for measuring success outcomes across three inter-connected federal programs: Perkins IV and V, the Every Student Succeeds Act (ESSA), and the Workforce Innovation and Opportunity Act (WIOA). While each





of these laws, and the state agencies responsible for delivering their respective programs, operate in disparate sectors, they often serve the same population of students and have similar measures of success. For example, most states have chosen to measure career readiness in their ESSA accountability systems, signaling an expanded focus on career readiness beyond CTE.⁵ In these states, common measures can provide an opportunity to align goals and coordinate service delivery across these programs.

TABLE 1: POPULATION AND ACCOUNTABILITY REQUIREMENTS FOR FEDERAL EDUCATION AND WORKFORCE DEVELOPMENT PROGRAMS

	POPULATION	ACCOUNTABILITY MEASURES
PERKINS IV	Secondary and postsecondary CTE participants and concentrators	<ul style="list-style-type: none"> • Secondary academic attainment • Technical skill attainment (secondary and postsecondary) • Secondary school completion • Secondary graduation rate • Student placement (secondary and postsecondary) • Non-traditional participation and completion (secondary and postsecondary) • Postsecondary credential, certificate or diploma attainment • Postsecondary student retention or transfer
PERKINS V	Same as Perkins IV	<ul style="list-style-type: none"> • Secondary graduation rate • Secondary academic proficiency • Postsecondary placement (secondary) • Non-traditional enrollment (secondary and postsecondary) • Secondary program quality • Postsecondary retention and placement • Postsecondary credential, certificate or diploma attainment
ESSA	All public elementary and secondary students	<ul style="list-style-type: none"> • Academic achievement • Another academic indicator • Graduation rate (high school only) • English language proficiency • A state-determined indicator of school quality or student success
WIOA	WIOA program participants such as out-of-school youths ages 16-24, in-school youths ages 14-21, adults with limited English proficiency, dislocated workers, individuals with disabilities and job seekers	<ul style="list-style-type: none"> • Employment or education (second quarter and fourth quarter after exit) • Median earnings • Credential attainment • Measurable skill gain • Effectiveness in serving employers

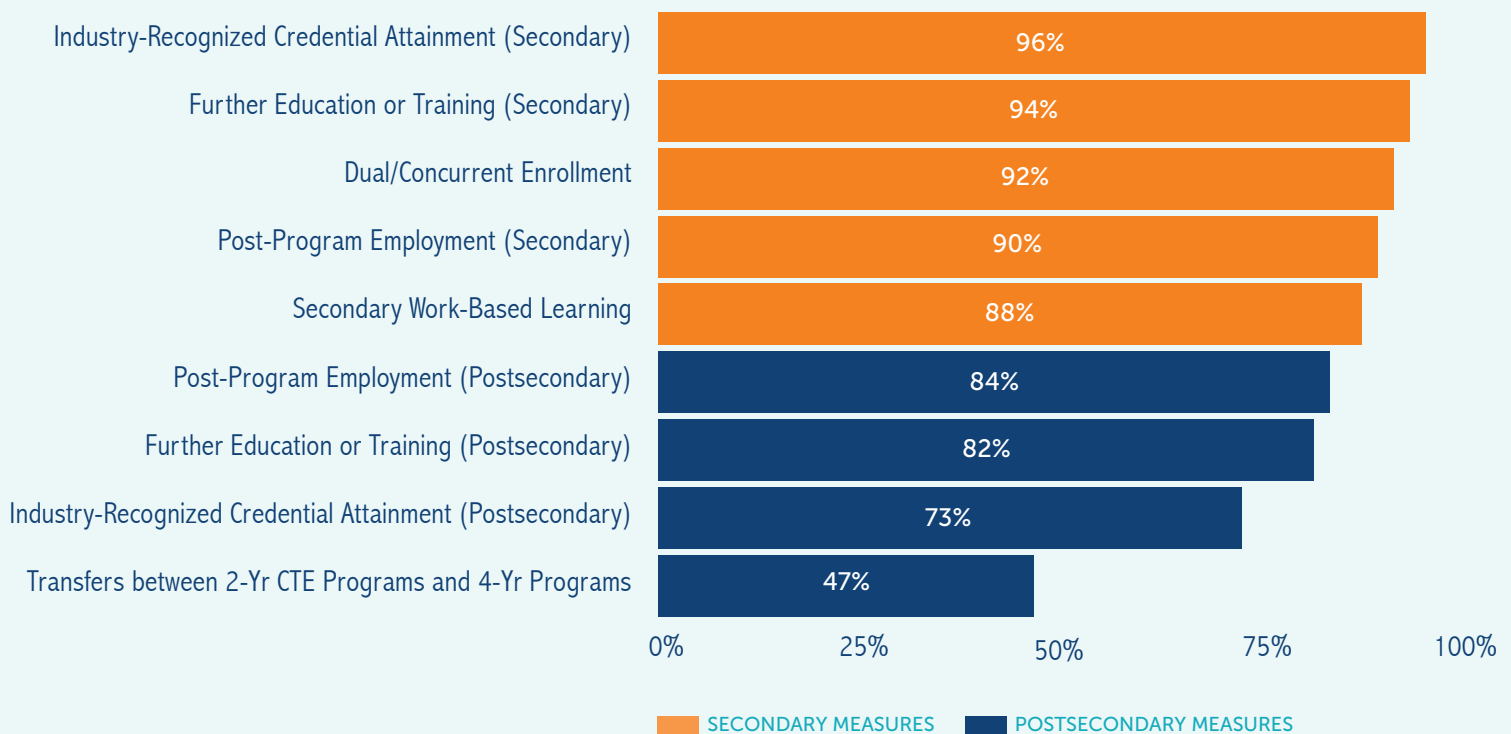
How Are States Using Their Career Readiness Data?

This report examines four primary measures of career readiness, which are commonly used in federal and state reporting and are often discussed as signals of career readiness at the secondary and postsecondary levels. These four measures include:

-  • Completion of a work-based learning experience;
-  • Attainment of a recognized postsecondary credential, including industry-recognized credentials and postsecondary degrees;
-  • Completion of dual or concurrent enrollment; and
-  • Successful transition to further education, employment or the military.

According to State Directors, nearly every state can collect learner-level information on these measures at either the secondary or postsecondary level. However, these measures are stronger at the secondary than at the postsecondary level, and, as the rest of this report will examine, these measures are not always valid and high quality.

FIGURE 2: PERCENTAGE OF STATES THAT CAN COLLECT LEARNER-LEVEL DATA ON A VARIETY OF CAREER READINESS MEASURES



States are correct to measure and incentivize these activities, and a growing body of research has demonstrated positive economic outcomes for learners who attain these milestones in their youth. The Brookings Institution finds a correlation between work-based learning and job quality later in life.⁶ Numerous studies find that learners who earn college credit in high school are more likely to enroll and persist in postsecondary education.^{7,8} But counting learners who complete these milestones is only the first step. States should consider a variety of career readiness experiences throughout a learner’s career pathway and ensure that data are high quality, aligned across sectors, and able to be disaggregated by different learner populations so states can use them effectively to improve program quality and ensure equitable learner success.

Disaggregating Career Readiness Data

To use data effectively, states must be able to disaggregate measures of career readiness by Career Cluster®, program and sub-population to better identify patterns in enrollment and performance. Most states are well prepared to examine their data with precision, in part because of federal reporting requirements. Perkins IV directed states to disaggregate CTE performance indicators by Career Cluster; gender; race/ethnicity; and special populations, which include individuals with disabilities, economically disadvantaged individuals and other populations. Perkins V further aligns these expectations with ESSA and WIOA; adopts additional sub-populations for reporting; and directs states, to the extent practicable, to disaggregate performance indicators by CTE program of study in addition to Career Cluster.

TABLE 2: STATES THAT CAN DISAGGREGATE CAREER READINESS MEASURES

	BY CAREER CLUSTER	BY CTE PROGRAM OR PROGRAM OF STUDY	BY RACE/ETHNICITY	BY GENDER	BY INDIVIDUALS WITH DISABILITIES	BY ECONOMICALLY DISADVANTAGED INDIVIDUALS
Secondary Work-Based Learning	61%	55%	65%	65%	65%	63%
Industry-Recognized Credential Attainment (Secondary)	73%	65%	76%	76%	76%	76%
Industry-Recognized Credential Attainment (Postsecondary)	53%	43%	53%	53%	51%	51%
Dual/Concurrent Enrollment	63%	61%	80%	80%	78%	75%
Transfers Between 2-Yr CTE Programs and 4-Yr Programs	31%	29%	31%	31%	29%	29%
Post-Program Employment (Secondary)	63%	57%	73%	73%	71%	71%
Post-Program Employment (Postsecondary)	69%	67%	78%	78%	73%	75%
Further Education or Training (Secondary)	71%	63%	82%	82%	80%	80%
Further Education or Training (Postsecondary)	63%	61%	73%	73%	69%	71%

75%–100% OF STATES 50%–74% OF STATES 25%–49% OF STATES 0%–24% OF STATES

How Are States Using Their Career Readiness Data?

As Table 2 shows, most states can disaggregate their data by Career Cluster, CTE program of study and additional sub-populations for a variety of career readiness measures. The only exceptions are for measures at the postsecondary level. Less than half of states can disaggregate successful transfers between postsecondary two-year CTE programs and four-year programs, and only 43 percent of states report that they can disaggregate the CTE program or program of study related to credentials attained at the postsecondary level.

The measures states are best prepared to disaggregate are secondary attainment of industry-recognized credentials, dual or concurrent enrollment, post-program employment for postsecondary learners, and post-program enrollment in further education or training for secondary learners. Many states have chosen to count industry-recognized credential attainment and dual or concurrent enrollment in their state and federal high school accountability systems, which may be why such large percentages of states can disaggregate these measures. The fact that so many states can disaggregate post-program outcomes may be a result of reporting requirements under Perkins IV. While states can report these measures as a “meta-indicator” — meaning they can include in the numerator any learner who goes on to further education or training, employment or military service — they are required to disaggregate this meta-indicator by sub-population.

That so many states can disaggregate measures of career readiness is promising. However, this situation makes focusing on improving the quality and validity of the data all the more important for states. Even if states can break down their data on post-program employment, this measure is virtually meaningless if it is derived from self-reported surveys with a low response rate. And states still have work to do to ensure that they can disaggregate data for work-based learning, industry-recognized credential attainment, and other measures of career readiness by all program areas and sub-populations.

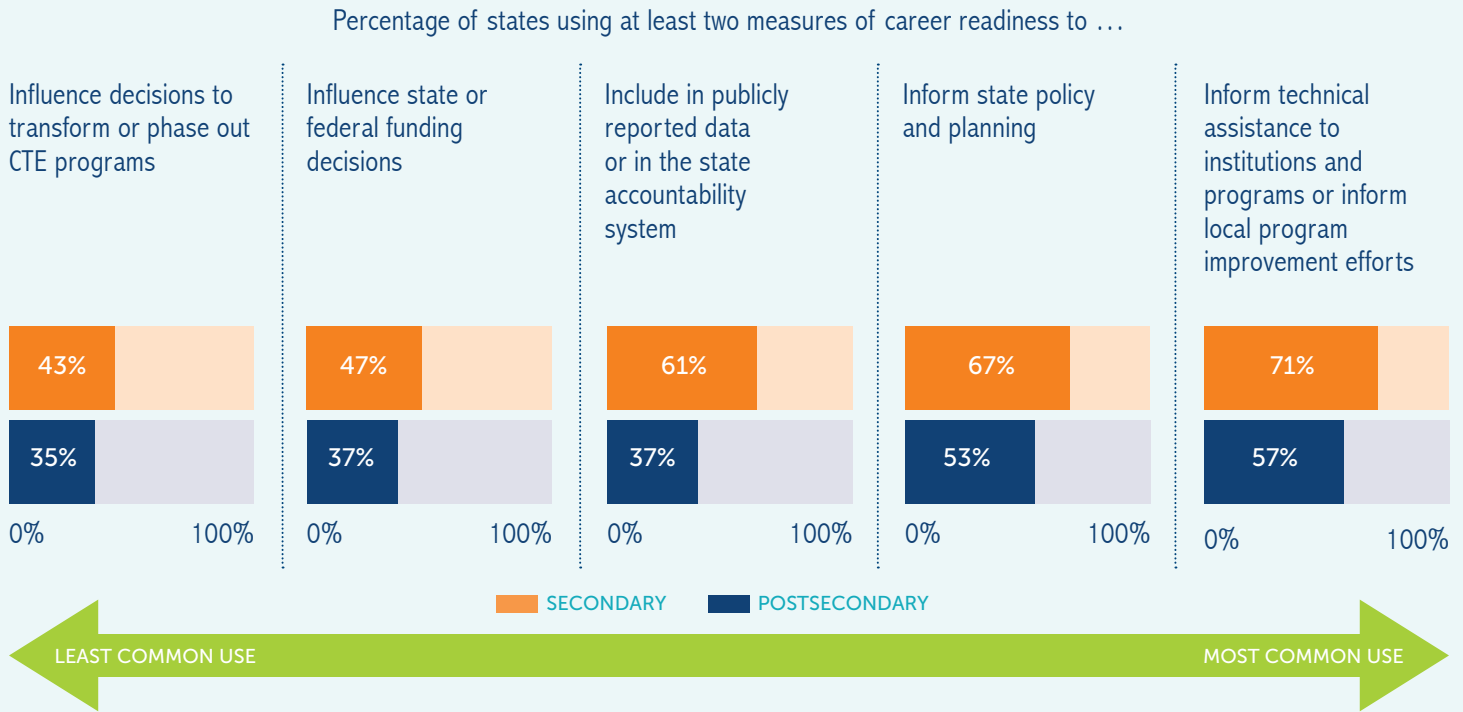
Using Career Readiness Data to Effect Change

Data are effective only if they are used strategically to create change. Using data to create change means embedding data in every step of the decisionmaking process, from adopting state policy to improving program quality. If data are high quality, valid and aligned longitudinally, they can provide color and nuance to a state’s CTE programs. State leaders should make sure to wield career readiness data like a scalpel rather than a hammer, delivering necessary supports with surgical precision to ensure that each learner can access and succeed in high-quality career pathways.

This report examines how states use the four measures of career readiness identified in the survey: completion of a work-based learning experience; attainment of a recognized postsecondary credential, including industry-recognized credentials and postsecondary degrees; completion of dual or concurrent enrollment; and successful transition to further education, employment or the military. Figure 3 depicts the proportion of states that are using at least two of these four measures of career readiness to influence decisionmaking at the secondary or postsecondary level. See Appendix A for a further breakdown of how states use each of the four measures.

Using data to create change means embedding data in every step of the decisionmaking process, from adopting state policy to improving program quality.

FIGURE 3: COMMON USES OF CAREER READINESS DATA (SECONDARY AND POSTSECONDARY)



Informing Technical Assistance and Program Improvement Efforts

One of the primary levers state leaders can use to influence program quality and equity is technical assistance and supports to local leaders. While many decisions about the design and delivery of CTE are made at the regional or institutional level, state leaders can help improve program quality and equity by sharing promising practices from across the state, providing professional development for educators and administrators, and directing resources toward program improvement efforts. Using data to inform and prioritize these supports can ensure that local investments have the maximum impact.

According to State Directors, this use of career readiness data is the most common. As Figure 3 shows, 71 percent of states use at least two out of the four career readiness measures included in the survey to inform technical assistance and program improvement efforts at the secondary level. Fifty-seven percent of states report the same at the postsecondary level.

One approach is **Idaho's** CTE Program Quality Initiative, which provides program incentive and technical assistance funding to reward outstanding program performance as well as help local program leaders improve performance on a variety of state-identified performance measures. For the technical assistance funding, the Division of Career & Technical Education examines local program data annually to identify school districts that are below target and then reaches out to these programs to offer resources and technical assistance. In 2018, Idaho received 94 applications and distributed 44 awards to support program improvement efforts. The Legislature has provided some investment to support the initiative the past two years, and the Appropriations Committee voted for additional funds during the 2019 legislative session, providing sustainable incentive funding in the future to encourage all programs to achieve excellence.

Idaho CTE Program Quality Initiative Performance Measures

- Technical skill assessment success
- Workplace readiness assessment success
- Active involvement in career technical student organizations

Informing State Policy and Planning

State leaders can also use their data to inform state policy and planning. Good policy is evidence based, drawing on data to scale effective strategies, address barriers and improve ineffective programs. States should make examining career readiness data a common practice and an expectation for all major decisions. This use of career readiness data is the second most common across the states, according to the survey. Sixty-seven percent of states report using at least two out of the four career readiness measures examined in the survey to inform state policy and planning at the secondary level, and 53 percent report using at least two out of four at the postsecondary level.

Arkansas, for example, partnered with the Thomas B. Fordham Institute and the University of Connecticut in 2016 to examine post-program outcomes for CTE students.⁹ The Arkansas Research Center, operating under a U.S. Department of Education grant, created a statewide longitudinal data system that provided learner-level data for the analysis. The report found that post-program outcomes — including high school graduation, enrollment in a college or university, employment and earnings — were notably higher for learners who concentrated in a CTE program of study than for those who did not. State leaders in Arkansas have used this report to demonstrate to state policymakers the benefit of completing a sequence of high-quality CTE courses within a program of study.

Similarly, **Kentucky** uses information about dual credit earners to inform new investments and policy changes. In 2016, Gov. Matt Bevin launched the Dual Credit Scholarship Program to provide funding for high school seniors to take up to two college courses.¹⁰ Shortly thereafter, the Legislature expanded the initiative to include high school juniors. State leaders in Kentucky discovered that learners who complete dual credit are 30 percent more likely to persist in their second year of college, making a clear case for continued investment. Yet as dual credit grows in popularity, Kentucky has discovered that more and more students are participating in “random acts of dual credit” that are disconnected from their programs of study. As a result, the commonwealth is now working to set up guardrails to ensure that learners’ course-taking patterns are more closely aligned to their programs of study.

Including Career Readiness Measures in Publicly Reported Data or Accountability Systems

States also use career readiness data for public reporting or accountability purposes. Sixty-one percent of states report using at least two measures of career readiness for public reporting or accountability at the secondary level. However, this percentage is much lower at the postsecondary level, with only 37 percent of states reporting the same. Making career readiness data available to the public empowers stakeholders to identify priorities in their communities and become stronger advocates. If an institution is underperforming or failing to serve all learners equitably, then learners, parents and community members deserve to know so they can take action. Building such measures into state accountability systems for secondary and postsecondary education puts weight behind the data and compels institutions to focus their capacity on improving program quality and equity.

While many states have committed to start reporting their CTE and career readiness data, this strategy is still relatively nascent. Several states are reporting measures for the first time through their ESSA report cards, and others are still working through and refining their business rules. **Ohio**, however, first started publishing an annual CTE report card for schools and districts in 2013. The report card included a variety of indicators of career readiness and learner performance such as technical skill attainment, graduation rate, attainment of an industry-recognized credential, earning remediation-free scores on the ACT or SAT and post-program outcomes.¹¹ These report cards not only provided school and district leaders the information they needed to improve their programs but also empowered stakeholders in the community to be better advocates, hold institutions in their community accountable and celebrate successes. The CTE report card data have now been integrated into the statewide report cards.

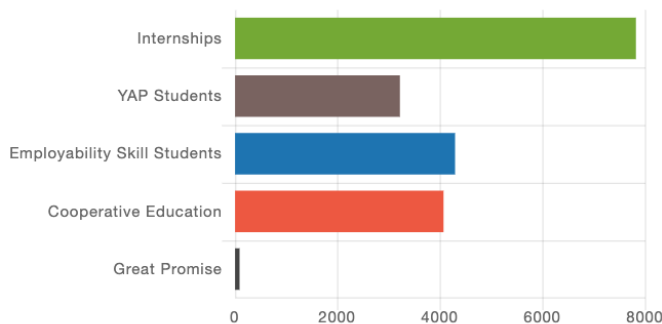
One priority that state policymakers in **Georgia** have elevated is participation in work-based learning and youth apprenticeships. The state developed a comprehensive work-based learning policy manual, which outlines the core requirements and structure for different types of experiences, and designed a virtual information hub to share critical resources with learners and employers. The website tracks participation in work-based learning and allows viewers to examine data by type, credits earned and Career Cluster of focus.¹²

Using Data to Transform Career Pathways

These three approaches — informing technical assistance or program improvement, informing state policy and planning, and reporting career readiness data to the public — are effective strategies but might not in themselves be transformative. To achieve quality and equity state-wide, states must be able to rely on their data to make high-stakes decisions about funding or phasing out underperforming programs.

Only 47 percent of states report using at least two measures of career readiness to make funding decisions at the secondary level and 37 percent at the postsecondary level. These states should be recognized for their efforts to align resources and funding with program improvement, a critical strategy for transforming career pathways quality. Yet with less than half of states using data in this way, states appear to

Program Enrollment



Total Credits Earned



Georgia's work-based learning dashboard.
Retrieved from <https://gawbl.org/by-the-numbers>

How Are States Using Their Career Readiness Data?

be reluctant to rely on their data for high-stakes decisions such as connecting funding with program quality. Often, state CTE offices are organized in such a way that decisions about program quality and funding are disconnected. These decisions should be better coordinated to ensure that outdated and low-quality programs are not sustained.

Only 43 percent of states use two or more career readiness measures to transform or phase out programs at the secondary level and 35 percent at the postsecondary level. Again, states may be hesitant to make high-stakes decisions based on data they do not fully trust. Having reliable, high-quality data that all stakeholders can understand and rely on allows for difficult conversations and creates the opportunity for meaningful, transformative work. Such decisions are not easy to make, but they must be informed by data to ensure that all programs are high quality and that each learner is able to access and succeed in his or her career pathway of choice.

One state that has taken a bold but transparent approach to program phase-out is **Wisconsin**. The Wisconsin Technical College System's (WTCS) program suspension policy states that associate degree and other sub-baccalaureate programs may be subject to program phase-out if they fail to meet goals for enrollment, retention, placement and other outcomes.¹³ This process is meant to be collaborative between the institution and WTCS. Before a program is placed on suspension, the education directors and assistant vice president of instruction at WTCS reach out to the program dean to identify opportunities for improvement. Often, faculty and staff at the institution are willing to place a program on suspension to free up resources and capacity for newer, more relevant offerings. Once a program has been placed on suspension, a phase-out period accommodates learners who are already enrolled, but no new students are permitted to enroll. After three years of suspension, the discontinuation process is triggered, and the program is terminated.

Improving the Quality of Career Readiness Measures

One of the likely reasons State Directors are not fully leveraging their career readiness data to transform career pathways is because they do not trust the quality and validity of their data. Improving the quality of career readiness measures is an urgent imperative for states, and there is a lot of opportunity for improvement. While many states have developed processes to collect and disaggregate data for state and federal reporting, these methods are often archaic, inefficient and unreliable.

How States Collect Data on Career Readiness

Overall, states do not appear to have a consistent approach to measuring career readiness data, as Table 3 shows. The most common approach is to report data through a state-level student information system or through a state-wide longitudinal data system (SLDS). Ninety percent of states measure dual or concurrent enrollment, 67 percent collect secondary industry-recognized credential attainment, and 61 percent collect secondary work-based learning data through a statewide data system. Yet fewer states use this method to collect other measures, such as post-program employment or pursuit of further education or training, and data collection overall does not appear to be as strong at the postsecondary level.

One example of a state that collects learner-level career readiness data at the state level is **Tennessee**, which uses a separate statewide portal for educators to submit information about learners who are placed in work-based learning. Each learner is required to have a complete

personalized learning plan that documents goals; skill development; and details about the placement such as the name of the employer, the duration of the experience, and whether the experience is paid or unpaid. While the work-based learning portal is not directly connected to Tennessee's student record database, state leaders in the Department of Education can do a backend match to link the data with the learner's profile.

Some states, but not as many, use a locally sourced student information system or a separate statewide Perkins data collection to gather learner-level data. Far fewer partner with other agencies or organizations, such as the National Student Clearinghouse, to measure career readiness.

It is worth noting that states rely heavily on self-reported information for post-program outcomes measures. Sixty-one percent of states report that they use surveys to learn

CTE and SLDSs: A Natural Fit

More and more, state leaders are working to connect learner-level data at the state level through SLDSs. While SLDSs historically have included K-12 data, many have been expanded to include learner-level data from preschool through college and into the workforce (commonly known as P20W systems).

Setting up a cross-agency data system requires extensive partnership, trust and commitment of resources across sectors, but the impact is often worth the effort. States with strong SLDSs can use their data to answer critical questions about which courses and experiences are most strongly correlated with graduate success.

States should make sure their SLDSs include CTE data and other learner-level information related to career readiness. Often, CTE data are measured separately from data within the same sector. Ensuring these data are included in the SLDS facilitates better alignment within the sector, ensures that other experiences that are not captured through traditional CTE data collections are measured, and allows state policymakers to evaluate outcomes for learners who complete CTE or other career-focused experiences.

TABLE 3: HOW STATES COLLECT LEARNER-LEVEL CAREER READINESS DATA

	COLLECTED THROUGH A STATEWIDE STUDENT INFORMATION SYSTEM OR SLDs*	COLLECTED BY INDIVIDUALS OR INSTITUTIONS THROUGH SURVEYS	COLLECTED THROUGH A LOCALLY SOURCED STUDENT INFORMATION SYSTEM	COLLECTED THROUGH A SEPARATE PERKINS DATA COLLECTION	COLLECTED THROUGH AN AGREEMENT WITH THE STATE DEPARTMENT OF LABOR OR OTHER AGENCY	COLLECTED THROUGH AN AGREEMENT WITH THE NATIONAL STUDENT CLEARINGHOUSE	COLLECTED THROUGH AN AGREEMENT WITH CREDENTIALING BODIES	PERCENTAGES OF STATES THAT ARE ABLE TO COLLECT
Secondary Work-Based Learning	61%	8%	31%	10%	0%	n/a	n/a	88%
Industry-Recognized Credential Attainment (Secondary)	67%	10%	31%	24%	n/a	n/a	12%	96%
Industry-Recognized Credential Attainment (Postsecondary)	39%	10%	24%	24%	n/a	n/a	10%	73%
Dual/Concurrent Enrollment	90%	2%	29%	6%	n/a	8%	n/a	92%
Transfers Between 2-Yr CTE Programs and 4-Yr Programs	29%	2%	14%	2%	n/a	12%	n/a	47%
Post-Program Employment (Secondary)	35%	61%	n/a	n/a	18%	10%	n/a	90%
Post-Program Employment (Postsecondary)	25%	33%	n/a	n/a	45%	10%	n/a	84%
Further Education or Training (Secondary)	45%	55%	n/a	n/a	4%	33%	n/a	94%
Further Education or Training (Postsecondary)	31%	31%	n/a	n/a	10%	41%	n/a	82%

*State Longitudinal Data System

75%–100% OF STATES
 50%–74% OF STATES
 25%–49% OF STATES
 0%–24% OF STATES

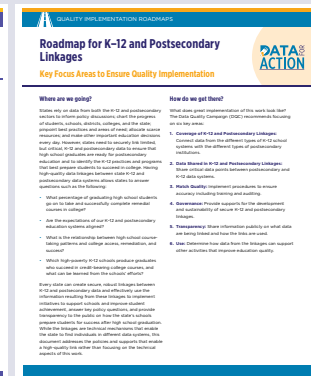
about post-program employment for secondary learners, and 33 percent use surveys to learn about post-program employment for postsecondary learners. This information is often collected through student surveys administered by the school, school district or institution, though some institutions rely on methods such as tracking students down on LinkedIn or Facebook to find out where they end up. This approach not only leaves significant room for response error and misreporting but also leaves institutions susceptible to low response rates. When institutions can track down only a fraction of their program graduates, state leaders are not able to look at a representative sample of program participants.

At the postsecondary level, a higher percentage of states (45 percent) have successfully partnered with other state agencies to access employment data, but this proportion still represents less than half of survey respondents. The percentages are slightly better, but not much, for measuring post-program enrollment in further education or training: 55 percent of states use surveys at the secondary level, and 31 percent use them at the postsecondary level.

Improving the collection of outcome measures is an area of urgent need for State Directors. Decisionmakers must be able to see if learners are gaining meaningful employment or continuing their education once they exit their program, yet all too many states rely on sub-standard methods for collecting this information. When it comes to measuring post-program outcomes, states can improve the quality and efficiency of their data systems by thinking smarter, not harder. Rather than relying on self-reported data or student surveys — which are burdensome to administer and provide an inaccurate portrait of learner outcomes — states should invest in data systems based on strong partnerships and cross-agency data governance that allow them to leverage administrative records from other sectors to evaluate learner success. While decisions about cross-sector data sharing and governance are not in the purview of most State Directors, they can help start the conversation by critically examining the quality of their data, calling for access to better information, and demonstrating the impact that improving data quality can have on CTE program quality across the state.

State Directors should also consider whether other partners in their state, or even in other states, can supplement their learner data and validate the information they have on record. For example, states can partner with credential providers to access administrative records for learners who sit for and earn a credential of value. Only 12 percent of states have established such data sharing partnerships at the secondary level and only 10 percent at the postsecondary level, but agreements in these states cover only a fraction of the industry-recognized credentials available to and attained by learners. For the vast majority of states, information about industry-recognized credential attainment is reported by local schools and institutions without verifying that the learner received the credential from the provider.

Take the next step: DQC has developed roadmaps to help state leaders link K-12 and workforce data as well as secondary and postsecondary data. These instructive tools provide recommendations and promising examples to help states design and build connected data systems.¹⁴



Take the next step: In 2017, the Certification Data Exchange Project — a partnership of state leaders, credential providers and researchers — developed a five-step process for obtaining credential attainment data:

- Establish the data sharing agreement;
- Estimate bandwidth and allocate resources;
- Facilitate the transfer of data;
- Perform the analysis; and
- Present the results using common templates.

The full report describes lessons learned from the seven participating states, which were able to access nearly 100,000 individual credential attainment records collectively. The report also includes sample data sharing agreements and reporting templates.¹⁶



North Carolina is one state that has begun collecting industry-recognized credential attainment data directly from credentialing bodies. The state recently launched an incentive program to reward teachers for each student who successfully earns a state-recognized credential.¹⁵ To accurately identify these individuals, the Department of Public Instruction set up data sharing agreements to gather data directly from credential providers and has managed to successfully obtain data for more than half of credentials earned by high school students in the state. The remaining credentials are reported by teachers and certified by instructional leads. To match learner data between the secondary data system and the credential provider's database, North Carolina uses the learner's name, location, date of birth and other unique information.

Likewise, the **Minnesota** State Colleges and Universities system is collaborating with industry-recognized credential providers across a variety of program areas to obtain credential attainment data. State leaders have gained access to certification data from credential providers for emergency medical technician, automotive service, occupational therapy and other programs. However, the quality of the data varies from partner to partner. Some provide aggregated totals while others provide learner-level data.

Another approach to collecting data on career readiness is partnering with the National Student Clearinghouse, a non-profit organization supported by partnerships with more than 3,000 post-secondary institutions, to gather information on enrollment in further education, transfer between postsecondary programs, completion of dual or concurrent enrollment and credential attainment. But less than half of states report using the National Student Clearinghouse to collect data for these measures. One advantage to using the Clearinghouse for this information is that states can track students who attend a college or university in another state, something they cannot do with their state data systems alone.

Clearly, many states have an opportunity to improve methods of data collection, moving away from self-reported information and toward more reliable sources of information.

How States Validate Career Readiness Measures

In addition to improving methods of collection, states should adopt processes and protocols to review, validate and certify career readiness data. These processes and protocols can improve data quality by reducing errors and ensure that state policymakers can trust the accuracy of the data states report. States can take a number of different approaches to validating their career readiness data — such as examining data for anomalies or verifying information with other datasets — but at a minimum states should have some validation protocol in place.

Overall, states do not appear to be using robust processes and protocols for validating career readiness data. The most common approach is to conduct a state audit or review, though how involved these reviews are is unclear. Nearly as many states indicate they have no state process at all to review or validate career readiness measures, particularly for measuring work-based learning and industry-recognized credential attainment.

To the extent practicable, states should verify career readiness data with other agencies, organizations and partners to confirm that the reported information is accurate. This process means having employers validate that a learner has completed a work-based learning experience, verifying with postsecondary records that a learner has earned transcribed credit as a result of dual or concurrent enrollment, or partnering with credentialing bodies to confirm that learners have sat for and earned an industry-recognized credential of value.

In **Arkansas**, schools are required to get employer validation when participants complete a work-based learning assignment. Before their placement, learners identify specific skills they want to develop through their experience and how they want to be assessed by their worksite mentor. Employers are required to submit documentation to validate that the work-based learning experience was completed as described.

In **South Dakota**, the primary way high school students earn dual credit is by attending classes at Board of Regents schools and public technical institutes at a reduced tuition rate. Information on postsecondary credit attainment for these students is received directly from the institution awarding the credit. **Massachusetts** validates data among the school district's records, the National Student Clearinghouse and the higher education sector in the state to confirm that learners who are reported as earn-

ing postsecondary credit are also recognized as earning credit within the postsecondary sector.

Another approach states can take to validate career readiness data is building error rules or establishing thresholds for identifying anomalies in their data. In **Wisconsin**, validations are built into the secondary and postsecondary data collection system for dual or concurrent enrollment to trigger any incomplete information. This validation ensures that errors are identified at the input stage. In **Virginia**, the Department of Education uses reports from credential providers to verify and audit credential attainment data. The department conducts an electronic and manual analysis to identify discrepancies, such as irregular variances in the number of learners earning industry-recognized credentials, and will request additional information from the local institution if necessary.

Some states collect data for measures they have not clearly defined, particularly industry-recognized credentials and work-based learning. While 96 percent of states say they collect data on industry-recognized credential attainment at the secondary level (Figure 2 on page 8), only 80 percent of states have state-defined lists of industry-recognized credentials for secondary institutions. At the postsecondary level, 73 percent of states say they can measure industry-recognized credential attainment, but only 49 percent maintain approved lists (Figure 4). How states manage to measure something they have not defined is unclear when it is estimated that there are more than 300,000 credentials in the United States alone.¹⁷ Additionally, 88 percent of states say they can measure participation in secondary work-based learning, but only 63 percent report that they have a state-wide definition for work-based learning at the secondary level. One way state leaders can improve the accuracy of their data is by providing concrete data definitions and business rules for measures of career readiness and then

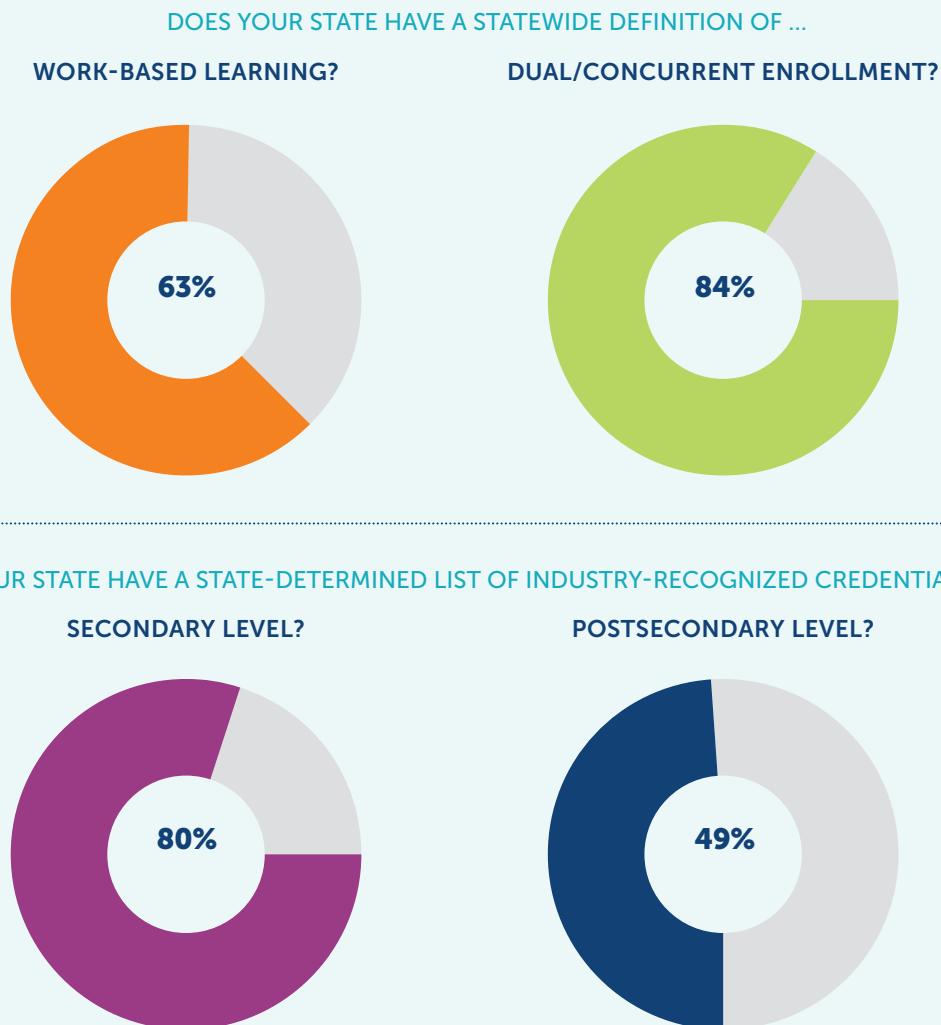
To the extent practicable, states should verify career readiness data with other agencies, organizations and partners to confirm that the reported information is accurate.

providing technical assistance and guidance to help local leaders improve data collection. Without setting clear definitions for these measures, states open themselves up for inconsistent reporting across the institutions and schools they serve.

A small number of states report validating career readiness measures with data from other agencies, organizations and partners. Even fewer say they have internal error rules and validation protocols or conduct technical assistance and trainings to ensure that local leaders have the understanding and capacity to enter data correctly.

This situation does not necessarily mean that states have neglected these approaches to validating their data. Some provided more detail in the survey than others about their validation protocols, which makes comparing approaches across the states challenging. However, the survey indicates that large numbers of states do not actively validate at the state level career readiness measures such as work-based learning or industry-recognized credential attainment. As states begin to integrate measures of career readiness into statewide accountability and reporting systems, they should re-examine these practices and ensure that robust processes are in place to validate the accuracy and consistency of their data.

FIGURE 4: DEFINING MEASURES OF CAREER READINESS



Aligning Disparate Data Systems

Many state data systems were constructed to support federal accountability and reporting requirements rather than a cohesive, statewide vision for career readiness. As a result, most states have disparate, disjointed data systems and multiple collection processes for different program areas. This situation creates an additional burden for local institutions and service providers, which are often asked to respond to multiple data collections for the same population of students. Additionally, having separate, disconnected data systems makes tracking learners as they transition from high school to postsecondary education and the workforce harder for state policymakers.

States should instead identify a cohesive, statewide vision for career readiness and ensure that their data systems allow them to monitor learner progress toward that goal. States that have prioritized goals around postsecondary credential attainment or registered apprenticeships understand that ensuring that learners are career ready when they enter, or transition within, the workforce is a shared responsibility. Tracking progress toward these goals requires cross-sector coordination and partnership, and states must have aligned and coordinated data systems — and use common data definitions — to ensure that they can truly achieve a shared goal for career readiness.

Over the past decade, multiple national efforts have sought to improve data linkages across secondary education, postsecondary education and the workforce. These efforts include federal investments in state data initiatives through SLDS state grants and the Race to the Top Fund, which gave states the capacity and resources

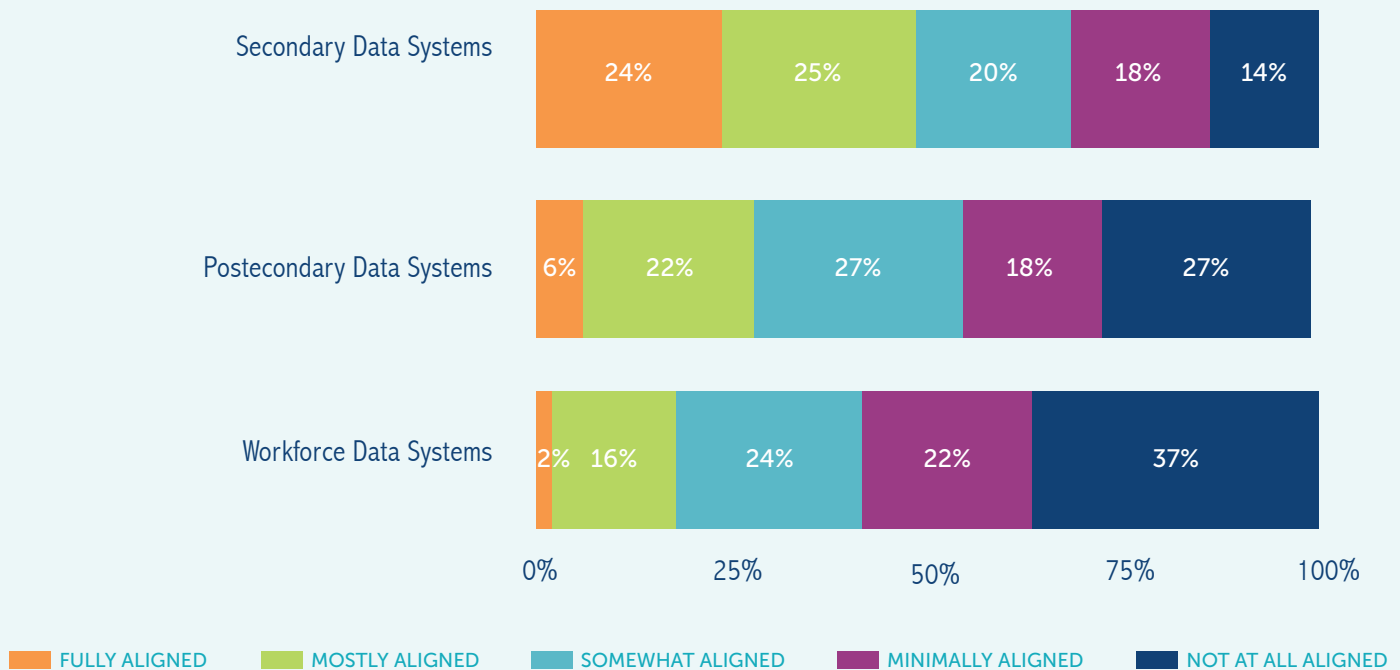
to create and strengthen data systems.^{18,19} On the workforce side, the federal Wage Record Interchange System (soon to be replaced by the State Wage Interchange System under WIOA) and the U.S. Department of Labor's Workforce Data Quality Initiative state grants have provided much-needed resources to support workforce data collection and alignment, both within and across states.^{20,21} To expand access to post-secondary data, the National Student Clearinghouse provides data exchange and research services, allowing state leaders to access data for graduates who cross state lines.²²

Despite these efforts, only 16 states and the District of Columbia have full cross-agency data systems that link learner-level data across K-12, postsecondary education and the workforce.²³ Establishing robust, linked data systems that are accessible and actionable takes more than the investment of state and federal dollars; it requires clear definitions and business rules, authentic partnerships, full commitment and buy-in from agency leaders and elected officials and a supportive policy environment. While national efforts to improve cross-sector data partnership have had some successes, states still have much work to do to ensure full data alignment across sectors.

How Aligned Are State CTE Data With Other State Data Systems?

According to State Directors, state CTE data systems are mostly discrete and disconnected from other statewide data systems, including those for K-12 public school students, students attending two-year and four-year institutions of higher education and individuals in the workforce.

FIGURE 5: HOW ALIGNED IS YOUR STATE CTE DATA SYSTEM WITH ...



At the secondary level, many states have student information systems with administrative and performance data for every learner enrolled in K-12 public schools. Yet these systems do not always include career readiness data. Only 49 percent of State Directors report that their CTE data systems are “mostly” or “fully” aligned with their state’s secondary data system. Some states, such as **Idaho**, have successfully integrated their CTE and secondary student record systems and adopted uniform statewide course codes so that state CTE leaders do not need to conduct a separate data collection to count CTE participants and concentrators. In Idaho, CTE classes have six-digit course codes, and all other classes have five-digit course codes, making identifying learners who are participating or concentrating in a CTE program relatively simple.

Alignment among data systems is weaker at the postsecondary level. This situation is not entirely surprising, given that many state and national investments in cross-sector data systems have focused on the secondary sector. Additionally, state postsecondary institutions are often more fragmented than public high schools and school districts. States often have separate data systems for two-year institutions, four-year institutions and individual campuses, and these data systems rarely include data for private postsecondary institutions.

According to State Directors, CTE data systems are “mostly” or “fully” aligned with other postsecondary data systems in only 28 percent of states. Just as many states report that their CTE data systems are “not at all aligned” with postsecondary systems. This lack of alignment is true

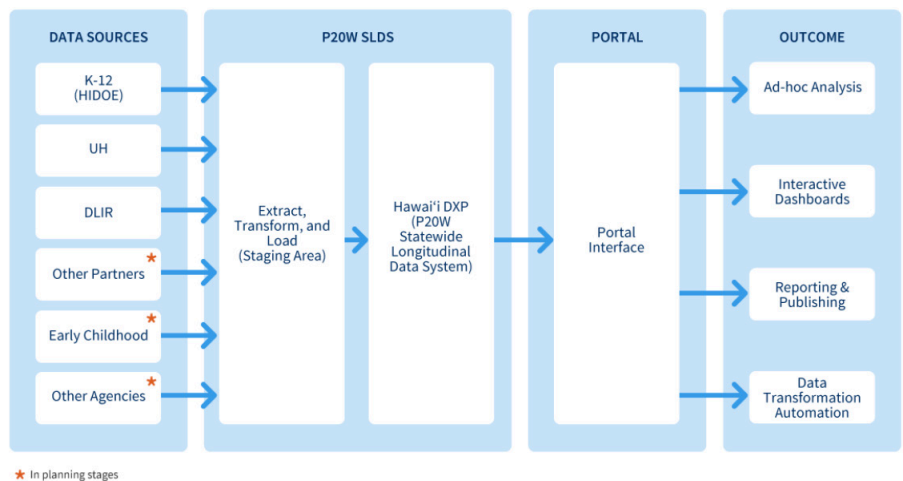
even for states in which the designated State Director is located in the postsecondary sector and a high proportion of Perkins funding is dispersed at the postsecondary level.

The lack of alignment is a significant limitation for state leaders. By definition, CTE spans secondary and postsecondary education, allowing learners to build upon and apply their knowledge as they transition from high school to college. Without strong linkages among CTE, secondary and postsecondary data systems, state leaders have limited ability to assess program quality and evaluate impact.

In **Hawai'i**, the University of Hawai'i Community Colleges System partnered with five other agencies and organizations to establish the Data Exchange Partnership, a full P20W data system. Each of the agencies has set up data sharing agreements to share and match learner-level data, and Hawai'i even used some of its Perkins funds to hire a full-time employee to manage its state CTE data. The Data Exchange Partnership allows state leaders to evaluate economic outcomes for learners who exit the postsecondary sector.

Even more urgent is the lack of alignment between CTE and workforce data systems. Only 18 percent of State Directors report that these systems are "mostly" or "fully" aligned, and fully 37 percent of State Directors say that these systems are "not at all aligned." As a result, many states rely on self-reported information to determine economic outcomes for CTE program participants, limiting the quality and reliability of their assessments.

Iowa, however, is one of the few exceptions to this rule. The state has established productive working relationships across the secondary education sector, the community colleges and the state workforce agency, enabling state leaders to access learner-level outcomes data for post-program placement, employment and wages. One reason the state



The system design for the Hawai'i Data Exchange Partnership. Retrieved from <http://hawaiidxp.org/about/system-overview>.

has been so effective at measuring learner outcomes is that both the secondary and postsecondary sectors use the same unique identifiers for individuals in the public education system. Similarly, the Iowa Department of Education, through its community college management information system and its relationship with the Iowa Workforce Development agency, is able to use Social Security numbers as unique identifiers to measure education and learner outcomes.

Additionally, Iowa is part of the National Student Clearinghouse, which allows states' leaders to track learners who are in further education within a state, as well as across state lines. The Iowa Department of Education also has a long-standing relationship with the Iowa Workforce Development agency, a relationship that has been formalized through a memorandum of understanding (MOU). The MOU is specifically written for the Iowa Department of Education to receive wage and employment data required under several state and federal programs. Iowa is unique because its community colleges and secondary schools are governed by the same department, which has allowed Iowa to better coordinate data collection across sectors.

Aligning Disparate Data Systems

As long as CTE data systems continue to be isolated and discrete, state leaders will be limited in their ability to evaluate learner outcomes and monitor progress toward statewide goals for workforce development and education. As states begin the planning process for Perkins V implementation, they should consider the opportunity to establish new data sharing partnerships with other agencies in their states. Through Perkins V, states have a true opportunity to design a cross-sector data system that reinforces their state vision for career readiness. The vision should serve as a guidepost for collecting, validating and aligning learner-level data across sectors.

Barriers to Coordinating, Matching and Sharing Data

Separate Data Systems or Inconsistent Definitions

One of the consequences of constructing separate, siloed data systems is that reconfiguring them to connect learner data across program areas is harder after the fact. Eighty-eight percent of states report that separate data systems or inconsistent definitions are a barrier to coordinating, matching and sharing data. This barrier is the most common across survey respondents.

Specifically, states say that agencies often hire different vendors to set up proprietary data systems at each level, which often leads to inconsistencies in data collection. When different agencies have their own data platforms, definitions, business rules and reporting timelines for collecting measures of career readiness, having accurate and timely data that are comparable across sectors is all the more challenging.

Establishing cross-sector linkages and clarifying data governance takes a lot of time and hard work. In 2012, **Kentucky** took action to remove alignment barriers by establishing an independent agency with authority over all education, workforce and labor data across the state. The Kentucky Center for Statistics (KYStats, formerly the Kentucky Center for Education and Workforce Statistics) matches learner-level data across sectors, ensures compliance with federal and state regulations, conducts policy research, develops reports for state and local policymakers and more.

This work did not happen overnight, though. Before KYStats was established, state leaders in Kentucky had been striving for decades to write data sharing agreements, gain buy-in from agency heads, and get approval from legal counsel. Establishing KYStats took time, money and dedication. Much of KYStats' success today can be attributed to the shared commitment and trust among agency heads, who recognized the need for shared data governance and committed themselves to making that vision a reality.

Legal or Privacy Barriers

Another common barrier across the states is legal and privacy restrictions on data collection and use.

Seventy-one percent of State Directors indicate that these restrictions are a challenge.

States are subject to federal privacy regulations under the Family Educational Rights and Privacy Act (FERPA), but many have adopted additional restrictions to protect learner privacy. Specifically, states report that restrictions on accessing Social Security numbers or other personally identifiable information make matching learner-level data across sectors significantly harder. Lengthy procedures for establishing and certifying data sharing agreements can also increase the burden for state leaders.

KYStats Participating Agencies

- Kentucky Department of Education
- Kentucky Higher Education Assistance Authority
- Kentucky Education & Workforce Development Cabinet
- Education Professional Standards Board
- Kentucky Council on Postsecondary Education

Barriers to Coordinating, Matching and Sharing Data

States should be commended for taking their data stewardship seriously and prioritizing data security and privacy, but they often err on the side of caution at the expense of data quality and access. FERPA does not prohibit states from sharing learner-level data across agencies. And even when restrictions are in place, states can find innovative solutions by leveraging intermediaries such as research institutions or other state agencies to conduct data matching or using alternative matching criteria when Social Security numbers are not available. States should be transparent about data sharing standards and protocols so that agencies know what they can and cannot do with learner-level data.

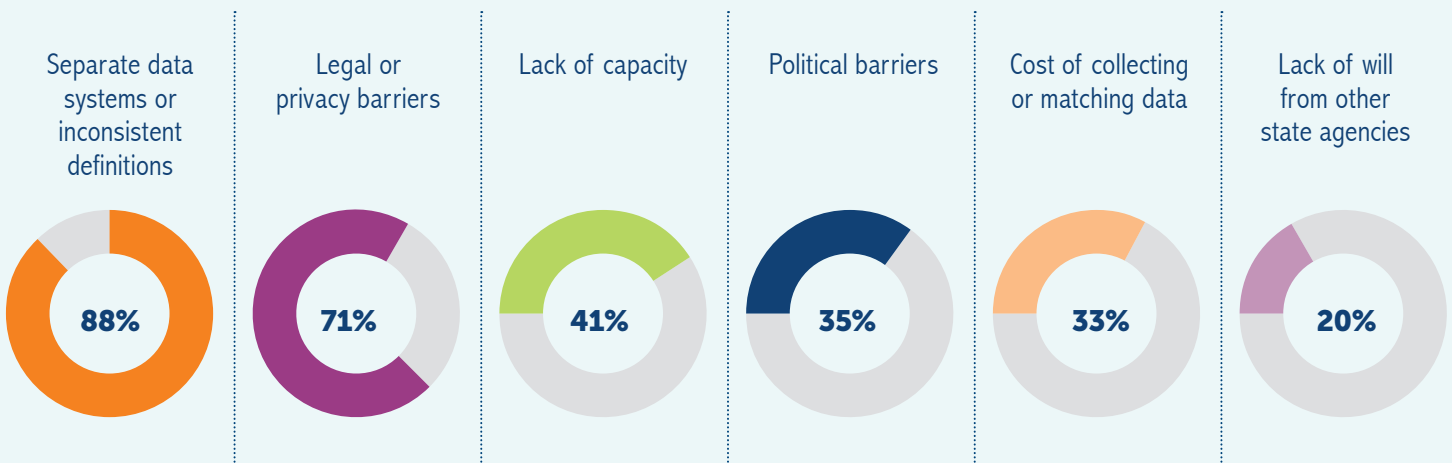
Less Common Barriers to Alignment

Interestingly, aligning data systems appears to be more a function of technology and legal issues than political will and resources. Capacity, cost or political barriers are challenges for less than half of State Directors, and only one in five states say lack of will from other state agencies is a barrier.

This news is good for states. Like Kentucky, states that can harness cross-sector enthusiasm and political will can often find innovative solutions to overcome technology and legal barriers. For example, when **New Jersey** found matching student information to workforce outcomes in house impossible, state leaders tapped the state Department of Motor Vehicles (DMV), which has access to Social Security numbers, names and dates of birth, to facilitate matching secondary and workforce data. Through a partnership with the DMV, the Department of Education was able to conduct a successful match and access learner-level workforce outcomes for graduates.

In other states, a unifying state goal or vision for career readiness, such as a postsecondary credential attainment goal, has been an effective catalyst for cross-sector partnership around data. In 2014, Gov. Terry McAuliffe of **Virginia** issued Executive Order 23, which directed all state agencies to work together toward a statewide goal of earning 50,000 credentials in in-demand industries.²⁴ Gov. McAuliffe convened the Governor's Workforce Council, with representation from secondary, postsecondary and workforce development, and all state initiatives since then have coalesced around this singular goal. As a result, each of the partnering agencies represented on the Governor's Workforce Council are now using common definitions and measures for credential attainment and have established agreements to share data through the Virginia Longitudinal Data System.

FIGURE 6: WHAT BARRIERS PREVENT COORDINATING, MATCHING AND SHARING DATA ACROSS SECTORS?



Conclusion

One of the most powerful tools State Directors have in their toolbox is their state data system. When data systems are well aligned across sectors and data are high quality, state leaders can make informed decisions to support local program delivery, enact effective state policies, hold institutions accountable for learner success and ensure that all programs are high quality.

According to State Directors, however, much work remains to improve the quality of CTE data systems and measures of career readiness. CTE data systems are not aligned across the secondary, postsecondary and workforce sectors, limiting states' abilities to track learners longitudinally and evaluate employment and educational outcomes. State and federal policymakers have started approaching education and workforce as part of one ecosystem — working in tandem to help learners gain the experience, skills and credentials they need for meaningful employment — and have enacted policies to encourage collaboration and alignment. This approach is reflected in common language and measures across ESSA, WIOA and Perkins V but must also be reflected in state data systems.

Furthermore, many of the methods states use to collect and validate career readiness measures are insufficient, leaving states to rely on self-reported or unverified data. Many states

report that they have limited or no processes to validate career readiness data to confirm that learners are completing work-based learning, earning industry-recognized credentials, earning postsecondary credit, or transitioning to employment or further education as reported by their local institutions. These steps are necessary to ensure that data are reliable and that career-focused opportunities are delivered consistently and with quality across the state. States must take measures to improve the quality of their data so they can make informed decisions based on information they trust.

Perkins V presents a once-in-a-decade opportunity for states to reimagine and align their data systems — but only if they choose to take it. As they prepare to implement Perkins V, states are required by statute to engage partners across agencies and sectors, collect new performance measures, and better connect their data to their state and local planning. Perkins V also includes new requirements for reporting disaggregated data at the state level and using information gathered through the comprehensive local needs assessment to inform the delivery of CTE at the local level. The window is wide open for states to re-examine their CTE data systems, ask intentional questions about data quality, and recommit to sharing and using data in an impactful way.

Recommendations

As states transition their CTE data systems to meet the requirements of Perkins V, they should take full advantage of this opportunity to reimagine how their data systems are designed and operated. Critical opportunities include:

Realigning state data systems around a unifying state vision for career readiness. State leaders should take a step back and consider whether their data systems can sufficiently measure progress toward a shared statewide vision and goals for career readiness. They can begin this work by:

- Taking advantage of Perkins V stakeholder engagement requirements to build relationships with state leaders in the secondary, postsecondary and workforce sectors;
- Building on alignment between Perkins V, WIOA and ESSA to identify common goals, establish common measures, and secure buy-in for a shared, unifying vision for career readiness; and
- Aligning definitions, measures, unique identifiers and collection cycles across program areas and, if possible, condensing disparate data systems into one unified system to reduce the data collection burden and ensure comparability across programs.

Auditing data collection processes and identifying opportunities to improve data quality. Many states rely on outdated practices and methods for collecting and validating career readiness data. They should re-examine existing practices and adopt processes that are more robust. States should consider:

- Moving away from surveys and self-reported data and toward more reliable sources of information, such as industry-recognized credential providers, the National Student Clearinghouse, and administrative data from the secondary, postsecondary and workforce sectors;
- Embedding robust processes and protocols for validating data at both the local and state levels; and
- Building local capacity to collect and validate high-quality data.

Committing to transparency and using CTE data to ensure equity across all learner populations. Data can be a powerful tool to inform decisions at the state, institution and individual levels. States should consider who their key stakeholders are and ensure that these stakeholders have access to the data they need. States can begin this work by:

- Regularly publishing disaggregated career readiness data by sub-population, such as in annual report cards, and including all learners, not just CTE students, in reported figures;
- Building mechanisms to trigger action and support for programs that are not serving each learner equitably; and
- Equipping school leaders to make data-informed decisions so they can ensure that each learner can access, fully participate in and succeed in high-quality CTE programs.

Taking bold steps to connect data with program approval and funding decisions.

Many states use their data to inform technical assistance and policy, but fewer actually connect their data to decisions about program approval and funding. State leaders should take bold actions and use their authority to elevate the rigor and quality of CTE programs across the state by:

- Adopting formal policies that embed data into program application, review and funding processes;
- Coordinating decisions related to evaluating and funding CTE programs; and
- Building feedback loops to trigger action and support when programs are underperforming.

A high-quality, integrated data system is necessary to help state leaders identify and close equity gaps, continuously improve CTE programs and programs of study, evaluate learner outcomes and program impact, and hold institutions accountable for learner success. But there is an urgent need to improve data quality and ensure that data systems are aligned across sectors. Perkins V provides states the unique opportunity to retool their data systems and secure cross-sector commitment toward cohesive, statewide measures of career readiness.

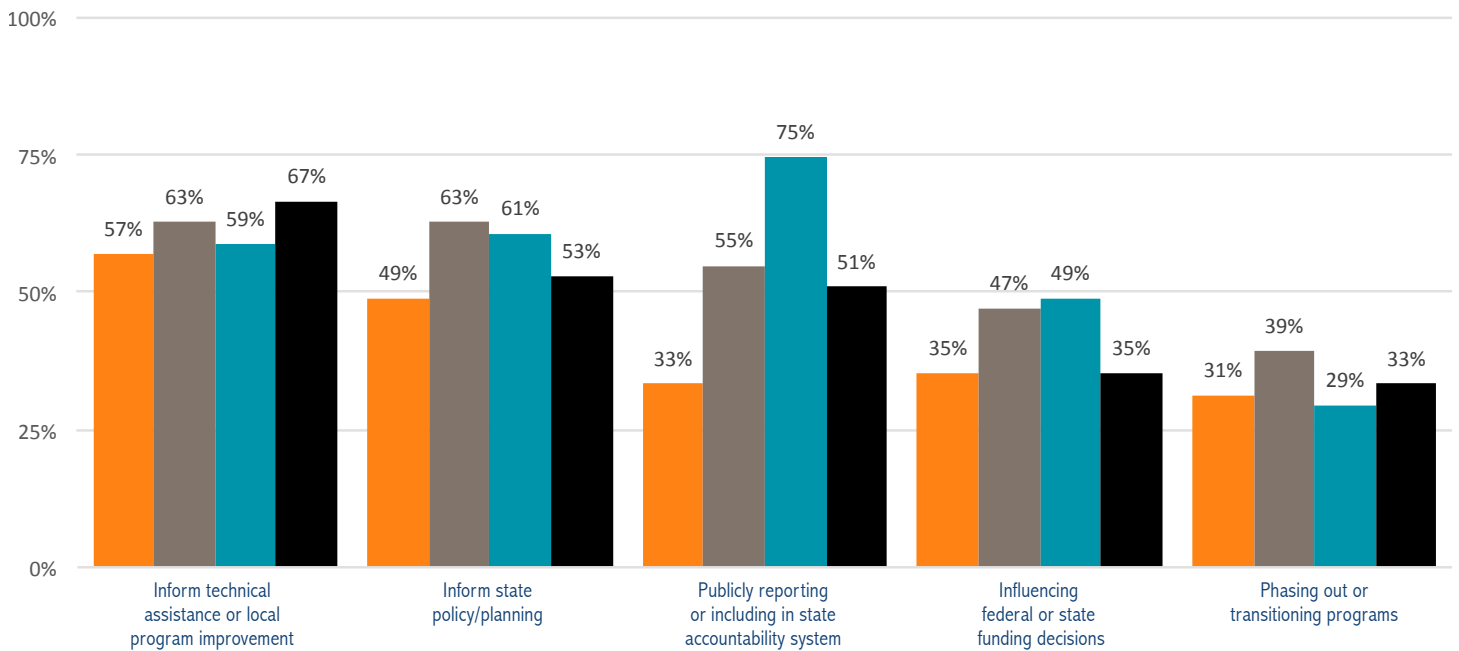
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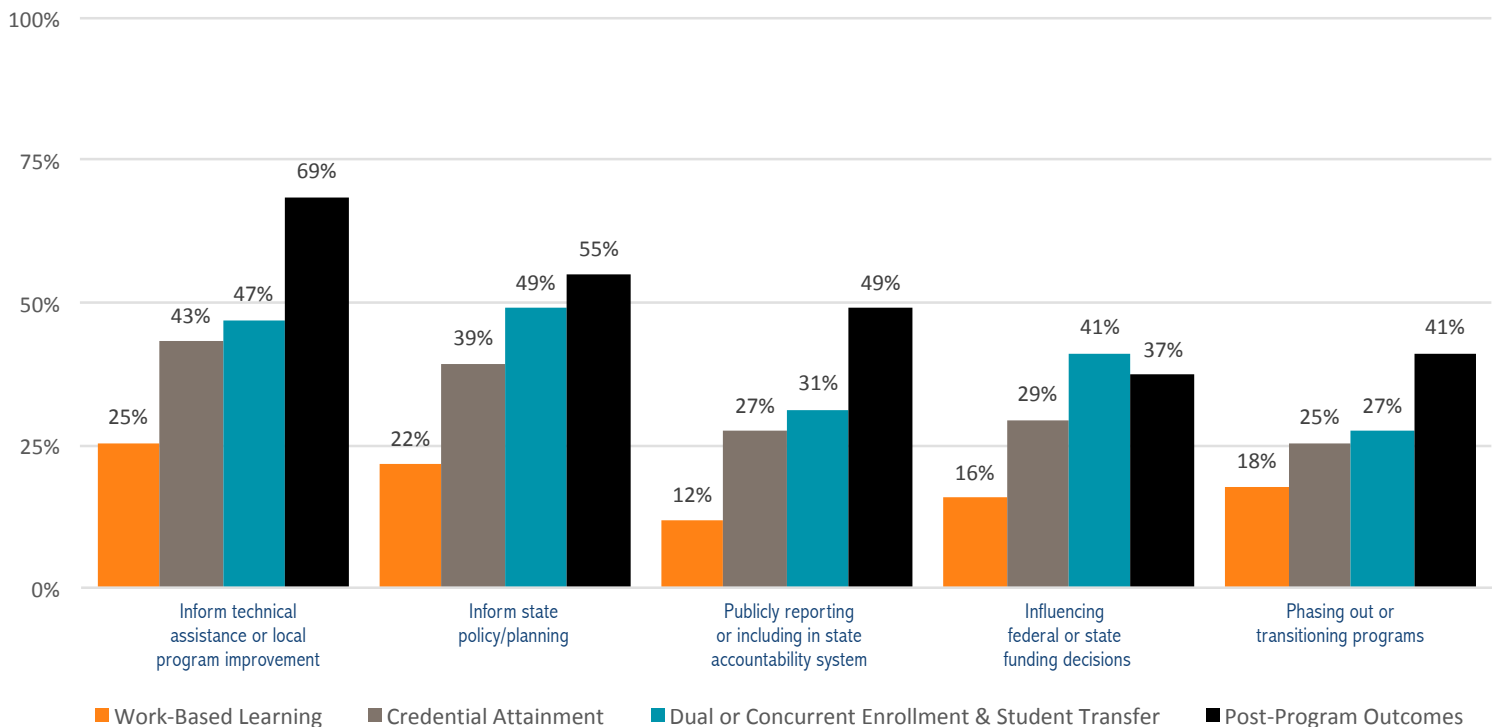
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Appendix A: Use of Career Readiness Data

USE OF CAREER READINESS DATA AT THE SECONDARY LEVEL



USE OF CAREER READINESS DATA AT THE POSTSECONDARY LEVEL



- ¹ Alaska and Rhode Island did not provide responses to the survey. When used in this report, “State CTE Directors” refers only to those who completed the survey.
- ² Achieve, Advance CTE, the Council of Chief State School Officers and Education Strategy Group. (2019). *Making career readiness count*. Retrieved from <https://careertech.org/resource/making-career-readiness-count-2019>
- ³ Education Commission of the States. (2017). *Policy snapshot: Attainment goals and plans*. Retrieved from https://www.ecs.org/wp-content/uploads/Attainment_Goals_and_Plans.pdf
- ⁴ The Strengthening Career and Technical Education for the 21st Century Act of 2018, Public Law 115-224.
- ⁵ Achieve, Advance CTE, the Council of Chief State School Officers and Education Strategy Group. (2019). *Making career readiness count*. Retrieved from <https://careertech.org/resource/making-career-readiness-count-2019>
- ⁶ Metropolitan Policy Program at Brookings. (2018). *Pathways to high-quality jobs for young adults*. Retrieved from https://www.brookings.edu/wp-content/uploads/2018/10/Brookings_Child-Trends_Pathways-for-High-Quality-Jobs-FINAL.pdf
- ⁷ Indiana Commission for Higher Education. (2019). *Early college credit: Dual credit, AP & the broader landscape of earning college credits in high school*. Retrieved from https://www.in.gov/che/files/Early%20College%20Credit_Jan%202019_FINAL.pdf
- ⁸ Community College Research Center. (2017). *What happens to students who take community college “dual enrollment” courses in high school?* Retrieved from <https://ccrc.tc.columbia.edu/media/k2/attachments/what-happens-community-college-dual-enrollment-students.pdf>
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- ¹⁵ North Carolina State Board of Education & North Carolina Department of Public Instruction. (2017). *Report to the North Carolina General Assembly: Industry certifications and credentials teacher bonus pilot program*. Retrieved from <https://www.ncleg.gov/documents/sites/committees/JLEOC/Reports%20Received/2017%20Reports%20Received/Industry%20Certifications-Credentials%20Teacher%20Bonus%20Pilot%20Program.pdf>
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