

Lessons on Expanding Quality CTE and Work-Based Learning

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High-quality [career and technical education](#) and [work-based learning](#) opportunities can support students along a pathway to credential attainment, employment and upward economic mobility through intentional skill development and experiential learning. CTE concentration in high school can increase [graduation rates](#) while helping students build [employability skills](#) that can support [positive outcomes](#) in the workforce. When CTE concentration is [paired with](#) opportunities for [postsecondary credit](#) or a quality [work-based learning experience](#), students are more likely to attain postsecondary and workforce credentials, successfully enter the workforce and earn higher wages.

States are increasingly progressing toward [state attainment goals](#) through aligning workforce education policy more closely with workforce needs, but there are opportunities to make deeper connections. Projections from the Georgetown University Center on Education and the Workforce indicate that [72% of jobs](#) in 2031 will require a postsecondary education and/or training.

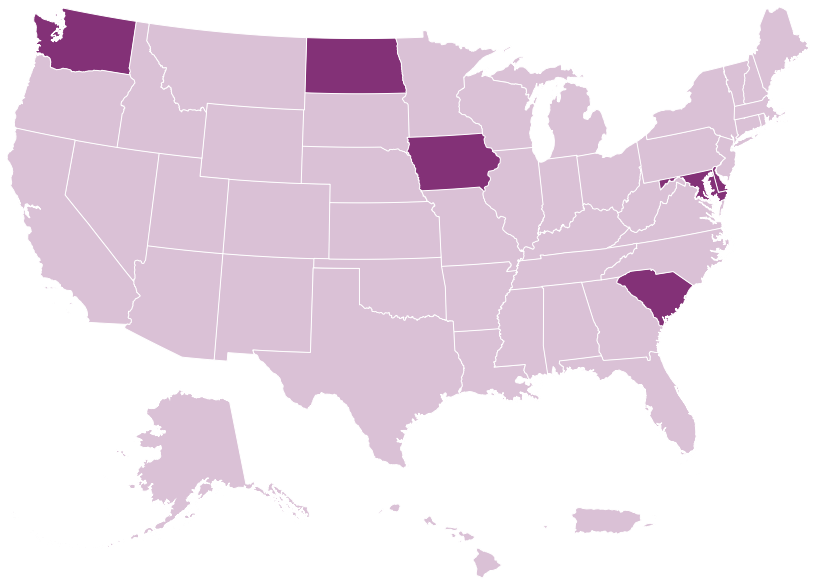
These future labor market demands and the perceived skills gap in the American workforce highlight the importance of continued investments in CTE and work-based learning pathways for students. State education and workforce leaders have responded to the needs of students and employers by increasing alignment between existing CTE and work-based learning offerings across different education settings. State leaders are also increasing student access to these opportunities, which are both key elements of a comprehensive talent development strategy.

Considerations for Policymakers

- 1) With a focus on inequities, collect and use data to identify and address inequities in CTE and work-based learning access.
- 2) Recognize and support the diverse needs of districts and schools based on geographic and resource limitations.
- 3) Leverage data alongside a strong and consistent definition of quality to evaluate and improve CTE and work-based learning programs.
- 4) Engage various stakeholders at each stage from ideation to program evaluation.

Education Commission of the States staff members interviewed state leaders and policymakers, including state education agency staff, state workforce development agency staff, higher education agency staff and district leaders in **Delaware, Iowa, Maryland, North Dakota, South Carolina** and **Washington** to better understand how they align CTE and work-based learning policies and programs with workforce needs.

Interviews primarily focused on obstacles to equitable student access, state efforts to evaluate and support program quality, and meaningful stakeholder engagement. [Participation data](#) highlights disparities in access by geography, race, ethnicity and [gender](#). Once states implement CTE or work-based learning offerings, program quality standards and meaningful program evaluation is vital to support [positive student outcomes](#). Participants also shared that meaningful stakeholder engagement is central to efforts to increase program quality. Research [indicates](#) limited local capacity and obstacles to substantive employer engagement adversely impact access to quality CTE and work-based learning experiences.



This Policy Brief highlights key findings from the interviews, including insight into obstacles and promising practices in increasing student access, program quality and stakeholder engagement.

Lessons From the Field

In the interviews with state policymakers and leaders, the state leaders shared insights into challenges, barriers and ways to address them to advance high-quality CTE and work-based learning opportunities. Through an analysis of the interviews, Education Commission of the States identified a series of obstacles related to student access, program quality and stakeholder engagement and approaches states are taking to address them in their efforts to align CTE and work-based learning opportunities.

Student Access

As states work to expand CTE and work-based learning pathways, leaders have considered how to ensure equitable access. In our interviews, states reported a variety of disparities in student access to programs, including place-based program disparities, inequities in advising and program awareness, and inequities in access to programs that lead to high-wage occupations. States also noted stigma around CTE and work-based learning pathways held by school staff, families and students as well as insufficient awareness and capacity to advise students at the local level.

“ College isn’t a destination. A job is the destination. How we get there could be military, community service, apprenticeships, internships, college, like it’s one of the number of pathways. Re-tooling how we think about that ... will give our kids a better understanding ... about where they can and should go next.

STATE CTE DIRECTOR ”

Place-Based Program Disparities

Policymakers elevated challenges with providing students equitable access to high-quality CTE and work-based learning programming depending on the type of community where they attend school. Though some challenges were similar, they looked different across rural, urban and suburban communities. These challenges included inflexible school schedules, lack of transportation, difficulties engaging employers and resource inequities.

The school bell schedule was identified as a significant obstacle. School schedules are often rigid and do not provide sufficient time to travel to and from a job site without missing class. Interviewees worried that seat time and course requirements could conflict with students’ ability to participate in programs that require time off campus. Policymakers suggested that flexible scheduling, virtual course offerings or block schedules could allow students to attend off-site opportunities.

In addition to scheduling concerns, state leaders discussed difficulties students have accessing transportation to and from work-based learning opportunities. In rural areas, the distances between job sites and schools could limit a student's ability to take part in programming. The distance might not be as great in urban areas, but timely transportation may still be lacking based on the availability of public transit. Leaders identified funding for transportation services, transportation stipends for students, virtual or hybrid opportunities and employer-based transportation options as ways to address these obstacles.

Policymakers elevated challenges with finding employers to meet the demand for work-based learning opportunities in both rural and urban areas. Though there are more employers in urban areas, schools may not have enough class openings to meet student demand. Meanwhile, in rural areas, there are fewer employers to partner with for student placements. Policymakers stated both realities make it difficult for students to get a placement and especially difficult to find one aligned with their interests.

Further, regional economic variation limited access to programs aligned to high-demand occupations or student interest areas. Interviewees emphasized the importance of sustained employer engagement, innovative instructional delivery models, and increased investment to increase access to CTE and work-based learning opportunities across geographies.

“ One [barrier] is the more rural communities very often lack the tax base to generate local funds to help sustain the programs or sometimes have enough staff. Their schools also tend to be the older facilities that need the most upgrading to house these programs. And they also ... often have smaller student populations. So you often don't have enough students to support a wide variety of programs. So you get this limiting that takes place.

STATE CTE DIRECTOR ”

State leaders shared challenges with sustained investment and procurement of resources needed for high-quality programs, especially in historically under-resourced communities, including urban and rural school districts. Generally, these districts have difficulty hiring staff, updating facilities and procuring equipment. In rural areas, challenges found in other regions were often exacerbated by challenges related to economies of scale, or efficiencies and capacity increases from serving a larger population of students. Policymakers suggested that better alignment of state investment with student needs and local revenue capacity could help address these challenges.

Inequities in Advising and Program Awareness

Interviewees expressed concern about access to high-quality programs because of insufficient program awareness and inadequate advising. Some worry that students may be unable to make informed choices without the knowledge that programs exist and can support their career pursuits. However, they expressed that building counselor and advisor capacity can be key in addressing these challenges.

Policymakers felt that some school counselors lacked the knowledge to effectively counsel students into CTE pathways. They suggested that more informed counselors could better facilitate students' access to CTE and work-based learning programming.

Concerns about stigmas associated with CTE also aligned with the feeling that CTE and work-based learning are often seen as a “second choice” behind going to college by school staff, students and families. Policymakers believed that these stigmas could be addressed by building awareness about the opportunities in CTE pathways and with strong connections between counselors and students.

“ CTE is oftentimes looked at as a plan B ... I believe strongly that all students benefit from that career readiness pathway. Whether it be that they're getting some work-based learning and apprenticeship and internship.

STATE WORKFORCE LEADER ”

Inequities in Access to Programs That Lead to High Wage, In-Demand Jobs

Through the interviews, it was clear that not all students have access to pathways toward high-wage, in-demand careers. In rural areas, challenges frequently center around a limited number of employers in the region to offer a wide range of opportunities. Additionally, while programs may be offered, they might not align with a student's career interest.

State leaders also highlighted inequitable enrollment based on race and gender. Some interviewees shared that Black students, Latine students and Indigenous students were more likely to enroll in trade programs, while white and Asian American students were more likely to enroll in engineering programs with better wage outcomes. They also noted that women were most likely to enroll in the health care and childcare pathways, which tend to lead to lower wages. Policymakers emphasized the importance of more robust advising as an opportunity to address these disparities and the adoption of virtual or hybrid learning opportunities that transcend regional boundaries.

Program Quality: Components of High-Quality Experiences

State leaders and policymakers have focused on measuring and evaluating the quality of CTE and work-based learning opportunities. In doing so, many states have developed definitions and identified components for evaluating quality. Interviewees were clear about what is necessary to offer high-quality experiences in their state, however, they noted data challenges associated with evaluating these experiences.

Continuum of Learning Opportunities

Leaders and policymakers expressed that maintaining a continuum of learning opportunities that connect hands-on, meaningful job tasks with classroom instruction is a key quality component. This includes offering career exploration and CTE in middle schools that align with deeper learning opportunities in high school and beyond. Some policymakers and leaders expressed that quality CTE includes work-based learning and core academic instruction. Collectively, they were clear that a continuum of opportunities contributes to the overall quality of programs.

Opportunities to Earn Credit and Credentials

Along the continuum of learning opportunities, state leaders and policymakers noted that the ability for students to earn credentials and postsecondary credit while in high school is another important component of high-quality CTE and work-based experiences. They emphasized the importance of learning technical and durable skills to attain credentials and credit. Despite elevating the importance, opportunities to earn credential and credit vary significantly within states.

“ How do we make sure that the students that we’re sending employers are well prepared for careers?
STATE EDUCATION AGENCY LEADER ”

Qualified Instructors and Equipment

According to the interviewees, qualified teachers, work-based learning coordinators and appropriate equipment that help build industry-specific knowledge are also key components of quality programs. Interviewees expressed that instructors with industry experience and knowledge of what is needed to succeed in a career field are especially significant. However, recruiting and retaining such teachers and acquiring equipment is often challenging. Community colleges were seen as key partners in providing instructors for advanced technical courses. For equipment needs, interviewees identified community colleges as well as local employers as resources.

“ One thing is educator availability ... Not only in K-12 but in higher education, the identification of educators that are qualified to teach in these technology areas and these changing fields is a challenge.
DISTRICT SUPERINTENDENT ”

Employer Engagement

State leaders and policymakers also emphasized the importance of employer engagement in establishing and executing quality experiences. Employer engagement in the early stages through ongoing evaluation is necessary to inform, support and improve CTE and work-based learning. Involving employers in the early stages through ongoing evaluation was highlighted as a critical component in ensuring quality CTE and work-based learning experiences. Policymakers and leaders emphasized the importance of frequent evaluation of programs compared to industry and employer standards.

“In terms of how we came to define quality, there was a lot of stakeholder engagement. That included business. We don’t have any conversations about anything that would impact an employer without having labor partners, both through the state Labor Council and the specific labor entities. Which is really important because they’re going to be the voice of the future workforce. This allows business partners to be very clear about what they need.

STATE EDUCATION AGENCY LEADER”

Program Quality: The Evaluation of Quality of Experiences

State leaders and policymakers were clear that student outcomes, labor market information and employer perspectives should be used to measure the quality of programs. However, they expressed challenges in measuring and evaluating quality.

Prioritizing Student Outcomes

Leaders and policymakers identified a student’s progression in wages, access to benefits and opportunities to progress on a career ladder as indicators of high-quality CTE and work-based learning experiences. Despite the clarity on these measures, many policymakers and leaders shared that accessing relevant data and tracking student outcomes can be challenging. Interviewees shared that including the metrics in accountability and program approval criteria would be a way to get better data and work towards strong student outcomes.

Leveraging Labor Market Information and Employer Perspectives

In each state, leaders emphasized the importance of evaluating courses, programs of study and curricula with labor market demand and in-demand skills.

In addition to labor market data, state leaders and policymakers emphasized the importance of engaging employers to provide information on the skills that will be in demand in the future. Some states solicited employer input through surveys, while others engaged employers through advisory councils that review programs and curricula.

“Some districts have sought the input of employers on their programs through surveys. They were looking for information on the skills needed to succeed in their industry.”

STATE WORKFORCE DEVELOPMENT LEADERS

Creating Strong Data Networks

State leaders and policymakers believed they had collected robust data from CTE and work-based learning participants that could be used to evaluate the quality of programs. However, practitioners and local leaders expressed that it was difficult to access and use this data because different state entities controlled it. Further, some local leaders expressed that they had limited staff capacity and resources to maximize the use of the data.

To address this challenge, some states created data centers that aggregate information from labor and education agencies to help local officials access information. Additionally, some states have provided state-level support to districts to access and effectively use the data at their disposal.

“If you have all of these data silos, sometimes it becomes really hard for practitioners, researchers, and policymakers to access the data in any sort of meaningful way. Recognizing that challenge [our state] created the longitudinal data center that really acts sort of as a convenient body, sort of an intermediary of all of these different agencies, [taking] all of that data and centrally reports a broad range of data for the state.”

STATE EDUCATION AGENCY LEADER

Stakeholder Engagement

Policymakers stressed the importance of meaningful stakeholder engagement with students, families, district leaders, employers, and state and local agencies. Interviewees consistently elevated inefficient collaboration between these key players as a barrier to access and quality. State leaders primarily identified cross-agency coordination, local stakeholders and employer engagement as the three most significant challenges in establishing and growing high-quality programs.

State Agency Coordination

State leaders identified competing priorities and requirements in policy as barriers to meaningful cross-agency collaboration. CTE and work-based learning programs are often governed by a complex web of state and federal policies and by various agencies in state and local government. Interviewees emphasized the importance of collaboration or centralized governance of programs to ensure alignment that supports student progression along industry-aligned pathways. These collaborations are important in establishing common definitions and frameworks for program administration and evaluation. In some states, a single agency serves as the coordinating entity, while other states use formal channels for collaboration, such as workforce development boards and councils.

Local Government Engagement

Interviews consistently raised local government's lack of capacity to establish and administer high-quality programs as an obstacle to student access and program development. Specifically, policymakers cited staffing challenges, insufficient advising and limited resources as barriers. These local capacity challenges exacerbate information gaps for students and families. They can also result in limited student support vital for enrollment and completion of CTE and work-based learning programs. Some state leaders shared their efforts to develop guides, provide training and technical assistance, and other supports — like grant funding — to increase or supplement local capacity.

Employer Engagement

Policymakers expressed difficulty establishing and supporting programs requested by employers in state outreach efforts. Interviewees also emphasized that employers may not have the capacity to engage in the work, especially small- and medium-sized companies. Employers who misunderstood components of a work-based learning placement or did not see an immediate return on investment for hosting a student or lending their expertise to a program could be deterred from participating.

Policymakers noted that there are no quick fixes to this problem but highlighted the importance of continued engagement and messaging about long-term talent pipeline development. State leaders also shared that, in addition to investment from the employer, states could consider incentives to support work-based learning placements. Most significantly, states highlighted success with continued engagement of employers through advisory committees and co-development of CTE and work-based learning offerings to ensure aligned and relevant standards and expectations for students.

“ We get a lot of feedback about rural access ... A lot of the issues are similar in urban communities because you have more students. So you may have more businesses, but if you're trying to ... expand access for [large urban school districts], you have far more students than you have placement opportunities even with ... the massive amounts of employers that they have in that area.

STATE POLICYMAKER ”

Questions for State Policymakers to Consider

Based on the interviews with state leaders and policymakers, some considerations related to increasing student access, creating quality experiences and engaging stakeholders in CTE and work-based learning emerged. The following considerations may help guide states in aligning CTE and work-based learning policies and programs.

With a focus on inequities, collect and use data to identify and address inequities in CTE and work-based learning access.

- What processes are in place to use data to identify inequities in CTE and work-based learning?
- Do districts have an awareness of and access to data that can help them identify inequities?
- Based on disaggregated student participation and concentration data, what gaps in student participation and outcomes persist at the state and local levels?
- How are states supporting districts' ability to analyze relevant data to understand and address inequities?
- With an understanding of existing inequities students face, how is the state distributing funds to address these specific inequities?

Recognize and support the diverse needs of districts and schools based on geographic and resource limitations.

- Do some districts and schools require additional resources and support to increase student access to CTE and work-based learning?
- How could a change in the school day schedule provide time for students to engage in CTE and work-based learning during the school day?
- Does the state support designated work-based learning coordinators at the school or district level?
- How does the state facilitate coordination between educators and employers to support work-based learning?
- What state resources can be used to strengthen the teacher pipeline to ensure quality instruction is available?
- What stigmas of CTE and work-based learning exist, and how can the state support districts overcome them?

Leverage data alongside an effective and consistent definition of quality to evaluate and improve CTE and work-based learning programs.

- Does your state have processes to share labor market information, postsecondary outcomes and workforce outcomes data across agencies and with districts?
- Does your state collect student-level data on metrics aligned with the state definition of quality CTE and work-based learning?
- How can the state support districts and schools in analyzing their program data to ensure students have access to high-quality programs?
- Do districts have the ability to make changes to better align their CTE and work-based learning programs with state program quality standards?

Engage various stakeholders at each stage of the process from ideation to program evaluation.

- Do program development processes allow districts to engage teachers, counselors, parents, students and employers?
- Are teachers, counselors, parents, students and employers involved in CTE and work-based learning programs' development, implementation and evaluation phases?



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