GETTING STUDENTS CAREER READY

Strategies to Address Equity • Rethinking CTE in Nebraska
West Virginia’s Simulated Workplaces • Making the Most of Perkins V
ANNUAL CONFERENCE 2019
October 16–19, 2019
Hilton Omaha, Omaha, NE

Please join us for NASBE’s Annual Conference, the largest gathering of state board of education members in the nation. Speakers will cover amplifying teacher voice, juvenile justice education, teacher pipeline issues, assessment innovation, early learning, career and technical education, and civic engagement—plus a full set of sessions on effective boardsmanship led by state board members for state board members!


A FEW OF OUR AMAZING SPEAKERS:

Dan Goldhaber
CALDER Center, American Institutes for Research

Hailly T.N. Korman
Bellwether Education Partners

Stephanie Marken
Gallup

Sam Meisels
Buffett Early Childhood Institute

Rodney Robinson
2019 National Teacher of the Year
High-Quality Career Readiness for All Students
As career pathways proliferate, state leaders should pay close attention to program quality. **Kathleen Mathers**

Four Strategies to Address Equity in CTE
State boards can help ensure that all students have access to high-quality CTE that prepares them for high-wage jobs. **Austin Estes and Brianna McCain**

Making the Most of Perkins V
Is your state tapping into the law’s new flexibilities and its convergence with ESSA and WIOA? **Alex Perry**

Rethinking Career Education in Nebraska
The state is building on recent reforms in CTE as it crafts a long-term state plan for Perkins. **Rachel Wise, Matt Blomstedt, and Ryan Foor**

Aligning CTE Courses to Local Labor Markets
Are students who stay put after high school prepared to work for hometown employers? **Amber M. Northern and Michael J. Petrilli**

The Critical Role of Apprenticeship Programs
State leaders seeking to expand work-based learning have many flavors to choose from. **Wanda Monthey**

Simulated Workplaces in West Virginia
Student-led businesses are key to West Virginia’s special brand of work-based learning. **Kathy D’Antoni**
Schools in many states and districts can boast that career and technical education for their rising graduates is not their parents’ CTE. Where students were once tracked into one path or another, there is broad agreement that every student needs academic and technical skills to prepare them for life and every student needs to plant their feet on a career pathway during their K-12 journey.

Kicking off this issue, Kathleen Mathers of the Education Strategy Group paints a national landscape of burgeoning opportunities for readying students for the world of work. As states expand career pathways that students can embark on before they leave high school, state boards of education have a role to play in ensuring these programs are high quality and truly reach all students. She lists four actions for state boards to take.

Challenges remain, and this issue lays out several. In their piece on equity in CTE, Austin Estes and Brianna McCain at Advance CTE conclude, “With the right policies, systems, and attitudes, CTE can be a powerful tool for closing achievement and opportunity gaps.” To overcome a past in which schools often enrolled minority and low-income students in CTE courses aimed at low-wage employment, state boards should examine disaggregated program data, talk to diverse students and parents, and remove barriers to program access, they write.

Amber Northern and Michael Petrilli give us a rundown on a recent Fordham Institute study that asks how states and districts can determine which CTE course enrollment in high school aligns with the work available in local labor markets. The study concluded that state boards and agencies can do more to make CTE courses more relevant to the local employers hiring local graduates.

Wanda Monthey details the different types of apprenticeship programs available for students, and she says state boards should encourage these options for on-the-job learning. Kathy D’Antoni of the West Virginia Department of Education writes that the state expanded its work-based learning by marshaling cross-agency and business support for a program that transformed traditional CTE classrooms into student-led companies.

Alex Perry of Foresight Law + Policy lays out the timeline for developing state plans for implementing a key federal law, the reauthorized Perkins Act (aka Perkins V), and he suggests ways state boards might best take advantage of the opportunity it represents.

Rachel Wise, chair of NASBE’s board and herself a former CTE educator, teams up with state chief Matt Blomstedt and Ryan Poor to tell Nebraska’s CTE story. They see the development of their state plan under Perkins V as an opportunity to knit together ongoing initiatives to expand students’ career options into a guiding vision for career education in the state.

Finally, we have bottled the great conversation that Scott Stump, Rachel Wise, and Byron Ernst had during NASBE’s 2019 legislative conference. Stump describes the opportunity for states to make hay with the flexibility and alignment created by the triple reauthorization of Perkins, the Workforce Innovation and Opportunity Act, and the Every Student Succeeds Act. “We need to make sure that pathways that empower individuals to thrive are not just there but are equally valued,” he said.
Federal leaders have been working diligently to complete key education legislation and other decision making before the 2020 campaign season begins in earnest.

At the beginning of 2019, Senate Health, Education, Labor, and Pensions (HELP) Committee Chairman Lamar Alexander (R-TN) and House Education and Labor Committee Chairman Bobby Scott (D-VA) agreed to prioritize reauthorization of the Higher Education Act (HEA), including updates to K-12 educator recruitment and preparation provisions. Given the number of new House committee members, Scott decided to spend the first part of the year educating new members on the issues. Working closely with Ranking Member Virginia Foxx (R-NC), Scott’s committee completed five bipartisan HEA hearings by Memorial Day. With the mostly veteran HELP Committee, Alexander decided to forgo a heavy hearing schedule and began negotiating with Ranking Member Patty Murray (D-WA) on a bipartisan bill for committee debate and an eventual vote.

Prospects for a new higher education law being sent to the president this fall may be dimming. Although the Alexander-Murray negotiations have reportedly progressed, key issues remain. Recognizing the necessity of a Senate compromise before a bill can be sent to the president, Chairman Scott has taken a wait-and-see approach before drafting a new House bill. Absent movement by year’s end, we do not expect Congress to update the HEA before the 2020 elections.

After uncertainty early in the year, Congress appears to be poised to provide at least a modest funding boost for education. The House had moved quickly early in the year to approve a meaningful spending increase for U.S. Department of Education programs, despite the lack of an overarching budget agreement, and the full House approved increases for Title I of the Elementary and Secondary Education Act and Part B of the Individuals with Disabilities Education Act. Senate Appropriations, however, got a very late start after Senate leaders directed them to wait for a budget agreement with the White House. Negotiators finally reached a two-year agreement in late July, setting the stage for a likely rush of Senate appropriations decisions in September and October. Although it is too early to project final allocations, the agreement provides aggregate caps that should accommodate at least some of the education spending increases included in the House bill. That’s good news after a year of tense budget negotiations that could have easily led to overall decreases in federal education spending.

Also on the House agenda, Chairman Scott may ask his committee to consider legislation to further promote apprenticeships as a core workforce development strategy, and he may champion a measure to increase the federal share of overall funding committed to special education.

Among government agency developments, the Federal Communications Commission is expected to soon make important decisions about E-rate, a program to help schools acquire high-capacity broadband, including whether to continue the current formula for allocating funding for WiFi in schools. The U.S. Department of Health and Human Services is expected to invite states to submit applications for the fiscal year 2019 Preschool Development Grants competition.

Thanks to Reg Leichty and his colleagues at Foresight Law + Policy for these updates.

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**Figure 1. Individual Learning Plans for College and Career Readiness by State**

Source: Drawn from data published in Office of Disability Employment Policy, “Individualized Learning Plans Across the U.S.” (Washington, DC: U.S. Department of Labor, 2016), as well as staff’s scan of state policies.
Significant economic shifts—spurred by rapid technological advancement and the Great Recession—fundamentally altered the path toward economic security and self-sufficiency in the United States, with major consequences for education and work. No longer are college and career readiness entwined in name only. More states and communities are prioritizing career pathways that start in high school and culminate in a postsecondary credential, and students are exploring their career interests earlier. As this shift takes hold, state boards of education can play a vital role in ensuring that high-quality opportunities are available to all students, especially those who are disproportionately underrepresented in high-value job fields.

Employment with family-sustaining wages now requires postsecondary education. Individuals with only a high school diploma have about a 30 percent chance of earning more than $30,000 a year, and most that do are male.\(^1\) According to the Georgetown Center on Education and the Workforce, nearly every job created during the recovery after the Great Recession required some postsecondary education or training.\(^2\)

These data and even more recent workforce projections recognize, however, that not all students need a bachelor’s degree to thrive in the workforce. Nationally, more than 30 million “good jobs”—ones that provide a family-sustaining wage—are held by individuals with less than a bachelor’s degree and more than a high school diploma.\(^3\) This level of postsecondary education and training—postsecondary certificates, journeyman licenses, industry-recognized credentials, and associate degrees—represents a significant opportunity. In fact, nearly a third of all associate’s degree holders and many workers with one-year certificates earn more than the average worker with a bachelor’s degree.\(^4\)

### Figure 1. State CTE Laws, 2015–18

<table>
<thead>
<tr>
<th>Total Number of CTE/Career Readiness Legislation Passed by Year</th>
<th>Number of States Passing CTE/Career Readiness Legislation by Year</th>
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<tbody>
<tr>
<td>2018: 146</td>
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<td>2017: 241</td>
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State Efforts to Promote Career Readiness

Education policy leaders at the K-12 and higher education levels are responding to the economic reality by setting more ambitious goals for postsecondary credential attainment and making college and career readiness a larger focus of their high school strategies. And they are doing so with a more explicit focus on closing equity gaps, recognizing that past efforts to improve students’ career readiness have far too often tracked students of color and low-income students into low-quality offerings (see also Austin Estes and Brianna McCain’s article, page 10). Over the past four years, in particular, the country has witnessed increased momentum toward high-quality career readiness for all students. During that time, nearly every state has passed legislation pertaining to career readiness or career and technical education (CTE), accounting for more than 600 bills total (figure 1). Three areas account for the most policy growth:

- **Employer engagement.** States are increasingly calling on the employer community to partner in designing career pathways in secondary schools that develop the knowledge and skills necessary for success in high-skill, high-demand jobs.

- **Accountability.** More than 40 states value students’ college and career readiness in their high school accountability systems, more than double the number of states a few years back (figure 2). States are emphasizing four types of measures: 1) college and career preparatory courses and pathways; 2) assessments indicating postsecondary preparation or demonstrating technical skill acquisition; 3) experiences outside the classroom, such as work-based learning, that help students learn and demonstrate professional skills; and 4) transitions beyond high school.

- **Work-based learning.** More than half of the states passed legislation in 2018 on using work-based learning opportunities to connect students with industry.

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*Source: “Making Career Readiness Count 3.0” (Washington, DC: Education Strategy Group et al., 2019).*
more high-quality, scalable partnerships and disseminate information about the conditions and strategies necessary for successful implementation of youth apprenticeships. (See also the article by Wanda Monthey, page 30).

The focus on strengthening and expanding career readiness is likely to continue. In 2019, more than half of governors’ state of the state addresses included some mention of career readiness.

**Keeping Tabs on Quality**

As states dramatically expand career readiness opportunities, state boards must help ensure that the opportunities are high quality, set students on a path to postsecondary education and training, and are available to students regardless of skin color, geography, or family income. Board members should take the following actions to put all students on a path to economic opportunity.

**Lock arms with higher education leaders to create pathways that articulate into and through postsecondary education.** As states look to scale high-quality programs of study, partnerships between K-12 and higher education will be imperative. State board members should work alongside other K-12 and higher education leaders to set a vision for quality that guides all state actions to expand and strengthen career pathways. The true mark of quality will come when each pathway 1) leads to measurable academic gains and increased postsecondary credential attainment for students in both the short and long term; 2) enables youth to earn fully transferrable postsecondary credits or industry-recognized credentials that have labor market value while in high school; 3) combines rigorous academic content with opportunities for applied learning in and outside the classroom; and 4) is supported by aligned academic and career advising across K-12 and higher education. Leading states such as Ohio and Kentucky have developed approaches to ensure that courses directly articulate for postsecondary credit at institutions statewide, accelerating students on a path to credential attainment.

The elements of a high-quality pathway should be prioritized in state funding and accountability systems. Through federal Perkins or state dollars, states can offer direct or incentive funding to promote pathways that help students gain postsecondary credit while in high school and articulate directly into opportunities in higher education to earn a credential with labor market value. As states continue to improve their high school accountability systems, they should prioritize measures such as dual enrollment, industry-recognized credentials, and work-based learning.

It is particularly important that states be explicit about how all these efforts align—to each other and to a student’s pathway. For example, a dual-credit experience that is disconnected from a student’s pathway can be a positive experience, but it will not contribute to a student’s postsecondary success in the same way a fully aligned, integrated opportunity to earn early postsecondary credit would. Delaware has worked to address both issues. The state phases out funding for any programs that do not provide students with an opportunity to earn postsecondary credit or an industry-recognized credential. And in the state’s accountability system under the Every Student Succeeds Act, the elements of a high-quality career pathway—such as dual credit within a state-approved program of study—are included in the state’s career preparedness measure.

**Use labor market data to create and phase out career pathways.** States need a demand-driven system for determining which educational programs and pathways warrant continued development and investment, and which should be scaled back or phased out. The foundation of those decisions should be traditional and real-time labor market information and workforce projections. These data present a robust vision of current and future job openings and associated wages, often at both the regional and state levels, which can be mined to help state leaders better understand the skills and credentials most in need today and in the future within priority industries.

States should leverage this information—and engagement with employers—as the starting point for pathway approval, renewal, and phaseout. For instance, Tennessee approves and phases out state-approved programs of study based on alignment with workforce projections and a review of alignment between course standards and industry needs. New Jersey code
State board members should request that the state agency provide data on availability of pathways, enrollment in the courses within those pathways, and the number of students completing the full sequences of courses within those pathways. All of those data should be disaggregated by race/ethnicity, gender, and income status and then mapped across geographic regions to identify gaps and showcase schools and pathways within schools that have closed equity gaps. The data should be provided to board members and other state policymakers annually and should be easily accessible to the public and researchers for further study.

For example, Kentucky developed “heat maps” that display access and enrollment in pathways aligned to high-demand industry sectors by school district. The maps have helped the state education agency apply a data-driven approach for prioritizing technical assistance to districts (figure 3).

Data should be an asset in this work; instead, it is an Achilles’ heel. State board members should request that the state agency provide data on availability of pathways, enrollment in the courses within those pathways, and the number of students completing the full sequences of courses within those pathways. All of those data should be disaggregated by race/ethnicity, gender, and income status and then mapped across geographic regions to identify gaps and showcase schools and pathways within schools that have closed equity gaps. The data should be provided to board members and other state policymakers annually and should be easily accessible to the public and researchers for further study. Kentucky, for example, developed “heat maps” that display access and enrollment in pathways aligned to high-demand industry sectors by school district. The maps have helped the state education agency apply a data-driven approach for prioritizing technical assistance to districts (figure 3).

Data should be an asset in this work; instead, it is an Achilles’ heel. The path to closing equity gaps starts with states using disaggregated data to drive conversations about high-quality opportunities for students, especially students from traditionally underserved student populations or geographies. For instance, finding that only one-quarter of information technology certificates are awarded to females can help education...
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leaders grapple with questions about access, stigma, advising, supports, and communications. All states must build better linkages across sectors so that educators and policymakers can have actionable data.

**Ensure that the state accountability system prioritizes high-value, industry-recognized credentials.** States and communities have begun to recognize that industry-recognized credentials play an important role in education system's responsiveness to the new economy. Yet with over 4,000 credentialing bodies nationwide offering thousands of industry-recognized credentials across sectors, very little information is available about their value. How can states that have encouraged the growth of industry-recognized credentials determine which ones to scale up?

To help answer that question and guide states' work in this area, Education Strategy Group in partnership with CCSSO and Advance CTE convened a work group of state and national leaders from K-12, higher education, and industry to develop a road map for how states can identify which credentials the labor market values and what approaches improve credential attainment and reporting. Our report, “Credential Currency: How States Can Identify and Promote Credentials of Value,” argues that high-quality credentials (those with “value”) either 1) help an individual find employment or advance in the workforce and/or 2) accelerate a student's progression into and through

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**Figure 4. Steps to Ensuring the Quality of Nondegree Credentials**

1. **Identify High-Value Non-Degree Credentials**
   - Use real-time UMI to identify high-value non-degree credentials in priority occupations
   - Finalize your priority statewide and regional occupations
   - Identify HS occupations from the ID/HS list

2. **Validate the Preliminary List of Priority Non-Degree Credentials**
   - Yet any changes to credentials list against your established process
   - Synthesize survey and focus group findings
   - Convene industry-specific focus groups

3. **Incentivize Attainment of Priority Non-Degree Credentials**
   - Incentivize higher education
   - Incentivize districts and schools
   - Incentivize students and families

4. **Report on Attainment of Priority Non-Degree Credentials**
   - Collect reliable data on credential attainment

postsecondary education and training. States need to place their greatest focus on the credentials that provide the greatest value to students and employers. According to the report, to do so, states should do the following:

- Identify high-value credentials through analysis of employer signals and determination of those that count for postsecondary credit. All states should build a cross-sector priority credential list to use in programmatic and funding decisions.
- Incentivize attainment of high-value credentials by demonstrating their value for students’ futures; providing funding for attainment to schools and districts; including priority credentials in state accountability systems; and publicly communicating the importance of specific credentials.
- Collect and report credential attainment data without relying upon self-reported information.

To support states in this critical work, ESG has developed tools for implementing these recommendations. Figure 4 illustrates the process that states may take to identify and prioritize credentials with labor market value. ESG recently published work that provides state leaders with tools to guide them through that process.

State boards should leverage their authority and bully pulpit to ensure that policies and regulations distinguish between high- and low-value credentials; there is a robust process, including the use of labor-market information and employer feedback, to determine which credentials are valued in the workforce; and the information collected from schools and districts is at the individual student level so that policymakers can monitor access and success disaggregated by student groups.

With 26 states including industry-recognized credentials in their high school accountability systems—up from 11 prior to the passage of the Every Student Succeeds Act—and others contemplating whether such credentials should count toward their postsecondary attainment goals, the stakes have never been higher. The choices states make about which nondegree credentials “count” will either encourage learners to head down a meaningful career path or unwittingly steer them toward lower value credentials.

Accelerating Progress, Closing Gaps

States have done a tremendous job over the past few years reframing and expanding career readiness opportunities for K-12 students. This positive momentum should be celebrated. It is leading to tangible improvements in student outcomes and as a result will likely continue for the foreseeable future. As states work to accelerate that progress, quality must be the driving consideration. These opportunities should be built on a foundation of concrete, not sand. Otherwise, states will jeopardize the momentum to date, fail to meet the evolving needs of the workforce, and deliver empty promises to students.

A deep focus on quality is critical not only to prepare students for the workforce but also to advance equity: States have a responsibility to make sure all students, especially those from traditionally underserved backgrounds, have the skills and knowledge they need to be successful in life after high school. We must not accept our past of tracking students of color and those from low-income families into low-quality career pathways as our future.


2Anthony P. Carnevale et al., “America’s Divided Recovery: College Haves and Have Nots” (Washington, DC: Georgetown University Center on Education and the Workforce, June 2016).

3Anthony P. Carnevale et al., “Good Jobs that Pay Without a BA” (Washington, DC: Georgetown University Center on Education and the Workforce, 2017).


10“Making Career Readiness Count.”
Career and technical education, or CTE, helps learners gain the skills they need for high-wage, high-skill, in-demand occupations, but this was not always the case. For much of the 20th century, what was then called vocational education offered watered-down academics in exchange for low-skill job training. Students enrolled in these programs were less likely than their peers to complete high school, earn advanced math credits, or meet preparatory requirements to enter four-year colleges, fixing vocational education as a second-tier educational pathway.

Given the U.S. history of segregation and racism in public education, it is unsurprising that learners of color were disproportionately counseled into these

Programs are at once powerful tools for expanding opportunity and laden with a fraught history of doing the opposite.

Austin Estes and Brianna McCain

Four Strategies to Address Equity in CTE
would write off the one out of five students who do not complete high school, the two out of five high school completers who do not immediately enroll in college, and the two out of five college students who do not graduate in six years.

The line between education and work is far more fluid than most people believe, and learners should have access to the knowledge and opportunities that will help them achieve their academic and career goals. In today’s economy, there are 30 million family-sustaining jobs that don’t require a four-year degree. Accessing these opportunities can put workers on a path toward lifelong learning and economic success.

State boards of education in particular can expand access to and achieve equity within CTE programs by taking four actions: investigate the data to identify discrepancies in access, enrollment, and success for different student populations; rebuild trust by talking to students and families and reengaging historically marginalized populations; identify and remove barriers to access; and take measures to ensure learner success.

Investigate Data

There is no more powerful tool than a state’s data system to reveal discrepancies in access and success. State leaders can use data to gain an understanding of the CTE landscape, examine root causes, empower local leaders to take action, and hold local institutions accountable. However, state leaders do not always have access to the data they need to make informed decisions. Challenges with data collection, student privacy laws, and cross-sector data linkages can limit the information available to state leaders. A high-quality data system should enable state leaders to answer the following questions:

- Which student populations are overrepresented in CTE programs that are not aligned to high-skill, high-wage, in-demand occupations? Which are underrepresented?
- How does the population of CTE students vary across Career Clusters? Are students enrolling in programs aligned to industries in which individuals with their gender, racial, ethnic, or socioeconomic background are underrepresented?
equity gaps. Although local sites are not required to act on the department’s recommendations, many recognize the need and seize the opportunity for additional state support. In this way, the education department serves as an equity partner, empowering local leaders to examine root causes and pursue new strategies to achieve subgroup parity.

Talk to Students and Families

Core to advancing equity in CTE is building trust with families and students. Learners will not participate in CTE if they do not view it as a viable mechanism to help them achieve their college and career goals. Building trust with families and students means intentionally including diverse voices—especially those who have been historically underserved by CTE—in conversations about policy and programmatic decisions that will affect them.

Providing a platform for students, families, and leaders to help inform policy and programmatic decisions empowers communities and increases their investment in CTE. Students and families should have multiple opportunities to provide feedback, and these feedback loops must be accessible to diverse groups of students and families.

Here are some questions to consider in examining the accessibility of information and feedback loops:

- In what languages are plans, data, policy, and program information presented? What languages may community members use to provide feedback?

- Is information presented in plain language that the average layperson can understand? Is jargon translated into lay terms?

- What timeframe for providing feedback is given? Who may be excluded from providing feedback due to the times and dates of meetings?

- What delivery methods may community members use to provide feedback (online, mail, in person)? Who may be unable to access these opportunities because of the location or time of day?

Another strategy for engaging historically marginalized populations is tapping trusted CTE
champions who can demographically represent populations that states are hoping to support.

In 2017, Advance CTE, with support from the Siemens Foundation, commissioned focus groups and a national survey to explore the attitudes of parents and students currently involved in CTE, as well as prospective CTE parents and students. A key finding was that school counselors, teachers, and CTE students are among the most trusted sources of information about CTE for prospective parents and students alike. By engaging trusted stakeholders, states can get critical insights into how CTE programs can better serve historically marginalized populations.

Remove Barriers to Access

In practice, much of the conversation about equity in CTE centers on access. Working toward parity in CTE programs is a good focus—particularly to ensure that learners are not under- or overenrolled in a specific program area—but such efforts must be coupled with a focus on quality.

To begin with, state leaders must set high standards for excellence and quality in CTE so that no student anywhere can enroll in low-quality programs that lead to terminal, low-wage occupations. State leaders must use their authority over program approval, funding, and standards to set a high bar for all CTE programs. Focusing on program quality means ensuring that all programs are aligned to priority industry sectors, teach the latest practices and techniques, are facilitated by experienced, well-trained educators, and give learners the opportunity to apply their learning in a real-world setting while accumulating early postsecondary credit and working toward an industry-recognized credential.

State leaders can expand access to high-quality CTE programs by identifying common barriers and working to meet students where they are. Some barriers that might inhibit access to high-quality CTE include the following:

- geography and availability of high-quality CTE programs;
- funding and resources, particularly for capital-intensive programs such as advanced manufacturing or health science;
- at-home factors (family involvement, income, trauma, childcare needs, health needs);
- academic preparation;
- career awareness/advising;
- lack of qualified instructors;
- cultural awareness; and
- physical and learning disabilities.

To help local institutions expand access, states must target their resources and funds to the communities and students most in need. Compared with other programs, CTE can be more expensive due to the cost of equipment, facilities, and educators, making it difficult for states to sufficiently fund high-quality CTE in high-need areas. State boards of education can advocate for legislation and enact regulations that ensure existing funds are leveraged appropriately.

State leaders can also work with stakeholders to expand geographic access to CTE. They can consider input from the business community and CTE instructors, for example, to identify the challenges to expanding access to specific zip codes. They can craft strategies to address these challenges, such as leveraging funds to provide appropriate transportation to CTE opportunities and leveraging technology to connect learners to industry experts virtually. For example, the Ohio Department of Education has developed a mapping tool using geographic information systems to identify key factors that support or inhibit learners’ access to work-based learning and CTE.

Finally, state boards of education can advocate for legislation and pass regulations that help to address some of the significant barriers that prevent learners from entering CTE programs even when those programs are geographically available to them—for example, a lack of academic preparation, inadequate advising, and entrance requirements.

To address these barriers, state boards can pass regulations to ensure that each learner experiences rigorous academics, that academic and technical instruction are integrated and reinforced within a program of study, and that career exploration starts early so there can be a smooth handoff once learners officially enter a program of study. They can also examine whether entrance requirements are predictive...
CTE can be a powerful tool for closing achievement and opportunity gaps.

of learner success in CTE programs and not just a means to deal with excess demand for given programs. State leaders can also promote bridge programs or summer-intensive programs as an alternative to entrance requirements. These programs help ensure that each learner has the foundational skills needed to succeed in CTE.

Take Steps to Ensure Learner Success

Too often, CTE students face teasing or harassment in programs that are not considered appropriate for their gender. Other emotional, financial, and academic challenges can also inhibit learners from reaching their full potential. To be successful in CTE, students must enter a safe, welcoming environment in which they can excel academically and build the skills and experiences they need in the workplace.

School and district leaders make most of the decisions affecting school climate and student supports, but there is still an important role for state leaders to play. For one, they can set policies on the availability and use of school climate surveys. One example is Illinois State Board of Education, which requires districts to administer one of three school climate and culture surveys each year. The data, which are also available on the school report card, are used to determine student perceptions about their own safety and well-being and to inform school improvement planning.

State policymakers also can ensure learner success by making resources available to support academics, healthcare, and other student needs. For students living in poverty, minor health issues like cavities or untreated illnesses can have a dramatic impact on learning in the classroom. Some schools, such as the Traverse Bay Intermediate School District’s Career-Tech Center in Traverse City, Michigan, provide free dental, mental, and health services for students so they can focus on learning.

Students also need help with the transition to the next step in their career pathways, whether they choose to go on to a four-year college, community or technical college, apprenticeship, or straight into the workforce. State boards can set policies and advocate for funding to expand rigorous academic and career advising so learners are aware of the variety of postsecondary options and the steps they need to take to get there. College and career advising has been a focus of the Massachusetts Department of Elementary and Secondary Education, which recently unveiled a new advising framework and has begun training school-based teams of counselors and administrators on a student-centered approach to college and career planning. As part of the training, participants attend a racial bias workshop to understand and counteract bias in college and career advising.

Additionally, state leaders can work to expand early postsecondary opportunities, work-based learning, and other experiences that facilitate successful transitions. Students who earn college credit in high school are more likely to enroll and persist in college after they graduate. By expanding access to such opportunities in high school—and holding schools and local education agencies accountable for increasing student participation—state leaders can ensure more students graduate with the experiences they need to seamlessly take the next steps.

A Path Forward

With the right policies, systems, and attitudes, CTE can be a powerful tool for closing achievement and opportunity gaps. High-quality programs of study can prepare learners to earn valuable credentials that will advance their economic and social mobility, help them obtain employment in a career of choice with family-sustaining wages, and provide opportunities for advancement and lifelong learning. As CTE continues to grow in popularity and availability, state leaders should learn from and actively work to dismantle the aspects of CTE’s history that contributed to equity gaps and make sure that each learner has access to high-quality opportunities and support.

State boards are uniquely positioned to influence equity and access in K-12 education. This authority includes expansion of access to CTE. They should leverage their power to ensure that each learner can access, succeed in, and feel welcome in high-quality programs. It is only through an intentional focus on equity that states will truly be able to put students first.


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Making the Most of Perkins V

Following the passage of the Strengthening Career and Technical Education Act for the 21st Century (Perkins V) in the summer of 2018, state education leaders are crafting four-year plans to implement the law, which are due to the U.S. Department of Education next spring. They ought to take full advantage of the flexibilities Perkins V has to offer.

To increase students’ access to career and technical education (CTE) programs, state education leaders must also push their agencies to align their Perkins plans with the plans for related laws like the

Alex Perry

State boards should tap into new flexibilities and convergence with ESSA and WIOA.
Every Student Succeeds Act (ESSA) and the Workforce Innovation and Opportunity Act (WIOA). And at the state and local levels, they must take advantage of Perkins V’s flexibilities and allowable uses, which may point them toward making some hard choices that will change the way funds were invested under Perkins IV.

The time to have those conversations is now. States are in the middle of required public consultations, and many have started drafting their plans.

**What Changed**

The Perkins reauthorization changed the planning process, provided new flexibility on how state and local recipients spend their money, and reformed CTE accountability systems.¹

Whereas the previous version of the law merely encouraged stakeholder consultation, the state plan for Perkins V must be developed in consultation with specific stakeholders, including those from secondary and postsecondary CTE programs, community representatives, the WIOA-established workforce development board, and members and representatives of special populations. Perkins V also requires that state plans undergo robust public comment and review and provides a 30-day signoff opportunity for the state’s governor. Any changes or revisions to the plan must be submitted for public comment as well.

Local recipients of Perkins funds must conduct a comprehensive local needs assessment every two years. The needs assessment must examine student performance, program offerings, teacher capacity, and progress toward closing equity gaps. States may also tailor requirements for the needs assessments to meet local contexts.

Perkins V provides much greater flexibility in where state and local recipients can invest their funds. For example, the Perkins Reserve has increased in size from 10 percent under Perkins IV to 15 percent under Perkins V, and states may set aside these funds to foster innovation in CTE and promote programs aligned with high-wage, high-skill, or in-demand occupations.

The new law lifts a previous restriction on using Perkins funds below seventh grade. Funds now may be used for career exploration in fifth through eighth grade.²

In a major change for accountability systems, states no longer must negotiate their performance levels with the U.S. Department of Education. Under Perkins IV, states had to negotiate with the department and agree on performance levels across each of the core indicators in the law for which they would be held accountable. Under Perkins V, states may set their own levels based on the law’s criteria. One such criterion is that the levels of performance must apply equally for all concentrators in the state. Another is that schools must make meaningful progress toward improving performance for all CTE students and special populations.

Perkins V created a consistent, nationwide definition of a CTE concentrator: a student who completes at least two courses in a CTE program or program of study. Because the definition will increase the number of students included in the state accountability system, this change raises the stakes for designing the CTE system well.

In addition, Congress created the Perkins Innovation and Modernization Grant Program. The first solicitation for grants under the program were announced in April, with competitive preference priorities for promoting science, technology, engineering, and math (STEM) and serving low-income students and students attending CTE programs from Qualified Opportunity Zones.³

**Dual Enrollment and Early College High Schools**

In a much more expansive way than Perkins IV, Perkins V encourages states and local entities to consider dual and concurrent enrollment and early college high schools (otherwise known as college in high school programs) as a pathway for postsecondary attainment in a student’s desired career field.

Schools around the country have demonstrated that college in high school programs can propel students toward valuable, portable college credentials and degrees. Perkins V builds upon previous allowable uses in the 2006 law to expand how states can apply funds to dual enrollment or early college high school programs. For example, educators increasingly
use dual enrollment to advance high school students into postsecondary CTE classes so that they can secure their degree or credential and move into the workforce expeditiously. Perkins V will continue to support the growth of dual enrollment courses.

States are to detail in their state plans how they will make opportunities available for students to engage in dual enrollment programs, which carries over from Perkins IV. New or expanded provisions that support dual enrollment include local use of funds, state leadership activities, local applications to receive funding, and accountability system indicators. Perkins V adds two allowable uses of funds for local recipients that directly affect college in high school programs, which must align with the district’s needs assessment:

- expanded student access to college in high school programs with a CTE focus; and
- reduced or eliminated out-of-pocket expenses for participating students in special populations—that is, students with disabilities, low-income youth and adults, out-of-workforce individuals, single parents, displaced homemakers, homeless individuals, youth in foster care, young people with parents in the U.S. Armed Forces, and English language learners—to include fees, transportation, child care, and addressing mobility challenges.

The new law allows states to use funds to establish, expand, and integrate opportunities for students to participate in college in high school programs at no cost to them or their families. It also requires districts to include in their application to the state how they will provide the opportunity for students to participate in college in high school programs.

As part of their accountability systems, states are required to report on several indicators at the secondary and postsecondary levels. At the secondary level, states will choose to report at least one of the following as part of the indicator addressing program quality:

- the percentage of students graduating from high school with a recognized postsecondary credential;
- the percentage of students graduating from high school with postsecondary credits in the relevant CTE program earned through a college in high school program; or
- the percentage of students graduating from high school who have participated in work-based learning.

While Perkins V includes new and expanded allowable uses for these programs, ensuring that states and local recipients are using their funding to support these programs is not enough. In their planning process, states must proactively prioritize these programs, build them into their accountability systems, and make decisions on how to change state funding to accommodate that priority.

State leaders have a role in educating local recipients about the allowable uses in the law, encouraging them to make investments that align with their local needs assessment. The changes cannot and will not happen in a vacuum. While the funding can be used in more ways, that flexibility will not make a meaningful difference if states and local recipients fail to invest differently—in dual enrollment and other places in the law where the federal government is encouraging states and districts to act.

**Alignment with Other Federal Laws**

In writing Perkins V, Congress intentionally decided to more closely align Perkins with other federal laws that overlap in their interactions with education or workforce policies, including ESSA and WIOA. With the right leadership to align implementation, these laws can work together to develop a coherent pipeline between education and the workforce.

The main alignment opportunities between the federal laws focus on planning, data, and accountability. For planning purposes, the timelines for submission of Perkins and WIOA’s four-year plans have been synchronized so they both will be due to the U.S. Department of Education in spring 2020. This is designed to encourage states to look at ways to match their planning efforts for the laws, align them where possible, and avoid duplication. For example, some of the required consultation activities under WIOA planning match closely with similar requirements under Perkins as it relates to consulting with each law’s special populations.
Rethinking Career Education in Nebraska

Over the past few years, the Nebraska Department of Education (NDE) has been working with Nebraska practitioners on expanding CTE opportunities for its students. These efforts provide a solid foundation for the heavy lift to come: development of a state plan for implementing the reauthorized Carl D. Perkins Career and Technical Education Act (Perkins V) that builds on a cohesive vision and policy framework to guide CTE in Nebraska and addresses gaps in access and opportunity.

The Nebraska State Board of Education began conversations on Perkins V in spring 2019, anticipating the approval of a state plan in the spring of 2020. But when NDE began rethinking CTE in Nebraska in the early 2000s, it first developed the Nebraska Career Education Model to provide a framework for career awareness and for structuring CTE courses and programs. The model defines six major career fields: agriculture, food, and natural resources; business, marketing, and management; communication and information systems; health sciences; human sciences and education; and skilled and technical sciences. These career fields are further broken down by career clusters, which map out the courses a student needs in order to pursue a career. For example, a student interested in skilled and technical sciences might be interested in the career cluster of architecture and construction.

Within each career cluster are programs of study. A program of study is a specific series of courses designed to prepare students for postsecondary education and career opportunities. In Nebraska, a CTE concentrator is a student who has taken at least three courses in a program of study. Implementation of the Career Education Model was in line with the earlier version of the Perkins Act, passed in 2006, and increased the focus on career clusters and programs of study.

In a second phase, NDE developed Nebraska Career Connections, a free online career planning and information tool for students and teachers to learn about career fields and pathways. It also links to the Nebraska Department of Labor's workforce trends and information. Adult learners looking for a new career or pursuing postsecondary education also use Career Connections.

To implement the Career Education Model, NDE developed a process it called reVISION, in which schools and local communities analyze current career education programs, research school and community needs, and make the adjustments needed to prepare students for postsecondary education and careers. By the end of the 2018–19 school year, 122 Nebraska school districts (half of them) had engaged in reVISION. Its purpose is to bring new understanding, energy, and commitment to CTE as a vital education, workforce, and economic development strategy.

The process relies on a collaborative work team of administrators, school counselors, CTE teachers, core academic teachers, and representatives from area community colleges and the Nebraska Departments of Labor and Economic Development. Supported by NDE staff, the teams review and analyze school, program, labor, and economic development data to identify key themes and areas for program development and improvement.

The teams draw on several resources. One is a report prepared for the state by SRI International, “Nebraska’s Next Economy: Analysis and Recommendations for the Economic
Nebraska has had great success with CTE concentrators, given that 99 percent of its CTE concentrators graduate from high school.

Development Ecosystem,” which helps teams understand and identify high-wage, high-skill, high-demand occupations. They also review school accountability information such as graduation rates and ACT scores.

Another important data set for the teams includes information on CTE concentrators. Nebraska has had great success with CTE concentrators, given that 99 percent of its CTE concentrators graduate from high school and its graduation rate for all students is 89 percent. This evidence underscores the value of leveraging CTE to keep high school relevant and engaging for students.

The concentrator data also point state officials toward a deeper understanding of the percentage of students enrolled in CTE and the demographic characteristics of CTE enrollment. For example, in 2016–17, 42 percent of the concentrators in all career clusters were female. However, females made up 47 percent of CTE participants who took at least one course that year. Is there equity of opportunity and access in our state? We can also analyze completer and participant data within and across race/ethnicity and special populations. Also important is the degree of participation in career and technical student organizations.

Once these data are synthesized, NDE and local school staff share a summary with key stakeholders in a community engagement meeting. This meeting is essential in building the initial framework for an action plan and for starting the process of seeking broad input and building support for CTE. The teams use the input from these meetings to draft three- to five-year action plans.

The outcomes of reVISION are delineated in five objectives and corresponding results (figure 1). These outcomes, along with the process used to obtain them, can serve as the framework for developing Nebraska’s Perkins V state plan.

Figure 1. Objectives and Outcomes of Nebraska’s reVISION

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Results</th>
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| Align career education programs with workforce needs and economic development of Nebraska’s talent pipeline | • Addition of new Programs of Study  
• Elimination of outdated programs not aligned to needs  
• Revision of current curriculum  
• Identification of instructional material/equipment needs  
• Collaboration with business/industry |
| Update current career education Programs of Study and curricular offerings to meet postsecondary education entrance requirements | • Increased rigor and relevance of CTE offerings  
• Programs of Study aligned to postsecondary programs  
• Expansion of career academy programs  
• Expansion of dual-credit offerings |
| Strengthen career readiness resources and strategies | • Focus on Nebraska’s Career Readiness (CR) Standards  
• Addition of purposeful instruction on CR standards  
• Increased employer engagement  
• Implementation of Workplace Experiences |
| Fortify career guidance initiatives for all students | • Increased engagement with Nebraska Career Connections  
• Review of PK-12 career development process  
• Implementation of Engage curriculum  
• Implementation of Personal Learning Plans/student planning |
| Engage local/regional businesses in career education programming and creation of a common language between local employers and educators | • Meaningful engagement of business/industry in CTE curricular planning  
• Expansion of Workplace Experiences including Work-Based Learning  
• Increased student access to local business experts  
• Increased relevance of curriculum for students |
Addressing CTE Challenges

The reVISION process surfaced gaps, which led the Nebraska State Board of Education to make regulatory changes. The two most recent changes addressed career academies and teacher certification. Previously, schools’ use of career academies was inconsistent, as was their quality. Some school districts used a national model or framework. Some schools and districts identified programs as career academies but were missing some best-practice elements. Through reVISION, many communities and regional collaboratives identified career academies as a method for linking rigorous academic coursework with CTE courses and programs. In 2013, the state board adopted NDE Rule 47, which outlines programmatic requirements for its approval of career academies in order to help increase quality and consistency statewide.4

Another challenge Nebraska faces is a shortage of certified teachers in CTE. Feedback from reVISION informed the work of a Nebraska state board study committee, which developed a teacher permit (different from a standard teaching certificate in Nebraska) to address this shortage.5 The career education teaching permit allows individuals with work experience or proficiency in a specific career field to teach in a local school. Individuals seeking the career education permit need not be trained through a teacher preparation program. However, they still need to meet minimum requirements expected of all teachers. Schools submit a recommendation for an individual to qualify for the career education teaching permit based on local needs. Teachers with these permits can teach courses only in the career field associated with their work experience.

Nebraska’s state board, in partnership with the commissioner of education, has elevated equity as a central part of its mission.6 NDE made these commitments for equity in education, which the state board included in a supporting resolution:

- equity of access by supporting quality instructional materials; and
- equity of access and opportunity by engaging Nebraskans.

These statements are becoming the foundation of education policy development in Nebraska.

Planning for Perkins V

NDE and the state board must develop and submit a Perkins V state plan that outlines how the state will comply with the provisions of the federal law, passed in 2018. The state board sees this process as an opportunity and responsibility to build a vision and policy framework around CTE. Although we used our regulatory authority in the past to address pieces of the CTE puzzle, now is the time to step back and ensure that the state’s policies and regulations build a cohesive system of career education from elementary through high school. A good state plan will point Nebraska toward effective use of regulatory authority that will align policy with practice and fill gaps at the policy and practitioner level.

Nebraska has benefited from several valuable resources to guide CTE policy development. One such resource was Advance CTE and the Association for Career and Technical Education (ACTE)’s summary of the major tenets of Perkins V:7

- maintains a commitment to driving improvement through programs of study;
- introduces comprehensive local needs assessment, which requires data-driven decision making;
- lifts the previous restriction on spending funds below grade 7;
- focuses on disaggregation of data—and referencing attention to this disaggregation and identified performance gaps; and
- increases the focus on serving special populations.

There are other policy decisions states must make as they develop their state plans. Nebraska’s equity commitments provide vision and direction for responding to the major tenets of Perkins V, and its implementation of reVISION serves as a model for stakeholder engagement in development of the Perkins V state plan.
In addition to its hundreds of species and distinctive habitats, the world-class Henry Doorly Zoo and Aquarium in Omaha is also home to Zoo Academy, a leader in STEM learning and career exploration related to the life sciences and the first of its kind. Started in 1996 in partnership with Omaha Public Schools, the academy serves 120 high school students from across the metropolitan Omaha area, who typically attend for half a day.

Students receive integrated instruction in science, math, English, and social studies, with classroom teachers working directly with zoo staff. In science class, for example, they work with zoo geneticists or animal management to apply what they have learned. In government class, they might address environmental and conservation policies.

Academy students can pursue Nebraska’s Animal Science Pathway or Conservation Research Pathway. In both, they master STEM skills and engage in zoo-related research and animal medical procedures, and they are called upon to suggest solutions to problems that arise in zoo management. Alumni have gone on to become veterinarians, museum educators, and nutritionists, for example.

“A huge benefit is that quite a few employees have come from the Zoo Academy program,” said Elizabeth Mulkerrin, the zoo’s vice president of education. The program is “a win-win for students and businesses and school districts,” she said. “We hope others replicate it.” —Valerie Norville

Another valuable resource is a guide from the Council of Chief State School Officers. It provides considerations for moving beyond the required stakeholder engagement provisions in Perkins V and suggests ideas and strategies for different stakeholders groups: state policymakers and agencies; districts; postsecondary institutions and staff; and families and communities. Like many other states, the Nebraska state board over the next few months...
will be engaging in discussions with a range of stakeholders on a state plan to comply with Perkins V.

We have also used a state education policy checklist and a brief on career readiness and workforce development as a valuable primer on CTE policy-related decisions that the state plan will reflect.9 With the revisions to the state’s school accreditation rule also under way, opportunities will certainly emerge to rethink and expand on the existing requirements related to CTE. For example, NDE Rule 10 indicates that “career education is included in the middle grades program.” While there are more specific requirements for high school programs, the NDE can look to how other states have supported middle school programs. In addition, NASBE’s recent Power of the Question report gives states valuable, policy-minded resources to ground and frame state board work.10

Perkins V is a real-time opportunity for NDE to implement its equity commitments. In its resolution in support of these commitments, the state board said, “Nebraska will lead the way in addressing inequities of the past by focusing on opportunities to learn for all students and by adopting a relentless focus on outcomes that ensure all stakeholders deliver on the promise of equity....”

Over the next year, Nebraska will be building on the strong foundation of the reVISION effort to address current gaps in the CTE system. The primary challenge will be linking the Perkins V state plan with work to implement the Every Student Succeeds Act (ESSA), the Individuals with Disabilities Education Act (IDEA), and the Workforce Innovation and Opportunity Act (WIOA). Useful in this effort is the American Institutes for Research’s resource, “Developing a College- and Career-Ready Workforce: An Analysis of ESSA, Perkins V, IDEA, and WIOA.” By linking the Perkins V state plan with other related federal legislation, Nebraska will be making progress toward its commitments to equity, in particular “ensuring all Nebraskans are college, career, and civic ready.”

Aligning policy and practice through the Perkins V state plan is no easy task. While Nebraska has promising practices in place—like Rule 47 for career academies and Rule 21 for career education teaching permits as well as the reVISION engagement strategies—Nebraska must consider a long-term vision for CTE. Nebraska’s equity commitments provide a starting point. By using available policy resources, state boards of education can ensure that their states will develop meaningful state plans that not only comply with federal law but also keep the best interests of students, schools, families, and communities in mind. Career and technical education can provide equitable education opportunities for all learners. Equitable, relevant, and innovative Perkins V state plans will help states deliver these opportunities. ■

2Female students accounted for 6,973 of a total 16,534 concentrators in Nebraska, and there were 98,637 total participants in at least one course out of the 323,391 students in Nebraska schools in 2016–17. Data are from the federal government’s Perkins Data Explorer, https://perkins.ed.gov/pims/DataExplorer; and the Nebraska Department of Education’s Nebraska Education Profile, http://nep.education.ne.gov/.
3The National Career Academy Coalition publishes National Standards of Practice, which provide an initial lens for elements and best practices. See https://www.ncacinc.com/nsop.
5Title 92, Nebraska Administrative Code, Chapter 21 (NDE Rule 21): Regulations for the Issuance of Certificates and Permits to Teach, Provide Special Services, and Administer in Nebraska Schools, www.education.ne.gov/legal/current-nde-rules-regulations/.
6In Nebraska, the state board and commissioner are one entity: the Nebraska Department of Education. The state board is elected and appoints the commissioner. This governance structure allows for congruence in the development of policies and regulations for the Nebraska education system. “Strengthening Career and Technical Education for the 21st Century Act (Perkins V)” (Silver Spring, MD: Advance CTE and the Association for Career and Technical Education, August 2018), https://careertech.org/Perkins.

Rachel Wise, Ph.D., is in her sixth year as a member of the Nebraska State Board of Education and is currently the chair of NASBE’s Board of Directors. Dr. Wise was a CTE teacher and administrator in Nebraska. Matt Blomstedt, Ph.D., is the Nebraska commissioner of education, appointed by the state board in 2014. Dr. Blomstedt serves on the CCSSO board of directors and was named NASBE’s Policy Leader of the Year in 2018. Ryan Foer, Ph.D., the state board relations & rules and regulations officer for the Nebraska Department of Education, was previously a CTE teacher and teacher educator.
The 2018 reauthorization of the Perkins Act—the principal federal program supporting career and technical education (CTE)—expressly aims to “align workforce skills with labor market needs.” But it does little to define or operationalize such alignment. Likewise, the Foundation for Excellence in Education admonishes states to phase out “dead end” CTE programs that “do not reflect labor market demand” and “develop new programs of study to address gaps in industry demand.”

But here’s the catch: Every local labor market is different. Occupations that might be a smart bet in Canton may not be so in Kansas City. High school graduates tend not to move to where the jobs are. According to a 2015 analysis in the *New York Times*, “Over the last few decades, Americans have become less mobile, and most adults—especially those with less education or lower incomes—do not venture far from their hometowns.” Specifically, “the median distance Americans live from their mother is 18 miles, and only 20 percent live more than a couple of hours’ drive from their parents.”

As state boards of education begin work on their long-term plans to implement Perkins V, they will need to reckon with young people’s immobility. Students’ hometowns need to do far better at readying them to succeed at local colleges and in local careers. And therefore high school CTE programs must mesh with real-world job opportunities in their own and nearby communities.

How do states and districts know which CTE course taking in high school aligns with the kinds of work available in local labor markets? Our organization recently published a study by Cameron Sublett and David Griffith that maps data from CTE courses in American high schools to their associated industry and real-world occupations, as categorized by the Bureau of Labor Statistics. Doing so allowed them to determine whether students in high school CTE programs are more likely to take courses in in-demand and high-wage industries, both nationally and locally.

Sublett and Griffith found that many fields that account for a significant number of U.S. jobs align little with CTE course taking in high school. Over half of U.S. jobs are in four fields: business management and administration (18.0 percent); hospitality and tourism (12.5 percent); marketing (11.6 percent); and manufacturing (8.9 percent). Yet collectively, these fields account for only a quarter of CTE enrollment and concentrations.

National versus Local Mismatches

There is no evident relationship between the share of total CTE enrollment or concentrations for which a field accounts and its national employment share. And because only 15.5 percent of U.S. students concentrate in a CTE career cluster, the concentration rates for most fields are much lower than their share of employment. For example, almost no students concentrate in marketing. In fact, of the 16 CTE fields, only two—agriculture, food, and natural resources; and arts, A/V technology, and communications—have concentration rates that exceed their employment shares (figure 1).

In contrast to this mismatch between CTE courses taken and national labor market demand, a specific industry’s share of local employment is positively related to a student’s odds of taking related coursework. For example, a percentage point increase in the information technology sector’s local employment share is associated with a 10.2 percentage point increase in a student’s probability of taking at least
Race and Gender Patterns

National CTE course-taking patterns differ significantly by race and gender, even though all groups of students exhibit similar responses to local labor market demand. Male and female students exhibit strikingly different patterns of CTE course taking at the national level. For example, male students take slightly more courses in IT and far more courses in STEM; manufacturing; architecture and construction; and transportation, distribution, and logistics. Female students take significantly more courses in health science; human services; education and training; and arts, A/V technology, and communications.

Similarly, national course-taking patterns differ by race. Roughly 18 percent of white students concentrate in any CTE field versus 15 percent of black students and 13 percent of Hispanic students. Yet black students take more courses in high-paying fields like health science and IT than do their white or Hispanic peers, while substantially larger numbers of white students are taking coursework in the one IT course. Similarly, a percentage point increase in employment in arts, A/V technology, and communications is associated with a 14.8 percentage point increase in a student’s probability of taking related coursework (figure 2).

Oddly enough, in most fields, students are actually less likely to take related CTE courses when local industry wages are higher—perhaps because CTE programs are not connecting them with the highest paying jobs or positions within those industries. For example, a $1,000 increase in local IT wages is associated with a 13.6 percentage point decrease in the probability that a student will take one or more IT courses. Similarly, a $1,000 increase in arts, A/V technology, and communications wages locally is associated with a 14 percentage point decrease in the probability that a student will take one or more courses in this field. The two exceptions are architecture and construction and health science, wherein a $1,000 increase in local wages is associated with 2.3 percentage point and 0.7 percentage point increases, respectively, in the probability of taking related coursework (figure 3).

Figure 1. CTE Concentration Rates and Employment Shares by Sector

Note: Agriculture, Food & Natural Resources (AFNR); Architecture & Construction (AC); Arts, A/V Technology & Communications (AV); Business Management & Administration (BM); Education & Training (ED); Finance (FIN); Government & Public Administration (GOV); Health Science (HS); Hospitality & Tourism (HOSP); Human Services (HUM); Information Technology (IT); Law, Public Safety, Corrections & Security (LAW); Manufacturing (MAN); Marketing (MARK); Science, Technology, Engineering & Mathematics (STEM); Transportation, Distribution & Logistics (TRAN).

Specific industry’s share of local employment is positively related to a student’s odds of taking related coursework.
low-paying agriculture, food, and natural resources field (figure 4).

Despite these differences, there is no evidence that students respond differently to local variations in employment or wages based on their race or gender. In other words, all students are more likely to take CTE coursework in fields that support more local jobs but less likely to do so when those jobs pay a higher wage.

**State Role in Improving Alignment**

Sublett and Griffith conclude that there is significant potential for greater alignment in most fields. Because only one in six high school students concentrates in any CTE field, they are missing out on career preparation for any industry, including those in high-wage, in-demand industries.

That said, alignment is not always easily

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**Figure 2. Students’ Likelihood of Taking Courses Related to Local Jobs**

![Figure 2](image_url)

*Note: Because some CTE clusters have very low participation rates, our exploration of local course-taking patterns is limited to the seven clusters with enough data to facilitate a meaningful analysis.*

**Figure 3. Students’ Likelihood of Taking CTE Courses in High-Wage Local Industry**

![Figure 3](image_url)
defined or easily achieved. Some fields and careers rely heavily on postsecondary training, and the mismatch between high school courses taken and industry demand may occur not because students are neglecting certain industries but because related courses are simply not offered.

Still, state boards and state education agencies can do much to help make CTE courses more relevant to local labor markets. Here are four ideas.

**Conduct an in-depth analysis of industry employment and CTE course taking in your state.** Where are the potential areas of misalignment? For example, healthcare is a growing industry and has the highest concentration rate of any field at the national level. So if fewer than 2 percent of the students in your state are concentrating in it, much more may be possible and desirable.

What programs and courses are students able to take? Access is part of what drives patterns of CTE course taking. State officials should examine the factors that drive access—for example, geographical boundaries, funding, industry demand, lack of high-quality CTE teachers. Which are most problematic, and what can be done to address them?

They should also take a close look at the quality of the specific courses that students are taking, since our analysis suggests that how states are defining CTE is an issue in some places. For instance, there’s a big difference between a general computer skills course and learning to code in Python. Does what students are learning in CTE courses match the intent of the programs of study?

Perkins V requires comprehensive local needs assessments to ensure alignment between local offerings and state and regional needs, so the development of Perkins state plans presents a new opportunity to address this issue. State boards might also require that the state’s longitudinal data system support an evaluation of its education and workforce programs.

**Establish collaborations among government entities, the business community, workforce agencies, and other stakeholders to advance CTE programs.** For instance, the Governor’s Workforce Cabinet in Indiana comprises workforce and high school and postsecondary education agencies tasked with identifying workforce needs in the state and developing a strategic plan to meet those needs, including plans to help high school and college students navigate potential careers and coach them along the way. In Kentucky, the Economic Development and State and Regional Workforce boards are collaborating to review labor market data to ensure their accuracy. In other states,
Align funding to your priorities. This is likely the hardest step to take, given the complexity and intransigence of state education budgets. Still, linking CTE funding to in-demand occupations to incentivize pathway alignment is an admirable goal. So is offering financial incentives to high school students to complete work-based learning programs and creating or expanding tax credits to businesses that employ paid apprentices. Footing the bill for students to obtain industry-recognized credentials is another way to demonstrate commitment in and the value of CTE programs. The bottom line is this: Take whatever steps you can to make CTE not only a high-quality option but fiscally advantageous for students and other stakeholders.

Our study underscores the need for local business, industrial, and secondary and post-secondary education sectors to join hands. At the top of their to-do list should be better integration of what is taught in high school CTE programs with the skills, knowledge, and positions needed in their local labor markets, both now and in the future.

In a handful of states and cities, industry and education leaders are already collaborating to make that vision a reality for their students. For the sake of all the young Americans who will live no more than 18 miles from mom, we hope that more communities follow in their footsteps.

Numerous states are making strides in strengthening high-quality career pathways. For instance, Massachusetts has developed a High Quality College and Career Pathways (HQCCP) designation, which includes a requirement that career pathways align to labor market needs. They are increasing their approved Early College Designation and Innovation Pathways from 9 in 2018 to 71 by 2019, which will expand access to high-quality pathways to over 5,000 students by the fall of 2019, up from approximately 1,300 students in 2018.

Delaware has created robust cross-sector partnerships between education and industry through the Delaware Pathways program, an initiative launched to expand access to state-model career pathways. This has led to the Delaware Promise—a statewide commitment between education and industry to ensure that by 2025, 65 percent of Delaware’s workforce will earn a two- or four-year degree or a professional certificate. Delaware has launched 14 career pathways in in-demand fields so far.

1Quentin Suffren and Dr. Danielle Mezera, “Aligning State Career and Technical Education Programs with Industry Need and Priorities: A Playbook for State Policymakers,” CTE Playbook Series & Perkins V Brief (Tallahassee, FL: ExcelinEd, December 2018). This reauthorization of the Perkins law is dubbed Perkins V.
4The study defined concentrators as students who completed three or more courses in one of 16 nationally recognized career clusters, and 18 states have been using this definition, according to the Association for Career and Technical Education. (Perkins V instituted a definition of two or more courses.) And while many students interested in business or marketing might be pursing a traditional four-year college route—taking academic courses in high school but no CTE—that is surely not the case for most teenagers interested in hospitality, tourism, or manufacturing.
5For instance, the lack of teachers with industry expertise is one barrier to comprehensive CTE programs. See “The State of Career Technical Education: Increasing Access to Industry Experts in High Schools” (Washington, DC: Advance CTE, December 2016).
State boards can explore many avenues for work-based learning to prep high school students for good jobs.

Wanda Monthey

The Critical Role of Apprenticeship Programs

While their authority for program approval may vary from state to state, state boards of education should ensure that the secondary school CTE programs are part of a continuum that prepares students for further education, training, and the workplace. By expanding apprenticeship programs, state boards can give students opportunities to become successful adults earning family-sustaining wages.

The Atlantic reported in 2014 that fewer than 5 percent of young people in the United States were training as apprentices, with most in construction trades, compared with 60 percent in Germany. But U.S. participation is growing. The U.S. Department of Labor reports 56 percent growth in apprenticeships since 2013, amounting to 585,000 participants in fiscal year 2018, with 23,400 registered programs.

State policymakers’ interest has also increased. According to the National Conference of State Legislatures, 7 states passed 11 related laws in 2016, 14 states passed 20 laws in 2017, and 19 states passed 29 laws in 2018. Most focused on the following:

- establishing new programs or new requirements for existing programs;
- new funding in the form of tax credits or grants to employers to incentivize hiring of apprentices or scholarship funds to students who are participating in an apprenticeship;
- increasing awareness of available programs;
- allowing apprenticeships to fulfill credits toward graduation and to ensure that credits transfer; and
- expanding programs to prevent discrimination and ensure diversity among apprentice programs.

Program design will vary to fit local contexts. A study by Advance CTE for the U.S. Department of Education (ED) studied eight secondary apprenticeship programs across the country and found that they all used different strategies to address local skill gaps. Yet the programs faced common challenges that state policy can address: leveraging funding, barriers to equitable participation, and historically disconnected systems with limited ability to collect and share data on outcomes. The study concluded that “with the right partners, policies, programmatic elements, and support, apprenticeships programs can enrich CTE programs” while also addressing state and local skill gaps that employers face.

The ED report identified five components of apprenticeships: 1) employer involvement; 2) on-the-job training; 3) related technical instruction; 4) paid work experience; and 5) award of portable, nationally recognized industry credentials. In addition to registered apprenticeships, there are youth apprenticeships, which are sometimes registered and may include many of the same components, that are designed specifically for students aged 16 to 18 and are connected to an adult apprenticeship. There are also preapprenticeship programs or strategies, designed to prepare individuals for entry into a registered apprenticeship program.

Registered Apprenticeships

Apprenticeships combine classroom instruction and on-the-job learning. Registered programs are developed by or with employers, postsecondary institutions, or intermediary organizations, with approval of a state’s
programs that are competency based or a hybrid of competency and time based. A competency-based or hybrid program must include the same competencies as a traditional time-based program. Regardless of format, students need to demonstrate proficiency in order to complete the program and receive certification.

Youth Apprenticeships

Youth apprenticeship programs in high school give students a wide range of choices after high school that include embarking on career pathways, moving directly into industry, attending postsecondary education, and joining adult apprenticeships. Programs begin in high school, and a high-quality program articulates with postsecondary programs. Students gain academic and technical skills in their high schools and career/technical centers and gain work experience with an employer. In many cases, students leave high school with college credits through dual enrollment and industry-recognized credentials and certification.

Students may go into a preapprenticeship program or right into a registered apprenticeship program if they are eligible.

The National Governors Association offers four criteria for a quality youth apprenticeship program:

- paid on-the-job learning under the supervision of skilled employee mentors;
- related classroom instruction;
- ongoing assessment against established skills and competency standards; and
- culmination in a portable, industry-recognized credential and postsecondary credit.

Policymakers, educators, and employers have voiced concern about the impact of labor laws on students in the workplace. In January 2017, the U.S. Departments of Education and Labor sent a joint letter to encourage states to develop youth apprenticeship programs for secondary students who are 16 or older. The letter also addresses concerns about hazardous occupations and the Fair Labor Standards Act.

Preapprenticeships

Preapprenticeship programs, in general, are more advanced than youth apprenticeship
Box 1. Youth and Preapprenticeship Programs in STEM

Six states’ education agencies will be designing and implementing preapprenticeship programs over the next three years.

The Kentucky STEM Apprenticeship Program will give high school CTE students in the Perry County School District and Hazard Independent Schools the opportunity to enroll in a Pathways in Technology Early College High School. With Hazard Community and Technical College, the Eastern Kentucky Concentrated Employment Program, and other partners, the project will incorporate paid competency-based apprenticeships for students in grades 11 and 12 to prepare them for careers in health care or computer science.

Maryland will expand its pilot Apprenticeship Maryland to a statewide program. Through the Apprenticeship Program Advisory Committee, the Maryland State Department of Education will continue its partnership with the Maryland Higher Education Commission, registered apprenticeship sponsors, and others to transition high school students to postsecondary education and employment in STEM fields, including computer science.

The Nebraska Pathways to STEM Apprenticeship project will develop a competency-based computer science registered apprenticeship in rural northeast Nebraska. It will build on the region’s Pathways 2 Tomorrow program, an eight-school district partnership with rural northeast Nebraska high schools, Northeast Community College, and Educational Service Unit 2 that offers CTE course sequences in information technology and healthcare. The project will focus on opportunities for rural English learners in the region’s high schools.

The Oregon Pathways to Apprenticeship in Computer Science project will develop a competency-based apprenticeship pathway for high school students enrolled in computer science programs of study. The project will include paid work experiences with Apprenti, a registered apprenticeship. The project will pilot online delivery of curriculum, mentorship, and work-based learning with rural school districts in two regions.

The Rhode Island Youth Apprenticeship Program will develop two competency-based programs, a Cyber-Security Analyst Apprenticeship Program and Data Analyst Apprenticeship Program. Both will prepare high school students for entry-level cybersecurity and data sciences roles at CVS Health and other Rhode Island employers. Apprentices will complete a paid internship in the summer before their senior year, receive mentor support, earn postsecondary credit, and attain industry-valued credentials before graduation.

Preparing Today’s Students for Tomorrow’s Tennessee will expand a work-based learning initiative in Hamilton County to create a pilot competency-based machine operator apprenticeship. Lessons learned from the pilot will be used to develop an apprenticeship curriculum that aligns with existing high school CTE programs of study in advanced manufacturing, computer science, and health care.
State boards are uniquely positioned to support and encourage new programs at all levels of apprenticeship.

programs and give secondary and postsecondary students, out-of-school youth (16-24 and not in school or working), and adults the skills necessary to move into a registered program. Instruction may vary in length and scope and may include basic skills training, academic skills remediation, or an introduction to the industry. Completers may be accorded preferential consideration for entry into a registered apprenticeship program, apply time served or credits earned toward fulfilling program requirements, or both.

The Labor and ED guidance identifies the elements of a preapprenticeship program:

- prepares individuals to enter and succeed in a registered apprenticeship program;
- addresses the needs of students, employers, sponsors, and school districts;
- offers courses as part of the program in high school that are approved by a registered program and count toward high school graduation;
- facilitates participation in on-the-job learning as early as age 16 that can count as entry into the registered program;
- presents opportunities to earn industry-recognized credentials and certifications;
- applies to a registered program upon graduation or leading up to graduation; and
- awards postsecondary credit based on articulation agreements between local school districts, postsecondary institutions, and registered programs.8

The Education Department awarded funds to six states in 2018 for preapprenticeship programs in science, technology, engineering, and mathematics (STEM) fields, including computer science, to expand and facilitate the transition of high school CTE students to postsecondary education and employment (box 1).

What Can State Boards Do?

High school students and others can participate in solid apprenticeship programs that set them on the path to good careers. But such programs require state-level leadership. Even if the state board does not directly authorize funds to local districts, the board may be approving career and technical programs. State boards are thus uniquely positioned to support and encourage new programs at all levels of apprenticeship, including through development of their state plans to implement the reauthorized Perkins Act.

State boards ought to share regulatory language and strategies with other boards. For example, a Virginia law passed in 2018 requires the board to review and revise competencies for CTE programs and ensure their alignment with existing industry and professional standard certifications. The law requires local school boards to notify students and parents of available internships, externships, apprenticeships, credentialing, certification, licensure, and other work-based learning programs. In Georgia, the state board in 2015 approved regulations for apprenticeship coordinators in high schools that set out criteria for local boards to meet in order to receive state funds.9

Funds for apprenticeship programs are also available through the Workforce Innovation and Opportunity Act (WIOA), which requires that at least 75 percent of state and local youth funding be used for out-of-school youth. If the state board has responsibility for youth who are not in school or working, WIOA funding may support their participation in apprenticeships.

Before beginning to review state and local apprenticeship programs and their accompanying statutes and regulations, state boards need to determine which agency approves such programs in their state. Twenty-five states and the District of Columbia and Guam have state apprenticeship offices. Sometimes workforce boards have responsibility for apprenticeships (Maryland), and in other states community and technical colleges administer them (South Carolina and North Carolina). Other states rely on the national apprenticeship system administered by the Labor Department.

State boards will need to review their state and local resources, including identifying which employers are willing to design local and state programs. Linking with existing programs will be much easier than trying to develop new ones. There may be multiple apprenticeship models across the state. An experienced employer may select one student to enter their registered apprenticeship, while youth apprenticeships may be more prevalent elsewhere.
consider including apprenticeships in multiple state plans, not just the plans for Perkins.

- encourage local schools and postsecondary institutions to plan for apprenticeship programs;
- promote more articulation and dual enrollment agreements;
- partner with workforce councils and development offices to expand opportunities for effective use of WIOA funds;
- approve industry-recognized credentials that meet graduation, career and technical program, and apprenticeship completion requirements; and
- join forces with employers to expand opportunities for students.

Depending on their level of authority, state boards may also be able to approve the awarding of credit toward graduation for apprenticeship experiences, which may include waiving traditional coursework with equivalent learning in the workplace or related classroom instruction. It may entail considering comprehensive policies to allow for more flexibility in classroom hours, experiential learning, or demonstration of state content standards through alternative methods.

State board colleagues across the country who have led career education work are ready and willing to share their strategies, as well as sharing what did not work. State leaders who are interested in expanding career pathways that include on-the-job learning for high school students should do the following:

- provide funding and implement policies that allow work-based learning to occur in high schools;
- establish quality standards, program approval processes, and data collection to evaluate outcomes;
- identify apprenticeship opportunities and consider including apprenticeships in multiple state plans, not just the plans for Perkins.

With their diverse membership and representation across the regions of their states, state boards can devise creative options, such as the preapprenticeship program coordinated by the Connecticut Center for Advanced Technology, which prepares high school students for entry-level jobs in manufacturing while paying them as part-time interns. The center increased access by offering instruction online. State boards can also learn from international approaches to apprenticeship (box 2).

There are successful examples in every state (including in West Virginia, for example, whose efforts are detailed on page 35). Michigan requires apprenticeship and internship programs to be part of school improvement plans and Oklahoma requires schools to include apprenticeship programs in student’s Individual Career and Academic Plan (ICAP) advising plans.

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State boards of education have a critical role in the development and approval of state CTE plans. While structures and authority may vary, all boards can give students the chance to be better prepared for success in the workplace.
“Businesses’ number one problem is finding qualified workers. At the current pace of job growth, if sustained, this problem is set to get much worse. These labor shortages will only intensify across all industries and company sizes.”

Kathy D’Antoni

Simulated Workplaces in West Virginia

In order to provide students with demand-driven skills that will set them up for career success, the West Virginia Department of Education (WVDE) and state businesses collaborated to create the Simulated Workplace—powerful learning environments that transform the traditional classroom into student-led companies that replicate real-world work experiences.

Participating students master high-level technical skills that “stack” along a career pathway, embrace business processes and expectations, and gain soft skills such as leadership, communication, teamwork, critical thinking, a positive work ethic, accountability, and valuing quality work.

Students find the program engaging, exciting, and empowering. In a recent statewide survey conducted by the Rural Education Laboratory, 93 percent of students reported seeing connections between what they are learning and what they need to know for a job. When a high school senior from the Mid-Ohio Valley Technical Institute was asked, “Do you understand what the Simulated Workplace is trying to do?” the student...
responded, “Oh, yes ma’am, you are not just preparing us for the next four years, you are preparing us for the next 40 years.”

WVDE designed the Simulated Workplace environment in 2012, inspired by conversations with local, state, and national business and industry representatives, who raised issues that have also emerged in national business surveys: critical job openings remaining unfilled due to the inability to find highly skilled workers and teens and young adults often entering the workforce lacking the skills, attitudes, motivation, and education for personal or professional success.\(^3\)

In a debriefing of these business/industry interviews, the department decided to create a more authentic classroom environment for career and technical education (CTE) in which students would have the opportunity to gain employability and technical skills. It is important to note that Simulated Workplace is not a curriculum: It is an environment that transforms the culture of CTE and empowers students to create and define their education experiences.

### Program Protocols

Working with a committee of experts from West Virginia industries, businesses, and the education sector, the group identified 12 framework-setting protocols and processes aligned to real working environments:

- student-led company, with organizational charts and assigned roles within the company;
- application/interview process to join the company;
- formal attendance system that mimics an industry-related company;
- random drug testing;
- 5S quality control;
- safe work areas;
- workplace teams;
- project-based learning/project management;
- student-developed company policy and procedures;
- company meetings;
- onsite business reviews; and
- accountability system using data review, reporting, portfolios, and technical assessments.

These protocols, which are the essential piece of the Simulated Workplace environment, ensure the consistency, quality, and measurable outcomes of simulated companies statewide. In 2013, six schools piloted the program, with 30 more schools added in 2014. Feedback from educators, students, and businesses further enhanced the initiative. By 2015, participating schools were reporting significant increases in student attendance, decreases in discipline referrals, and higher test scores, prompting the department to increase the number of participating schools to 80.

The West Virginia Board of Education voted unanimously to include the protocols of simulated workplace in state policy in 2016, transforming all West Virginia CTE classrooms into student-led simulated companies using the protocols. In addition to passing this board policy, the state board was instrumental in connecting the Simulated Workplace initiative with other state agencies (Commerce, Workforce, Department of Natural Resources, Governor’s Office, etc.) and West Virginia business/industry stakeholders.

Today, CTE programs in 130 secondary schools have Simulated Workplace companies. The CTE programs are part of the secondary high school curriculum. Typically, students are scheduled into elective CTE courses that range from 55 to 90 minutes per day alongside their academic courses. The CTE programs are housed either in comprehensive high schools or at a county CTE center. The programs in CTE centers are typically half-day programs, with students returning to their home high school for the academic courses. Regardless of school structure, West Virginia has more than 1,200 student-led companies with more than 24,000 students participating. Several schools have hosted representatives from other states and Australia who wanted to learn whether this model would work in their education systems.\(^4\)

The program has produced many positive outcomes. Participating schools report increased participation in CTE, increased attendance rates, higher high school graduation rates, fewer discipline referrals, high passing rates at drug screening, increased use of project-based learning models from the Southern Regional Education Board, increased participation of business and
industry, and a significant increase in students’ safety awareness.

Simulated Workplace enhances the state’s apprenticeship model, adding value for students and employers. Like all apprenticeships, it helps students gain technical skill sets. But it also focuses on the employability skills employers require—critical thinking, problem solving, and communication. Turning the classroom into a student-led company exposes students to business processes not normally covered in traditional apprenticeship programs.

Additionally, West Virginia is a rural state, which limits apprenticeship opportunities. Simulated Workplace equips interested students across the state with technical and employability skills critical for workplace success.

Assessment

Assessments of these skills help students demonstrate their value to employers. As part of Simulated Workplace, West Virginia implemented the National Occupational Competency Testing Institute (NOCTI) technical assessments. U.S. industry and educational experts developed and vetted these industry-recognized, skill-based measurements of technical skills for specific programs. The assessments are administered online. The majority of West Virginia CTE students are scoring above the workforce entry levels (criterion-referenced cut scores) established by business/industry experts, with 55 percent meeting workforce entry levels and 25 to 30 percent exceeding them. Students who successfully complete their program-specific assessments earn a NOCTI Workforce Competency Credential.

In addition to the technical assessment, West Virginia collaborated with NOCTI to create a Simulated Workplace assessment to determine students’ attainment of employability skill sets. Thus the inclusion of NOCTI into the Simulated Workplace environment illustrates to business and industry that students are gaining soft skills and technical skills.

Participation of West Virginia’s business and industry with Simulated Workplace companies is ongoing, with representatives continuing to play a major role through onsite business reviews. They act as inspectors, reviewing and rating each company with predeveloped criteria, like a health inspector’s review of a restaurant. They review skill sets being taught, evaluate the company’s equipment, interview...
As with many disasters, recovery was slow and arduous, and when media attention waned, recovery slowed further. When students returned to school in fall 2016, the plight of the flood victims—which included friends, families, some of their schools, and some of the students themselves—weighed heavily on their minds. At Simulated Workplace company meetings, students discussed ways to assist in flood cleanup efforts. WVDE staff presented its project idea for small-home construction, “Big Hearts, Give Tiny Homes,” to student leadership groups, who promptly began designing the process and the product.

Students committed to having the tiny homes ready for Christmas delivery, which was only seven weeks away. The typical tiny home takes six months to construct. The simulated workplace company meetings, students discussed ways to assist in flood cleanup efforts. WVDE staff presented its project idea for small-home construction, “Big Hearts, Give Tiny Homes,” to student leadership groups, who promptly began designing the process and the product.

Students Leading

Simulated Workplace changed CTE learning in West Virginia, but the student-led company projects also are benefitting West Virginia’s economy. Spinoffs from the Simulated Workplace initiative include four statewide projects: Tiny Homes, a student-led Economic Summit, the State Parks projects, and a project competition.

Tiny Homes. In June 2016, West Virginia experienced a horrific flood, which devastated families and businesses throughout central and southern West Virginia and left many homeless. As with many disasters, recovery was slow and arduous, and when media attention waned, recovery slowed further. When students returned to school in fall 2016, the plight of the flood victims—which included friends, families, some of their schools, and some of the students themselves—weighed heavily on their minds. At Simulated Workplace company meetings, students discussed ways to assist in flood cleanup efforts. WVDE staff presented its project idea for small-home construction, “Big Hearts, Give Tiny Homes,” to student leadership groups, who promptly began designing the process and the product.

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project to transport the homes from across the state to the Yeager Airport in Charleston, West Virginia. On December 20, West Virginia’s governor, Jim Justice, presented keys to 15 homeless families.

“\textit{I love working hands-on with my colleagues and getting to experiment through the tiny home project},” said one student from James Rumsey Technical Institute. “I would love to come back and do it over again!”

**Economic Summit.** The transformation of CTE has given students a voice. In his 2017 State of the State address, Governor Justice decried West Virginia’s national economic ranking and expressed the need for change. Simulated Workplace student leaders who listened to the address began to ask questions about the state economy during company meetings, and WVDE staff decided to help give them an outlet.

In April 2017, the Simulated Workplace Student Economic Development task force was created. At its first summit in Charleston, 50 students from across the state convened to develop ideas for building upon the state's economic assets and addressing its problems. The following summer, company leaders met and talked with local business leaders and economic development authorities to get an understanding of the needs of their respective communities that they could take to a second summit that September.

Students vetted and honed more than 30 ideas at the September summit and split into project teams to develop frameworks for potential economic projects. The cross-state teams continued their work after the summit via Skype, email, and other media. Then they returned to Charleston in October for a meeting with members of the business community. Business experts selected as mentors for the teams asked guiding questions to ensure that students addressed key components in their proposed projects. Five projects were selected to be developed further and presented to the governor: restoration of properties; tiny homes for tourism; smart/medical homes technology; theme park development; and agricultural impact.

**The State Parks Project.** In an interagency collaboration between WVDE and the West Virginia Division of Natural Resources, Simulated Workplace companies work with State Park officials to revitalize parks in their areas. The project covers 35 state parks, seven state forests, the Greenbrier River Trail, and the North Bend Rail Trail. Simulated Workplace companies are updating these properties through construction and restoration projects such as the installation of HVAC systems and design and construction of cabins, bath houses, and walking trails. There are about 320 ongoing projects.

**The EPIC Project.** In the fall of 2018, the WVDE challenged Simulated Workplace companies to participate in a statewide competition on innovations to boost local economies. The competition, Economic Projects Impacting Communities, required Simulated Workplace company leaders to meet with community leaders such as mayors, local councils, economic development officers, and county commissioners to collaboratively develop and submit an idea for a project that would benefit their local economy. Of sixteen student teams presenting projects, five were awarded grants. Simulated Workplace companies will work with their community leaders over the next two years to bring their projects to life. The projects include a star-gazing cabin to attract tourists to one of West Virginia’s “dark sky” counties (known as the darkest area in the United States); a town revitalization project that includes an amphitheater, a microbusiness complex, and innovative cabins for tourists; and local park upgrades and renovations.

Simulated Workplace has changed the learning landscape for West Virginia CTE students, and West Virginia in turn is reaping the benefits of phenomenal changes in student behaviors, achievement, and accountability. This process has reinforced the notion that schools must give students a voice in their education if they want to see increased performance and better outcomes. Education that provides an exciting, engaging, empowering environment changes lives. Through the Simulated Workplace initiative, West Virginia is experiencing this firsthand.\(^5\)  

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\(^1\)Mark Zandi, quoted in Fred Imbert, “\textit{Private Payrolls Miss Expectations as Companies Can’t Find Enough People to Hire},” CNBC (July 5, 2018).

\(^2\)Laura Holian and Brittany Cunningham, “\textit{The Student Experience: West Virginia’s Simulated Workplace}” (Arlington, VA: Regional Educational Laboratory Appalachia, 2017), 1-2.


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\(^6\)Kathy D’Antoni, Ed.D., is associate state superintendent of schools in the West Virginia Department of Education’s Division of Technical and Adult Education.
cont’d from page 14…Four Strategies


9Draws on Advance CTE, “Making Good on the Promise.”

10Advance CTE, “The Values and Promise of Career Technical Education: Results from a National Survey of Parents and Students” (Silver Spring, MD: author, 2017).


cont’d from page 17…Making the Most of Perkins V

There is also significant overlap between definitions and data requirements in Perkins, WIOA, and ESSA. Perkins V’s “special populations” overlap in several areas with ESSA’s “subgroups” and WIOA’s “individual with a barrier to employment.” As a result, Perkins V encourages states to be thoughtful in how they are collecting and using data for these populations in a way that is nonduplicative and can be applied toward each of the laws. In many cases, given that the agencies responsible for implementing ESSA, WIOA, and Perkins in a state may not be the same, leadership must ensure that agencies are being encouraged or required to coordinate.

There are also opportunities for alignment in the construction of accountability systems. States that have selected the college and career readiness indicator as part of their ESSA accountability system may already have included one of the Perkins V measures of program quality. Those states may want to pick another indicator of program quality for Perkins V in order to maximize the ways in which they are assessing CTE program quality.⁹

Role for State Boards

While most states are already developing their four-year Perkins V plans, states will continue to operate under the one-year transition plans they submitted to the U.S. Department of Education in the spring. In addition, the first local needs assessment process is under way.

Members of state boards of education must ask the right questions of state agencies and encourage leadership to capitalize on the new opportunities in Perkins V. During the planning period, state boards should be asking these questions:

- How will Perkins V funds support increased access to special populations to close equity gaps and increase attainment of industry credentials?¹⁰
- What is the right division of resources between secondary and postsecondary programs?
- How will the expanded reserve fund be used to incentivize high-quality CTE programs and encourage innovation?
What should the accountability system look like for CTE programs, particularly as it relates to defining and measuring quality? How can that system be aligned with ESSA and WIOA?

How will Perkins V funding contribute to an aligned educational system that produces graduates with the kind of in-demand credentials that local employers are demanding?

What should the employer role be?

How can work-based learning and apprenticeship opportunities be maximized?

How can funding be leveraged to support early postsecondary opportunities, like dual enrollment or early college high schools, for CTE students?

How can Perkins V be used to address many districts’ shortages of teachers with the right credentials and certifications to teach CTE classes?

States and districts must begin to chart how they will support increased access to high-quality CTE during the current planning phase. Without leadership committed to capitalizing upon the opportunities of Perkins V, bureaucratic inertia risks squandering them.

As plan writing and consultation moves forward, state board leaders should ask tough questions about how their states are leveraging Perkins V reforms to encourage greater alignment with ESSA and WIOA. In addition, they ought to take advantage of new opportunities to realign how their states invest Perkins funding to support innovative, proven models for improving student access and success. Given the urgent need to get the U.S. education-to-workforce pipeline right—and particularly given the growing need for postsecondary credentials for the emerging workforce—states cannot wait for Perkins VI.

2Advance CTE, “Perkins V: Strengthening Career and Technical Education for the 21st Century Act” (Silver Spring, MD, August 2018).
8Advance CTE, “Maximizing Perkins V’s Comprehensive Local Needs Assessment & Local Application to Drive CTE Program Quality and Equity: A Guide for State Leaders” (Silver Spring, MD, 2019).
9Canney, “Policy Toolkit.”
Where is the U.S. Department of Education headed on support for career and technical education?

We are at a point like no other in 30 years. We're in a position where U.S. employers—and many of you as members of your state board and as employers yourselves—understand the skills gap that we're facing in this country. At the same time, we also have a $1.5 trillion financial aid in student debt that's bearing down on young people—those that have graduated, those that might have started in postsecondary education but with no degree and lots of debt, and parents that have agreed to sign onto Parent PLUS Loans. All of this is converging in new conversations about how we think beyond the K-12 space and really look at that intersection between graduation from high school and what's next in line. And that's why Secretary DeVos's call to us is that we absolutely need to continue rethinking education.

We have to question everything to make sure nothing limits a student's ability to be prepared for what's next. With the Workforce Innovation and Opportunity Act (WIOA) being reauthorized in 2014, the Every Student Succeeds Act (ESSA) reauthorized in 2015, and now with career and technical education, the Perkins Act, reauthorized last summer, we have a time and space to start working the local flexibilities and push to put those closest to the learners in charge to drive all of those federal resources—along with your state and local resources—that can be put into play for the benefit of students. We are excited that the definitions in ESSA, WIOA, and Perkins are now more aligned. We love the fact that the performance metrics are also very much aligned.

The president's budget proposal relative to CTE is aggressive. It is expanding Pell eligibility for short-term grants that provide stackable credentials and making reform to the federal work study programs to connect individuals who are serving on campus in a lot of duties out into the workplace for apprenticeships. One of the ways that we're proposing that will be used is for student teachers and those who are in unpaid nursing internships.

Many of you probably heard the secretary's announcement on the Education Freedom and Opportunity Act. It's $5 billion in private funding, scholarships, investment through voluntary donations, and state-facing scholarship programs that ultimately can be used for CTE. We see this filling a unique void for students, allowing them to have access to a STEM or a cybersecurity program that's not in their district. The funds can also be used
by the student to pay for concurrent enrollment and also can provide for transportation to an apprenticeship and for tools and supplies. Many of the trades require students to wear boots or scrubs that some students are not going to be able to afford.

What should state boards focus on regarding the Perkins reauthorization?

All of this is about expanding multiple pathways and freedom for students. I’m going to go back to my cattle background. For those of you that never worked cattle, you don’t want to give them the widest berth possible because they will run over you. And yes, I have been run over and broke some ribs. What you do is you continually narrow down those places to get them into the alley, and the alley is getting smaller until it’s one cow following the other. Take away visual distractions for them, and they’ll quietly go where you want them to go. We’ve done that to students without knowing it. We have created this pipeline of heading to a four-year degree. And while it has been successful in getting more students to go, it’s having unintended consequences in student debt and students without degrees because, I would contend, many of them never thought of going in the first place. If we could ask, “Where are you going?” that would change that equation.

With the accountability standards, with the way we measure success in schools, with the way we drive high school graduation requirements based on higher ed admission requirements—and we had lots of conversations about that as we worked on Colorado’s guidelines—we’ve left the path to the multiple career options of the wonderful skill-trade advanced manufacturing, the CMC machinists, professional welding, health-career pathways, medical schematics, and nursing. For many of those, it takes a student actively seeking out an alternative or a different pathway before they can get there. So ultimately, how do we make sure that our mind-set shifts so we can start matching up this disconnect between education and the economy?

That is not to say that education’s sole purpose is meeting the needs of the economy. But if our sole purpose is meeting the needs of students, at some day in the future they are going to be contributing to that economy. How do we ensure that they are prepared and ready to do that and that they are prepared and ready to continue learning? Many adults are in the marketplace right now, but they need to come back for upskilling, changing their roles and professions. In fact, the federal government has just launched a whole cybersecurity retraining possibility, where anyone from any agency that has an interest can immediately jump in and select it to get cyberskills training. The key is, we need to make sure that pathways that empower individuals to thrive are not just there but are equally valued.

We know that a CTE student is more likely to persist in completing high school, and this is particularly true for low-income students. Why is that not core to our foundation of success? We know that students who engage in CTE tend to fare well in the labor market once they have moved on from the high school environment. We know that the median earnings of an individual with an associate’s degree in a STEM field exceeds that of individuals with a bachelor’s degree program in liberal arts. But unfortunately, too many students are not taking advantage of that, because it doesn’t appear to them to be equally valued. About 8 million of America’s high school age students participate in a CTE program out of 15 million—so 50 percent. The thing that concerns me more is this whole notion of concentrators. A concentrator takes at least two courses in that sequence, so they decided to come back for more. They have an interest in that area and are deciding to dig deeper into it. Only about 20 percent of our high school population are continuing in that pathway that they discovered as their area of interest.

About 15 years ago, Colorado did a survey of business leaders and said, “What are the skills that employees are lacking?” They laid out a list of 21st century skills, employable skills, all the different needs. Let me take you on a different path to why students are missing those skills when they get to employment. We’re at the lowest point in U.S. history of students being engaged meaningfully in the workplace before they graduate high school—last year, one in three. And for students of color and students that are below the poverty line, less.
So how do we make sure we can connect students earlier so that they learn what it means to be an employee? We contend that school is not the most authentic place to learn those skills; the workplace is. Internships are one of those options, and the Perkins law is for it. Some of the largest pieces that Congress focused on in this run of the reauthorization were digging into how we connect students to the workplace with apprenticeships and learning opportunities. It also called for an expansion of concurrent enrollment opportunities to extend the students farther down that learning path more efficiently and quickly to ultimately get them to that industry credential.

Perkins allows for taking away the arbitrary age limit originally set in the law to make it very clear that career exploration should begin earlier. It also continues to emphasize programs of study and career pathways, making sure that students are on an intentional sequence of courses as opposed to just dabbling.

A survey done last spring showed that 50 percent of programs across this country don’t have business/industry eyes on the curriculum, the equipment, or the progression that students are making their way through. Congress put in place a local needs assessment that your states will work with local recipients to release every two years, digging into [the needs of] local employers, stakeholders, and special population providers.

Most of you probably have already seen and hopefully approved your transition plan. Next spring, we’ll be looking at the full four-year plan, and we know that all states will be working in the summer and fall. We’ll be supporting them with short conversation-starter videos. We’re not proposing regulations because, in my opinion, they are very compliance driven. Any guidance that we put out will immediately be taken up as “We can or can’t do that.” We’re trying to push creativity. I do not want state plans starting to look like they did 12 years ago because that would be a mark of failure.

Of the things that keep me up at night, the issue of concentrators is one of them. When the Perkins Act was reauthorized, [the definition] came up pretty quickly. Where we landed: As soon as the student has reached two courses, they’re going to be in the concentrator definition. We can argue whether that’s the right measure or not; it is what it is. As far as the accountability system goes, I don’t know that the measure itself of a concentrator is the most important piece. It is a measure of what the supply is going to be.

In Colorado many years ago, we put in place what we called the Labor Day report, which pulled from those concentrator definitions—what was in the K-12 pipeline, starting as early as seventh or eighth grade—to say, “We have this much student interest in these areas, but we know that our future employment is going to be big in these areas.” So we could have a conversation about accountability in relation to what was going on in the labor market, saying, if we’re making a promise to a child, “We’re going to educate you for X,” then at the end of the day, there’s going to be great life and a great capacity for returns in X. When it comes to the measures specifically for CTE, two courses do start to give you an idea of how different that concentration is and its effect on the student versus one who does not have those two courses.

My oldest son Brady, who finished at Colorado State University about two years ago, has been working, paying his own housing, his own car insurance, car bill. The summer before his eighth-grade year, I asked him, “Brady, has anybody had a conversation with you about
what you want to do next? What do you want to do after high school?” I knew there was this tool called College in Colorado that was a free, interest-inventory resource that allowed every individual in the state to have access to its folder and guide and figure out what the next steps were for them. Engineering turned out to be at the top of the three that it laid out for him. We had a conversation in the fall: “All right, Brady. You’ve got to pick high school classes. Now that you know what you’re interested in, which ones would make the most sense?” His biggest choice was between two CTE programs: business or the agricultural program. The agriculture program had shop, and he knew he’d be doing fabricating and welding for the engineering path—the design that he’d be doing there would be the right way to go. But it also allowed him to know that for concurrent enrollment, he needed regular calculus.

These are the conversations to start in middle school. Otherwise, high school makes no sense, and that’s been the issue for too many students: contextualizing high school by which career path you are on and having real conversations with students like, “If you don’t like math, a STEM career probably is not in your future unless you can get over your hatred for math.” Policywise, you have got to start conversations earlier.

Ernest: How do we as state board members help our states and schools to be innovative in their Perkins state plans?

I would go back to what you as a board are challenged to do: It’s to set a vision and key strategies and really allow your own staffs and all the rest of the players—whether it be the WIOA, ESSA, CTE, or the adult education components—to figure out the mechanics behind it. But be thinking. You know the pulse of your states. Is it a “we need to get students out into the workplace” agenda? Set the large goal—right now, there’s 30 percent; let’s get 50 percent of the high school population having a meaningful workplace learning experience, potentially an apprenticeship. If you’re looking for a way to solve some of the structural capacity issues, we’ve got to look at apprenticeship as using experts in field as instructors. Then we have to back up and figure out how to get them an interim license.

We need to shift the mind-set. You’re going to have to go back and look at your community college percentages. Right now, 60 to 70 percent of students at most community colleges are in nontransfer groups with little or no utility in the employment marketplace. That’s great for moving onto a four-year institution, but if you look at the data critically, you’re going to find that most students are not transferring on. Our practices are not leading students into a certificate or degree program that could lead on to a bachelor’s as well. If that’s a strategy for your state—getting more students into those certificate pathways—lay that out as an agenda item.

Wise: Do you see an intersection of IDEA and vocational rehabilitation? What suggestions and strategies do you have for states?

Multiple pathways in CTE today are for all students. And if we allow individualized education programs (IEPs) to drive our students with disabilities to certain career pathways instead of providing the right accommodations to get them into a STEM or a cybersecurity pathway, we’re going to miss the boat. Perkins V requires every LEA to do a local disaggregation of their data by special populations, by race, ethnicity, and origin and by gender, and it’s going to become very apparent because it’s by program pathway that the data will show up. My fear is—when we get down to the STEM, the health, the advanced manufacturing—we’re going to start to see some places where there are gaps, and we need to make sure that those local individuals, local special populations, and staff who are on those stakeholder committees identify those gaps and then say, “How can we make sure that we are providing access to all students to each of these local pathways?”

Ernest: How can we make sure we have the right teachers with the right pedagogy in the classroom with our students?

One of the things, first and foremost, [that
We’ve got to make sure that through authorizations we can get people in the classroom and then provide what they need.

is important for all of you: Most of you have authority over teacher licensure institutions in your states. Historically, we have had agriculture and consumer science and business, and all of the CTE areas had to get licensure paths at land-grant institutions. Those have been decimated over the past 20 years. Look at that licensure path and say, “We really need more.” How do we work with our institutions of higher education to create dedicated, easy licensure pathways so that the student who is on an engineering path but decides, “You know what, I don’t want to be an engineer,” has an easy way to step into a profession?

The second thing: Over 50 percent of our instructional force in CTE across the country has come out of the workplace. My second son is the other example—a computer science major from Colorado State working for Trimble, a geospatial company right outside Boulder. As much as he loves working with students and would absolutely volunteer for those pathways, he’s not going to make a shift, especially if he has to take a 15- to 20-credit program that costs $500–$750 a credit. We’ve got to make sure that through authorizations we can get people in the classroom and then provide what they need, which is what Colorado did. They said, “OK, not each person coming from business is going to need the same thing.” Nurses have been trained as clinical preceptors, and so they have a training and pedagogy. How do we make sure we honor that and not require the same thing of a nurse as we do of a machinist?

More information on opportunities and flexibilities with Perkins V can be found in the Perkins V section of the Perkins Collaborative Resource Network at https://cte.ed.gov.

cont’d from page 34...Apprenticeships

5Sometimes programs are called apprenticeships without such approval and thus are not “official” registered apprenticeship programs. This article addresses approved RA programs and those that are industry recognized apprenticeships.
8Ibid.
9Rule 160-4-3-.13, Ga. Comp. R. & Regs, “Youth Apprenticeship Programs.”
Ne of the first projects that landed on my desk when I joined NASBE in 2014 was redesign of our popular online resource, the Healthy Schools Database. NASBE first designed it over 10 years ago to help state policymakers learn from each other’s student health and wellness policies. If a state board member wanted to know which states had dealt with preventing concussions in student sports or to look for other states’ suicide prevention policies, for example, this was her resource. Researchers, advocates, health professionals, and media came to depend on the database for information on state health policy.

Updating such a robust resource required substantial time and money. So we were delighted when research organization Child Trends in 2017 began to partner with us to update the database and align it to the Whole School, Whole Community, Whole Child (WSCC) model and Robert Wood Johnson Foundation made the work possible. WSCC defines 10 areas of a healthy school: health education; physical education and physical activity; nutrition environment and services; health services; counseling, psychological, and social services; social and emotional climate; physical environment; employee wellness; family engagement; and community involvement. Combined, these elements provide a road map for comprehensive policymaking to support student well-being.

The NASBE State Policy Database on School Health, relaunched earlier this year, encompasses policies enacted as of September 2017 for 136 variables across the 10 domains. An accompanying visualization helps users quickly see the state landscape of a given school health policy.

As state boards of education and others consider adoption of policies and processes that support the whole child, this database can illuminate information on existing statutes and best practices that can inform new work. Take, for example, the topic of school employee wellness. According to the database, only 10 states address staff wellness in policy. Wellness can cover everything from substance abuse and health assessment to flu shot requirements and healthy food policies. Only two states, Louisiana and Mississippi, address stress management in employee wellness policies.

Supporting the well-being of teachers and their aptitude for teaching the social, emotional, and academic skills students need is of increasing concern to the public, according to a recent NASBE survey. Mississippi is the only state that provides comprehensive coverage, addressing all components of employee wellness identified in the NASBE database. It does so by establishing a statewide wellness program for all state employees who participate in the school employee health insurance plan. States looking to adopt more wellness-conscious policies for employees within the school setting could connect with colleagues in Mississippi to learn about implementation and the challenges therein.

Nearly five years in the making, our health policy database is timelier than ever. Policymakers are increasingly focused on issues of student safety and wellness. This database will be a help to all policy actors—be it the state board, education agency, legislature, or governor—as they work together to enact policies that ensure safe and equitable learning environments for all students.

To access NASBE’s State Policy Database on School Health, visit http://statepolicies.nasbe.org/health.
When choosing real estate, it is said the three most important factors are location, location, location. The same is true of items on the meeting agendas of state boards of education. How, when, and where items appear speaks volumes about the intentions, beliefs, and values of a board.

A state board’s agenda shapes the educational narrative in a state and is the single most important mechanism at members’ disposal for meaningful action toward improving outcomes for students. It is a bully pulpit and the citizen’s voice in education. Three levers of board authority—the power of policy, the power of the question, and the power of convening—converge here to demonstrate the power of collective voice and drive the work of the board.

State board chairs typically collaborate with the chief state school officer and executive staff to develop each meeting’s agenda. Given the agenda’s critical importance, they ought to devote a fair bit of time and effort to the task, with intentional focus on the desired outcomes for the meeting. To develop an effective, efficient agenda, board chairs must ensure that the state’s values and priorities are reflected there. Strong agendas honor and elevate items of the greatest importance and impact while giving less time and prominence to items of lesser import or relegating them to the consent agenda.

All board members need to feel that their concerns on emerging issues are important to the work of the board. While the chair must put the board’s long-term goals at the heart of the agenda, members should be able to rely upon an established process for raising issues, placing them on study session schedules or committee agendas, or addressing them in another agreed-upon fashion.

Often, agenda development follows conventional practice developed over many years. Yet state boards over time have assumed new authorities, adopted new strategic plans, and established new priorities. Many boards have given little thought to realigning meeting agendas to reflect their current realities.

NASBE staff reviews state board agendas and minutes monthly in order to stay abreast of common issues and discern topics that are trending across the country, so we get a good sense of how agendas are constructed and delivered. From this national perspective, we can offer some best practices for building effective agendas:

- establish clear objectives for each meeting;
- show the correlation of each item to the board’s strategic plan;
- provide members with quality resources and background on items in advance of the meeting;
- pace policy items across meetings to permit ample consideration before a required vote;
- relegate informational and routine matters to the consent agenda;
- allow time for members to question and discuss items;
- provide ample opportunities for public input into important items; and
- leave the meeting with established outcomes for the next meeting and a sense of next steps.

I challenge all state boards to stop and reflect on current practice. How are you spending your time together? Do your agendas truly reflect the board’s intentions, beliefs, and values? Do they drive your work? Do they demonstrate what you wish to accomplish for the students and citizens of your state?
EARLY CARE AND EDUCATION: ON THE RADAR OF STATE BOARDS OF EDUCATION

In the first quarter of 2017, state boards of education in 11 states discussed topics related to early care and...
We think it’s time to build an innovative solution that brings state and district assessments closer to each other—and to the classroom. Let’s work together to improve testing efficiency and give teachers information throughout the year to accelerate student learning.

It’s time to rethink state assessment

nwea.us/state-assessment