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ADVANCE CTE State Leaders Connecting Learning to Work

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A Cross-State Collaboration on Increasing Access to Industry Experts in High School

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Overview

Advance CTE

State Leaders Connecting Learning to Work (Advance CTE) is the longest standing national nonprofit that represents state directors and state leaders responsible for secondary, postsecondary, and adult Career Technical Education (CTE) across all 50 states and U.S. territories.

Our mission is to support visionary state leadership, cultivate best practices, and speak with a collective voice to advance high-quality CTE policies, programs, and pathways that ensure career success for each learner. Our vision is to transform and expand CTE so that each learner—of any background, age, and zip code—is prepared for career and college success through state leadership, advocacy, and partnerships. Learn more at www.careertech.org.

The Center on Great Teachers and Leaders

The Center on Great Teachers and Leaders (GTL Center) supports state education leaders in their efforts to ensure that all students have access to great teachers and leaders. The GTL Center provides a range of technical assistance supports, including engaging states in cycles of continuous improvement through analyzing data to identify challenges, conducting root-cause analysis to uncover the underlying source of the problem, and identifying and implementing evidence-based strategies to address the selected challenge(s).

The College and Career Readiness and Success Center

The College and Career Readiness and Success (CCRS) Center at the American Institutes for Research provides states with customized resources and technical assistance to support the design, implementation, and continuous improvement of college and career readiness priorities. Using technical assistance strategies based on research and promising practices, the CCRS Center focuses its support on promoting career readiness such as employability skills, career and technical education, and work-based learning; building postsecondary pipelines; and promoting data use.

Contents

Introduction

An important principle of Putting Learner Success First: A Shared Vision for the Future of CTE—a seminal 2016 vision proposing a transformation of the education system, with Career and Technical Education (CTE) as an essential strategy—is that all learners have access to knowledgeable industry experts who can link what is taught in the classroom to what is applied in the real world (Advance CTE, 2016a). Unfortunately, most learners across the country lack sufficient access to these "industry experts." The 2016 report, *The State of Career Technical Education: Increasing Access to Industry Experts in High Schools (Industry Experts Report)*, examined how states are currently addressing this shortage and included a variety of promising strategies that states and local school districts have begun to use to engage industry experts in teaching and learning (Advance CTE, 2016b).

Given that many of these strategies are relatively new and that states are interested in sharing and exploring with each other, **Advance CTE**, the **Center on Great Teachers and Leaders** (GTL Center), and the **College and Career Readiness and Success Center** (CCRS Center) convened and facilitated working groups of state CTE leaders from 11 states along with national partners to explore two of the most promising strategies: (1) supporting industry experts in innovative roles and (2) leveraging postsecondary partnerships and faculty with the goal of advancing work in these states and the broader field.

The working groups shared their biggest challenges as well as innovative programs and policies to increase secondary students' access to industry experts. Across two working groups addressing two different topics, common challenges and strategies emerged. Challenges common to all the participating states were

- collecting and analyzing reliable data about how secondary students currently access industry experts;
- recruiting and compensating industry experts as full-time instructors; and
- engaging and partnering with employers as industry experts.

The promising solutions the states shared to address their challenges fall into two categories: **Educator Policies** (e.g., alternative licensure programs for full-time teachers, part-time/adjunct teachers, and dual enrollment) and **Employer Partnership Strategies** (e.g., providing employers with a continuum of engagement opportunities, creating or connecting with intermediaries and industry associations, combating employer "burnout," engaging with industry experts virtually). What follows is a summary of the working groups' focus and design, common challenges, promising state solutions, and resources.

Focus and Design of the Working Groups

The stated objectives of the working groups were to:

- Discuss strategies related to increasing access to industry experts by exploring innovative roles in secondary schools for industry experts, including part-time instruction and coteaching, and by leveraging relationships between secondary and postsecondary institutions or systems.
- Brainstorm new ways that states can build effective policies and programs to implement new strategies that still ensure quality instruction.
- Facilitate conversations and inspire action in states to address this growing challenge.

Because this work is relatively new and innovative for states (and many districts), the working groups provided an opportunity for states and national leaders to explore promising strategies collaboratively with peers and determine what supports may be needed for implementation. Advance CTE, the GTL Center, and the CCRS Center continued the collaboration that led to the *Industry Experts Report* by convening and facilitating two working groups of state and national leaders (see Acknowledgments for more information about the national organization partners) to discuss specific strategies and develop implementation supports over the course of five meetings.[1]

- Working Group 1: Innovative Roles. We recruited and convened one working group of states (Exhibit 1) to discuss ***recruiting and supporting CTE instructors and industry experts in innovative roles*** (such as co-teaching or part-time teaching), with a special focus on how these strategies may offer new opportunities for rural communities. This working group discussed topics such as licensure and compensation policies as well as teaching structures, alumni networks, industry partnerships, and professional learning.

Exhibit 1. Innovative Roles Working Group

States	Partner Organizations	Meeting Topics
Arkansas Hawaii Kentucky Minnesota New Jersey Ohio	■ Association for Career and Technical Education ■ Educators Rising ■ Glendale Educational Foundation ■ Project Lead The Way ■ U.S. Chamber of Commerce Foundation	1. Kickoff Meeting 2. Innovative Role Structures 3. Engaging Business and Industry and Part-Time Licensure and Externships 4. Promoting District Buy-In and Assessing Implementation Efforts 5. Working Group Reflections and Support From Partner Organizations

[1] We reached out to states (identified through responses to the 2016 survey and other communications) that are already engaged in using one or both of these strategies or are in the process of developing a statewide strategy for one of the working groups. The working groups each met virtually five times between July 2017 and February 2018, including a kickoff meeting, a meeting to discuss design and implementation of these strategies, and a concluding meeting to discuss next steps and finalize guidance for the field. We expected that these meetings would uncover additional insights and information about these strategies, including their design, implementation, potential success, and unintended consequences. We also anticipated that these meetings may shed light on how these strategies may impact changes to other policies or systems in secondary schools.

- Working Group 2: Secondary and Postsecondary Collaboration. We recruited and convened a second working group of states (Exhibit 2) to discuss ***opportunities for secondary schools to collaborate with postsecondary institutions that allow districts to expand CTE course options and intentionally tap into industry experts*** who already serve as adjunct faculty members. This working group discussed topics such as dual credit and dual enrollment opportunities that provide access for high school students to technical classes taught by industry experts at a local college and policies that certify postsecondary instructors as secondary teachers.

Exhibit 2. Secondary and Postsecondary Collaboration Working Group

States	Partner Organizations	Meeting Topics
Hawaii Idaho Iowa Minnesota Oregon Tennessee	■ Association for Career and Technical Education ■ Jobs for the Future ■ National Alliance of Concurrent Enrollment Partnerships	1. Kickoff Meeting 2. State Sharing: Bright Spots 3. State Sharing: Barriers 4. State Sharing: State Levers Scaling Local Practices 5. Working Group Reflections and Support From Partner Organizations

Common Challenges

Three important common challenges rose to the top during nearly every meeting in both working groups: collecting and analyzing CTE teacher data, teacher recruitment and salary, and engaging and partnering with employers.

CTE Teacher Workforce Data

As discussed in the *Industry Experts Report* (Advance CTE, 2016b), data collection to identify CTE teacher workforce needs is inconsistent across states. According to the working group participants, most states are collecting information about full-time CTE teachers only—not part-time teachers, mentors, or guest speakers—and even then, the quality of the data is uncertain. Without adequate and useful data on secondary students' access to appropriate industry experts, states are limited in their capacity to make policy changes to support more innovative strategies or evaluate the strategies put in place.

One notable exception to this commonly cited barrier is New Jersey. In 2016, as part of the New Skills for Youth[2] initiative, New Jersey partnered with the Heldrich Center at Rutgers University to analyze characteristics of the existing pool of CTE teachers in the state. This analysis identified teachers who hold a CTE certification and are currently teaching a related course within a Career Cluster. New Jersey learned that the state was facing a significant retirement cliff for CTE teachers: While there are 3,400 CTE teachers in the state, half of all CTE teachers are 52 years old or older, and a quarter are 59 years old or older. This analysis also highlighted acute teacher shortages in three Career Clusters: Agriculture, Food, and Natural Resources; Health Science; and Science, Technology, Engineering, and Mathematics. Furthermore, New Jersey discovered that nearly all Career Clusters had teacher shortages for particular certifications within Career Clusters.

To learn more about CTE in specific local districts, New Jersey then conducted four focus groups throughout the state on the CTE teacher supply. The state used the focus groups to test interest in solutions drawn from the *Industry Experts Report* and then drew from the strategies suggested to identify the state's two new pathways. Many of the challenges and suggestions that came out of the focus groups ended up in the successful application that New Jersey submitted for the High School CTE Teacher Pathway initiative at the U.S. Department of Education's Office of Career, Technical, and Adult Education (see page 6). From this work, New Jersey concluded that the state is facing a significant retirement cliff, which increased the urgency even more in this area.[3] For the grant, New Jersey will explore lowering barriers to full-time alternative certification and transitioning academic teachers into related CTE teaching fields through externships and mentorship.

[2] In January 2016, JPMorgan Chase & Co. launched New Skills for Youth, a $75 million, five-year initiative aimed at strengthening career-focused education, starting in high school and ending with postsecondary degrees or credentials aligned with high-skill jobs.

[3] From New Jersey's working group presentation, January 2018.

One working group state noted that if money were not a constraint, the state would enhance its statewide longitudinal data system and include data related include data related to the following:

- Work-based learning experiences
- Industry certifications (for both instructors and students)
- Other ways industry experts are connected to secondary classrooms.

Currently, it is not possible for the state to measure these items.

Teacher Recruitment and Salary

Recruiting industry experts into high schools as full-time teachers is a big challenge. As discussed in *Strengthening the Rural CTE Teacher Pipeline* (Advance CTE, 2018), one major challenge of recruiting—and retaining—CTE instructors is competition from the private sector. States participating in the working groups specifically noted that the Career Clusters with the biggest recruitment barriers are Information Technology (IT) and Health Care because salaries within the industries are significantly higher than those for full-time teachers.

Accessing Industry Experts Through Employer Engagement

Finally, the states participating in the working groups expressed interest in understanding how to more effectively engage employers and industry partners at both the local/regional and state levels. States were eager to help connect their school districts with local employers to help build new pathways from industry into the classrooms but struggled with how to do so effectively. Specifically, states discussed a range of challenges from how to approach nearby businesses to how to handle employer "burnout" by the businesses with which all the education institutions in the community wanted to partner. States also struggled with what the state role could or should be compared to the role of local CTE leaders.

Promising State Solutions

States identified a number of key strategies related to *educator policies* and *engaging and partnering with employers as industry experts* as moving the needle on expanding access to industry experts for secondary learners.

Educator Policies

Although hiring decisions are made locally, states do have an impact on the certification process. States may establish alternative certification pathways to provide flexibility for schools to recruit industry experts as either full-time or adjunct teachers, and about 90% of states (Advance CTE, 2016b) have taken advantage of one or both of these policy levers. States can also encourage or facilitate the recertification or dual certification of existing instructors so they are prepared to teach high-demand CTE subjects.

Alternative Licensure Programs for Full-Time Teachers

The working groups were eager to learn about the newest programs that states have developed to recruit industry experts into teaching CTE full time. Idaho identified the InSpIRE Cohort Project as one of the state's "bright spots" in innovation and secondary and postsecondary collaboration. Similarly, New Jersey presented the state's plans for a newly awarded grant from the U.S. Department of Education specifically focused on creating CTE teacher pathways for general education high school teachers. By the end of the working groups, several states indicated great interest in presenting (and possibly adapting) one or both models to key stakeholders.

Idaho's new program for supporting industry experts already licensed as Limited Occupational Specialists, the InSpIRE Cohort Project, began in the summer of 2017. In each year of the two-year program, the InSpIRE Cohort training begins with a Summer Academy for Limited Occupational Specialists,[4] followed by monthly regional meetings of Cohort participants on Saturdays for eight consecutive months during the school year. During the project, participants create an electronic portfolio of teaching pedagogy mastery, meet with regional mentors (who may be from secondary or postsecondary education), visit classrooms, and go through an evaluation process used only for continuous improvement. The participants do not pay tuition—they are responsible only for any travel costs for meetings. As a new program, InSpIRE does not have any results yet, but Idaho officials are optimistic about the program's promise in supporting and retaining industry experts in part-time and other innovative roles in the classroom.

Through the High School CTE Teacher Pathway initiative at the U.S. Department of Education's Office of Career, Technical, and Adult Education, New Jersey is piloting a new CTE Teacher Bridge Program.[5] The objective of the program is to train and certify general education

[4] https://cte.idaho.gov/educators/certifications/inspire-educate/

[5] https://cte.ed.gov/initiatives/high-school-cte-teacher-pathway

teachers to lead CTE programs in priority industries. Interested teachers will participate in industry externships, mentorships with CTE teachers, quarterly professional development meetings, and opportunities to earn industry certifications to equip them with the knowledge and training to transition to high-demand disciplines (Advance CTE, 2018).

Part-Time/Adjunct Teachers

Part-time teachers provide in-person, regularly scheduled (weekly, biweekly, monthly, etc.) instruction. They coteach with a full-time general education or CTE teacher, and they may or may not be the teacher of record. Through the coteaching model, teachers may use either a block schedule with academic and CTE units, or labs or project-based learning periods for CTE units.

In contrast, guest or adjunct instructors provide instruction as needed. They may be in person or virtual and may substitute for a full-time teacher as needed. They do not serve as the teacher of record in most cases. These instructors teach specific lessons within units or course periods, present specific content, and guide students through specific learning activities.

As mentioned, in addition to the CTE Teacher Bridge Program, New Jersey is piloting an Industry Fellows program to officially enable industry experts to coteach part-time with experienced teachers in a CTE classroom as those experts decide whether they will become CTE teachers. Although some districts were already using this co-teaching model, the CTE Teacher Bridge Program is a formal on-ramp to certification.

Kentucky has a long-standing adjunct teacher policy that allows industry experts to teach part time while keeping their industry jobs. Adjunct certification in Kentucky is an annual contract that allows an expert to be the teacher of record but does not lead to full certification. Applicants for adjunct CTE teacher certification need only a high school diploma and four years of relevant work experience. Nearly 1,000 certificates have been issued in Kentucky, providing students with access to industry experts who are unable to commit to full-time teaching (Advance CTE, 2018).

Dual Enrollment

States have turned to colleges and universities for qualified teaching talent, allowing learners to receive expert instruction outside the K–12 system and even earn college credit in high school. Community and technical colleges often have equipment and adjunct faculty on-site that high school students can take advantage of, all while earning college credit (Zinth, 2014). The licensure and qualifications requirements for faculty at the Tennessee College of Applied Technology (TCAT) are similar to and overlap with those of the state department of education for high school teachers. This feature allows for the possibility of the 27 TCATs[6] throughout the state making their adjunct faculty available to teach in surrounding high schools, assuming the faculty have obtained a state teaching license.

[6] https://www.tbr.edu/institutions/colleges-applied-technology

Nebraska offers a postsecondary dual-credit teaching permit that allows postsecondary instructors to teach secondary students in their areas of expertise, with the added benefit that many of the postsecondary CTE instructors are still employed in industry.[7] Postsecondary CTE instructors support professional development for secondary teachers and assist in aligning curriculum between secondary and postsecondary programs.

Some states, however, are struggling to meet accreditation requirements to offer dual-credit opportunities to high school students (Advance CTE, 2018). In 2015, the Higher Learning Commission (HLC), which oversees accreditation of degree-granting institutions in 19 states, clarified that individuals would need to either hold a master's degree or complete 18 graduate-level credits in their subject area to be qualified to teach dual-credit courses in high school (Higher Learning Commission, 2015). Initially, states were concerned that this policy would exacerbate the CTE teacher shortage, but in practice this challenge seems to be affecting the non-CTE dual-credit courses significantly more, such as English or history. Although the HLC grants exemptions for work experience for CTE instructors, in Minnesota, given the different qualifications for secondary and postsecondary teachers, rural districts struggle to find part-time instructors for many CTE courses. For example, it is difficult to hire two full-time welders in a rural community (one for the high school and one for the community or technical college), especially when there is a lower bar for entry into the teaching profession at the community or technical college.

Engaging and Partnering With Employers as Industry Experts

Two overarching challenges emerged about employer engagement: how to connect with local employers and industries efficiently and effectively, and how to sustain employer engagement to ensure that secondary students have adequate and consistent access to industry experts. Within these challenges, the states discussed several promising strategies, including providing employers with a continuum of engagement opportunities, creating or connecting with intermediaries and industry associations, combating employer "burnout," and engaging with industry experts virtually.

Creating a Continuum of Employer Engagement

The focus of the working groups (and states) was on innovative roles for industry experts in the classroom, and there are many approaches that can support stronger partnerships and engagement with industry partners across a continuum (see Figure 1). Working group states shared that providing new or even currently engaged employers with such a menu helps them determine appropriate ways to connect.

[7] https://cdn.education.ne.gov/wp-content/uploads/2017/07/Postsecond-Permit2-web.pdf

Figure 1

Continuum of Employer Engagement

- **Full-time instructors:** Retired or transitioning professionals who make use of state alternative certification policies to enter the classroom.

- **Part-time instructors:** Industry professionals who provide in-person, regularly scheduled instruction. They coteach with a full-time general education or CTE teacher, and they may or may not be the teacher of record.
- **Adjunct instructors:** Industry experts who provide instruction as needed (but can be regularly scheduled). They may be in person or virtual and may substitute for a full-time teacher as needed. They do not serve as the teacher of record. These instructors teach lessons within units or course periods, present specialized content, and guide students through specific learning activities.
- **Guest instructors:** Industry experts who can support student learning by guest lecturing. This approach enables students in both CTE and core general education classes to make connections between their coursework and real-life careers.

- **Work-based learning (WBL):** WBL experiences allow students to explore and develop the skills needed for success in specific occupations and industries. These experiences go beyond project-based learning or classroom instruction to expose students to applied learning in a work environment. These experiences do not necessarily have to take place during the workday or during school hours because some WBL may be virtual, built into the school day, or organized outside traditional school or working hours. All WBL involves instruction and support from (or interaction with) industry professionals and experts (and often includes partnerships with local businesses or industries).[8]
- **Mentors/career coaches:** Industry experts who provide mentoring and career advice to students either during the day or after school hours. Mentoring and career coaching are low-touch activities that involve a limited time commitment from industry professionals but that also allow students to benefit from expert career guidance (Advance CTE, 2016b).
- **Advisory committees:** Industry professionals who participate in a Career Cluster or program advisory committee can help design frameworks and supportive materials and enhance the quality of graduating students available to their companies and communities (Association for Career and Technical Education, 2018).
- **Career and Technical Student Organization (CTSO) judges:** CTSOs host events at the local, state, and national levels for students to compete with their peers. Industry professionals can volunteer to judge these competitions or other capstone experiences, providing much-needed expertise and ensuring that students are being judged using workforce-relevant standards (Advance CTE, 2016b).

[8] http://www.ccrscenter.org/products-resources/ccrs-center-webinars-events/work-based-learning-promoting-well-rounded-education

Connecting With Intermediaries

Reaching out to employers one by one, even in small or rural communities, is often not the best use best use of time for a school or district. States discussed two important ways to engage multiple employers simultaneously. The first way, by connecting with local or regional intermediaries, is particularly useful in reaching a number of employers at one time. Intermediaries are entities (individuals or organizations) that primarily support work-based learning or other career development activities for students. They facilitate partnerships between educators and employers for the ultimate benefit of a student's career exploration (College and Career Readiness and Success Center, 2017).

Intermediary organizations are often third-party, public or private organizations (such as local chambers of commerce, business and industry associations, local and regional workforce investment boards and other government-appointed entities, nonprofit organizations, and postsecondary institutions) that employ individuals to coordinate WBL activities. By engaging with one or more local intermediaries, schools are connected to a third party that can help translate business-speak to edu-speak and vice versa. The Iowa Department of Education, for example, created a statewide network comprised of 15 work-based learning intermediary regions.[9] Located within each of the 15 community college districts throughout the state, these regional intermediaries provide a one-stop shop for both educators and employers, with information related to workplace learning opportunities for secondary students. Many of these regional intermediaries work together with the regional representatives from the Iowa Governor's STEM Advisory Council to promote work-based learning opportunities in STEM fields.

Connecting With Industry Associations

The second way states discussed engaging multiple employers at once was through industry associations. Industry associations bring a range of like employers together. Industry associations are formed for a variety of reasons—such as creating a common set of occupational standards or hiring practices—and they usually include employers of all sizes. If a school or a district has many students interested in a particular occupation or industry, such as nursing or health care, for example, the relevant industry association might include members who work at hospitals and labs and private medical practices, all of which could provide students with access to industry experts. There are often statewide industry associations that support small, medium, and large companies—a state education agency could ask such associations to encourage local affiliates to work with their districts and schools.

Oregon has set up accelerated learning pathways through a tight alignment between secondary and postsecondary institutions with input from and partnerships with local

[9] https://www.educateiowa.gov/adult-career-and-community-college/career-and-technical-education/intermediary-network-statewide

workforce investment boards. By using the regulations and funding streams of the Carl D. Perkins Career and Technical Education Act (Perkins) and the Workforce Innovation and Opportunity Act (WIOA; particularly Title I), Oregon is leveraging connections with industries to foster pathway partnerships. Through WIOA-based relationships with local workforce investment boards, often acting as intermediaries, Oregon has been able to set up dual-enrollment opportunities and accelerated pathways for students interested in accessing experts and gaining workplace experiences.

Combating Employer "Burnout"

Both intermediaries and industry associations can help with the issues of employer "burnout" that several states brought up throughout the working groups. Burnout occurs when the same employers are tapped by schools for multiple tasks, such as joining advisory boards, advising on initiatives, and offering work-based learning opportunities for students. Schools may have a long-standing relationship with a few employers and go to them repeatedly. To avoid overusing the same people, schools should look to the local intermediaries and industry associations to help expand the pool of connected employers. Schools might also want to look beyond the "usual suspects"; that is, some of the biggest employers in a community may be public institutions—such as municipal government or the school district itself, particularly in rural areas—and they employ people across many occupations. Municipal government has experts in IT, cybersecurity, office administration, facilities management, human resources, and, sometimes, health care. It's important for states and districts to consider all employers in a geographic region when seeking industry experts who may be accessible to students.

Minnesota noted that with the passage of both WIOA and the Every Student Succeeds Act, employers are receiving more requests to partner than ever before. Minnesota shared that requests that are more focused tend to result in better engagement with an employer or industry. The state has learned that the requests need to focus on the technical and employability skills within the employer's field, specify expectations and the time period, and acknowledge the variety of ways in which employers can be engaged.

Tennessee's approach to avoiding employer "burnout" is focused on providing multiple engagement options and developing a group of champions who can talk peer-to-peer with other employers and help build a robust network of business partners. Aware that the same employers were being approached with many requests and that relying on the same subset of people could dissuade other potential partners from engaging, Tennessee provides employers with a menu of options for engagement, from participating in career fairs to donating equipment to serving on an industry advisory council, accounting for the different levels of desired engagement.[10] Tennessee has developed a group of champions who can talk peer-to-peer with other employers to connect to those outside the "usual

[10] https://www.tn.gov/content/tn/education/pathwaystn.html/

suspects." Tennessee also noted that the "right person" inside a company can matter a lot for engagement, pointing out that there are distinctions between a human resources professional and a content expert when making requests of a business.

Finally, some states have encouraged school districts to connect with their local community colleges to create a single advisory board. Minnesota distributes the 85% of Perkins pass-through funds through consortia only. Each Perkins consortium consists of at least one Minnesota college and multiple school districts (Minnesota Department of Education, 2016). Through this model, employers can engage with multiple educational institutions at one time (both K–12 and postsecondary) in an advisory capacity and through work-based learning opportunities.

Engaging With Industry Experts Virtually

For rural communities, ensuring that all learners have opportunities to engage with industry experts can be particularly challenging. Often, physical distances between employers, schools, and institutions as well as limited transportation options make in-person connections more difficult. Many rural communities do not have a wide variety of industries represented, limiting learners' opportunities to explore diverse Career Clusters and pathways (Advance CTE, 2017).

Technology plays a major role in how states are creating innovative solutions. Hawaii, for example, established a strategic partnership with a web-based platform that provides students with virtual engagement technology and credits this partnership with being able to bring a variety of industry experts into secondary students' classrooms and lives.[11] The platform connects students with a network of professional mentors from companies located across the state. Hawaii's Connect to Careers pilot offered 175 software licenses for teachers who teach at least 50% CTE classes, with unlimited use through June 2018.[12] Teachers make requests for a range of employer activities—such as conducting a one-on-one interview with a student or judging a CTSO competition—and the platform makes a connection with an eligible and appropriate industry partner. Through the pilot program, Hawaii has learned that teacher training related to the platform is essential, otherwise the tool is not used.

Sponsored by the state Departments of Education, Labor, and Economic Development, Nebraska Career Clusters provides students with virtual industry tours from their classrooms.[13] The virtual tours of Nebraska industries provide students with a glimpse inside the industry, interviews with industry experts, information about the types of careers available, the skill and knowledge requirements of the different careers, and the education and experience requirements.

[11] https://www.nepris.com/

[12] http://www.hawaiipublicschools.org/ConnectWithUs/Partnerships/C2C/Pages/home.aspx

[13] www.nebraskacareerclusters.com

Conclusion

A cornerstone of high-quality CTE is industry experts who can make course material relevant by connecting education to the world of work. By sharing new and emerging strategies as well as established practices, the states that participated in the Innovative Roles and the Secondary and Postsecondary Collaboration Working Groups had an opportunity to discuss how they are ensuring that secondary students benefit from the expertise of someone in the field. Across both working groups, the same challenges were voiced concerning educator policies and engaging and partnering with employers as industry experts. It became clear that states need to explore solutions beyond traditionally certified CTE teachers in order to connect secondary students with industry experts in a variety of roles.

CALL TO ACTION

States to expand thinking beyond traditionally certified CTE teachers

Alternative licensure and teacher training, although helpful, have not been successful enough to be the sole solutions to CTE teacher shortages. There is a great opportunity for states to use strategies beyond recruiting full-time CTE teachers to increase secondary students' access to industry experts. Many of the strategies included in this report show promise for connecting secondary students with industry experts in a variety of roles.

State CTE leaders should help districts and schools create a menu of options for local employers that span the continuum of engagement. At the same time, states should be collecting and analyzing data about the ways employers are engaged with secondary students beyond full-time teaching. By providing the menu of options and then tracking those roles, state directors will have a fuller picture of how students are interacting with and benefiting from industry experts.

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Acknowledgments

Working Groups Partner Organizations Support

Association for Career and Technical Education

The Association for Career and Technical Education (ACTE) has two avenues for providing support related to increasing access to industry experts: Industry Collaborations and a new High-Quality CTE initiative. ACTE collaborates with industries through Industry Insider Tours (AHLA and NCCER); Teacher Professional Learning (NBPTS); articles in *Techniques* and Industry Connect Blog; CareerTech VISION Sessions CFP; and Teacher Education Pipeline content strategy. For the new High-Quality CTE initiative, ACTE is embarking on a multistep initiative to (a) synthesize the different voices in the high-quality CTE dialogue, (b) identify a comprehensive, research-based Quality CTE Program of Study Framework, (c) test the framework, and (d) integrate the framework into ACTE's efforts to recognize and disseminate information about best practices within CTE.

Educators Rising

A Career and Technical Student Organization, Educators Rising has a variety of offerings for thinking about innovative roles for industry experts to reach secondary students, including teaching-based competitions, micro-credentials, and leadership opportunities.

Jobs for the Future

Jobs for the Future (JFF) works to ensure that all lower-income people and workers have the skills and credentials to succeed in the economy. JFF's three goals are (a) preparing for college and career, (b) earning postsecondary credentials, and (c) advancing careers and economic growth. Tools and resources for achieving these goals include Pathways to Prosperity Network; Early College and Dual Enrollment; the Center for Apprenticeship and Work-Based Learning; Early College Community of Practice and Other Learning Networks; Strategic Planning and Development; Policy Analysis and Development; Asset Mapping; Regional Pathways Design and Mobilization; and Communications and Marketing.

National Alliance of Concurrent Enrollment Partnerships

Advancing quality college courses for high school students, the National Alliance of Concurrent Enrollment Partnerships (NACEP) offers Quality Assurance, Professional Networks, and Policy Support and Implementation. NACEP's vision is that all high school students will be prepared for, have access to, and succeed in quality college courses.

Project Lead The Way

Project Lead The Way (PLTW) creates an engaging, hands-on classroom environment and empowers students to develop the in-demand knowledge and skills they need to thrive. PLTW also provides teachers with the training, resources, and support they need to engage students in real-world learning, as well as a menu of options for industry experts to engage with secondary students.

U.S. Chamber of Commerce Foundation

Dedicated to strengthening America's long-term competitiveness, the Center for Education and Workforce at the U.S. Chamber of Commerce Foundation is developing and promoting solutions for the most pressing education and workforce challenges of the day. Through the Talent Pipeline Management initiative, the Center for Education and Workforce is promoting an employer-led approach to closing the skills gap.

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