High-quality CTE

PLANNING FOR A COVID-19-IMPACTED SCHOOL YEAR

AN INITIATIVE OF ACTE

★ ★ ★

HIGH QUALITY

CTE

Association for Career and Technical Education
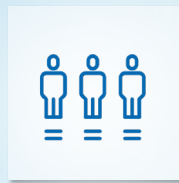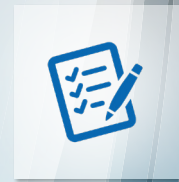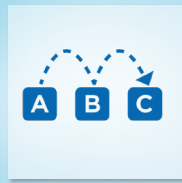
ACTE®

Dear CTE Family,

This year has already felt like a lifetime. From an unprecedented global pandemic that has impacted every aspect of our lives to civil rights protests and the fight for a fairer and more equitable society, the first half of the year has not been easy. In particular, the switch to remote learning for many with virtually no time to prepare has been immeasurably difficult and presented a wide range of challenges, not only for effective teaching and learning but also for the physical, mental and emotional health of learners and educators. We recognize that the 2020–21 school year, regardless of whether your campus plans to be in-person, remote or use a blended learning model, will undoubtedly be uncharted territory and just as difficult — if not more so — as we continue to adjust to the reality of the coronavirus.

If there has been any silver lining over the past few months, it is that the resilience, hard work and outstanding commitment to students by CTE educators has shined through for all to see. CTE professionals in all corners of the country have stepped up and met the needs of students in new and innovative ways. You all are the leaders of your classrooms, schools, colleges and communities, and we know that you will continue to find even more innovative ways to accomplish your goals. Now more than ever is the time to be bold, experimental and forward-thinking.

Benjamin Franklin once said that, "Out of adversity comes opportunity." This still rings true. Addressing and tackling the challenges of today will not be easy, but we will do it together. The CTE ecosystem is unquestionably stronger now than it was even just five years ago, and we know that with your hard work, we will emerge from the other side of the pandemic with new strategies, new successes and new opportunities for our programs and students. We hope this guide provides ideas and resources to assist you as we fight this battle together, and as always, we stand ready and willing to help. In the coming school year, ACTE will continue to provide relevant CTE professional development and resources to you as we navigate these changing circumstances, and to advocate for the funding, supports and resources you need to succeed in these challenging circumstances.

With gratitude for the work you do and hope for the future,

LeAnn Wilson
Executive Director, ACTE

Nancy J. Trivette
President, ACTE

TABLE OF CONTENTS

INTRODUCTION

As the country continues to grapple with the impacts of the COVID-19 pandemic, CTE stakeholders around the nation are thinking ahead to what education might look like in the future. Whether schools and postsecondary institutions will be able to open fully for the next school year using social distancing methods, utilize a blended approach or continue with remote learning exclusively, there are significant implications for CTE programs, students and educators. This guide is designed to help CTE stakeholders identify the key considerations, questions and emerging best practices that should shape future planning. It is important to note, however, that every educational institution will have different needs and be operating under different state and local guidelines. Accordingly, this document should be seen as a tool for, not an arbitrator of, the difficult decisions that CTE leaders will make in the coming months.

The guide is organized around the elements of ACTE's Quality CTE Program of Study Framework to capture the breadth of issues important to maintaining CTE program quality within any educational environment. The 13 elements of the Framework cover the vast majority of CTE-specific considerations that are likely to arise in the 2020–21 school year, based on current knowledge and understanding. However, as the situation unfolds and new issues arise, the entire education and workforce development community will need to be flexible.

Moreover, there are a wide range of additional decisions that will need to be made by policymakers and leaders at the state, district and institutional levels that are much broader than CTE programs — decisions around instructional calendars, health and safety, connectivity, transportation, foodservice, sports programs, support services and all the other functions that educational institutions serve within communities. It will be important for CTE leaders to be involved in these overarching conversations to ensure the needs of all students are represented. There are many other organizations providing comprehensive guidance on these issues, and we have included a sample of resources in the System Supports section, with a longer list in the Appendix. Many states and districts are also producing guidelines on these topics that will be important resources on which to base CTE-specific planning. Postsecondary institutions should also consult with accrediting and governing bodies.

One of the most fundamental decisions to be made, upon which most other plans will be based, is whether to reopen campuses and in what formats classes will be offered. In a survey conducted in late May of ACTE members, approximately 60% of respondents indicated that these decisions either had not been made or were not public at that time. Where decisions had been made, CTE educators on the secondary level indicated they were most likely returning to a mix of in-person and remote instruction (26%), with much smaller percentages anticipating mostly in-person teaching (5%) or mostly or all remote teaching (4%). Postsecondary CTE educators were also more likely to expect to return to a blended model (29%), closely followed by remote instruction (28%), with few anticipating mostly in-person teaching (5%).

Campus Reopening Plans
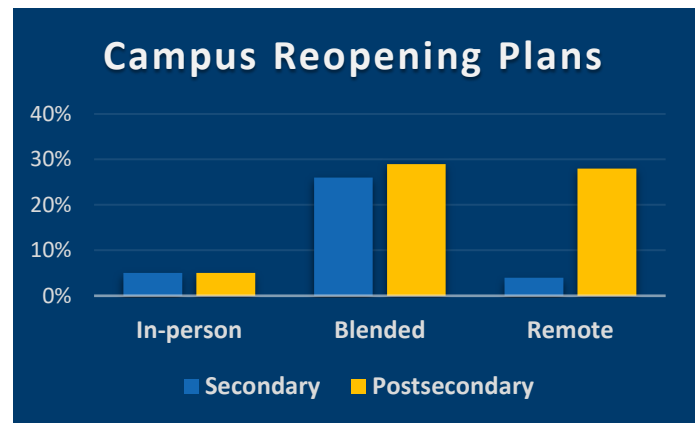
To account for the three main instructional models that are emerging as educators plan for the next school year, the content in each section of this guide is further delineated based on these scenarios:

➔ *In-person Learning:* In this scenario, all or nearly all students would engage in in-person learning with social distancing. Exceptions might include medically vulnerable staff and students who have risk factors or health concerns that make them more susceptible to COVID-19 complications, as well as those sick or quarantined due to possible exposure. As of late May, few institutions had committed to a completely in-person instructional model for the summer or upcoming school year. However, this remains a goal in many areas.

➜ *Remote Learning:* In this scenario, all or nearly all students would engage in remote instruction, synchronously (in real time) and/or asynchronously. Minor modifications include allowing students on campus for minimal hands-on lab work, or serving some students with special needs in person. More postsecondary institutions than secondary school districts seem to be considering this approach.

➜ *Blended Learning:* In this scenario, students experience some combination of socially distanced in-person learning and remote learning. This combination can occur in a multitude of ways, and may include smaller groups, staggered attendance, rotating time between campus and remote learning, cohort-based learning, modified instructional calendars, competency-based models and/or teaching learners in the classroom and at home simultaneously. Many postsecondary institutions already employ a blended learning model, with some courses taught in-person and others online. Blended learning scenarios require educators to consider all of the nuances of both in-person and remote learning, as well the logistics of combining the two.
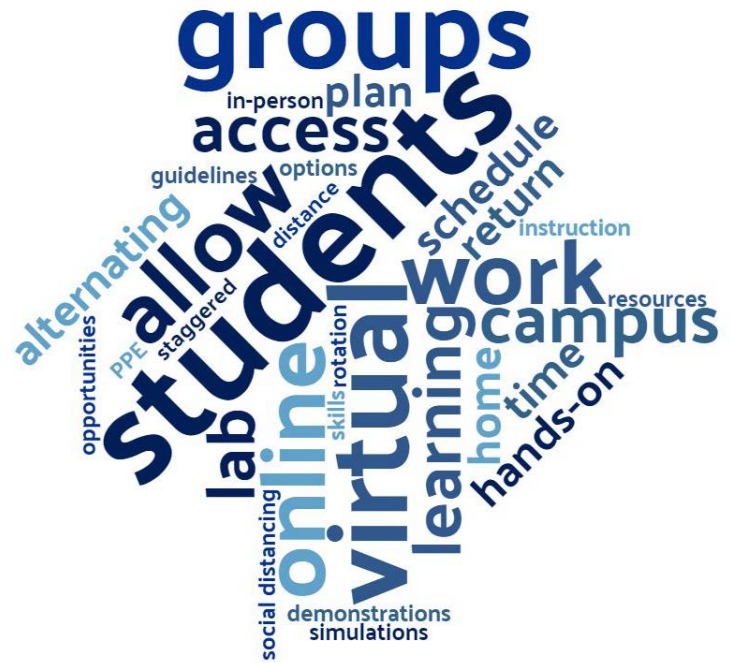
ACTE is not advocating for any one of these three models, as decisions about the best approach to instruction in a specific area should be made by state, local and/or institution leaders, in close collaboration with health care professionals and key stakeholders, such as faculty and staff, students, families and community leaders. The health and safety of instructors, staff and learners should be the top priority in making these decisions.

For many — if not most — CTE programs, at least some face-to-face instruction is ideal, or even necessary, for knowledge and skill development and hands-on practice. However, current circumstances are far from ideal, and blended or remote instruction may be judged necessary or beneficial to protect health and safety during the pandemic. In addition, prior to the pandemic many institutions were pursuing the delivery of CTE through remote instruction as an important tool to provide equitable access to more learners, with significant success. This guide presents a variety of ideas, resources and guiding questions to help support a rigorous, high-quality experience for all learners — one that diminishes or even eliminates gaps in student knowledge and skill gain between delivery models.

Organization of the Guide

As mentioned earlier, this guide is organized by each of the elements of ACTE's *Quality CTE Program of Study Framework*. It can be read in any order, in whole or in part, as some sections may be more relevant to specific roles within the CTE system or at different stages of planning. The System Supports element, which appears first, also serves to provide some additional context on the in-person, remote and blended models and addresses overarching issues like federal funding. The next element presented is Access and Equity, as it also provides overarching content that must be addressed in order for the remaining elements to be implemented effectively. Following these two sections, the remaining elements are presented in the order of the Framework, but as mentioned above, can be read in any order or in isolation. Because access and equity are so important to many decisions about COVID-19-impacted learning, these issues are addressed throughout the guide, in addition to the in-depth discussion in the Access and Equity section.

Within each element, the text includes *overarching considerations* that cut across all three instructional scenarios, *specific issues relevant to each scenario*, *access and equity implications*, *key questions* to help guide local discussions and links to *resources, tools and examples*.

Additional resources related to planning for the 2020–21 school year, including a webinar series that provides a deep dive into each of the elements, can be found on ACTE's website. ACTE will continue seeking input from the field to collect and document promising practices that support educators in delivering high-quality CTE experiences as the challenge to traditional delivery continues.

This document is not legal advice, nor is it an exhaustive list of every consideration or action that CTE educators may need to take for the 2020–21 school year. Readers should defer to federal, state, local and/or institution requirements and guidance. The instructional models, ideas, resources, tools and examples shared do not constitute endorsements of any products, services or strategies, as different products, services and strategies will work in different contexts. As knowledge is gained, this guide may be updated to incorporate new ideas and resources and emerging issues.

SYSTEM SUPPORTS

High-quality CTE programs exist within broader education and workforce development systems that have a significant impact on their operations. In order for CTE programs to reach their full potential, key supports must be in place at this broader systems level, such as policies, funding, research, cross-system collaboration, education and labor market alignment, and CTE marketing and recruitment efforts across programs. These supports are usually not specific to individual programs, but provide the foundation on which all high-quality programs in a local area can flourish.

Key Issues to Address
• Providing input into broader, systems-level conversations about reopening to ensure CTE is represented
• Communicating with all stakeholders about changes to instruction and their implications
• Addressing funding issues and potential budget cuts
• Monitoring health and safety in any in-person instruction
• Ensuring all students have internet access and devices
• Establishing options for students to practice hands-on skills
• Coordinating schedules across educational institutions

In the context of the COVID-19 pandemic, many of the systems in which CTE programs operate are facing unprecedented stress, and policymakers are dealing with difficult decisions that have ripple effects on institutions, programs, learners and teachers, as well as families, communities, and local and regional economies.

It is vital that CTE stakeholders have a seat at the table as these systems-level decisions are made. Advocacy for policies that support CTE students and prepare a competitive workforce, including the funding necessary to implement these policies, will be critical. CTE programs provide learners with unique opportunities to explore and prepare for careers, including hands-on and lab-based learning using specialized facilities and equipment, industry credentials, and work-based learning and industry engagement, and subsequently have many instructional needs that differ from the needs of academic classrooms. Those needs risk being overlooked by policymakers if CTE stakeholders are not included in discussions, which could negatively impact the success of CTE learners and reverberate onto employers and the economy. Many systems are forming working groups to develop reentry plans and surveying guardians, educators and/or students. It is imperative that CTE leaders stay attuned to these efforts and contribute to discussions. For CTE leaders tasked with making some of these bigger decisions, involving a diverse set of stakeholders — administrators, instructors, faculty, staff, students and families, and partners across credit and non-credit programs — to facilitate input from a diversity of voices will be critical.

The biggest decisions that education leaders are facing are around whether, when and how to open campuses. A brief overview is provided below of the considerations around this topic that have emerged as most relevant to CTE programs, and links to reentry guidance and planning resources are included in the Resources, Tools and Examples section. Whatever instructional model is chosen, frequent and transparent communication with learners, their guardians (as appropriate), instructors and staff, and partners will be important to keep everyone apprised of changes and aware of where they can direct their questions and concerns. And while recruiting new learners into CTE programs might not be top of mind at this time, new methods of communication and new instructional models will impact the messaging of recruitment and promotional materials and the choice of media and venues; for instance, continued remote learning might lend itself to more virtual modes of recruitment through social media. Other systems-level aspects of CTE, including policies related to staffing, cross-system collaboration and labor market alignment, are addressed in other sections of this guide.

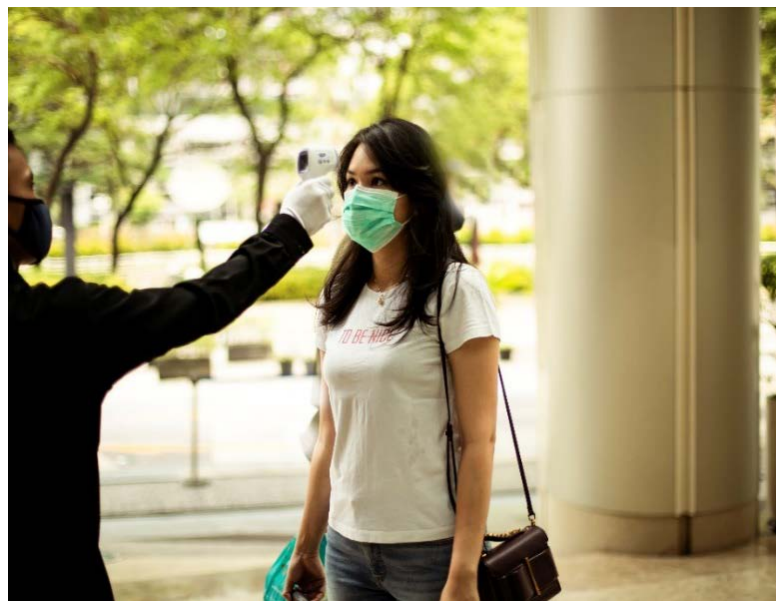## In-person Learning

Social distancing to comply with state and local rules, as well as to prioritize the health and safety of learners and staff, will be the most critical element of developing fully in-person instructional models. The CDC encourages smaller learning cohorts in their guidance for educational institutions, but does not define this numerically. Many states have limited gatherings to

groups of 10 as part of stay-at-home and early reopening guidelines, and even in places with larger caps (such as 50, 100 or 250), often there are more students than that in the hallways, cafeterias or other common spaces on campus. A number of CTE leaders report that they intend to keep a teacher-to-student ratio of 10:1 or less. However, this will vary based on a number of considerations, including state and local guidance, space in the classroom or lab, budget constraints and preexisting ratio requirements. Ensuring space between students is also an issue within classrooms, as well as in common spaces, such as cafeterias, libraries and school or public transportation.

Health screenings are recommended by the CDC for in-person learning. It is suggested that K–12 schools, if feasible, conduct daily health checks such as temperature screening, symptom checking and/or health screenings in addition to asking guardians to take temperatures daily and keep symptomatic learners at home. The CDC considers a person to have a fever when they have a measured temperature of 100.4° F (38° C). As of writing this publication, states are setting their own temperature thresholds, most in line with the CDC guidance.

Several area CTE center administrators have shared that they are looking at large-scale temperature-taking solutions, such as kiosks, cameras and thermal scanners that register individuals' temperatures as they enter a building and notify operators of high temperatures. Other campuses are considering having instructors play this role in each classroom. Data privacy will be a concern with all of these activities, and if instructors are assisting in this effort, they will need to be trained and equipped with protective equipment, and time will need to be set aside before or during classes to accomplish

Access and Equity Implications

The access and equity implications across these models are tremendous and multifaceted. Access to computers and high-speed internet is one of the most obvious and immediate on-the-ground challenges. Less time on campus may result in fewer opportunities for industry credentials, accelerated credit and other opportunities, which can be particularly troubling for students who do not have the resources to pursue these opportunities on their own. The needs of medically vulnerable learners and staff, accessibility in remote instruction, cyberbullying, learning loss, growing equity gaps for underserved populations and a number of other issues are addressed in the Access and Equity section and in other content throughout this document.

this task. Regardless of the exact method of screening selected, all staff should be educated on signs and symptoms they should informally be on the lookout for, and processes should be in place to refer students for additional medical attention.

Preventative measures are also key considerations in this model, such as making opportunities for hand washing or sanitizing more readily available and requiring or encouraging staff and learners to wear masks. It is also extremely important to supplement these on-campus preventative measures with education for students and families about precautions and possible symptoms, and to encourage self-monitoring.

Institutions will also need to decide whether to provide, or partner with health care facilities to provide, COVID-19 testing for staff and/or students. If implemented, testing must be affordable and accessible, and linked to rigorous tracing efforts for those who test positive. The conversation around testing and tracing has been particularly salient at the postsecondary level, where students come to campus from multiple communities. Another option institutions are exploring is using wastewater testing as an early indicator of significant transmission in the community.

Campuses are crafting policies to give instructors and staff the authority to send students home who display symptoms such as coughing or wheezing, to help them decide when this is necessary and to combat possible pushback from the learner or a guardian. Some postsecondary institutions are adding safety measures like mask wearing into student codes of conduct and employee policies.

Even in a scenario where most students return to campus, medically vulnerable populations are likely to need continued options for remote learning or other accommodations, which are described in detail in other sections of this guide. In addition, if this scenario is chosen, it is still important to have contingency plans in place to move quickly to remote learning for all students, if health conditions in the local area warrant more extreme social distancing for a period of time. This has implications for the way activities in many of the other elements are structured and delivered.

Remote Learning

In this scenario, all students would continue to learn remotely, with a few isolated exceptions. If a district or institution will be completely remote in the 2020–21 school year, with no in-person learning options, then the CTE curriculum will have to adjust significantly. The biggest challenge in this instance will be labs and hands-on learning; ideas and resources for continuing to build and practice skills through virtual, simulated and other methods are addressed in several of the other sections of this guide. The decision to shift to remote learning could also impact accreditation, industry certification and licensure requirements, and/or funding. CTE leaders will need to consult with appropriate institution or program governing bodies and program advisory boards about the ramifications of the fully remote instructional model.

The most critical systems-level issue for remote instruction is connectivity. This arose repeatedly throughout the spring as a significant barrier for learning for students of all ages. The Federal Communications Commission reports that more than 21 million Americans lack broadband access, while

BroadbandNow estimates this number is actually 42 million. Even in higher-income areas, learners can lack access to high-speed internet and a computer for the several hours a day needed for remote instruction. Many students only have a cell phone that may not work well with online platforms, and learners at home may have other responsibilities and distractions that can impede learning and add stress, or may even be facing homelessness.

Several CTE educators have reported that their districts and institutions have been or will be providing computers and internet hotspots to learners who need them through distribution programs, or staging mobile or stationary hotspots using school buses or campus parking lots. Community organizations and agencies, such as libraries, can also be a source of connectivity for students who lack reliable high-speed internet and/or access to technology. CTE leaders should strongly encourage these approaches to help CTE learners connect remotely, while bearing in mind that some of the devices being provided by schools, such as Chromebooks, may not be capable of running the software necessary for all CTE programs.

When it is not possible to get all learners connected, CTE instructors will likely need to develop packets of readings, worksheets, quizzes and potentially kits of activities that can be safely completed at home. However, this should be a last resort, as educators in CTE and other subject areas have acknowledged that online and paper-based experiences are widely divergent, and CTE students in particular will need access to technology to participate in virtual and simulated experiences. Throughout the rest of this guide, the underlying assumption is that student connectivity issues have already been largely addressed. That should be the first priority of institutions and districts pursuing remote learning options, as delivering a high-quality CTE program experience remotely will be nearly impossible without at least some internet and computer or mobile device access.

In many places, allowances within this remote learning model are being made for small groups of students to return to campus or other facilities for lab work or extra supports. In this case, the instruction may not look that different from CTE delivery in the blended learning scenario described below. However, there are key differences because the CTE learners in the lab will be one of the few groups on campus, and would likely only attend in person for short periods at a time, not on the traditional instructional schedule or even the modified blended schedules many are considering. For example,

students might be able to sign up for lab time a few times during the semester or receive hands-on practice through worksite placements, even if educational institutions continue to use remote instruction.

Blended Learning

Findings from both the ACTE survey and an ExcelinEd survey of K–12 state education leaders point to this instructional model as the most likely for many districts and institutions, with campuses welcoming students back on a staggered or rotating schedule. In this scenario, all of the considerations that are discussed above, such as health screenings and technology access, will still apply for the times students are learning in person and remotely. In addition, there are decisions that must be made about the blend of instruction and how it will be operationalized.

One option that campus leaders are exploring is A/B scheduling or the 2-2-1 model. In this model, learners are split into two groups. Each group is on campus one day, then learns remotely the next day while the other group is on campus. The fifth day is a distance learning day for everyone. A number of CTE administrators, both secondary and postsecondary, have reported to ACTE that their institutions are considering this model or similar variations.

Other options include rotating between one week on campus and one week of remote learning, or even larger blocks of time on and off campus for different students. The cohort scheduling model is another possibility, with the same small group of students staying together throughout the day. This may be an option for career academies that are already designed on a cohort learning model, but could be challenging for CTE in comprehensive high schools: ExcelinEd has

suggested that this option may reduce student elective choice. In addition to changes in schedules and student groupings, some school systems and postsecondary institutions are considering modified calendars that bring learners to campus in the summer and close campuses at Thanksgiving, at which point learners would either take an extended winter break or transition to remote learning. Whatever scheduling option is chosen, there will be many moving pieces across a campus and within programs to coordinate, including transportation, course schedules and issues of instructor capacity and workload.

Federal Funding

Many of the instructional reforms discussed in this guide require financial resources — at a time when state and local budgets are under significant pressures. However, federal funding may be available to address some of these reforms. The primary source of funding that has already been allocated to educational institutions to address coronavirus-related costs is the Coronavirus Preparedness and Response Supplemental Appropriations (CARES) Act. Most notably, the law provided $30.9 billion for an education stabilization fund that was split between states, postsecondary institutions and local school districts. Money through this Act can be used for a variety of costs, such as improving educational technology and supporting distance education, retrofitting facilities, or providing professional development to educators — any cost that resulted from the shifts in instruction caused by the pandemic. A portion of the postsecondary funds was also set aside for direct aid to students to help address equity issues.

Additional funding under the CARES Act went to related programs that might benefit CTE programs and learners, such as Project SERV, which helps institutions recover from traumatic events; the dislocated worker national reserve fund for states to respond to workforce issues related to the coronavirus; and several competitive grants being offered through the U.S. Department of Education. With all of these funds, as mentioned earlier, it will be important for CTE stakeholders to be at the table as distribution and allocation decisions are made. There is also a chance that additional funding will be made available later in summer 2020, as several proposals for more education support have been introduced in Congress.

CTE educators should keep in mind that other federal funding streams, such as Perkins, the Individuals with Disabilities Education Act (IDEA), the Every Student

Succeeds Act (ESSA) and competitive grants offered in the higher education space, may be able to help with new costs as well — each can be a piece of solving the funding puzzle. For example, "equipment, technology and instructional materials" are already an allowable use of funds under Perkins, as is "expanding opportunities for students to participate in distance career and technical education and blended-learning programs," and ESSA includes funds for professional development. The "supplement-not-supplant" provision in many federal laws that prevents federal funds from being spent on some existing expenses may no longer be applicable if state or local budgets are cut; this is another important consideration.

In the case of Perkins in particular, it is required under Perkins V that all spending be linked to the comprehensive local needs assessment (CLNA), so depending on the timing of when that evaluation was completed, local areas may need to amend their CLNAs to reflect new COVID-19-related needs in order to align spending. Any equipment purchased with federal dollars will also be subject to the same rules related to inventory and tracking as in the past; however, the federal government and some states have issued waivers for equipment use in unrelated programs and equipment/supply donations. There is nothing within Perkins that prevents equipment or technology from being provided to individual students for instructional purposes, but there may be other state or local rules related to this practice.

In all cases, and with any federal funding source, check with state authorities before allocating resources as there may be additional parameters in place.

Area Career and Technology Centers

For CTE offered through shared-time centers that serve high school students, one of the toughest challenges will be figuring out how to match schedules and transportation decisions among sending schools. Area center leaders have told ACTE that they are considering having some schools send students two days a week, and other schools on two different days, but this scenario may not allow them to maintain social distancing if one particular school makes up the largest portion of students in one CTE program. Another option suggested by ACTE survey respondents is having students sign up for lab time when it works with their home school or district schedule. This would also allow the area center to put a cap on the number of people in the lab at each time.

However, in any modified schedule, transportation to the area center will be a challenge for students who are dependent on school-provided transport, as it is usually not cost effective for schools to send a bus for only a few students, and morning and afternoon bus routes will take longer in most districts to accommodate social distancing — which could impact those traveling to the area centers as well. One option is to provide funds for students to use ridesharing services. In another approach, guidance from the state of Maryland suggests that area centers could increase their core academic offerings so that students would not have to navigate between multiple campuses, although this would be a difficult undertaking to launch in time for the new school year and would require buy-in from all partner schools.

Technology interoperability is another concern. Schools generally have firewalls and other protections loaded onto student devices. Centers that serve multiple schools or districts will need to be sure that the platforms used are accessible to all participating students. This may require conversations with the chief technology officers of each school or district.

Resources, Tools and Examples

- The CDC has published reopening guidelines, disinfecting protocols and considerations for K–12 schools and higher education institutions.
- Advance CTE has released a brief on COVID-19's impact on CTE and the coming school year.
- ExcelinEd has developed a detailed breakdown of different scheduling, grouping and calendar options for 2020–21, and shared results from a state leader survey on reopening.

- This webcast from EdSource takes a deep dive into three school districts identified by the Center on Reinventing Public Education as having success in their transition to remote learning.
- This article from Education Dive discusses the challenges of socially distanced educational spaces. Education Week has produced several articles and resources on adapting educational facilities to social distancing, including a measurement guide and other articles. This Spaces4Learning article also describes how to rethink school spaces in light of social distancing.

- Inside Higher Ed has published a number of articles on reopening, including 15 scenarios for 2020–21 planning and others found in this compilation.
- This article from the Hechinger Report discusses the potential for growing community college enrollments as this year's graduates delay attending four-year universities.
- This COVID-19 Crisis Communications Triage Kit includes tips for leaders in education and other sectors.
- To help you connect with other CTE administrators considering these issues, ACTE has an active Administration Division.
- A sample of reentry guides from federal sources as well as national organizations, states and counties is included in the Appendix.

System Supports: Key Questions to Consider

Cross-cutting Questions

- As summer begins, have you reopened facilities to serve any students? If yes, what are the early lessons learned?
- Have decisions been made about offering in-person, remote or blended learning for the fall semester? If not, who will make those decisions and when will they be made?
- Have learners and their guardians, where appropriate, been surveyed about their needs and preferences for technology, support services and more? Do these surveys address CTE instructional needs specifically?
- How can CTE leaders be involved in discussions around reopening in your area?
- Have CTE programs been specifically included within your campus, district or state's reopening plans? If not, how can these guidelines be updated to include CTE needs and challenges?
- What challenges do you foresee that may be overlooked by leaders without expertise in CTE, and how can you share relevant information with those leaders?
- What funding sources are available to help with the costs associated with whichever instructional model is chosen?
- What, if any, budget cuts are anticipated to CTE programs due to economic challenges in your area?
- How do you plan to recruit students to CTE in light of new instructional models? Will your messaging and choice of media need to change?
- How will you communicate with learners, guardians and partners about changes to instructional delivery, schedules, curriculum, work-based learning and other CTE course elements? How will you keep all stakeholders updated throughout the year on the impact of these changes and any new developments?
- What are your district's or institution's plans for future closures or other delivery changes that may be necessary during the year?

In-person Questions

- How will classes or other events on campus comply with group size limitations in your local area through creative scheduling, use of space or other strategies? How will you promote appropriate social distancing among students and staff?
- How will learner health screenings be implemented on a regular basis? Who will be responsible? How will student health data be protected?
- How can you provide enough personal protective equipment for students and staff, particularly if you have donated supplies you may have previously stocked?
- Will staff and/or students be encouraged or required to wear masks on campus? If so, how will you supply those masks? How will they be cleaned and/or replaced and how will you enforce the policy?
- What sanitation procedures will be encouraged or required, including handwashing as well as cleaning of facilities, equipment and supplies? How will you implement and enforce these procedures?
- How will transportation options and schedules be modified for social distancing?
- How will you provide continued remote learning for medically vulnerable students and staff?
- If you are a shared-time center administrator, how can you effectively schedule student time on campus in coordination with partner schools while maintaining social distancing? How will students be transported to the center?

System Supports: Key Questions to Consider (Continued)

Remote Questions

- What plans will provide internet connectivity and access to computers or mobile devices for all students?
- How will a shift to remote learning impact accreditation and/or funding?
- How will the need for hands-on practice and requirements for industry certifications and licensure be accommodated? Will these experiences be all remote, or can learners return to campus in isolated instances? (More questions on these topics can be found in other sections of this guide.)
- If you are a shared-time center administrator, how will you coordinate with local schools on technology interoperability?

Blended Questions

- Which student groupings, calendar adjustments and other scheduling factors will impact how students transition between remote and in-person instruction?
- How will transportation options, broader instructional schedules and course schedules be modified to maintain student access to a full range of high-quality CTE programs?
- How will instructor schedules be modified to accommodate the workload inherent in delivering remote and in-person teaching?
- Does the blend chosen provide enough hands-on learning for CTE students? If not, how can it be adapted?
- If you are a shared-time center administrator, how can you effectively schedule student time on-campus in coordination with partner schools while maintaining social distancing? How will students be transported to the center? How will you coordinate with local schools on technology interoperability?

ACCESS & EQUITY

High-quality CTE programs include program of study promotion, student recruitment, and operational and instructional strategies to support both access and equity for each and every student, regardless of their sex, gender identity, sexual orientation, race, ethnicity, nationality, ability or age; as well as for all of the special population groups outlined in federal statute. Due to the critical importance of this topic, access and equity issues have also been addressed within each of the remaining elements, but a deeper dive is taken here.

Key Issues to Address

- Addressing connectivity and technology needs
- Supporting basic student needs and mental health
- Providing supplemental supports to students, including learners with disabilities and English learners
- Being attentive to inequities in access to high-quality career pathways
- Supporting medically vulnerable learners at home
- Using accessible design and providing assistive technology for in-person and remote learning

Ensuring access and equity in a COVID-19-impacted school year will be more challenging, but also more critical, than ever. Equity issues have been at the forefront of many discussions around the shift to remote learning in the spring, which shined a spotlight on equity gaps within our current education system. Many of these gaps have always existed, but were brought to the forefront by the abrupt changes made as districts and institutions shifted the educational experience. New gaps have also emerged as economic conditions have deteriorated. The Perkins V comprehensive local needs assessment, with its emphasis on disaggregated data analysis and evaluation of special population needs and performance in CTE programs, is an important tool for continuing to evaluate equity gaps, and is described more in the Data and Program Improvement section.

Several equity issues cut across the possible instructional scenarios for the new school year. First, as further described in the System Supports section, it will be critical for districts and institutions to continue addressing connectivity and device access issues, even in in-person scenarios, in case learning has to quickly

move to a remote environment to address a local COVID-19 outbreak. Meeting basic student needs, such as for food, housing and transportation, as the economic conditions of the pandemic impact students and families, will also be important precursors to learning. In addition, institutions will need to be attentive to learners' mental health and social-emotional needs, as learners cope with grief and loss, poverty, racial injustice and other traumas from before and during the pandemic. Close communication with students and families about their needs and services available to help meet those essential needs will be key, which may include translating materials into different languages. Institutions and districts that use equity-focused frameworks like Multi-tiered System of Support may benefit from already having a defined approach for identifying and responding to learner needs.

Learners may also need tutoring and other catch-up interventions in their core academic courses that could impact their ability to take part in CTE courses. According to ACTE survey respondents, CTE professionals are planning to intensively collaborate with staff from special education, English language and other departments to facilitate services and provide one-on-one interaction in person, over the phone and/or online. CTE educators should also take part in individualized education program (IEP)/504 meetings to reaffirm and revise these plans in light of changing situations; the Individuals with Disabilities Education Act supports CTE educator participation in IEP meetings as an essential means for CTE educators to have a voice and gain appropriate supports for their students.

Furthermore, the pandemic is seriously impacting learners' access to and transition within high-quality career pathways, and this will have reverberating effects, particularly on learners already underserved by the education system. According to polling from Strada Education Network, Black Americans and Latino Americans are more likely than white Americans to have changed or canceled their education plans during the first wave of the pandemic, but are also more likely than white Americans to enroll in education and training programs in the coming months.

Unemployment rates were also higher as of May for Black Americans and Latino Americans than for other racial or ethnic groups. Accessible and unbiased career guidance and advising, including follow-up efforts to encourage planned transitions; ease of credit transfer and acceptance of credit for prior learning; and access to industry credentials and programs that integrate basic skills education and CTE will be critical to help mitigate the impacts of COVID-19 on the education and career trajectories of many.

CTE educators should be prepared to give all students and families grace and understanding as they work to navigate the challenges of the summer and the new school year. Ben Williams, CEO of the National Alliance for Partnerships in Equity (NAPE), emphasizes this point. "We should enter into the process in a collaborative and supportive way, and check ourselves when we want to pass judgment." This understanding should extend to instructors, staff and administrators as well, as everyone adjusts to the challenges of COVID-19-impacted learning.

In-person Considerations

Resuming in-person learning will allow many of the services provided by campuses to address basic equity needs to resume as well, such as meal distribution, campus health clinics, mental health and counselor services, and access to technology. Academic supports will be more readily available as well, and CTE students should have access to the full range of classroom supports that were afforded to them before the pandemic, adjusted for social distancing.

However, medically vulnerable learners must decide with their doctors about whether they can return to in-person instruction. Some may feel comfortable returning to campus, with social distancing and frequent disinfection. Others may decide to continue learning remotely, and students who are infected with or may have been exposed to COVID-19 will also need to remain home on at least a short-term basis. States, districts and institutions must support students, including students with an IEP or 504 plan, who need to remain at home through internet-enabled technology and remote instruction provided by a state-operated virtual school or by the district or institution. This may include livestreaming classroom activities, virtual course modules and online group work that enables learners at home and on campus to collaborate. These topics are further addressed in the Engaging Instruction section.

Medically vulnerable learners could also schedule times to come to campus for one-on-one instruction and practice with equipment and technology. Alternately, instructors, special education coordinators and paraprofessionals could visit a learner at home to provide one-on-one support.

Socially distanced in-person spaces may also cause difficulties for some learners. For instance, learners who are deaf or hard of hearing and English learners may have trouble communicating through masks. One option is for instructors to wear transparent masks or face shields; audiologists also recommend speaking a little more slowly and projecting your voice a little more when wearing a mask. Blind and low-vision students may also need to learn to navigate redesigned spaces. Assistive technology (AT) to support and enhance in-person instruction, both low- and high-tech options, should be explored to provide equity and access for all learners.

Remote Considerations

Access to computing devices and high-speed internet is a significant access and equity concern in this model, with ramifications across different learner groups, geographic areas, socioeconomic statuses and special populations. Further details on this issue are addressed in the System Supports element.

When it is not possible to get all learners connected, CTE instructors will need to develop packets of readings, worksheets, quizzes and at-home kits of activities that can be safely completed at home. More information on these kits is provided in the Facilities, Equipment, Technology and Materials and Student Assessment sections. Even with technology access, it will be important for instructors to share important information both synchronously and asynchronously, to design activities that take into account the different resources available to different students and to provide specific materials needed. For example, requiring specific ingredients for at-home culinary activities could place an undue burden on families dealing with economic hardship. Likewise, assignments that require students to have access to a specific piece of technology should be avoided unless all students have been confirmed to have access.

Accessibility for learners in the remote classroom is another concern. A learning management system (LMS) that supports accessibility for students who use AT is an important precursor. Building on this foundation, CTE educators can employ Universal Design for Learning (UDL) principles and ExploreAccess.org's three principles of accessible design: intuitive, perceivable and navigable. While designing courses for accessibility can feel overwhelming, there are many resources to support instructors in this work. Much of accessible

design involves making documents easy to read and easy to use by AT like text-to-speech converters. Trying to make the mobile user experience similar to the computer user experience is another equity issue, as many lower-income learners are more likely to use their phones to access coursework.

Experts recommend that all videos be captioned, not only for learners who are deaf or hard of hearing and English learners but also for students who may have to do schoolwork from a noisy location. Audio descriptions of videos and/or video transcription can also support accessibility, and English learners may need additional explanations of online content and access to translated materials. Terrill Thompson of the University of Washington DO-IT Center recommends that every teacher ask themselves these questions when evaluating the accessibility of education technology.

Many modifications and accommodations used in person, such as accommodations to timed exams, can be used in the online space, too. As CTE instructors are developing online assessments, they should focus on ensuring that assessments measure what they intend to measure. UDL can assist educators in designing assessments to meet learning goals and avoid barriers that prevent instructors from seeing what a student really knows. Guidance for accessible design, instruction and assessment is included in the Resources, Tools and Examples section below.

More specific to CTE, ensuring accessibility within any extended reality (XR) or other simulation programs used in CTE courses will be important. Accessibility for learners can also involve giving students a choice of formats; for instance, students could choose to demonstrate their knowledge and skill attainment by writing a reflection, making a video or giving a presentation.

Last but not least, students in remote spaces can be vulnerable to cyberbullying and harassment from other learners and bad actors who infiltrate public platforms or semi-private meetings. While this issue is not new, the surge in the number of students and educators using online spaces this spring has elevated its prominence. It will be important in the new school year for learners to know the risks and be equipped with resources and supports for addressing cyberbullying.

Blended Considerations

In a blended learning scenario, CTE educators will need to be attentive to all of these concerns, although the relative importance of each consideration will vary depending on the level of blend involved.
In one particular blended learning scenario, medically vulnerable learners and special population learners would be the only students who return to campus, while other students remain remote. In this case, CTE instructors, paraprofessionals and others would be on campus at least part of the time providing one-on-one or small group instruction, while also teaching other students remotely.

Resources, Tools and Examples

- Fourteen education and civil rights organizations have put together these recommendations for crafting a COVID-19 response that equitably serves the most vulnerable learners.
- NAPE's "Let's Talk" series of archived webinars addresses equity gaps exacerbated by the COVID-19 pandemic.
- The American Youth Policy Forum has compiled collections of resources for serving disadvantaged populations, such as youth in foster care and justice-involved youth.
- This resource introduces the Multi-tiered System of Support.
- The Key, an Inside Higher Ed podcast, explores the disproportionate impact of the pandemic on education and career plans of Black Americans and Latino Americans.

- This NCLA podcast discusses access and opportunity for underserved learners in urban areas during the pandemic.
- CAST has a number of resources for UDL and accessibility, including the Universal Design for Learning guidelines, the National Center on Accessible Educational Materials, questions to ask before selecting educational materials and tips for developing learning goals.
- UDL on Campus discusses the legal obligations of postsecondary institutions with respect to the accessibility of digital learning materials and related guidance.
- ExploreAccess.org has published a toolkit for designing an accessible course online.
- This summary includes specific questions educators can ask about technology accessibility.
- Michigan Virtual University's Supporting Students with Disabilities in K–12 Online and Blended Learning guide includes detailed considerations by disability type.
- The U.S. Department of Education's Described and Captioned Media Program provides media designed for students with disabilities, including CTE content.
- This article describes audiological considerations when wearing masks.
- ACTE, Penn State University's Workforce Education program and the National Technical Assistance Center on Transition hosted a five-part webinar series on CTE and special education in 2019.
- This resource from the U.S. Department of Education has tips and resources for cyber safety and digital citizenship.

Access & Equity: Key Questions to Consider

Cross-cutting Questions

- How will the availability, scheduling and delivery of tutoring and other interventions impact students' ability to participate in CTE courses?
- How can professionals and paraprofessionals with expertise in special education, English language instruction and other services help you support learners with different needs?
- How will you maintain communication with learners and their families about their needs, both educationally and for services like food, housing and transportation?
- How will you support learners' social-emotional and mental health needs?
- How can you support learners' access to and continuation along high-quality career pathways?

In-person Questions

- Will medically vulnerable learners and instructors return to campus? If not, how can you provide technology and online platforms for them to learn and teach remotely?
- Can you schedule separate, one-on-one time for medically vulnerable learners on campus or through socially distanced visits at home?
- Can you acquire transparent masks or face shields for instructors who work with learners who are deaf or hard of hearing and English learners?
- Can you let blind and low-vision learners practice navigating redesigned facilities?
- What low-tech or high-tech assistive technologies will learners need for socially distanced in-person instruction?

Remote Questions

- Will the district or institution provide computers and hotspots to all learners or to learners who need them? Will your program use Perkins and CARES Act funding for these purchases, or coordinate with other community services?
- If learners must use specific technology or materials for a project at home, how will you fund and provide those materials?
- How will you address learners who have conflicts, such as working or caring for siblings, during synchronous instruction?
- What accessibility features are available through your LMS; for instance, captioning and described media, text-to-speech capabilities and assessment accommodations?
- How can you verify the accessibility of educational technology tools, including XR and other simulations? Who in your IT and/or special education department can assist with this?
- How can you develop course modules with easy-to-implement accessibility features like clean design and captioning? How can you design remote assessments with appropriate accommodations?
- How and when can learners contact you or other staff, such as special education professionals or English language instructors, for additional support and explanation?
- How can you provide learners with a menu of different ways for interacting and demonstrating their knowledge and skills?
- How can you protect and empower learners against cyberbullying and harassment?

Blended Questions

- If the blended scenario in your district or institution puts medically vulnerable and/or special population learners back on campus, how will you schedule and space these groups to maintain social distancing?
- How will instructors balance their in-person teaching time with these learners while offering remote instruction to all other learners?

STANDARDS-ALIGNED & INTEGRATED CURRICULUM

High-quality CTE programs of study use a dynamic curriculum that is based on industry-validated technical standards and competencies, aligned with relevant content and standards for core subjects, and incorporates employability skill standards. CTE curriculum also allows for students to apply integrated knowledge and skills across these domains.

Key Issues to Address
• Prioritizing standards and content • Recovering standards and content that were missed in the spring • Adapting curriculum for social distancing or virtual platforms • Evaluating the efficacy of remote curriculum tools • Blending and sequencing in-person and remote curriculum

While CTE programs should strive to maintain alignment with standards for academic, technical and employability skills that were in place before the pandemic, it is clear from experiences this spring that curriculum is likely to need modification for a COVID-19-impacted school year.

Regardless of the instructional model chosen, CTE educators will need to prioritize content and standards in cases where instructional time is shortened, or to prepare for the event of future campus closures. Having less time available for instruction was common in the spring; in one survey from Education Week, 69% of educators reported spending less time than usual presenting new, standards-aligned material. The schedule is likely to be adjusted in many fall scenarios as well. For instance, some postsecondary institutions are considering starting the semester early and ending it at Thanksgiving, as flu season starts again.

In the event of additional campus closures or other limitations on instructional time, CTE educators will need to identify which standards need the most attention and which standards are less critical to learner progress, and eliminate or trim extra content. Some states are looking at evaluating all of their CTE standards to ensure they can be implemented in various

instructional models. On the local level, one ACTE survey respondent shared that they are "looking at broad competencies and paring back requirements; i.e., if a student would previously need to complete eight different welds for a class, maybe four to six can demonstrate the competency needed without the repetition."

At the same time, significantly reducing the standards taught within courses is not a sustainable approach to preparing CTE students for success and may conflict with requirements by accreditors, industry credentialing bodies, state licensing boards or state CTE program approval processes — and could even impact funding. Significant care must be taken to ensure that prioritizing standards does not reduce overall student outcomes. Consulting with advisory boards before modifying curriculum will be critical.

Educators will also need to consider adjusting curriculum to account for potential learning loss from spring or to cover skills that weren't possible to address during emergency remote instruction. One option for standards recovery is spiraling new content with older content, which may support student learning better than beginning with a review of old materials before introducing new topics.

Access and Equity Implications

When you are considering how to modify curriculum while maintaining quality and relevance, remember that learners with disabilities, English learners and other special populations may need extra help navigating new course designs and adjusting to remote or blended courses. In addition, access to high-speed internet and functional devices for both students and instructors will be critical for the success of remote curriculum. Last but not least, remember that curriculum modifications that eliminate standards necessary to attain industry credentials can negatively impact learner access to valuable career pathways.

In-person Considerations

If a district or institution is returning to all or mostly in-person learning, CTE curriculum should largely unfold as normal. To maintain social distancing, instructors may need to reduce time spent on certain standards and modify curriculum to de-emphasize technical and employability skills that require students to demonstrate collaboration through close contact. This could include in-person teamwork more generally, as well as discipline-specific examples such as health care students acting as a rapid response team in an emergency simulation.

In addition, instructors may choose to frontload hands-on practice at the start of the school year, even if most learners return in person, in case campuses close again. Instructors may also need to spend more time early in the year on concept review or making up missed lab hours from the spring, requiring adjustments to the curriculum sequence used in the past.

Remote Considerations

If some or all of CTE learning will remain remote, instructors will need to substantially revisit curriculum to modify it to the remote space, including course objectives, activities and assessments. Within CTE, there are some programs where it is not possible for students to achieve all of the standards through a remote environment. Consultation with business partners can help identify standards that must be practiced in person, such as those required by an accreditor, an industry credentialing body or a licensing agency, which can then be prioritized for any limited in-person lab access that is available.

Choosing high-quality, relevant, accessible online curriculum tools and resources has been a significant challenge for many educators this spring. It will be important to complete a thorough evaluation of what worked well and what didn't in the shift to remote learning, and to take the time afforded before classes resume to carefully examine alignment of curriculum and instructional materials with course standards and student outcome goals. This is particularly important with free resources, which many educators relied on this spring, and are likely to continue to need moving forward, due to limited funding available for new curriculum purchases.

Safety should also be part of the remote curriculum, even if students are not able to access authentic or simulated tools. Online safety training such as OSHA 10-hour is an option, and learners can also conduct a job hazard analysis as a remote project.

Blended Considerations

Many CTE leaders are considering offering a blended or "flipped" classroom model, with theory emphasized through remote learning and hands-on practice delivered on campus. This typically involves chunking content into online and in-person segments, and thinking through the interconnection between the two. One tool that can facilitate this process is a mix map, a Venn diagram that captures course elements that will be taught online, course elements that will be taught in person and course elements across both delivery methods, with arrows connecting activities that speak to the same standards or content. Several resources to support blended learning are listed in the Resources, Tools and Examples section.
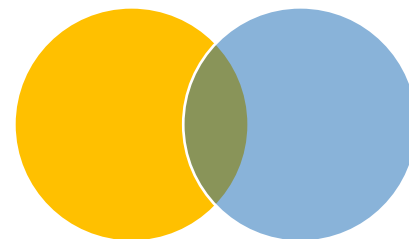
To help learners, especially those new to the blended environment, navigate the curriculum, CTE instructors will need to provide very clear syllabi and many signals and check-ins about how courses will progress and where information can be found. In addition, instructors will still need to modify curriculum delivered in person to accommodate social distancing, as noted above, and address issues related to remote curriculum as well. More specifics on instructional strategies for social distancing and remote learning can be found in the Engaging Instruction section.

Resources, Tools and Examples

- This resource from the National Institute for Excellence in Teaching includes guiding questions and a template for the recovery of standards and content in the new school year.
- This Education Week blog post addresses prioritizing standards. While it's written from the perspective of core academics, the principles and process can be applied to CTE.
- The BlendKit Course is a set of subject-matter-neutral, open educational resources related to blended learning and available for self-study or for group use.
- The Blended Learning Universe contains information on different models of structuring blended learning and blog posts about blended learning implementation.
- The Vanderbilt University Center for Teaching Blended and Online Learning Guide presents research on the learning possibilities offered through online and blended learning, as well as effective practices for facilitating online courses.

- This blog post from Oregon State University describes using mix maps for blended learning.
- The Online Learning Consortium has a number of resources for online and blended learning, including a course design review scorecard and a quality scorecard for blended learning programs.
- On the state level, Idaho Digital Learning Academy's CTE Digital courses are described in this profile from Advance CTE, while CTE Online is a free, California-based resource with thousands of lesson plans aligned to CTE, Common Core and Next Generation Science Standards.
- To teach safety, online OSHA safety training and conducting a job hazard analysis can be integrated into a remote curriculum.
- ACTE's Distance Learning Resources webpage includes a variety of curriculum resources that CTE educators turned to in the spring while making the switch to remote learning.

Standards-aligned & Integrated Curriculum: Key Questions to Consider

Cross-cutting Questions
- How can you prioritize content and standards to help learners build the most relevant knowledge and skills, in the event of future closures? How can your advisory board contribute to these decisions?
- Are there particular standards that need additional review or reteaching? How can you integrate skills that would normally have been taught in the prior school year?

In-person Questions
- How can you teach employability skills, particularly communication, collaboration and teamwork, in a socially distanced manner?
- How can you modify curriculum and standards when certain technical skills are meant to be executed as a group working together in close quarters? Can more socially distanced activities or simulations be substituted?
- Do you need to frontload hands-on practice or a particular set of knowledge and skills in the event of future closures?

Remote Questions
- Which curriculum tools have been most effective this spring in the remote environment and should continue to be used? What are the gaps in standards where new, remote curriculum and instructional resources are needed? How can CTE leaders help instructors choose and vet these resources for quality and accessibility?
- How will standards that require in-person instruction or practice be met? How can your advisory board contribute to these decisions?
- How can safety training be integrated into remote curriculum?

Blended Questions
- Which standards can most easily be taught through remote instructional methods and which require in-person practice?
- How might you better sequence curriculum in "chunks" of in-person and remote time?

SEQUENCING & ARTICULATION

High-quality CTE programs provide a sequence of courses that are aligned across learner levels, with opportunities for articulated credit, accelerated learning and career pathways. Collaboration among education providers, particularly between secondary and postsecondary educators, is key to ensuring non-duplicative courses, credit transfer and seamless opportunities for student advancement toward meaningful credentials.

Key Issues to Address

- Strengthening collaboration among partners
- Clearly communicating with partners and students about changes in instructional delivery and their implications
- Identifying and addressing funding and staffing issues to promote equitable access
- Reviewing early postsecondary opportunities in the context of the instructional delivery models chosen by secondary and postsecondary partners
- Exploring multiple ways to evaluate student learning outcomes for potential credit in the context of a COVID-19-impacted school year

Collaboration across learner levels could be difficult to prioritize within COVID-19-impacted learning, as educators face other immediate challenges, but will be more important than ever. CTE leaders will need to work across secondary, postsecondary and adult levels to realign course sequences as curriculum morphs in a remote or blended learning environment. Memoranda of understanding for articulated credit, credit transfer agreements and early postsecondary opportunities, which include dual enrollment, dual credit, concurrent enrollment and other related opportunities, will need to be reviewed to ensure they are still relevant and applicable. Many districts and institutions used pass/fail grading in the spring, and the implications of this for grade point averages and credit transfer will need to be unpacked this coming school year. Organizations like the American Council on Education are encouraging institutions to be generous and transparent about accepting credit in the unique circumstances of the pandemic.

Funding will be another important consideration, independent of decisions about in-person or remote delivery, particularly for early postsecondary opportunities for high school students. As state budgets feel the impact of decreased revenue and increased draw on resources, education budget changes are likely. States vary widely on whether and how they fund or support early postsecondary programs, but those that currently have robust funding mechanisms may face budget cuts. If state sources of funding for these programs are targeted for cuts, more of the funding burden will likely fall on districts, institutions or students and their guardians. Federal funding from the Coronavirus Preparedness and Response Supplemental Appropriations (CARES) Act can be used to support early postsecondary programs; however, this funding is finite and will be needed for many purposes. In addition, instructor shortages owing to retirements or budget cuts will potentially impact the availability of qualified instructors for both early postsecondary opportunities and postsecondary courses and credentials that are part of stackable pathways.

The most immediate challenge in this element will be coordinating across the secondary and postsecondary systems for early postsecondary opportunities, especially if the secondary school and the college choose different delivery modes or instructional calendars for the 2020–21 school year. Unless stipulated in statute, much of the decision-making power to modify practices around early postsecondary opportunities is deferred to the local or institutional level. Partnerships "in name only," without a coordinated approach to delivering courses, are likely to struggle more than those that have made partnership and collaboration central to their work, as is recommended by the National Alliance of Concurrent Enrollment Partnerships (NACEP) program quality standards. By working closely together, high schools and colleges can coordinate decision-making and document necessary changes in alignment with state board of education policy, regional accreditor policy and any state statute in order to continue offering robust opportunities to students.

It will also be important to utilize the full range of strategies for helping students earn articulated credit or

transfer credit for prior knowledge and skills. Expanding the use of prior learning assessment at the postsecondary level would particularly benefit dislocated workers pursuing additional training. Other competency-based approaches for awarding credit, such as badging, certifications, portfolios and challenge exams, can also be used to document student learning within this dynamic environment.

Institutions should work together to continue to provide as many options for students as possible under the circumstances, and minimize the disruptive impact of the pandemic on student opportunity. CTE courses in particular may be seen as more difficult to reconfigure and could be preferentially dropped as accelerated learning options as institutions contemplate how to adjust. This will complicate the availability of a well-trained workforce, further exacerbating economic recovery. Stakeholders need to work together to prioritize these programs to ensure the economy is poised for recovery.

In-person Considerations

If both secondary and postsecondary institutions partnering for early postsecondary opportunities choose the same instructional scenario and calendar for the new school year, logistics will be easier to navigate and these programs can likely continue much in the same manner as they previously operated, with social distancing in mind. Changes to instructional approaches at either institution may have impacts on the way the partnership functions and, ultimately, on students. For instance, if a dual enrollment course is taught at the high school and that high school opens to in-person learning, then the course can probably continue to be delivered largely as usual (with social distancing modifications). However, if a dual enrollment course is taught through the college and that college opens to in-

person learning, but the school district is remote or has cancelled off-campus activities, then the course may no longer be available for high school credit.

Additionally, if students or faculty are moving between in-person campuses, additional health screening and personal protective equipment may be needed. Transportation could also be an issue, particularly if school buses or public transportation had been used in the past, as new safety guidelines could affect availability.

Another impact in this model could be limits on course enrollments due to social distancing requirements. If students had previously accessed CTE courses on the postsecondary campus that now have limited enrollment, adult students who need retraining for immediate employment may be given priority access to these courses. Some postsecondary campuses are addressing this issue by offering more sections of courses at nontraditional times or offering bridge programs, but costs are an issue, particularly if the funding model used in a particular state or area requires institutions to bear additional cost burden for dual enrollment students. Similar challenges could exist at the secondary level if social distancing limits require reduced class sizes and space is at a premium. Dual enrollment or other advanced courses, including those necessary for credit through articulation agreements, could face more limited enrollment or be eliminated due to lack of space.

Remote Considerations

If a course offered for early postsecondary credit is taught through the college and the college is open remotely, then the student can choose whether or not to take the course online, bearing in mind that they may not be getting the same type of education, particularly for courses with lab hours. If a course is taught at the high school and requires lab hours completed in person, but the high school will be teaching all or mostly remotely, then the course may no longer be a good candidate for dual enrollment.

When a course is both suited to the remote environment and offered remotely, either through the college or through a respected third-party provider, that is likely to be the most effective way of continuing to help learners earn early postsecondary credit in this instructional model.

Another challenge if one or both systems go to remote learning is that course sequences may no longer mesh,

as the curriculum drifts from its previous design. While addressing these sequences will likely not be the first order of business as campuses reopen, CTE programs should plan to revisit course sequences, articulation agreements and resulting budget impacts, if remote learning will continue, to facilitate student achievement of early postsecondary credits. Maintaining access to industry certification exams (addressed in more detail in the Student Assessment section), which often provide articulated credit, will be similarly important for learner opportunity.

Access and Equity Implications

When you are considering this element, remember that existing inequities in access to early postsecondary credit may be even more challenging due to current economic conditions. Supports like transportation and tuition/textbook assistance will be more important than ever for many students. Many low-income learners rely on early postsecondary credit opportunities to make college affordable — if these courses are cut or access reduced, the impact could disproportionately harm those that struggle to pursue advanced opportunities on their own. It will also be critical to design aligned, stackable short-term postsecondary programs that can get individuals back to work quickly while providing the credentials necessary for career advancement and high-quality jobs.

Blended Considerations

As with the remote scenario, CTE programs will need to consider how to maintain quality in a blended course offered as an early postsecondary opportunity or with the intention of credit transfer. In addition, as with the in-person scenario, having students move between two campuses could increase their risk of exposure. If learners will be allowed to transition between campuses, those institutions will need to develop policies for health screening, scheduling and transportation that minimize this risk, such as requiring a certain amount of time to elapse between when the learner is on one campus before coming to the other campus.

Resources, Tools and Examples

- The NACEP Accreditation Commission has released a Statement on COVID-19 and NACEP Accreditation and compiled state-by-state guidance. NACEP also offers program quality standards that define characteristics of a quality early postsecondary program in the areas of partnership, faculty, assessment, curriculum, students and evaluation.
- The Higher Learning Commission (HLC) has released temporary policy, frequently asked questions and procedures for notifying HLC of changes.
- The College in High School Alliance has compiled guidance from a number of sources.
- The American Council on Education released a Statement of Principles on Acceptance of Credit this spring.
- The American Association of Collegiate Registrars and Admissions Officers has released guidance on evaluating transfer credit from COVID-19-impacted terms.

Sequencing & Articulation: Key Questions to Consider

Cross-cutting Questions
- What institutional changes will impact early postsecondary opportunities for high school students? How can institutions work together to mitigate those effects?
- How can postsecondary institutions expand accelerated credit attainment through prior learning assessments and competency-based approaches for awarding credit?
- What structures exist to facilitate open, timely communication about changes to instructional delivery or other policies and their implications for students and educators?

In-person Questions
- Will students be allowed to attend courses on the college campus? Will instructors from the college be allowed to come on the high school campus?
- How will institutions develop policies and scheduling and transportation options that minimize exposure risk for learners accessing two campuses?
- Will courses modified for social distancing still count for credit?
- Will enrollment caps impact student access to early postsecondary opportunities or courses needed for articulation/credit transfer?

Remote Questions
- Will courses count for postsecondary credit when learning is happening all or almost all remotely?
- How will you collaborate across learner levels to revisit course sequences? If course sequences and articulation agreements drift too far apart, will you realign or cancel agreements?

Blended Questions
- How will schedules for students be aligned across institutions to account for blended learning?

STUDENT ASSESSMENT

High-quality CTE programs employ multiple forms of formative and summative assessments, founded on technical competencies that are aligned to program standards and allow students to demonstrate academic, technical and employability skills.

Key Issues to Address
• Assessing learner gains and losses after spring closures • Providing multiple methods of assessment, multiple formats for feedback and accommodations • Modifying performance assessments for social distancing or virtual platforms • Providing assessment materials to remote learners • Taking advantage of remote proctoring, alternative testing sites and other testing flexibilities for credentialing exams

Credentialing options such as certifications, licensures, apprenticeship certificates, digital badges and degrees are important parts of CTE student assessment that could be significantly impacted by COVID-19. Socially distanced in-person, remote and blended instructional models could all affect how learners demonstrate their knowledge and skills for these credentials, and their ability to meet seat time and other requirements. Assessments tied to industry credentials in particular are often administered by a third party, so educators will have to work closely with partners to provide students continued access in the new school year.

Instructor assessment of knowledge and skill gains is equally important. Regardless of the instructional model chosen, CTE educators will need to determine learning gains and losses when students return to campus after a long hiatus, particularly for students who are entering the next course in a sequence that assumes preexisting knowledge and skills.

In-person Considerations

If learners return to campus, then many assessments can be carried out as normal. However, some assessment delivery may need to be modified to meet social distancing requirements. For instance, performance assessments in which students show their technical or employability skills through collaboration, such as working together to complete a construction task, may need to be modified to allow for more individual demonstration of knowledge and skills. Learners may also need additional personal protective equipment during assessments, and educators may need additional time to assess individual student skills in light of social distancing requirements.

For industry certification or licensing exams, instructors may need to identify alternative sites for students to take assessments, such as colleges or local union training centers, if some testing centers remain closed or have limited capacity. Some testing sites may also limit the number of learners being assessed at a given time, leading to scheduling challenges.

Remote Considerations

Assessing CTE student learning using remote methodologies will involve new techniques. A number of resources and tips exist that can help CTE instructors transition classroom assessment online. Some recommendations include providing smaller and more frequent assessments spread out across the course, as well as using online quizzes and polls, student reflections, and multiple formats of instructor-to-learner feedback as well as feedback among students through virtual breakout groups or discussion boards. Feedback can be communicated via written comments, phone, email or video, in synchronous or asynchronous formats, and may be shared with a group or provided independently, depending on the technology used and the goals of the instructor.

Some assessment options, such as quizzes, may be built into learning management systems or online textbooks. Whichever options are chosen, it is important to ensure any technology used for assessment is accessible and easy to navigate so that students' content knowledge and skills, rather than technology access or expertise, is being measured.

Developing assessments that reduce cheating and are a valid representation of what students know was an issue raised frequently during the spring transition to remote instruction. Institutions can provide guidance and policies on academic integrity for remote assessments. One strategy is to strive for assessments that require knowledge or skills to be applied, rather than just recalled — and allowing students to use textbooks or other tools as references during assessments (since access to outside resources is difficult to monitor remotely). Find more tips and resources about online assessments in the Resources, Tools and Examples section below.

Access and Equity Implications

When you are considering how to provide students with quality assessment, remember that students with disabilities may still need assessment accommodations, and these accommodations may differ between in-person and remote environments. In addition, learners with and without disabilities may perform better at different types of assessments than others. Instructor flexibility and using multiple modes of assessment will be key, regardless of the instructional scenario. Furthermore, in the remote learning model, some learners may struggle to access virtual assessments because of technology issues. Last but not least, less time on campus will impact students' ability to demonstrate skills and earn clock hours toward industry credentials, which can be life changing, especially for lower-income learners, opportunity youth and unemployed or underemployed adults.

Some CTE performance assessments can be adapted relatively easily to remote learning, such as a written business plan, a graphic design product or a presentation. For more hands-on demonstration of skills, research suggests that simulation-based assessment can be effective. The same simulation tools or at-home kits that can be used for student practice, as described further in Facilities, Equipment, Technology and Materials, can be harnessed for remote assessment. Virtual simulation settings can be modified to move from practice to a timed assessment. Students may be

able to demonstrate skills using at-home kits and live or prerecorded video; for instance, a health care student could record themselves placing an IV into a training arm. If at-home kits are used for assessment, however, all the materials must be supplied to the student to ensure equity. Programs should consult with business partners about the effectiveness of remote assessment options for demonstrating learning.

This past spring many certifying bodies allowed remote proctoring using a variety of methods to accomplish industry credentialing. The Association of Test Publishers and the National College Testing Association provided guidance for remote testing using live, real-time, remote trained proctors, and states such as Florida removed barriers to remote industry credentialing. Some certifiers have also extended the eligibility window for testing. ACTE has heard from several credentialing bodies that they are planning to continue remote proctoring, extended testing windows and other flexibilities in the 2020–21 school year.

However, some credentialing options require an in-person performance assessment; if programs cannot bring learners to campus individually or in socially distanced groups, they may be able to access a testing site where that performance could occur, or may need to wait to offer that part of the exam. Another issue is that remote proctoring can be costly and may not be easily scalable in areas with resource or technology limitations, raising equity concerns. In addition, many credentials have seat time and work-based learning requirements that will be challenging to fulfill during remote learning. Advisory committee members can provide guidance about how to meet requirements for credentialing through remote learning.

Whatever remote assessment options are available, it will be important to keep student assessment data secure, as addressed more in Data and Program Improvement.

Blended Considerations

The blended approach will entail considering all of the options outlined above, as students are assessed both remotely and in person, as necessary. In each field of study it will be important to determine which knowledge and skills are better assessed in-person and which knowledge and skills can be assessed remotely, without sacrificing the validity or reliability of assessments.

Resources, Tools and Examples

- The University of Central Florida's (UCF) Teaching Online Pedagogical Repository describes pedagogical practices in online assessment such as discussion board rubrics. UCF also offers the BlendKit Course of subject-matter-neutral, open educational resources related to blended learning and available for self-study or for group use.

- The Vanderbilt University Center for Teaching Blended and Online Learning Guide includes online pedagogical practices in assessment.
- Edutopia has published recent articles with tips on formative assessment and summative assessment in distance learning.
- This review of research on simulation-based assessment in health education finds that simulation-based assessment is best when multiple simulations are used and when simulation is used in combination with other assessment types.
- Certifiers including NOCTI, the Manufacturing Skill Standards Council, CompTIA, Certiport and NCCER, among many others, implemented remote proctoring and other testing flexibilities this spring. The Association of Test Publishers and the National College Testing Association have provided guidance on remote testing, and Florida allowed at-home testing for industry certification exams.
- This blog post from Advance CTE describes COVID-impacted considerations for industry credentials.

Student Assessment: Key Questions to Consider

Cross-cutting Questions
- How will you assess learning loss when classes resume?

In-person Questions
- How can you modify assessments when performance tasks call for a group to work together in close quarters? Can more socially distanced tasks or simulations be substituted?
- How will changes made to assessments for social distancing impact accommodations for special populations?
- How will you schedule performance assessment to maintain social distancing?
- If your usual testing centers for industry certification or licensing exams remain closed, can you proctor assessments on campus or at a worksite?

Remote Questions
- What assessments that work for you in the face-to-face classroom can be modified to the remote environment? How can your business partners contribute to these decisions?
- How will you provide feedback to learners?
- How will you manage the time needed to assess student skills, particularly if you must assess performance individually?
- How will you develop remote assessments that measure content knowledge and skills rather than skills using the online platform?
- How will you continue to provide accommodations with remote assessments?
- How can you use simulations, at-home kits, video or similar tools for assessment?
- How will you facilitate credentialing exams through remote proctoring, alternative testing sites or other flexibilities?
- What other aspects of industry credentials, such as seat time and work-based learning requirements, will be impacted by remote learning? How can your business partners help you navigate these challenges?

Blended Questions
- How will you coordinate online and in-person assessments to cover course content without too much repetition?
- Which standards within your program are best assessed in person, and which can be evaluated remotely?

PREPARED & EFFECTIVE PROGRAM STAFF
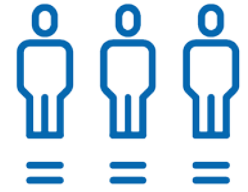
High-quality CTE programs are led by qualified staff with up-to-date knowledge and skills related to industry and pedagogy. As changes are likely to occur in both of these areas with the shift to more remote instruction and the evolving economy, professional development and other supports for CTE instructors, administrators and other staff supporting programs will be more important than ever in a COVID-19-impacted school year.

Key Issues to Address

- Evaluating staffing needs in light of potential budget cuts and retirements
- Protecting the health of medically vulnerable instructors and staff
- Equipping instructors and staff with technology
- Reconsidering instructor and staff workload and teaching assignments
- Providing professional development relevant to new instructional models and COVID-19 challenges
- Providing planning time and encouraging communities of practice

Regardless of the instructional model chosen, CTE leaders will face staffing challenges. Education budget cuts, health concerns and personal financial difficulties may contribute to teacher shortages, which already exist in some CTE fields in certain regions. In addition, while we know that many CTE professionals are creative and open to new challenges, some instructors may decide that retiring or leaving the profession is the right decision for them at this time. According to a survey from the Education Week Research Center, more than one in three educators across subject areas report that they have a physical condition associated with a higher risk of coronavirus complications, nearly two in three educators are concerned about the health implications of resuming in-person instruction and 12% percent of teachers say the pandemic may cause them to leave the profession.

To accommodate hiring, states are already looking at modifying regulations, allowing for recertification or dual certification in similar programs and instituting

short-term waivers. For instance, California is temporarily waiving assessments for teacher candidates. In addition, professionals who have lost their jobs in industry could be recruited into teaching, but will need training, mentoring and supports to be successful in their new role as instructors.

When you are considering how to support instructors and staff in delivering CTE in these challenging times, remember to foster the health — both physical and mental — of your workforce. Educators have been under significant stress over the last few months, and may be dealing with some of the same traumatic experiences as students. It is important to take time to address these issues with staff and support their social-emotional needs.

In-person Considerations

The biggest challenge with a return to in-person learning is the health needs of medically vulnerable instructors and staff. These professionals could be offered different positions in the district or institution that reduce their exposure, or if they and their doctor agree they can return to campus, even greater social distancing precautions could be taken in their particular classroom or lab. However this situation is handled, these professionals need to be treated with care and respect. Clear policies and processes for staff reassignments, developed in concert with employees and their representatives, can help ensure all staff are treated fairly.

If almost all learners return to campus, smaller class sizes to accommodate social distancing may mean that even more instructors and staff need to be hired than in other models; however, public school budget cuts make this unlikely in most districts and institutions. It is more likely that substitutes, adjuncts and paraprofessionals will be used to supplement the instructor of record, although this involves additional costs as well as effort for CTE instructors to oversee these other professionals. Industry partners could possibly provide some instruction, although their capacity for this is likely to be limited in the short term, given the current economic realities. CTE programs could also consider virtual or mobile modes of instruction as supplements to in-person

teaching, as further described in the [Facilities, Equipment, Technology and Materials](#) section of this guide.

In-person staff may also need extra time for cleaning, health screening, and working with students and assessing applied skills one-on-one instead of in groups. Programs will need to consider the full range of daily activities that may need modification as a result of COVID-19 safety guidelines and plan accordingly.

In an in-person scenario, professional development can continue on campus, with appropriate social distancing, addressing such topics as how to engage learners in a socially distanced environment, social-emotional needs of learners, and when and how to use remote tools to supplement mostly in-person learning. If a number of instructors do not return, those that do will likely need to pick up new classes or grade levels, and will need support and professional development to successfully shift their instruction. Administrators can encourage and support instructors and staff to come together as a professional learning community, virtually or in person, and to maintain membership in professional associations.

Remote Considerations

If learning remains remote in the 2020–21 school year, just like students, CTE instructors and staff will need computers and reliable internet access, and some may need assistive devices. Many instructors, like their learners, may struggle with this access and with integrating new technologies into their instruction.

Planning time and professional development on remote teaching topics, delivered virtually, will be crucial to support CTE instructors and staff as they move to remote learning in a more measured, deliberate way than was possible this spring. Professional development topics will include effectively using the district or institution's learning management system (LMS), accessible course design, virtual assessment and student engagement in the online sphere, among others. Many national organizations that CTE programs already rely on for high-quality professional learning are offering virtual sessions and workshops that can be integrated into local professional development calendars.

As always, instructors will also need to stay up to date with changing industry practices. The same remote tools and platforms that can engage learners in virtual [work-based learning](#) can facilitate this; for instance, [Louisiana](#) has offered virtual externships. Virtual professional learning communities among instructors and staff in your district or institution, or with nearby institutions, as well as continuing engagement in professional associations, can also support professional learning.

Blended Considerations

In a blended environment, CTE programs will need to be attentive to the concerns outlined above. One staffing option in the blended scenario is for teaching assignments to be reorganized to enable medically vulnerable instructors to teach online, with other instructors providing in-person instruction. Adjuncts, substitutes and paraprofessionals may still be needed to fill in gaps.

Professional development and planning needs in the blended scenario will be multifaceted, addressing both virtual instruction as well as socially distanced in-person learning and how to achieve the appropriate blend. Planning time will be essential if instructors are now preparing and delivering both in-person and remote instruction. In the blended environment, planning and professional development could be scheduled for days in which students participate in self-paced learning at home. Relatedly, administrators will need to be sensitive to instructor work schedules and workload, which will likely be increased if instructors prepare and teach content both online and in person. Again, substitutes, paraprofessionals and even industry partners could help to manage the increased workload.

Access and Equity Implications

When you are considering how to support instructors and staff in delivering CTE in these challenging times, remember that instructors and staff may have taken on second jobs, have family responsibilities or otherwise be unavailable for extended workdays or semesters, especially in high-poverty districts. Lower-income staff or those in rural areas may also be less likely to have functional devices and internet access at home. In addition, remember the impacts that a lack of qualified and caring teachers can have on learners from special and underserved populations, and the impact that a reduction in diversity in the teacher workforce can have on students of color, nontraditional students and other learners who benefit from mentors that reflect their identities. Districts, institutions and programs in areas with high-need students could suffer disproportionate losses in faculty or staff expertise. It will be challenging but critical to support high-need learners' continued access to high-quality instructors.

Resources, Tools and Examples

- CTE Learn, ACTE's professional development platform with MaxKnowledge, offers courses on online teaching.
- ACTE's Virtual Conference Planning Guide includes detailed tips and procedures for hosting virtual professional development conferences.
- ACTE is producing a series of webinars on offering high-quality CTE programs in socially distanced, remote and blended environments.
- Jumpstart to Successful Instruction is an open course designed specifically for CTE educators who are transitioning from the workplace to teaching, with useful insights for CTE educators designing courses and thinking about equity.
- The Tennessee Department of Education (along with many other states) is hosting its summer CTE Institute virtually.
- Louisiana has provided virtual externships to teachers through Nepris, as described in this brief by Advance CTE.
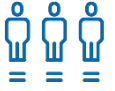
Prepared and Effective Program Staff: Key Questions to Consider

Cross-cutting Questions

- How will changes in or waivers to instructor preparation and certification regulations impact your staffing decisions? Can you identify barriers and advocate for flexibility from the state?
- How will institutions support the full range of instructor and staff needs, including physical, mental and social-emotional needs?

In-person Questions

- How will you protect medically vulnerable instructors and staff? Will these teachers be offered remote or non-teaching positions? Can their class sizes be reduced to allow for less exposure?
- Will you need more substitutes, adjuncts and paraprofessionals to oversee students in smaller, socially distanced groups? If so, how will you facilitate these arrangements?
- How will you build time into the calendar for additional responsibilities or activities that take longer because of social distancing and safety?
- How will you build time into the calendar for socially distanced professional development? What topics are the highest priority to address?
- How will instructors and staff access in-person or virtual communities of practice or professional associations to support their development?
- How can you better prepare educators through professional development in case a sudden shift to remote learning must occur?

Remote Questions

- How will you ensure that instructors and staff have reliable computer and internet access? How will you help instructors with special needs to access assistive devices?
- How will you build time into the calendar for planning and grading remotely, which may include extra time spent assessing learners individually?
- How will you build time into the calendar for remote professional development? Will it be synchronous across the department, school or institution, or will instructors be responsible for finding their own relevant professional development, or a combination of both? What topics are the highest priority to address?
- Will instructors and staff have access to virtual communities of practice or professional associations to support their development?
- Can virtual work-based learning platforms and industry speakers remotely engage with instructors about changing industry needs or even offer externships?

Blended Questions

- Can medically vulnerable instructors teach the remote portions of a course, while other instructors provide in-person instruction?
- How will you build time into the calendar for planning and grading across both the in-person and remote portions of the course?
- How will you build time into the calendar for professional development for blended learning? What topics are the highest priority to address?
- How will you work with instructors and staff to develop schedules that accommodate the workload of providing both remote and in-person teaching?

ENGAGING INSTRUCTION

High-quality CTE is perhaps most unique for its applied, contextual nature. Programs must have at their core instructional strategies that engage students and support student attainment of relevant knowledge and skills within a student-centered learning environment. Developing students' hands-on technical skills and fulfilling lab hours was the number one area of concern for CTE educators in ACTE's May 2020 survey, as this is perhaps the most difficult, but also one of the most critical, aspects of CTE to reconceptualize in a modified learning environment. In addition, regardless of the instructional model chosen, learners will benefit from instructor efforts to build a positive classroom culture that acknowledges their social-emotional needs and provides, as much as possible, personalized instruction.

Key Issues to Address

- Modifying project-based, hands-on and collaborative learning for social distancing or remote learning
- Developing easy-to-navigate and accessible remote content and activities
- Keeping students engaged remotely
- Creating a positive and respectful classroom culture that supports students' social-emotional needs

In-person Considerations

If learners return to campus, hands-on and project-based learning can continue in person, with social distancing. Projects and lab work will need to be designed with this distancing in mind, so in-person small group collaboration may be less common. One option that instructors have suggested for small group work during social distancing is for students to collaborate virtually using learning management system (LMS) tools or other software and apps, even when they are physically in the same classroom. This would also allow students who remain at home owing to health concerns to participate in real-time group work with learners who are on campus. Similarly, instructors could use video to minimize contact in the classroom; for instance, instead of automotive technology students gathering around a car to look inside, the instructor could use a portable video camera to show the inside of the vehicle, while students remain in their seats.

To further accommodate learners who remain at home, instructors may need to simultaneously livestream classroom activities to those learners while teaching the majority of students in person. This is a learned skill that can take some practice. Additional tips are included in the Remote Considerations section below.

Creating a positive classroom culture of learning and respect, and offering flexibility and differentiation to students will also be critical as students return to in-person instruction. Each learner has experienced the effects of the COVID-19 pandemic in different ways, and the return to in-person education may present additional challenges or fears to many. Social-emotional supports and understanding in the classroom will be more important than ever, and different students may also need different academic supports or additional hours in the lab to recapture learning time lost or address other skill deficiencies.

Remote Considerations

If instruction will take place all or mostly remotely, instructors will need access to evidence-based online learning strategies and the space for trial-and-error. Tools like the California Department of Education's Distance Learning Adaptation Document can help instructors translate in-person lesson plans to the online environment. Fundamental strategies for engaging instruction online include chunking each course, course unit and lesson, and providing clear navigation throughout, with frequent check-ins that require students to respond and engage.

Instructors will need to communicate clear norms and expectations to learners about using appropriate language, sharing speaking time online, responding constructively in discussion boards, when and how to use different media channels (e.g., when it's more appropriate to email the teacher versus starting a class discussion), and what to do in the event of cyberbullying or harassment. Guidelines for the amount of time students should spend engaged in remote course content can also be helpful. LMS and other virtual tools enable instructors to track the amount of time that a student is engaged online each day or class period, and can help instructors to monitor learner effort.

Video demonstrations are an important instructional strategy for remote CTE instructors, and one that many

embraced this spring. CTE educators have recorded themselves doing everything from checking vital signs to making a meal to repairing the plumbing in their own house. These videos can be delivered synchronously or asynchronously, and paired with interactive features like Q&A or discussion sessions, chats and polls.

CTE educators will also need clear guidance on the use of synchronous instruction, which can help to build the classroom community but is fraught with challenges, such as student privacy and scheduling issues. Even when synchronous instruction is available, the most critical content and information should be communicated in both synchronous and asynchronous formats for learners who may struggle to be online at a certain day and time.

A number of strategies can facilitate synchronous instruction and enable group work, discussion and reflection. Techniques used in the physical classroom, such as bell ringers and exit tickets, can easily translate to online courses. However, even synchronous instruction needs to be carefully planned to engage students — multitasking, distraction and technology issues can all reduce student participation and effective learning. The techniques below can help keep students engaged in this type of remote learning, and additional resources can be found in the Resources, Tools and Examples section:

- Limit class/meeting size, where possible, by splitting the class into smaller groups. Offering content at multiple times can also help learners who struggle to attend class remotely because of other responsibilities or connectivity issues.
- Consider leaving audio on for small groups rather than muting all participants. This can reduce distractions if students know everyone can hear them. However, be prepared to mute all participants if there is too much background noise.
- Include video of participants during introductions or questions, but when presenting content display only the speaker to reduce distractions.
- Offer the equivalent of bell ringers through polls, quizzes or questions in the chat as students enter.
- Prepare students to be called on, and use this strategy throughout. Adding different voices to the conversation breaks up the monotony.
- Stop and take questions frequently and send visual signals of appropriate times for questions.
- Check your lighting, framing and video angles and look into the camera rather than at the video stream.
- Consider how instruction will appear on a mobile screen.
- Consider accessibility (more details on this subject can be found in the Access and Equity section).

Project-based learning will also have to be redesigned, with more attention focused on projects that can be completed remotely. For instance, students could develop their own mock businesses with a budget and marketing plan. Instructors may also be able to send home the supplies needed for students to complete projects, or use computer-based simulations to engage students remotely and allow for skills practice. Both options are described more in the Facilities, Equipment, Technology and Materials section.
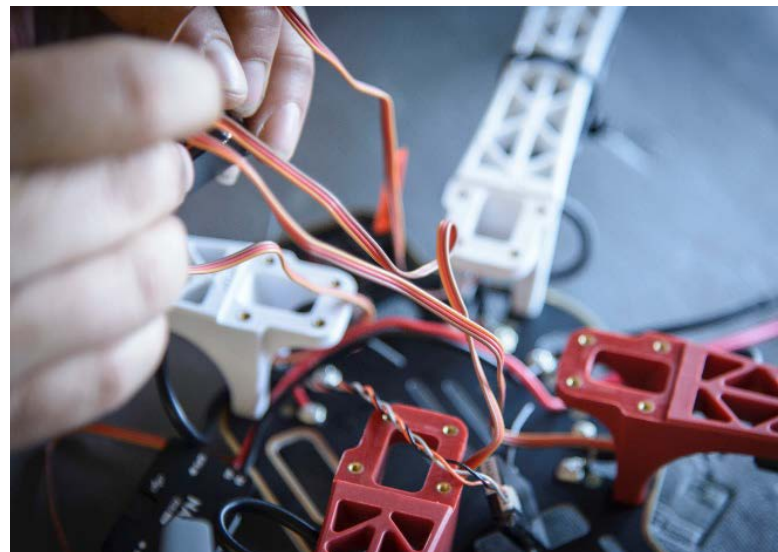
These types of projects and activities can help to address one of the biggest challenges in remote CTE learning: the ability for students to demonstrate knowledge and skills required in their career area through real-world application. Collaborative projects can be facilitated through virtual breakouts and other remote collaboration tools.

If many learners cannot access the internet or have limited access, then instructional materials will need to be physical media: textbooks, paper packets and at-home kits for hands-on practice that can be safely used at home. This topic is further addressed in the Facilities, Equipment, Technology and Materials section.

Blended Considerations

In a blended scenario, CTE instructors will need to consider all of the above. And while learners in this model will have some time for in-person, on-campus instruction, it will be less time than normal. To maximize students' limited time on site, instructors may consider demonstrating techniques over video, reducing in-class time needed for demonstration.

In addition, certain aspects of skill practice can be shifted to the remote setting. Simulation packages that include both virtual and in-person modules may work in the blended scenario. For instance, some virtual patient care simulations can be completed at home, while students practice with mannequins on campus. State nursing boards in several states, such as Oregon, granted accommodations this spring to allow simulated and virtual clinicals.

Access and Equity Implications

When you are considering how to offer engaging instruction in these scenarios, remember the importance of accessible design and that learners with disabilities, English learners and other special populations may need extra help navigating remote and blended content and may need to be engaged in different, personalized ways. Instructor flexibility will be key. In addition, remember that online spaces can be sites of bullying and harassment for young women, students of color, LGBTQ+ learners and other students. Finally, medically vulnerable learners who remain at home and quarantined students may feel very disconnected from the classroom; check-ins from instructors and peers can help to alleviate this loneliness.

Resources, Tools and Examples

- The Distance Learning Adaptation Document from the California Department of Education is a template to support teachers in the design and adaptation of weekly lessons for distance learning implementation.
- The University of Central Florida's (UCF) Teaching Online Pedagogical Repository describes pedagogical practice related to course content, interaction and assessment. UCF also offers the BlendKit Course of subject-matter-neutral, open educational resources related to blended learning and available for self-study or for group use.
- The Vanderbilt University Center for Teaching Blended and Online Learning Guide includes online pedagogical practices.
- Griffith Institute for Higher Education in Australia has produced a Getting Started with Blending Learning Guide for instructors.
- The Community of Inquiry Framework is a social constructivist model of learning processes in online and blended environments.
- The VOCAL (Visible, Organized, Compassionate, Analytical and Leader-by-example) approach for effective online teaching is described in this journal article.
- This Edutopia blog post describes one instructor's plans for bringing distance learning strategies back to the classroom, while this Inside Higher Ed article discusses the challenges and potential solutions for active learning in a socially distanced classroom.
- For tips on improving videos and presentations, check out this article from IDEAedu.org and resources from The Goodman Center that can be adapted to online teaching.
- The Gamification Guide is a free resource on game-based learning in the classroom.
- This resource from the U.S. Department of Education has tips and resources for cyber safety and digital citizenship.

Engaging Instruction: Key Questions to Consider

Cross-cutting Questions
- How will you work to rebuild a classroom community and support learners' social-emotional needs?

In-person Questions
- How can you design projects and group work with social distancing in mind? Will learners and instructors have devices in the classroom so they can collaborate remotely and maintain distancing, even when they're in the same physical space?
- If you have learners who remain at home, how will you engage them in instruction and collaboration?

Remote Questions
- Which instructional strategies have been most effective this spring in the remote environment and should continue to be used?
- What instructional techniques that work for you in the face-to-face classroom can be modified to the online space?
- How can you clearly organize learning to help students navigate online instruction?
- How can you clearly communicate remote classroom norms and expectations to learners? How will you address negative behavior in the online space?
- How will you support students to collaborate, discuss and reflect on course content online?
- How can learning be personalized in the remote space? How will you have periodic one-on-one interactions with learners?
- How will you apply project-based learning to the remote environment?
- What practical skills can you demonstrate over video?
- If you send home textbooks or paper packets, how will you help learners engage with these materials? How frequently will materials be exchanged between students and instructors?
- If you send home kits of materials, how will you promote safe usage? What instructions will you include? How will students get completed kits back to you?

Blended Questions
- How can you maximize in-person time by moving instruction and at least some demonstration to the remote space?

FACILITIES, EQUIPMENT, TECHNOLOGY & MATERIALS

High-quality CTE programs of study are attentive to the alignment, appropriateness and safety of the physical/material components of the program, including laboratories, classrooms, computers, industry-specific equipment, and tools and supplies that support learning. When considering the use of facilities and equipment in COVID-19-impacted learning, there are numerous critical considerations across all three potential instructional models.

Key Issues to Address

- Setting up any in-person classrooms, labs and other facilities to ensure social distancing and safety
- Cleaning and sanitizing facilities, equipment and technology used by students or staff
- Ensuring adequate personal protective equipment, as necessary
- Providing access to technology, equipment and instructional materials to students engaged in remote learning

In-person Considerations

If any learners return to campus, CTE programs will likely be required to adapt their classrooms and laboratories to meet new state and local safety requirements and guidelines for social distancing. This may be accomplished with fewer desks or workstations that are six feet apart. CDC guidelines also recommend setting up desks so that learners are not facing each other, instead facing ahead. Where space does not allow for six-foot distancing, another option being explored by administrators is erecting clear Plexiglas barriers between students. Where weather permits, classes or labs could even occur outside. Similarly, learning that already takes place in the open air, such as on a farm or construction site operated by the institution or district, could likely continue because of the seemingly lower rate of virus transmission outside (although recommendations on this topic could change).

While some CTE programs already make use of individual workstations that are spaced for safety,

classrooms and other laboratory or hands-on spaces that are more collaborative will be impacted by socially distanced layouts that discourage students from working in small groups in the same space. More information on this topic can be found in the Engaging Instruction section.

Another adaptation will be cleaning and safety protocols. CDC guidelines recommend frequent disinfection of high-touch surfaces with EPA-recommended disinfectants. Individual teachers will likely bear at least some responsibility for cleaning and sanitizing within their classroom and lab spaces. Administrators are looking at methods for cleaning efficiently, such as electrostatic sprayers with dispensing hoses that quickly and evenly coat surfaces with disinfectant. Sanitizer cabinets are another option for quickly disinfecting equipment. While campuses may be investigating other promising options, such as UV disinfection, the CDC states that the efficacy of these and similar methods against COVID-19 are unknown.

Smaller equipment, tools and supplies can also be assigned to only one student to reduce the need for cleaning and the spread of germs. This will likely require purchasing more tools and supplies than usual. Requiring even more frequent handwashing or sanitizing than usual within labs and shared spaces will be an important preventative measure as well. Business partners may be able to recommend best practices on cleaning and safety protocols within specific industries.

Another consideration is providing general personal protective equipment (PPE) to learners and staff, such as masks and gloves, as well as providing and cleaning occupation-specific PPE. Administrators are looking at bulk orders of reusable cloth masks from school uniform and equipment suppliers, as well as stocking up on exam gloves, paper towels, sanitizer, soap and disinfectant. Many CTE programs are replacing PPE that was donated to health care professionals during the pandemic in order to keep students and staff safe. Cost increases and high demand for these products, leading to back orders, will impact availability. Business and community partners may be able to donate some supplies, depending on their financial resources and capacity.

CTE programs in which students wear safety glasses are particularly concerning. Face masks can fog up glasses and goggles. One option is to invest in face shields that cover the eyes, mouth and nose. Instructors and students can also experiment with adding a waterproof layer to safety glasses through products and techniques used by scuba divers.

Remote Considerations

If some or all students continue to learn remotely, instructors may be able to turn to partner institutions or businesses for lab-based activities. For instance, if a local community college is open while the high school campus is closed for in-person learning, individuals or groups of high school students may be able to schedule time in the college lab. The same could happen with a local union training center or even a business, although these sites may be unwilling to have learners and instructors on site for safety and liability concerns.

In addition, programs can look to models for supplementing or replacing hands-on and lab-based instruction through video, simulations and mobile labs, as well as at-home kits of materials. Programs, particularly those in rural areas, have already been exploring these technologies to increase access to instruction and hands-on skill development. Several examples are included in the Resources, Tools and Examples section below.

In some cases, simulations can be an option for replacing access to lab equipment. Fully computerized simulations, such as some simulated patient interactions, electricity simulations and business simulations, may be good alternatives for certain programs of study. Many simulation packages include

both computer modules and physical equipment such as an extended reality (XR) helmet and stylus, or a mannequin arm. This equipment could be checked out to learners to use at home on a rotating basis, provided it is not too unwieldy or complex to use. Any materials that are checked out will need to be disinfected before and after use.

If the district or institution allows it, mobile labs could offer learners the chance to practice hands-on skills in a contained space that can be disinfected and minimally staffed. These labs typically rotate among multiple school districts or institutions, and could be used to supplement mostly remote instruction for students who need end-of-course lab hours or to complete in-person credentialing assessments.

These technology-heavy options require start-up costs, which may include physical components, software updates, maintenance and technical support, and access to high-speed internet. However, these costs can be shared among districts and institutions.

At-home kits of materials are another option in the remote environment. These could include industry-standard tools and equipment, the simulation tools described above or non-industry standard materials like cardboard in place of wood. Examples of kits sent home this spring include materials and tools for building Adirondack chairs; mannequin heads, color mixing bowls and hair clips; and ingredient kits for recipes. Safety would be a paramount concern with these at-home kits, and guardian permission and oversight may be needed if there is any risk of injury.

Ideally, educators will have access to video technology to demonstrate hands-on techniques, as further described in the Engaging Instruction section. Students in a fully remote environment will also need access to online videos, modules, digital or print textbooks,

Access and Equity Implications

When you are considering how to adapt facilities and equipment, remember that learners with disabilities and English learners may be particularly challenged by communicating through masks and navigating redesigned spaces. In remote scenarios, internet speeds and connection quality can be major sources of inequities in accessing video, simulations and other remote tools. In addition, many learners may struggle to adapt to remote lab experiences that are less tactile than in-person labs.

software or other instructional resources to complete more theoretical assignments. During the spring, many institutions made online textbooks or other resources available to all students, so these materials and how to access them will likely be familiar. Filling in gaps in readily available resources will be key if all instruction continues remotely.

Blended Considerations

In blended learning scenarios, CTE educators must attend to all of the considerations noted above during the times that students are learning at a distance or in person. Additional considerations related to facilities, equipment, technology and materials in the blended model include cleaning between groups of students, ensuring student access to appropriate materials both at home and on campus, and the safety of transporting tools or equipment between learning locations.

Many of these decisions will be heavily influenced by the blended model adopted. For example, if students are physically present every other day, and working remotely other days, all lab activities may be completed during class time, with no need for materials or equipment to be sent home with learners. Instead,

students would need virtual access to the instructional materials discussed above, such as online modules, digital textbooks and software to complete assignments while learning remotely. However, if the blended approach does not provide enough time to complete hands-on activities in the lab, students may need remote access to equipment or technology, such as the simulations or at-home kits described above.

Resources, Tools and Examples

- Relevant CDC guidance includes the agency's detailed reopening guide, released in May, with a section for schools and day camps, as well as cleaning and disinfecting recommendations.
- Education Week has produced several articles and resources on adapting educational facilities to social distancing, including a measurement guide and other articles. This Spaces4Learning article also describes how to rethink school spaces in light of social distancing.
- Case studies about mobile labs/equipment, simulators and interactive video can be found in Promising Practices and Design Principles in Career and Technical Education Delivered via Distance Learning Technology, Simulated Work-Based Learning: Instructional Approaches and Noteworthy Practices and Advance CTE's CTE on the Frontier series and CTE Distance Learning in Rural Communities brief.
- The International Nursing Association for Clinical Simulation and Learning (INACSL) has developed the INACSL Standards of Best Practice: Simulation. This blog post from Advance CTE also discusses nursing simulations. In spring 2020, Oregon provided guidance on virtual options for clinical experiences.
- This report from technology provider zSpace describes benefits from 3D, virtual reality and related learning environments.
- Online OSHA safety training can support safety in and out of the classroom and laboratory.

Facilities, Equipment, Technology & Materials: Key Questions to Consider

In-person Questions

- How can furniture and equipment in labs be arranged so that students remain socially distanced during class time? If this cannot be accomplished, can you use clear barriers between workstations or even situate labs outside?
- How will you efficiently clean and sanitize classrooms, lab spaces and tools? Will learners be responsible for cleaning and sanitization before and/or after usage? How much time will you schedule for cleaning?
- How can you reduce the sharing of tools or equipment among students?
- Do you have enough PPE for staff and students? How will you restock supplies of PPE in time for classes to resume?

Remote Questions

- Can learners access facilities and equipment through affiliated campuses, partner institutions, local union training centers or businesses for in-person, hands-on instruction?
- What equipment or technology do students need to practice applied skills remotely? Can that be accomplished using video, simulations or mobile labs? Could you band together with other districts or institutions for the start-up costs for simulators or mobile labs?
- Which instructional resources, such as online textbooks, modules or videos, can be made available online for students (assuming internet access issues have been addressed)?
- Are there personal tools, supplies or manipulatives that could be made available to students learning from a distance? How will you distribute and collect, as well as sanitize, personal tools and supplies?
- How will safety concerns be addressed with personal tools and supplies used at home? What instructions/remote training will you provide?

Blended Questions

- How will equipment and facilities be transported and deep cleaned between different groups of students?

BUSINESS & COMMUNITY PARTNERSHIPS

High-quality CTE programs actively engage business and community partners through a variety of activities to ensure programs of study are aligned with workforce needs. Maintaining partnerships will involve several layers of challenges in a COVID-19-impacted school year — from both the education perspective and the business perspective. However, business and community partnerships remain the foundation of labor-market-aligned CTE programs, and are critical to program quality across instructional models.

Key Issues to Address

- Evaluating CTE program offerings in light of new labor market information
- Prioritizing requests to business and community partners
- Using social distancing or virtual platforms to engage partners, including through advisory board meetings
- Recruiting industry professionals for virtual interactions with students

Business closures resulting from the pandemic will likely change many local and regional economies, causing some CTE programs to be less aligned to the current labor market. Education budget cuts may lead CTE leaders to streamline program offerings to those most essential to the local labor market, while in other cases, new programs may be needed, especially short-term postsecondary programs and customized training. Perkins V comprehensive local needs assessment (CLNA) findings will be a good place to start as these decisions are made, but may be less relevant in the current economic situation than before.

CTE leaders facing these decisions will need to connect regularly with their partners to align programs with current and future workforce demand and skill needs. However, businesses, even if they are able to remain engaged, may be unsure about what is needed, and needs may change quickly. Community organizations are also being stretched thin. While a number of ACTE survey respondents reported success this spring moving advisory board meetings online, others noted that their partners have been too distracted to engage. Many

businesses are facing deep revenue losses or even the prospect of closure, and longer-term education and skill needs may be difficult for employers to dedicate time and resources to during the present crisis.

Educators will need to be conscious of this situation as they approach employers and community partners, reducing requests and streamlining information while businesses focus on reopening and rebuilding. Local Chambers of Commerce, local workforce boards and similar organizations — anywhere that employers and community organizations are already engaged, and that are already monitoring these changes — will be invaluable sources of information. Keeping conversations and meetings short and to the point, reducing the frequency of emails and providing multiple engagement methods will also be important to avoid overburdening partners. Programs can prioritize their needs: are there questions about modifying curriculum or assessment that partners need to weigh in on, or personal protective equipment (PPE) and supplies that are needed urgently? More tangible requests should be considered on an individual basis — some employers may still welcome interns, have resources to donate or be able to provide guest speakers; while others will not have the capacity. More information on engaging partners in work-based learning (WBL) and career and technical student organizations (CTSOs) are available in those sections of the guide.

One casualty of this new environment may be the diversity of partners that CTE instructors have built through careful nurturing of relationships. This includes diversity of occupations and industries, small and large businesses, as well as demographic diversity so that learners can see themselves represented in different careers. Small businesses in particular may face challenges engaging, but will still need skilled workers as the economy recovers, so particular consideration to those voices is important.

In-person Considerations

Beyond these overarching considerations, CTE leaders are thinking about how to maintain on-the-ground relationships if and when campuses open in person.

Several respondents to ACTE's survey noted that they can continue to meet with their advisory boards while maintaining social distancing, either on site or at an off-campus location.

Other direct interactions with partners may be able to continue with social distancing, such as employer guest speakers or mentoring programs. If campuses are open but closed to outside visitors or field trips are curtailed, these activities can occur virtually. Further considerations for engaging industry through WBL, CTSOs and teacher externships are addressed in other sections of this guide.

Remote Considerations

According to ACTE's survey, a number of CTE leaders have already turned to virtual advisory board meetings to keep engaged with business, industry and community leaders. Several survey respondents noted that virtual meetings led to increased attendance and engagement, and indicated they plan to continue these in the future, even past the pandemic.

To maximize engagement, virtual meeting hosts should follow best practices for keeping participants involved, such as using video, polls and chat functions; following a clear agenda; and keeping groups to a manageable size so all voices can be heard. In addition to the following tips, further resources on hosting virtual meetings can be found in the Resources, Tools and Examples section below:

- Keep the meeting under 45 minutes.
- Make RSVPs mandatory.
- Send out reminders.
- Acknowledge everyone in the virtual room.
- Encourage a video-on policy.
- Don't multitask and discourage others from multitasking during meetings.
- Specifically address questions to quieter advisory board members.
- Provide concrete next steps.

If virtual advisory board meetings are used, it will be important to check with any entities that require these meetings, such as accreditation agencies or state agencies that approve CTE programs, to determine any specific procedures that need to be followed or records that need to be kept. For example, if sign-in sheets were used previously to document attendance, you will likely need a new system to capture and verify remote participation. Tried-and-true email and phone communication can also work to build and sustain partnerships.

In addition, the virtual industry tours, guest speakers and job shadows described in the WBL section of this guide can help build and maintain partnerships, especially while worksites are closed to learners. Industry representatives can be reached around the nation and the globe through some of these platforms; these opportunities can provide learners with diverse mentors that reflect their identities. Some platforms are designed to match mentors and students to highlight, for instance, the successes of women and people of color in STEM fields.

Access and Equity Implications

When you are considering how to keep business and community partners engaged, remember the impact of diversity in your partnerships, which can better inform your programs and show your learners how they can access and succeed in worthwhile careers.

Blended Considerations

Blended scenarios can offer the best of both worlds related to partner engagement — with opportunities for students to engage virtually but the ability to meet in person as well. One key consideration will be ensuring all students have access to engagement with business and industry professionals, without creating undue burden on employers. For example, if a guest speaker is scheduled on a day only half the students are on campus, the session could also be livestreamed to those learning at home.

Resources, Tools and Examples

- Vivayic has produced a Guide for Planning and Hosting an Effective Virtual Meeting/Training Event with succinct tips on technology, engagement and pre- and post-meeting activities.
- The Goodman Center has resources and webinars on effective online presentations, webinars and meetings.
- This article from the Center on Reinventing Public Education describes COVID-19 innovations in industry partnerships and engagement.

Business & Community Partnerships: Key Questions to Consider

Cross-cutting Questions

- If your district or institution is facing budget cuts, will you need to eliminate programs, instructors or staff? How can your CLNA and advisory board help you make these decisions?
- If your community is facing new or shifting labor market needs, will you be able to develop new programs or customized training in response? Will you be closing or scaling back programs where demand has decreased? How can your CLNA and advisory board help you make these decisions?
- How can you prioritize requests and streamline interactions to avoid overwhelming business and community partners?

In-person Questions

- How can you host advisory board meetings with social distancing, either on campus or at another site?
- How can you modify student engagement with industry professionals, such as guest speakers or mentoring programs, to accommodate social distancing?

Remote Questions

- How can you host advisory board meetings remotely? Do you have an approved synchronous platform for meetings with third parties?
- How will you maximize engagement in virtual advisory meetings?
- How can you meet accreditor or state agency requirements for virtual advisory meetings?
- How can you keep in touch with partners through other methods like email and phone, while not overburdening them?
- How can you use virtual platforms for guest speaking, mentoring, industry tours and job shadows to continue to engage industry and community partners?

Blended Questions

- How will you schedule industry engagement opportunities to maximize access for learners, faculty and/or staff who are on modified schedules?

STUDENT CAREER DEVELOPMENT

High-quality CTE programs of study provide students opportunities to gain career knowledge and engage in education and career planning and decision-making, including career counseling, career assessments, curriculum that helps students learn about careers, information about educational opportunities and workforce trends, and job search information and placement services. Some career development activities can easily be accomplished in a virtual or socially distanced environment, while others are more challenging.

Key Issues to Address
• Providing all students with access to high-quality career development • Recruiting other staff to support career development • Sharing up-to-date labor market information and information about educational opportunities with students • Providing additional supports to help students plan for transitions • Holding advising sessions, career fairs and other activities with social distancing or through virtual platforms • Providing access to virtual career information and planning portals and career exploration activities

One of the biggest risks to student career development in a COVID-19-impacted school year is that these activities will not be prioritized given the growing demands on funding and on counselors' time, which is likely to be focused on addressing more immediate social-emotional, physical and academic needs of students. Secondary school counselors in particular face a myriad of other responsibilities that are likely to require significant attention, and postsecondary career advisors are also likely to face new or more time-consuming responsibilities. In a May 2020 National Association of Colleges and Employers survey of colleges, 38% of campus career centers had implemented a hiring freeze, 16% had already experienced budget cuts of more than 10% and 50% had imposed a spending freeze. It will be critical for CTE leaders and stakeholders to advocate for robust career development services. Activities may need to be streamlined or integrated more seamlessly into coursework, or additional staff trained to support career development and maintain capacity for this important work.

Current economic conditions could also make future planning uncertain for students, particularly those selecting a program of study or nearing the end of their education. While many economists predict that most long-term job outlooks will remain stable, local economies are shifting dramatically in the short term. To help learners navigate these changes, career development professionals and instructors must have access to current education and workforce information and to professional development on labor market trends.

Educators and counselors will also need to be diligent about keeping learners and guardians, as appropriate, informed about further education and career options as well as opportunities such as work-based learning (WBL), career and technical student organizations (CTSOs), early postsecondary opportunities and articulated credit. Academic and career plans may need to be adjusted based on emerging student and economic needs, but it is important to specifically encourage high school seniors to maintain their momentum related to transitions, including tasks like applying to postsecondary institutions and completing the FAFSA, and for those approaching the end of their postsecondary education to continue intentionally planning for next steps. Frequent communication and low-cost incentives, such as contests, can encourage completion of these tasks. Students who graduated in spring 2020 may need continued access to campus career centers or online resources as they transition.

In-person Considerations

If students return to campuses, most campus-based career development activities should be able to continue with minor modifications to accommodate social distancing. Guardian meetings and interactions with business and community leaders, such as industry tours, guest speakers and mock interviews, may be able to occur with social distancing or may need to happen

virtually to reduce visitors to campus. At the postsecondary level, virtual career coaching may be offered to reduce student traffic in offices or common areas. Larger events such as career fairs or camps may need to be adapted for social distancing, with fewer attendees at a time or with students and companies signing up for small group or one-on-one interviews or sessions, or be reconceptualized into virtual offerings as described below.

Access and Equity Implications

When you are considering how to engage students in career development, remember that less privileged learners particularly benefit from being exposed to different occupations and industries, and may have connectivity issues that keep them from accessing virtual career exploration tools. In addition, low-income students, learners of color, students with disabilities and other learner groups have historically been tracked into certain career fields, which can consciously or unconsciously creep back into the system as counselors and educators navigate so many unprecedented challenges. Keeping these learners and their guardians, as appropriate, informed about all the possible options will be an equity challenge, and data should be carefully reviewed at regular intervals to ensure underrepresented students are accessing high-quality programs and services.

Remote Considerations

Fortunately, many online career exploration and development tools already provide a wealth of opportunities to continue with these activities virtually. These include career information and planning portals with education and career information, student interest and strength inventories, and portfolios; career exploration games; virtual platforms that expose learners to industry experts; and exploration tools and supports for transition for special populations.

Many states or schools already require students to complete academic and career plans through online platforms, and colleges and state workforce systems often offer online portals for exploring labor market and career information. Even more of these resources are likely to be made available if a significant portion of learning continues remotely.

These virtual tools can be integrated into course content, building on efforts that already began in the

spring, when many programs pivoted to career exploration. Live Q&A sessions for learners with counselors or mentors, interview and resume assistance, virtual industry chats or job shadowing, and independent career-focused research projects are all ways to engage students across the spectrum of career development activities virtually.

Career fairs and transition fairs can also be offered remotely through larger online meetings with postsecondary and industry representatives, as well as small group or one-on-one virtual meetings for interviews or Q&A. Examples of states, districts and institutions that harnessed virtual career exploration in spring 2020 are featured in the Resources, Tools and Examples section below.

In addition, counselors can also use phone calls, text messages/messaging apps and emails to continue to aid students in planning, or set up group and individual advising sessions and meetings on synchronous online platforms to discuss plans or provide tutorials on topics like completing the FAFSA. Social media channels can also provide information about career fairs, WBL and other opportunities to learners and guardians.

Blended Considerations

In blended learning scenarios it will be important to prevent career development activities from getting lost in the shuffle between campus-based activities and remote learning. In addition, careful attention will need to be paid to student schedules as it relates to their academic and career plans, to help them stay on track if the instructional calendar is adjusted to accommodate a blended model.

Resources, Tools and Examples

- A variety of online career exploration and planning platforms exist that can be harnessed for remote and socially distanced learning, including Xello, Kuder, Naviance and others.
- If your state does not have an online career information and planning system, learners can access O*NET for information on industry sectors, labor market trends, job duties and pay; or CareerOneStop for career exploration and planning resources.

- Nepris is a virtual platform that connects classrooms with industry professionals that has been used by education systems in Washington, D.C.; Texas; Kansas City; Orange County; and Louisiana.
- ConnectEd has a library of "Day at Work" videos across occupations.
- Local examples of virtual career exploration include Mahoning County Educational Service Center's weeklong Virtual Exploration Tour 2020; Washington's CareerConnect program, which transitioned to CareerConnect@Home this spring; and Transition Tennessee, which hosted virtual transition fairs in spring 2020.
- Explore-work.com features web-based modules for students that align with the five required WIOA Pre-Employment Transition Services, and T-Folio is a free virtual transition portfolio.
- ACTE has an active division for Counseling and Career Development.

Student Career Development: Key Questions to Consider

Cross-cutting Questions

- How can educators, WBL coordinators, paraprofessionals or other staff assist with career development responsibilities, as many counselors and advisers focus on other needs?
- How can career development activities be embedded more fully into course content?
- How will you access information and professional development about understanding short-, medium- and long-term workforce projections and helping students navigate a changing economy?
- How can you keep all learners informed about their breadth of career and education options?
- How can you provide frequent communication and additional supports or incentives to help students transition along their career pathways, in light of uncertain economic conditions?

In-person Questions

- How and where can you meet with learners (and when needed, their guardians) for career advisement, while maintaining social distancing?
- How can you adapt interactions with business and community representatives, like industry tours, guest speakers and mock interviews, to maintain social distancing?
- How can you adapt career and transition fairs to social distancing? Can students and employers sign-up for one-on-one or small group meetings?
- Even if students return in person, how can you leverage virtual platforms for career advisement, career fairs and other career development and exploration experiences?

Remote Questions

- If you don't already have access to a virtual career information and planning portal, will your state, district or institution be making this investment, or are there free tools you can use? Which system would work best for your students?
- How can you advise learners through virtual tools, phone, messaging or email?
- How can you provide interactions with business and community representatives through virtual platforms?
- How can you help learners conduct research about careers using online resources and virtual consultation with industry professionals?
- How can you stage mock interviews, provide resume assistance or help students apply for further education or jobs through synchronous or asynchronous tools?
- How can you schedule and host virtual career or transition fairs that allow for synchronous, one-on-one or small group meetings?

Blended Questions

- How can you provide learners with access to career development resources both when they are at home and on campus?
- How can you work to ensure that any decisions made about instructional calendars, lab time or course offerings when moving to a blended schedule do not negatively affect students as they transition to the next step on their education and career pathways?

CAREER & TECHNICAL STUDENT ORGANIZATIONS

Career and technical student organizations (CTSOs) are an integral part of CTE instruction and a key element of high-quality CTE programs. These intracurricular organizations include more than 2 million students combined and have demonstrated impacts on learner educational aspirations, academic motivation and engagement, career self-efficacy, employability skills and more. Continuing to engage learners in CTSOs will be critical for their future career readiness, and the overall success of CTE programs.

Key Issues to Address
• Engaging students in CTSO decision-making • Hosting meetings and elections with social distancing or through virtual platforms • Redesigning competitions, leadership development, fundraisers and community projects for social distancing or virtual platforms • Engaging business and community partners • Scheduling CTSO activities to maximize participation of learners on campus and at home

Many traditional CTSO activities, such as conferences, community service projects, competitive events and fundraisers, present added challenges in a COVID-19-impacted school year. The national CTSO organizations are working to address these challenges, with the majority planning to offer meetings and leadership training through multiple modes of engagement to support state organizations and local chapters and make it as easy as possible on advisers, whether those states and local chapters are operating in in-person, remote or blended learning environments. Local leaders can look to their national and state organizations for additional direction and supports as the year unfolds.

Regardless of the instructional model, it will be important to give students a voice in decisions made about how to move CTSOs forward. Student officers should be consulted regularly and given opportunities to make decisions, where appropriate, about the activities and priorities of their organizations, and may also be strong candidates to serve as leaders within the entire student body as institutions implement a diverse array of changes and seek student input and buy-in.

Across all educational scenarios, careful thought on the local and state levels should also be given to providing leadership training and competitive events to students as the year progresses. In many places, large conferences are likely to be prohibited for some time to come. The majority of national CTSO organizations are planning to offer remote meetings this summer and fall, and many states will likely follow suit. National CTSOs are also pushing up their launch of fall activities by several weeks to match the early-start calendars that many states and districts are implementing.

Recruiting members and leaders in the current environment may be challenging, especially without appealing draws like the opportunity to travel or interact with student leaders from across the country. It will be important to continue to make member recruitment and chapter affiliation a priority to ensure students still have access to the important skill-building opportunities that CTSOs provide, including adapting fun and social activities to socially distanced or remote environments.

Another important aspect of quality CTSOs is the opportunity for students to interact with business and community professionals. Given the current economic climate, it may be difficult for employers to dedicate as much time to CTSO activities as they might normally, regardless of policies on in-person or virtual learning, but advisers can use strategies described in the Business and Community Partnerships section to help create these opportunities.

In-person Considerations

Even if students have returned to campus, social distancing and safety requirements could complicate some CTSO activities, especially those that have typically taken place outside of class time. For example, students may not be allowed to gather before or after school for meetings in large groups. In this case, activities could be conducted during already scheduled class times, although that could reduce opportunities for students who are not currently enrolled in a CTE course to participate. Other ideas include utilizing larger spaces where students can spread out, such as gyms or cafeterias; hosting virtual meetings; or hosting smaller committee meetings rather than entire chapter meetings. Elections for leadership positions may also need to be held virtually or over a longer period of time to reduce contact between students.

Competitive events may be possible with minor modifications if learners return to campus, as most involve students working individually or in small teams. Projects should be evaluated for safety in light of the current local guidelines if they involve external activities, such as work in the community. Industry partners may still be able to mentor projects and serve as event judges in person, with appropriate social distancing; if public visitors are restricted on campus, business partners could connect remotely to meetings and competitive events hosted on campus.

Access and Equity Implications

When you are considering how to facilitate CTSO participation, remember that some learners may have scheduling challenges owing to other courses they need to take or family obligations, as well as connectivity issues that could impact their participation in virtual activities. In addition, remember that medically vulnerable and quarantined learners may be feeling isolated and lonely away from their CTSO peers; frequent check-ins from peers and the CTSO adviser may help alleviate these feelings and keep them engaged.

While most national CTSOs will not be hosting any in-person events this fall, as the school year progresses, national, state and local CTSO organizations will have to make decisions about the safety of travel and large gatherings in spring 2021, in accordance with local and state travel restrictions. Be prepared for modifications to traditional competition formats as the year unfolds. Institutions may also close periodically or for an extended time if there is another surge of cases, so making sure students have access to materials at home to safely complete their projects will be important.

Similarly, many local CTSO chapters pride themselves on extensive community involvement. Care should be taken to follow local and state guidelines for continuation of such events to ensure student safety. Student leaders should be encouraged to rethink activities in light of emerging community needs and design projects where social distancing and other safety measures can be prioritized. For example, instead of picking up items for a food drive, students might place drop-off containers in easy-to-access locations, such as parking lots, where donations could be collected without direct contact among individuals. These same guidelines would apply to fundraisers as well.

Remote Considerations

Not being together on campus will make the activities that are central to CTSOs even more challenging in many ways, but even more important as educators seek to build and maintain a sense of community among students. Meetings can be held through approved synchronous platforms, and the same practices described in the Engaging Instruction and Business and Community Partnerships sections can be used to make chapter or committee meetings productive and engaging. It will also be important to provide learners asynchronous ways to engage, such as discussion boards or messaging platforms, due to the variety of challenges many students still face with online access.

Some competitive events may not be possible in a fully virtual environment, but with some creativity, many others will be. Over the course of the spring, CTSOs in a number of states began to experiment with online competitions, and this is likely to be an option again this school year in places where in-person gatherings are not possible. The national CTSOs are exploring virtual competitions and leadership development, in addition to in-person and hybrid activities, although some event criteria or processes may need to be modified for the virtual setting. Employer mentors and event judges can continue to engage with learners through these virtual conferences; communication about the virtual conference format should be clear and consistent to help these partners, learners and guardians make the switch from in-person to remote events. Learn more about virtual CTSO events in the Resources, Tools and Examples section.

Student engagement with the community can continue with virtual or low-contact activities, depending on local guidelines. For example, students could record read-alouds to be posted on social media for preschool children, virtually tutor elementary students, produce public service announcements, participate in appropriately socially distanced outdoor cleanups, conduct online or drop-off supply drives or fundraisers for important community needs, or donate their emerging skills to those in need, virtually or with minimal personal contact. There will likely be many opportunities for creative new projects.

Blended Considerations

In blended scenarios, advisers will need to keep in mind all of the in-person and remote considerations mentioned above. In addition, there may be added issues to think through since students may not be all together at once, depending on the model being used, or could be on campus for only part of the fall. Options include using virtual platforms to host meetings and activities, or hosting separate chapter meetings for different groups of students. Advisers will need to think carefully about how to maintain activities like fundraisers and service projects if not all students are on campus each day. Dividing responsibilities and careful planning will be critical to the success of projects in this model.

Resources, Tools and Examples

- Iowa HOSA hosted a virtual conference in March with only a few days' notice. The advisers discuss how they hosted it and lessons learned on this webinar recording.
- SC HOSA hosted a virtual conference this spring. The conference website includes recordings and more information that other CTE advisers can use as inspiration.
- FCCLA will host a virtual national conference this summer. The conference website includes a student workbook, justification letter and other tools that can serve as examples.
- DECA has been hosting a virtual business challenge for several years, and this spring held an online executive mentor roundtable.
- ACTE's Virtual Conference Planning Guide includes detailed tips and procedures for hosting virtual conferences.
- This spring CTSOs moved planned fundraisers online, like the Monticello High School FFA Plant Sale, which enabled customers to order plants online and sign up for pick-up time slots.

Career & Technical Student Organizations: Key Questions to Consider

Cross-cutting Questions

- How can student leaders have a voice in decision-making about CTSOs in a COVID-19-impacted school year?
- How can you prepare students to move forward with projects given uncertainties like possible closures and pending decisions about competitive event formats?
- How will you communicate any changes in activities to students, families and partners, as appropriate?
- How can you continue to engage business and community partners?

In-person Questions

- How will you schedule chapter meetings for social distancing and to maximize participation? Even if students return to campus, can you meet virtually?
- How can you modify processes for electing officers or appointing committees for social distancing? Even if students return to campus, can you use remote tools for elections?
- How can you help learners modify projects to comply with social distancing?
- Are there travel restrictions in place that affect student participation in events?
- How can students participate in leadership training with social distancing, or virtually if in-person events are cancelled?
- How can you adapt fundraisers and service projects for social distancing? Are there new needs in your community your students could help meet?
- If you have members who remain at home because of illness, possible exposure or underlying medical conditions, how will you keep them involved?

Remote Questions

- Is there an approved synchronous platform that you can use for meetings? How will you schedule virtual meetings to maximize participation?
- If your state will host competitive events virtually, which events will be available to students and how can you help them prepare?
- Which virtual leadership trainings can students can participate in?
- How can your current service projects or fundraisers be adapted to the virtual space? What new opportunities might be available?

Blended Questions

- How will you offer chapter meetings if some students are on campus while others are working remotely?
- If you have longer-term projects or fundraisers, how will you manage those without students on campus every day? Are there project roles that need to be reassigned or redistributed?
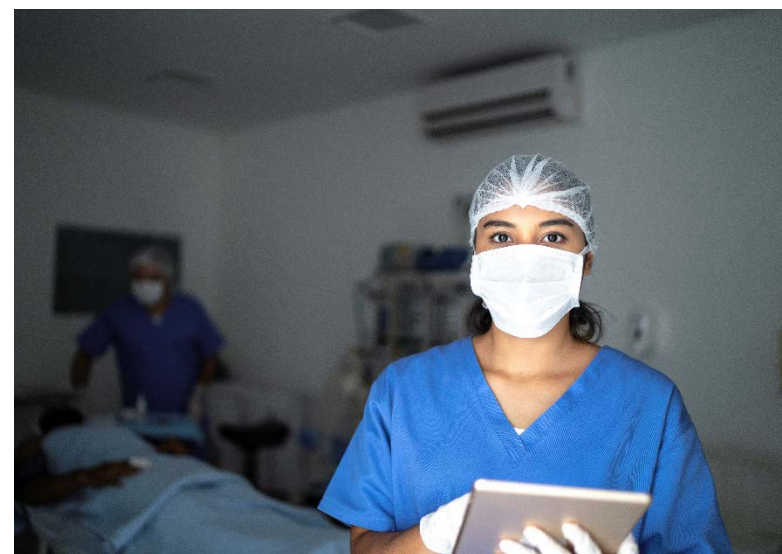
WORK-BASED LEARNING

High-quality CTE programs of study incorporate a full continuum of sustained, meaningful interactions with industry or community professionals that foster in-depth, firsthand engagement with the tasks required in a given career field.

Key Issues to Address
• Identifying business and community partners' capacity and willingness to engage in WBL • Maintaining WBL alignment with students' educational goals • Identifying employers that can accept learners on the worksite • Promoting social distancing and learner safety on the worksite • Integrating WBL into in-person or remote instruction through school-based models • Using virtual and simulated platforms for WBL

When considering how to offer work-based learning (WBL) in a COVID-19-impacted environment, CTE educators must first be aware of district, institution or college system guidance and requirements, as well as state requirements. Several states this spring, such as Wisconsin, changed requirements for WBL by allowing waivers, suggesting telework or enabling students to make up hours after the school year.

Furthermore, local unemployment, industry social distancing requirements and employers' willingness to accept liability for learners will have a major impact on the availability of WBL. Some industries may have a large pool of unemployed and underemployed adults to turn to, which would reduce their need for interns and apprentices, particularly on the secondary level. Liability concerns will also be paramount. In addition, employers may be even more challenged than before to find time to coordinate activities like guest speaking or job shadows, or to provide mentors for students in worksite placements.

Regardless of the instructional model chosen, it will be important to pay close attention to students' WBL training plans to facilitate activities or placements that develop and reinforce technical, academic and employability skills and align to students' education and career goals. Staff will also need to continue to supervise student experiences across all scenarios.

In-person Considerations

If nearly all students return to in-person learning, then learners may be allowed by the school system or institution to go out to the worksite for tours, job shadows, internships and/or apprenticeships. It is likely, however, that worksites will place restrictions on student (and instructor) access for safety and liability reasons. This will impact the availability of WBL, especially for minors. Adult interns and apprentices may be more likely to be allowed on site, and may even be needed in essential industries.

One option for internships and apprenticeships is to pursue placements in businesses deemed essential, bearing in mind that many businesses encompass a range of occupations, from frontline workers to business and marketing staff to IT support. Students in the trades may be able to resume placements safely in outdoor spaces with proper protective equipment, and since health care is an essential business, students may be able to resume clinical experiences. In California, nursing students are able to join the California Health Corps for paid placements assisting in health care facilities. While these experiences may not replace required clinical hours for licensure, they can provide important WBL opportunities for students.

When students are placed on a worksite, the training agreement should incorporate relevant social distancing guidelines or requirements and be developed carefully to address liability issues. For instance, some districts are considering asking learners or their guardians to sign waivers. These waivers or other guidelines should be developed with legal counsel. CTE programs should also consider whether and how to provide transportation to the worksite, so that students do not have to use public transit, and make plans for educators to monitor student placements in person, including the safety aspects of the jobsite.

If campuses are open, but local conditions preclude worksite-based experiences, school-based or virtual models can be used. For instance, industry professionals could set up a real-world challenge or task for learners, interact with students through periodic progress meetings and evaluate the final products, which can all occur remotely. To reduce exposure among students, the more collaborative aspects of such projects may need to be curtailed.

Another option is modeling the classroom as a business that is operated by learners. One of the leading examples of this approach is the Simulated Workplace model in West Virginia and Alabama, which includes industry professionals who help develop and serve as inspectors for each Simulated Workplace. During COVID-19-impacted learning, collaboration with industry partners can be limited to periodic, socially distanced or virtual interactions and inspections.

The final school-based option, school-based enterprises (SBEs), will be highly dependent on the nature of the enterprise, state and local distancing and cleaning protocols, and guidelines about off-campus visitors. SBEs like campus stores or restaurants may need to limit services to students and staff and operate using social distancing and disinfection protocols for food service, such as disposable utensils, or switch to an online order and delivery model. SBEs that serve external customers, like automotive service centers and pet grooming services, may need to close; if able to stay open, they will need to follow state and local social distancing and disinfection protocols, too. The easiest SBEs to continue operating with social distancing will be those that serve clients remotely, such as a 3D printing firm that takes online orders and mails completed products to clients.

Remote Considerations

Districts and institutions were already exploring the world of virtual WBL prior to COVID-19; campus

closures this spring have accelerated that trend. Remote WBL most frequently takes the form of virtual worksite tours, interviews with industry professionals and virtual mentoring sessions. These can vary in intensity from a few minutes of pre-recorded video to live, interactive meetings with industry professionals on the worksite. There are several platforms that can help instructors and students connect virtually with industry leaders; learn more in the Resources, Tools and Examples section below.

Virtual micro-internships, internships and apprenticeships are another option, although these will likely be most suitable for career areas that require less specialized equipment, while health care learners may be able to take part in simulated clinicals, which were allowed in Oregon in the spring. Extended reality (XR) and other simulations can also help students practice employability skills through authentic workplace scenarios that they can interact with and respond to. Several possible platforms for remote and XR WBL are included in the Resources, Tools and Examples section.

Some SBEs can also be operated virtually or with limited social interaction, such as the 3D printing business described above, or others in fields like graphic design or video production. In addition, simulated businesses and industry-driven projects can happen remotely, although this is again dependent on the program of the study and the nature of the project.

In some places, even if the campus remains closed for in-person learning, students may be able to be placed on site in businesses that are open and practicing safe social distancing, as described in the In-person Considerations section above. In any worksite placement, the safety and liability issues discussed above will need to be addressed.

Access and Equity Implications

When you are considering how to provide students with WBL, remember that some learners in high-poverty or rural areas can have a harder time finding WBL placements, as well as accessing safe methods of transportation. These challenges are likely to be exacerbated by the current economic conditions, with many businesses struggling as well. In addition, lack of access to high-speed internet and devices can hamper learner participation in remote WBL.

Blended Considerations

In a blended learning environment, instructors may be able to combine worksite, school-based and virtual WBL models. The implementation of school-based models would differ most significantly in the blended scenario, as limited time on campus would impact the design and operations of industry-driven projects, simulated businesses and SBEs. These activities would need to be designed with more remote elements in mind, or with tasks split between student groups if the blended model involves cohorts that rotate on and off campus.

Resources, Tools and Examples

- Advance CTE's CTE on the Frontier series includes profiles of West Virginia Simulated Workplaces and SBEs offered through the Connecticut Technical High School System.
- The Direct Employers Institute Workplace Simulation Program enables underrepresented and underexposed students to apply classroom learning to a real STEM problem during school hours and under the guidance of STEM professionals.

- Simulated Work-Based Learning: Instructional Approaches and Noteworthy Practices includes case studies of Simulated Workplaces, SBEs and industry-driven projects.
- Nepris is a virtual platform that connects classrooms with industry professionals that has been used by education systems in Texas, Kansas City, Orange County and Louisiana. The District of Columbia has partnered with Nepris for DC Career Conversations. In 2020 the district's Summer Youth Employment Program will include virtual internships and Career Edge curriculum, with some hybrid activities for ages 22-24.
- Practera, Symba and Parker Dewey are platforms for connecting college students and employers for remote internships. Practera recently made its service available for free to colleges until August 2021. Transfr VR provides XR-based manufacturing training for specific employer skill needs.
- INSPIRE Sheboygan County, a nonprofit education-industry collaborative in Wisconsin, pivoted to offering virtual job shadows in spring 2020.
- This blog post from JFF encourages programs to sustain apprenticeship. During spring 2020, some states modified apprenticeship and youth apprenticeship requirements, as in Wisconsin.
- ACTE has an active Work-based Learning section that recently co-hosted a virtual conference on WBL with Iowa.

Work-based Learning: Key Questions to Consider

Cross-cutting Questions

- Has your local department of health, county government, state, system, district and/or institution provided any guidance, waivers or other changes to WBL requirements?
- What capacity for WBL do local businesses have? Do they need interns and apprentices? Do they have time to coordinate job shadows or similar experiences?
- How will you continue to align WBL training plans with desired learning outcomes?

In-person Questions

- Will your local department of health, county government and/or institution allow students to go to a worksite, or are all off-campus activities cancelled?
- Will your industry partners allow learners and/or teachers on the worksite? Are there essential businesses in which you could place learners?
- If learners can be on worksites, what social distancing is required? How will you address liability? How will educators monitor the safety of students in those placements, as well as the desired learning outcomes?
- If learners would normally use public transit or school buses to get to the worksite, can another transportation option be found?
- How can you integrate WBL into the classroom through industry-driven projects or by transforming the classroom into a simulated business? Can industry partners offer guidance, collaboration and evaluation in remote or socially distanced ways?
- Will your local department of health, county government and/or institution allow SBEs to reopen with social distancing, or can you switch to an online order and delivery model?

Remote Questions

- How can you use virtual WBL platforms and other remote tools that connect learners and industry partners and help learners learn about work?
- Does your CTE program of study lend itself to virtual internships, apprenticeships or clinicals? Do you have industry partners who are in a position to support virtual interns or apprentices?
- How can you integrate WBL into the remote classroom through industry-driven projects or by transforming the remote classroom into a simulated business? Can industry partners offer guidance, collaboration and evaluation remotely?
- If you offer any SBEs, how can these continue to operate remotely?
- How can you use simulations to enable students to practice employability skills in authentic workplace scenarios?
- Will any worksite placements be allowed for students even if campuses remain closed?

Blended Questions

- How will institution and program scheduling decisions facilitate access to WBL experiences for all students?
- How can you design school-based WBL projects and activities to accommodate limited time on campus?
- If you are operating an SBE, how will you assign tasks to different groups of students as they rotate on and off campus?

DATA & PROGRAM IMPROVEMENT

High-quality CTE programs of study collect, report and use data for continuous evaluation and program improvement, analyze labor market data for program decision-making and provide appropriate access to relevant data for instructors, staff, learners, guardians, partners and the public. Frequent data analysis and transparent communication about data will be critical in the 2020–21 school year and thereafter to identify and address the ramifications of socially distanced, remote and blended learning on all students, particularly special and underserved populations.

Key Issues to Address

- Frequently measuring learner progress
- Disaggregating data to identify equity gaps
- Developing plans to address low or declining performance levels, with particular attention to equity gaps
- Potentially revising Perkins performance measure targets or the CLNA
- Identifying shifts in labor market data and adapting programs accordingly
- Maintaining data privacy and security

Motivated by the Perkins V comprehensive local needs assessment (CLNA) and calls for greater attention to equity and access for all learners, states, districts and institutions had begun before the pandemic to identify gaps in access to and success within CTE programs. Without careful, purposeful attention to and investment in supporting underserved communities, it is likely that these gaps will only be exacerbated by socially distanced, remote and blended learning models.

Regardless of the instructional scenario used this school year, CTE leaders will need to plan for frequent evaluation of learner progress and the impact of socially distanced, remote or blended learning. This will include looking at data disaggregated by different learner groups and comparing data from this year to similar cohorts in past years, bearing in mind that 2020 data may be significantly skewed by the sudden campus closures. Real-time data from a variety of sources, including attendance and engagement, classroom and third-party assessments, stakeholder surveys and early

warning systems, should be used to inform instruction and improve program delivery throughout the year. In the dynamic environment of COVID-19, timely and regular data collection and review will be more critical than ever.

In addition to this real-time progress monitoring, more formal data reporting will likely be affected by COVID-19. State and federal performance targets for future years, including those recently established under Perkins V, may need to be adapted to reflect local economic challenges and issues around testing and access to programs and supports. Perkins V secondary program quality indicators may be particularly impacted. Missing data, such as data from tests that were not administered this spring, could also affect required reporting.

CTE administrators will also need to keep up with changing labor market information to inform decision-making on which programs of study to offer, particularly in light of potential budget cuts and teacher shortages. This information should also be disseminated to instructors, career development professionals and other staff to inform career development activities. Some states may also direct programs to revisit their CLNAs to accommodate for the seismic shifts in some local and regional economies from the pandemic.

In-person Considerations

Even if campuses reopen to in-person instruction, spring closures will likely impact learner progress and program quality. Social distancing adaptations may lead to gaps in program of study access, performance and transition between learner levels and could impact performance metrics like the new Perkins V secondary program quality measures (this topic is addressed in more detail under Remote Considerations). In addition, even if students return in person, CTE programs will need access to labor market information to make decisions about which programs to sustain and which to potentially eliminate.

When it comes to collaborative data analysis, educators, advisory board members and other stakeholders may be able to gather with social distancing to work together on understanding data and identifying gaps, or they can meet remotely. These collaborative discussions should also be used to develop continuous improvement plans and address emerging issues.

CTE leaders who are responsible for area technology centers and other campuses will also need to ensure that their health monitoring processes align with the Family Educational Rights and Privacy Act (FERPA), Health Insurance Portability and Accountability Act (HIPAA) and Children's Online Privacy Protection Rule (COPPA), and protect data generated by temperature scanners and other tools. Federal guidance on this topic can be found in the Resources, Tools and Examples section below.

Access and Equity Implications

When you are considering data reporting and program evaluation in COVID-19-impacted learning, remember the importance of disaggregating data to assess the impacts of the transition to socially distanced, remote or blended models on populations who already face inequities: low-income students, students with disabilities, English learners, learners of color and nontraditional students, among others.

Remote Considerations

Remote learning will have a significant impact on learner progress, program quality and resulting data. In particular, reporting on the new Perkins V secondary program quality indicators will be tremendously impacted by the switch to remote delivery. In the Perkins V plans that are being submitted this year, states selected one or more secondary program quality measures — work-based learning (WBL), recognized postsecondary credential attainment and/or postsecondary credit in the student's CTE program of study, plus any additional indicators the state chose to measure.

According to a preliminary count by Advance CTE, 26 states have chosen recognized postsecondary credential attainment as their program quality indicator, 23 states have chosen WBL and 17 have chosen postsecondary credit. Several states have chosen multiple indicators, including at least one of the above and other measures such as CTE program completion or technical skill attainment. The remote setting will impact access to and delivery of industry credentials and WBL, in particular; measures of technical skill attainment and postsecondary credit will also be affected. In light of these changes, states may reassess their definitions of what will count for these measures, and local recipients may be able to modify their targets. More information on these topics can be found in the Sequencing and Articulation, Student Assessment and WBL sections. Educators, partners and stakeholders will need to meet virtually to address these issues and to analyze data and identify gaps collaboratively.

Data on virtual engagement will also be important. Districts and institutions can use their learning management systems or other virtual platforms to track the amount of time that a student is engaged online each day or class period. This data can serve as a leading indicator of other potential concerns and be used to develop continuous improvement plans. CTE educators will need to connect with IT departments and

be aware of state, district and institution data privacy and security requirements for online curriculum and assessment as this and other data are gathered.

Blended Considerations

CTE educators in the blended scenario will need to consider all of these issues, and also will need to compare data on access and performance between the in-person and remote parts of the curriculum. For instance, if students are performing differently on remote and in-person assessments that measure the same standards, that information can be used to adjust instructional practices.

Resources, Tools and Examples

- CoSN has produced a flowchart for vetting online tools for data privacy considerations.
- The Association of Test Publishers has provided guidance on data privacy and security in remote testing.
- The U.S. Department of Education has produced guidance on FERPA and coronavirus, FERPA and virtual learning resources and, with the U.S. Department of Health and Human Services, Joint Guidance on the Application of FERPA and HIPAA to Student Health Records.
- The Future of Privacy Forum has developed a number of tools for understanding education data privacy and security, including How FERPA and HIPAA Apply to Student Records During the COVID-19 Pandemic, Educator's Guide to Student Privacy, Online Learning Best Practices for Schools and Educators and COVID-19 Privacy and Data Protection Resources.

Data & Program Improvement: Key Questions to Consider

Cross-cutting Questions

- How can you use disaggregated CTE data (by special and underserved populations, including those required in Perkins V) to evaluate the quality of instruction in a COVID-19-impacted environment?
- How can you compare data to prior years to begin to identify differences in performance under new instructional models?
- How can you transparently communicate to learners and their guardians, where appropriate, about the impacts of new instructional models and plans to address those impacts?
- Where can you access current, region-specific labor market information and lists of high-skill, high-wage and in-demand occupations?
- Will your state require you to complete the next Perkins CLNA sooner than 2022, or give you the option of updating your CLNA based on new challenges?
- How will performance targets for Perkins or other state reporting be impacted by new instructional models, particularly Perkins secondary program quality indicator(s)? Will you be revising your targets or measurement approaches for any indicator(s)? Is your state shifting its guidance around data collection and reporting?
- How will you use real-time data on student engagement and performance to adjust and improve instruction?

In-person Questions

- How can instructors, staff, administrators, advisory board members and other stakeholders come together in socially distanced ways to analyze data and develop strategies in response?
- If you are responsible for any health monitoring on your campus, do your processes align with FERPA, COPPA and HIPAA? How will you protect student health data?

Remote Questions

- How can you connect with your IT department to ensure online curriculum tools protect data security and privacy?
- How can you use data on virtual engagement to improve instruction in the remote space?
- How can instructors, staff, administrators, advisory board members and other stakeholders come together remotely to analyze data and develop strategies in response?
- How can you identify the learner groups and programs that are transitioning well to remote learning and those that are struggling?

Blended Questions

- How can you compare performance data across the in-person and remote portions of the curriculum and use it to inform instruction?

APPENDIX

Broad Reentry Guidance and Planning Tools

- **A Blueprint for Back to School**
  American Enterprise Institute, May 2020
  https://www.aei.org/research-products/report/a-blueprint-for-back-to-school/

- **A Plan to Safely Reopen America's Schools and Communities: Guidance for Imagining a New Normal for Public Education, Public Health and Our Economy in the Age of COVID-19**
  American Federation of Teachers, April 2020
  https://www.aft.org/reopen-schools

- **CDC Activities and Initiatives Supporting the COVID-19 Response and the President's Plan for Opening America Up Again**
  Centers for Disease Control, May 2020
  https://www.cdc.gov/coronavirus/2019-ncov/downloads/php/CDC-Activities-Initiatives-for-COVID-19-Response.pdf

    Additional CDC Guidance:
    - https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/schools.html
    - https://www.cdc.gov/coronavirus/2019-ncov/community/colleges-universities/considerations.html
    - https://www.cdc.gov/coronavirus/2019-ncov/community/disinfecting-building-facility.html

- **Considerations for Reopening Institutions of Higher Education in the COVID-19 Era**
  American College Health Association, May 2020
  https://www.acha.org/documents/resources/guidelines/ACHA_Considerations_for_Reopening_IHEs_in_the_COVID-19_Era_May2020.pdf

- **Continuation of Educational Services at State-run Schools**
  Education Commission of the States, June 2020
  https://ednote.ecs.org/continuation-of-educational-services-at-state-run-schools/

- **COVID-19 Planning Guide and Self-Assessment for Higher Education**
  OpenSmartEdu, June 2020
  https://www.opensmartedu.org

- **COVID-19's Impact on CTE: Defining the Challenge and the Opportunity**
  Advance CTE, June 2020
  https://cte.careertech.org/sites/default/files/AdvanceCTE_COVID19_Impact_June_2020.pdf

- **National Governors Association Education COVID-19 Resources: State Reopening Tracker**
  National Governors Association, Updated Regularly
  https://education.nga.org

- **Pandemic Planning for Distance Learning: Scenarios and Considerations for PreK–12 Education Leaders**
  New America, May 2020
  https://www.newamerica.org/education-policy/reports/pandemic-planning-for-distance-learning-scenarios-and-considerations-for-prek12-education-leaders

- **Planning for Re-entry & Recovery: A Guide for Promoting Equity, Improvement, and Innovation**
  FourPoint Education Partners, May 2020
  https://www.fourpointeducation.com/wp-content/uploads/2020/05/2020_FourPoint_Recovery_Planning_Guide.pdf

- **Planning Guide: Scenarios and Considerations for 2020–21**
  National Institute for Excellence in Teaching, June 2020
  https://www.niet.org/assets/Resources/31b7058159/school-year-planning-guide-2020-21.pdf

- **Reimagining the College Experience in a Pandemic**
  Encoura Eduventures Research, May 2020
  http://pages.nrccua.org/2020-05-14-Enrollment-Insights-Report.html

- **Reopening Schools After COVID-19 Closures: Considerations for States**
  ExcelinEd, May 2020
  https://www.excelined.org/wp-content/uploads/2020/05/ExcelinEd.COVID19.ReopeningSchoolsConsiderationsforStates.May2020.pdf

- **Reopening Washington Schools 2020: District Planning Guide**
  Washington Office of Superintendent of Public Instruction, June 2020
  https://www.k12.wa.us/sites/default/files/public/workgroups/Reopening%20Washington%20Schools%202020%20Planning%20Guide.pdf

- **Restart & Recovery Framework and Tools**
  Council of Chief State School Officers, Updated Regularly
  https://ccsso.org/coronavirus

- **Rising to the Challenge of COVID-19: A Planning Framework for the 2020–21 School Year**
  Los Angeles County Office of Education, May 2020
  https://www.lacoe.edu/Home/School-Reopening

- **State Education Agency Considerations for Digital Learning: CARES Act & Beyond**
  State Educational Technology Directors Association, May 2020
  https://www.setda.org/2020/05/26/state-education-agency-considerations-for-digital-learning-cares-act-beyond/

- **Summer/Fall District Responses to COVID-19 School Closures**
  Center on Reinventing Public Education, Updated Regularly
  https://www.crpe.org/current-research/covid-19-school-closures

- **The Return: How Should Education Leaders Prepare for Reentry and Beyond?**
  Chiefs for Change and Johns Hopkins School of Education Institute for Education Policy, May 2020
  https://chiefsforchange.org/wp-content/uploads/2020/05/CFC-TheReturn_5-13-20.pdf

ACKNOWLEDGEMENTS

ACTE gratefully acknowledges all those who contributed to this publication, including the many ACTE members and other CTE stakeholders that responded to our survey and have offered their advice and insights as they navigate these challenging times. We would like to particularly thank those that gave of their time and expertise to review this guide and provide feedback during its development:

About ACTE

The Association for Career and Technical Education (ACTE) is the nation's largest not-for-profit association committed to the advancement of education that prepares youth and adults for successful careers. ACTE represents the community of CTE professionals, including educators, administrators, researchers, school counselors, guidance and career development professionals and others at all levels of education. ACTE is committed to excellence in providing advocacy, public awareness and access to resources, professional development and leadership opportunities.

www.acteonline.org