CTE ON THE FRONTIER

PROVIDING LEARNERS ACCESS TO DIVERSE CAREER PATHWAYS

CTE on the Frontier

To help states unpack the challenges and potential approaches to expanding access to quality Career Technical Education (CTE) programs in rural communities, Advance CTE — in partnership with the Council of Chief State School Officers and Education Strategy Group, through the New Skills for Youth (NSFY) initiative — is releasing a series of briefs titled *CTE on the Frontier*. The series will explore some of the most pressing challenges facing rural CTE, including program quality, access to the world of work, leveraging partnerships to expand program offerings, and the rural CTE teacher pipeline.

Through interviews with state CTE leaders at both the secondary and postsecondary levels, Advance CTE identified promising practices and strategies to strengthen access to and the quality of CTE pathways in rural communities. This brief, the third in the series, explores how states can and are leveraging partnerships and pooling resources to reach economies of scale and serve more rural learners with high-quality career pathways.

The State Role in Expanding Access to Diverse Career Pathways

The career pathways that are available in rural schools and institutions are often small in number and not fully aligned with the growing diversity of rural employment opportunities across new and emerging sectors. Not to mention, learners must have access to a breadth of diverse career pathways to enable them to find the career that best aligns with their passions. To prepare for these opportunities, learners need access to strong career pathways that offer aligned, sequenced courses that articulate to a postsecondary credential and allow learners to gain hands-on experience and career advisement along the way. Yet expanding program offerings to keep pace with rural employment opportunities is a persistent challenge. According to state CTE directors, school districts and community colleges all too often face scarce funds, instructors and facilities, necessitating tradeoffs between the breadth and depth of the programs they offer.

States can play an important role in filling critical access gaps in rural areas despite resource scarcity. By facilitating meaningful local partnerships, encouraging the sharing of resources and funds, expanding the use of technology and supporting local innovations, states can empower local school districts and institutions of higher education to reach more learners. These strategies help expand access and opportunities for learners, while maximizing state and local resources.

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Rural CTE in Federal Policy

There are a number of explicit avenues to leverage federal policy to support rural CTE. Additionally, state leaders and policymakers often have the flexibility to leverage both federal policy and federal dollars for rural CTE. Some examples include:

Carl D. Perkins Career and Technical Education Act of 2006 (Perkins Act): State Reserve Funds

While states must distribute 85 percent of Perkins funds to local recipients, they can choose to dedicate 10 percent to a Reserve Fund, which can be used to support CTE in rural areas or areas with high percentages or high numbers of CTE students. Many states choose to focus at least some of their Reserve Funds on supporting rural areas.

Perkins Act: Forming Consortia and Pooling Funds

At the local level, Perkins grant recipients may elect to form consortia (an option for local recipients that qualify for less than $15,000 in grant funds) and apply for a Perkins grant collaboratively. Local recipients may also pool a portion of their funds with other eligible recipients for certain uses, including activities related to implementing CTE programs of study (e.g., professional development for CTE teachers, administrators and faculty). States can use Perkins state leadership funds to support these efforts through incentive grants.

Workforce Innovation and Opportunity Act (WIOA): Governor's Set-Aside

Under Title I of WIOA, governors may elect to reserve up to 15 percent of their state's allocation "for statewide workforce investment activities."[1] This funding stream is fairly flexible in terms of allowable expenses and includes career pathway development and implementation, job-driven strategies and local-sector partnerships.[2]

Every Student Succeeds Act (ESSA): Rural Education Achievement Program (REAP)

Through REAP, ESSA supplies formula funds for eligible districts in rural areas with low numbers of students. These funds can be used for a number of authorized purposes, including bolstering CTE efforts.[3] REAP also supplies additional funds that state education agencies can distribute to local education agencies via subgrants. Similarly, districts can leverage these dollars for a variety of initiatives to support rural CTE.[4]

For more, visit https://careertech.org/resource/cte-frontier-leveraging-federal-policy-strengthen-rural-cte.

Leveraging Partnerships to Expand Course Access

Leveraging strategic partnerships can extend the reach of instructional staff, equipment and resources and help rural career pathways reach economies of scale. States can take a number of approaches to encourage and support collaboration in rural areas. They can incentivize collaboration through federal and state funding streams, facilitate planning and local policy development, and share lessons learned to help scale promising strategies statewide. In states like Nebraska and Alaska, these approaches are already starting to pay off by expanding the accessibility of rural career pathways.

Nebraska Perkins Consortia and Rural Collaboratives

State leaders in **Nebraska** have worked to promote a culture of collaboration across the state, creating an environment in which sharing resources and forming partnerships is the norm. This collaboration is due in part to Nebraska's use of consortia in CTE delivery. The state is home to 244 independent school districts, of which only 19 qualify for the minimum grant award

under the federal Carl D. Perkins Career and Technical Education Act of 2006 (defined in statute as $15,000 for local education agencies and $50,000 for institutions of higher education). Under the Perkins Act, local education agencies that do not meet the population threshold to qualify for the minimum amount of local Perkins funds are permitted to form and apply for funds through a consortium with one or more other districts.[6] This scenario allows small, rural districts and community colleges to unlock federal funding by committing to planning partnerships with their neighbors. While many school districts make use of the consortium option, postsecondary institutions commonly qualify for the minimum grant award. As such, there is only one postsecondary Perkins consortium in Nebraska.

In a state like Nebraska, where four out of five districts are rural, forming consortia is a widespread practice.[7] Perkins consortia are managed by Nebraska's Educational Service Units, 17 regional bodies that coordinate professional development, instruction and other educational services within their respective regions. Educational Service Units work with the partnering schools and districts in their region to coordinate the purchasing and sharing of equipment, design professional development opportunities for educators, and align career pathways from the secondary to the postsecondary level. Since program offerings are often determined by the availability of qualified teachers, having a coordinated approach to providing professional development and sharing faculty between partners helps to sustain programs in high-wage, high-demand industries and ensure that learners have access to a variety of opportunities.

Nebraska's collaborative approach to rural CTE delivery, in addition to its use of the Perkins consortium opportunity, has expanded the offerings available to rural learners and helped systematize professional development across the state. The model provides an infrastructure to train teachers and administrators on new statewide CTE standards and programs of study, empowering them to improve the quality of their programs. As a result, many local districts have developed new programs or strengthened existing ones in information technology and health science, two priority industries in the state. In a couple of cases, the consortia model has also enabled Educational Service Units to establish career academies and partner with nearby postsecondary institutions to offer dual credit

Rhode Island Advanced Course Network

In **Rhode Island**, learners can access a variety of rich learning experiences within their chosen career pathway through the Advanced Course Network.[5] The program provides state funding to allow students to access course content delivered in different settings and locations, including high schools, colleges and universities, online classrooms, and industry training providers.

Additionally, Rhode Island is working to develop a Transport to Career Fund to cover transportation costs for participating students and provide resources to help students and families browse program offerings in their area. And since the funding follows the student, educational providers have an incentive to provide robust, meaningful offerings to attract students from around the region.

While the program benefits from being in a relatively small state, similar course choice policies in rural areas, along with funding and resources to alleviate the burden of transportation, can help learners access programs that are not available in their own school. Rhode Island's Advanced Course Network could be a model for other states working to remove barriers to entry for all learners — not just those in rural areas — and allow them to access rich learning experiences through neighboring institutions and training providers.

opportunities to students in their region. Thanks to this model, rural learners are able to access career pathways and dual credit opportunities that are not available in their assigned school.

Additionally, Nebraska is working to incubate strategic partnerships in rural areas through a state-led rural collaborative pilot project. The project, launched in the 2015-16 school year, aims to align class schedules, document course offerings and empower learners across six rural high schools to select and enroll in a career pathway of their choice.

Unlike students in other states that have regional career technical centers serving various schools, districts and learner levels, Nebraska students can access CTE coursework only within comprehensive high schools and community colleges. However, under Nebraska's Enrollment Options law, high school students can enroll in and attend classes in neighboring schools and districts.[8] These "option students" can pursue a career pathway of their choice, even if it is not offered at their current school, as long as they enroll themselves, schedule their courses, and find their own means of transportation.

While the policy mechanisms are in place to enable cross-institutional mobility, state leaders in Nebraska developed the rural collaborative pilot to help coordinate enrollment across participating schools and help learners access career pathways offered in other locations. Starting with six schools in northeast Nebraska, state staff worked with local school administrators to align class schedules so that core academic courses would be offered in the morning and technical courses would be offered in the afternoon. This approach ensures that class scheduling, once a barrier to course choice, no longer excludes students from accessing courses in other schools.

Additionally, this approach allows schools to specialize in certain career pathways by expanding the pool of eligible students. While previously schools were pressured to meet the diverse interests of a small student body, accessing larger populations has allowed program designers to serve the more committed career pathway concentrators — who require more advanced coursework and instruction — without neglecting the interests of other students. This approach has also excited postsecondary partners that, without centralized area technical centers, are often challenged to connect and align courses with secondary career pathways. A partnership with a nearby community college allows students to participate in dual credit end-of-pathway capstones and helps learners transition from secondary to postsecondary education.

The rural collaborative initiative is still in its early stages, but state leaders in Nebraska are optimistic about its progress. And while transportation costs are currently covered by students, parents and participating schools, Nebraska hopes to expand the initiative and provide funding for transportation.

Lessons Learned in Nebraska

- Think beyond the school or institution to design and expand career pathways. Local administrators can get more mileage out of state and federal resources by forming strategic partnerships and focusing professional development, program design, industry partnerships and equipment procurement to meet regional needs.
- Identify whether opportunities exist to unlock state and federal funds through consortia or other partnerships.
- Empower local administrators to coordinate program offerings and align scheduling with nearby schools and districts to ensure that learners are aware of and can take advantage of a broader catalog of courses.

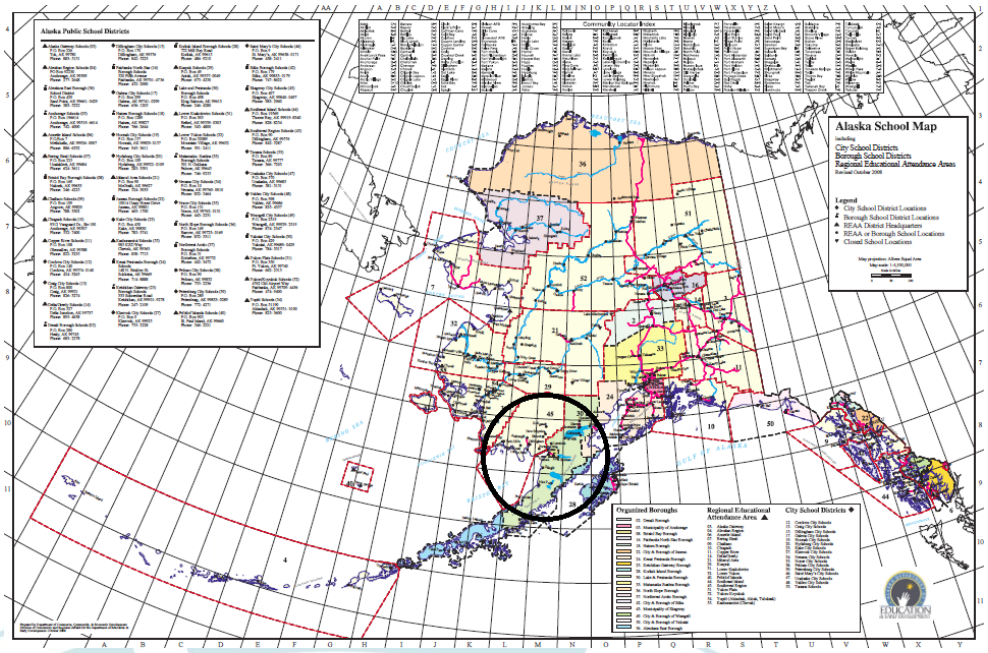
Alaska Bristol Bay Collaborative

Most of the towns and communities in **Alaska** are so remote that they can be accessed only by boat or plane, making a course choice option like Nebraska's nearly impossible. Nevertheless, rural districts in Alaska's Bristol Bay region found an innovative workaround to help learners access courses, equipment, and expert educators in other schools.

Through the Bristol Bay Collaborative, which began in 2011, students attending school in one of four participating school districts can sign up for intensive "Phase Weeks," during which they receive specialized instruction and hands-on learning at a remote campus one week at a time. Sending schools cover the cost of air transportation — using state and federal funds as well as support from the regional economic development corporation — and participating students are boarded on site. What's more, each of the sending schools has restructured its academic calendar so that participating students do not fall behind during Phase Week.

Currently, students in the Bristol Bay area can enroll in career pathways in allied health, construction trades, facilities maintenance and information technology, with more options in development. The program follows Alaska's CTE program of study model, which requires at least two sequenced courses and dual credit opportunities. Four Phase Weeks are available during the year — each one an independent class built into a sequenced career pathway — and students can earn between .5 and 1.5 high school credits for completing one class. Participating students can also earn postsecondary credit offered through the University of Alaska Fairbanks' Bristol Bay campus, in partnership with the Bristol Bay Economic Development Corporation. For dual credit courses, students can earn between one and three college credits per course.

Despite the small size of participating school districts, enrollment in the program has grown from 24 students in the 2011-12 school year to 128 in 2016-17. For perspective, the entire region includes only 1,500 students total in prekindergarten through 12th grade.[9] Further, students have taken advantage of opportunity to earn college credit through the collaborative. During the lifespan of the program, students have earned a total of 777 college credits.



The Bristol Bay Collaborative is a partnership of Lake & Peninsula School District, Bristol Bay School District, Southwest Region School District and Dillingham School District. Map provided by the Alaska Department of Education and Early Development.

This collaborative approach has enabled participating districts to specialize in certain program areas — Lake & Peninsula, Bristol Bay and Dillingham simultaneously offer their own Phase Weeks, each of which are best suited to their region — and expand the number of high-quality career pathways available to students in the area. Additionally, expert instructors, who are difficult to recruit and retain in rural areas, can reach more learners than before. Transporting and boarding students for a week at a time is not cheap, but districts find it to be more cost effective than hiring additional instructional staff. Although the collaborative was designed and initiated at the regional level, staff in the Alaska Department of Education and Early Development see a growing interest in other areas of the state. They plan to share lessons learned with other Alaskan districts and, through the promotion of Perkins consortia, encourage and incentivize similar collaborative efforts across the state.

Filling Critical Career Pathways Gaps with Virtual Learning

Another way states can expand the variety of course offerings available to rural learners is by leveraging virtual technology to close critical gaps and enrich the quality and substance of available career pathways. Digital learning technology is not in itself a new approach. But in states like North Dakota and Idaho, state leaders are using technology creatively and adopting new policies to help learners get hands-on experience and exposure to specialized coursework.

North Dakota's Interactive Television

In **North Dakota,** virtual technology has helped rural educators at both the secondary and postsecondary levels reach learners at scale for almost 30 years. At the secondary level, learners use a program called Interactive Television, or ITV, to connect with educators at a distance. ITV students sit in a classroom in their home school and are connected to remote sites in real

Area Technical Centers

One common way that rural CTE programs are delivered is through area technical centers. Area technical centers are co-located sites that serve learners from multiple institutions at the same time. Centers often serve secondary, postsecondary and adult learners and can be either shared time, meaning they offer primarily technical education, or full time, meaning they provide a full course menu through which academic and technical content are both taught.

Area technical centers are often well suited to serve rural areas because they provide a centralized location to offer a diverse menu of courses and programs. They can help high schools and postsecondary institutions cut costs by pooling resources and serving a wider population of students.

In **Oklahoma,** for example, 29 state career technology center districts collectively serve secondary and adult learners across 58 campuses.[10] Some technology center districts serve up to 57 sending schools, dramatically expanding the number of learners who can be reached. These centers also have the capacity — and the staff — to liaise with business and industry partners and develop meaningful career pathways that are aligned with, and validated by, industry needs.

About two-thirds of states use area technical centers in some form to reach secondary learners, postsecondary learners or both.[11] Quite often, centers are used to provide diverse course offerings to rural learners, making up for limited course offerings in their sending schools.

time via video, allowing several students to access expert teaching staff simultaneously. The technology has been widely adopted in CTE classes across the state, possibly due to the scarcity of certified CTE instructors, and has even been used to provide labs and workshops to remote learners. For example, welding labs can be outfitted with video cameras and monitors, allowing instructors to facilitate a class remotely. Students do not even need to leave their home school — they can sit at their workstations and work hands on with the equipment while the instructor observes and directs from a distance.

Approximately 75 percent of CTE courses delivered through ITV are transmitted through one of North Dakota's 10 area career and technology centers, allowing these centers to leverage their resources and instructional staff to reach more learners.[12] Classes are broadcast in real time from the classroom. While teachers do have a small number of students physically present in their classroom, small enrollments allow them to dedicate time and attention to remote students.

Since 2009, the number of districts delivering CTE through the ITV program has more than doubled, rising from 42 to 90. Coupled with this growth in participation is an expansion of program offerings. While only 19 CTE courses were offered in 2009, 37 courses were offered in 2017, many of them in high-growth Career Clusters® such as Health Science; Agriculture, Food & Natural Resources; and Marketing. This approach has helped expand the reach and impact of qualified instructional personnel, allowing learners to access a far broader and richer catalog of CTE course content than they could before.[13] Additionally, staff at participating schools regularly convene with other administrators in their area to inventory eligible courses and coordinate which will be offered in person and which will be made available online.

The technology for ITV has been available since the late 1980s, and its rapid growth over the past decade can be attributed in part to a more robust, statewide broadband infrastructure and better technology. In its early stages, ITV was delivered on an analog platform. Since then, the program has switched to digital and now uses more sophisticated equipment and high-definition video, making delivery easier and the learning experience more realistic. Additionally, CTE educators transmitting through ITV have access to new equipment that allows them to supplement their lessons with simulated demonstrations, bringing new life into a virtually delivered course. Meanwhile, a statewide push to equip schools and libraries with better digital infrastructure has made meeting the broadband requirements to access ITV easier for classrooms.

North Dakota uses state funds to incentivize schools to enlist the ITV technology in expanding the reach of CTE classes. Schools that transmit ITV coursework to other schools are eligible for a 4 percent reimbursement per receiving school, which helps defray program costs and encourage those schools with qualified instructional staff to reach larger student populations. Only state-approved CTE

Lessons Learned in North Dakota

- If recruiting and training qualified instructors is the primary barrier to course access, think about how technology can be leveraged to put educators in front of more learners.
- Create funding structures that incentivize schools and institutions to adopt new technologies.
- Encourage school districts, community colleges, area technical centers and other institutions to coordinate with one another and inventory all available course offerings within a specific region.
- Ensure that learners are aware of the course offerings available in their community and any opportunities to access programs virtually.

programs are eligible for the reimbursement — an important condition that allows the state to monitor and ensure program quality.

Community Colleges Are Leveraging Technology to Reach Rural Learners As Well

Virtual technology can also be used at the postsecondary level to connect learners with expert faculty via distance learning. According to the National Center for Education Statistics, 38 percent of undergraduate college students took at least one distance learning class — defined as a class taught "only online" — in the 2011-12 school year.[14]

In North Dakota, the same technology used in the ITV network at the secondary level is used at the postsecondary level as well. The technology is called Interactive Video Network (IVN), though the name is the only difference. Programs such as the Dakota Nursing program — a consortium of four colleges working to strengthen the pipeline of health professionals — use the platform to reach more students across North Dakota. Students enrolled in IVN classes can earn credit toward an associate degree in nursing, allowing them to hurdle geographic barriers to access the necessary coursework to earn their credentials.

IVN is also used to connect secondary students with dual credit opportunities. High school students can access the platform from their assigned school and interact directly with postsecondary instructors without leaving the classroom. The technology has been primarily used to help learners earn CTE dual credit in health science.

Meanwhile, in Alaska**,** postsecondary faculty at AVTEC — Alaska's Institute of Technology — have a different approach to using virtual technology to reach rural learners. Rather than conference students in to connect with remote instructors, AVTEC faculty in the maritime program have started traveling to remote locations — often accessible only by plane — with mobile simulators to help high school and college students get hands-on work experiences. Instructors will bring no more than what they can fit on a plane — a couple of computer monitors and mobile equipment — and will set up shop in the classroom. These simulations are delivered as part of the Intro to Nautical Skills course, which is offered via distance learning to districts around the state and allows students to earn both high school and postsecondary credit. They also serve as early exploratory opportunities for younger students examining different career options.

Idaho Digital Learning

Idaho Digital Learning was first authorized by the state legislature in 2002 to "provide choice, accessibility, flexibility, quality and equity in curricular offerings."[15] In many other states, similar technology has helped learners access coursework that either is not offered in their school or college or does not easily fit into their schedule. What makes Idaho Digital Learning unique, however, is the way the state is integrating CTE instruction into its online course catalog. State leaders have been careful to preserve the quality and hands-on components of career pathways while leveraging the Idaho Digital Learning platform to broaden their reach.

Idaho Digital Learning operates as an independent school rather than a state department or agency. The program is fully accredited and serves students across each of Idaho's 115 districts and charter schools with online instruction across a variety of disciplines. The courses are designed to adapt to students' needs and schedules and are offered in a cohort course format, following a typical schedule aligned with the academic year; a flex course format, allowing learners to proceed at their own pace and skip certain course material if they can demonstrate mastery; or a hybrid format that provides synchronous virtual lectures and online lessons. Enrollment costs just $75 per course (an expense that is often covered by the student's school), and each course is aligned with Idaho Core Content Standards and facilitated by a certified teacher and a certified Idaho administrator, ensuring that quality is not the cost of access.

Available Courses

	Course	Provider	Type	Level
View	Business Computer Applications A	IDLA	Standard	High School
View	Business Computer Applications B	IDLA	Standard	High School
View	Exploring Computer Science	IDLA	Standard	High School
View	Fundamentals of Health Professions	IDLA	Standard	High School
View	Medical Terminology	IDLA	Standard	High School

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Course offerings available through CTE Digital in Idaho

Although Idaho Digital Learning was authorized in 2002, the program did not include any CTE courses until after 2015, when the state legislature formalized through state statute the partnership between the Idaho Division of Career & Technical Education and Idaho Digital Learning. The goal of this new statute was to adapt appropriate CTE courses for online instruction through what would come to be known as CTE Digital. The state legislature aimed to use CTE Digital to close access gaps and ensure that students all over the state would be able to access online CTE coursework.

CTE Digital courses are developed collaboratively by Idaho Digital Learning and CTE subject matter experts. Before an existing course can be designated as CTE Digital, a certified CTE teacher develops curriculum and course content that is aligned with CTE standards. Any new courses are developed by certified CTE teachers hired by Idaho Digital Learning, and they typically are teaching the same course in their district. In both cases, the state-level CTE program manager signs off on the course before it can be offered through CTE Digital. On an ongoing basis, Idaho Digital Learning is required to use CTE-certified teachers to deliver the courses.

The partnership for CTE Digital has yielded five CTE-specific courses in the Information Technology and Health Science Career Clusters® to date. State leaders in Idaho wanted to design programs thoughtfully to ensure that they would align with available career pathways in high-demand industries; supplement local implementation; and allow learners to experience rich, hands-on learning outside of a virtual environment through an in-person capstone course. Idaho is currently growing the number of career pathways that meet these rigorous criteria.

State leaders in Idaho recognize the tension between using virtual learning to address short-term teacher shortages, which satisfies an immediate need but may not be driven by labor market demand, and prioritizing quality by including only courses that make sense in an online environment and are

aligned with in-demand career pathways. The offerings currently available through CTE Digital are aligned with the high-growth, high-wage occupations in the information technology and health science fields.[16] Plus, these offerings prioritize foundational courses such as Fundamentals of Health Professions and Exploring Computer Science to help learners gain the foundational knowledge they need before they continue their learning in the classroom or workplace.

This design supports the implementation of local career pathways. In many districts and schools, program administrators have started enrolling students in Idaho Digital Learning to take foundational CTE coursework, thus freeing up instructional capacity to focus on more advanced courses that do not adapt easily to online learning environments. This approach allows learners across the state, particularly those in rural areas, to access introductory content online and creates capacity for educators to design richer career pathways. Idaho Digital Learning also provides adaptable course sequence roadmaps that describe how CTE Digital content can be integrated into CTE, Advanced Placement and dual credit pathways.[17] The Department of Education provides funds to cover the cost of industry certification or Advanced Placement examinations for students enrolled in various career pathways.

Summit Technology Academy

Summit Technology Academy in Lee's Summit, **Missouri**, is not itself a rural school. But the 2017 Excellence in Action award winner (in the Information Technology Career Cluster) serves students from 24 urban, rural and suburban sending high schools, allowing learners from all over the region to access expert instructional staff, cutting-edge equipment and early postsecondary options.[18]

Summit Technology Academy is a comprehensive high school that offers shared-time programming to students in nearby schools and districts in the morning and in the afternoon. Nearly 10 percent of the student population comes from rural schools, which reimburse the academy for the cost of tuition. This number is growing and includes districts like Kingsville School District. This district, which has only 266 students from grades K-12 and is located a full 45-minute drive from Lee's Summit, does not have the capacity to offer the same breadth of high-quality career pathways.

The curriculum was developed in partnership with industry leaders in information technology, who helped identify the core competencies students would need to be prepared for work in the field. These competencies are reviewed regularly to ensure that they are rigorous and aligned with the latest industry practices. Additionally, students who are enrolled in the program can participate in work-based learning opportunities, often paid and spanning multiple years, which help them gain experience and workplace mentorship to help launch their careers.

The program partners with more than 200 businesses in the area to provide students with paid internships, tuition forgiveness, grant programs and loan programs. And students who complete the program by their junior year can enroll in a university partnership called the Missouri Innovation Campus, through which they can begin to earn a bachelor's degree while still in high school. Programs like Summit Technology Academy help rural learners access high-quality career pathways not available in their own communities and get a leg up on their future careers.

While many subjects are strengthened by hands-on learning, high-quality CTE courses depend on meaningful experiential learning — a major hurdle to offering CTE coursework online. No amount of virtual learning can substitute for the experience gained handling equipment in a welding lab or working with a patient, simulated or otherwise. State-approved CTE programs that count CTE Digital courses among their catalog will be required to offer in-person experiential learning and active participation in Career Technical Student Organizations (CTSOs) to preserve the richness and out-of-classroom experience that high-quality career pathways provide.

In addition to the online courses available through CTE Digital, Idaho students can enroll in dual credit opportunities through Idaho Digital Learning.[19] Advanced Placement courses — which are often far less accessible in rural areas than in urban or suburban areas — are available through the platform, allowing learners to make early progress toward a postsecondary credential on their own time.[20]

Idaho Digital Learning also has professional development content to help teachers enhance their pedagogy and instruction, ensuring that teachers in even the most rural communities can access high-quality training content. Through partnerships with various state and national organizations, Idaho Digital Learning has developed multiple training courses for instructors, including programs related to digital learning, computer science instruction, and building a college- and career-ready culture. Professional development content often responds to state need and is developed in partnership with industry leaders. For example, Idaho Digital Learning designed a robust computer science program in partnership with Code.org after government, education and industry leaders on the Idaho Technology Council raised the need for more educators to be trained in computer science.

Though CTE Digital is in the nascent stages of development, the program has seen early enthusiasm from students across Idaho, serving more than 1,000 students in the 2015-16 school year.

Lessons Learned in Idaho

- Consider what might be lost by adapting a CTE course online and ensure that learners have the opportunity to supplement any online learning with experiential and leadership opportunities.
- Provide foundational content online to free up capacity to offer more advanced coursework and strengthen career pathway offerings.
- Leverage the same technology used to deliver online CTE content to students for teacher professional development.

State Strategies to Increase Access to Diverse Career Pathways

The case for expanding diverse career pathways is clear: When learners have access to more course variety, they can unlock their interests, pursue the career pathways that align with their career goals, and develop the experience they need to fill critical workforce needs in their communities. Yet expanding access to strong and diverse career pathways is a persistent challenge in rural areas. Innovative strategies like rural collaboratives or virtual technology can help rural programs maximize their resources and provide more options and access to rural learners, thus preparing them for the full breadth of opportunities in their communities. State leaders should consider the following strategies to economize and expand access to diverse rural career pathways:

- **Make use of partnerships to leverage competitive advantage:** Quite often, rural institutions lack the student demand to justify an expansive course catalog, leading to a tension between program depth and breadth. They often invest in a variety of introductory courses to encourage "sampling" of career options and help learners find their career passions. But the idea that schools and colleges must be all things to all students is outdated. In states like Nebraska and Idaho, rural leaders are working collaboratively to inventory course offerings, specialize in certain content areas, and use technology to connect learners with opportunities outside of their home school. This collaboration allows institutions to invest in robust, vertically aligned career pathways that equip learners with the deeper technical skills needed in the workforce and ensures that rural learners can access a variety of meaningful learning experiences.

- **Identify and address barriers that inhibit access to other program offerings:** While every rural school and community has its own unique opportunities, it also faces a unique set of challenges that can inhibit access to quality career pathways. In Nebraska, course scheduling was identified as a barrier to entry for schools in the rural collaborative initiative. Even with a generous statewide course choice policy, students were struggling to fit both their core academic and CTE coursework in their schedules. To address this barrier, schools in the collaborative coordinated with one another to align their schedules and free up the afternoon block for students to enroll in CTE courses. Identifying and dismantling barriers — which, in addition to course scheduling, may include transportation or broadband access — enables state and local policymakers to connect learners with career pathways in their area.

- **Use virtual learning models to provide foundational content and free up instructional capacity for more intensive coursework:** Thinking of digital learning as a way to augment, not replace, robust career pathways is important. Implemented thoughtfully, digital courses can fill critical gaps in career pathways and provide introductory content to career explorers. However, learners must still have access to work-based learning, leadership opportunities, industry experts, and other meaningful experiences that enrich the career pathway and help learners prepare for the real world. Expanding foundational digital learning opportunities can free up much-needed capacity to focus on meaningful experiences later in a student's career pathway.

- **Never sacrifice quality for access:** When it comes to rural career pathways, taking shortcuts and making sacrifices — such as teacher quality, facilities and equipment, or work-based learning opportunities — can be tempting to diversify the number of programs offered. Not to mention, instructional staff availability, student demand and even legacy can be stronger drivers of course offerings than industry need, regional sector strategies or labor market data. When designing a rural strategy, state and local leaders should prioritize quality above all else and find a way to scale and expand programs without sacrificing the experiences that make them meaningful.

Having access to diverse career pathways is paramount to ensure that rural learners can discover and be prepared for success in their future careers. Expanding access to diverse options, particularly for rural learners, helps expose learners to different career options early on and ensures that they can access enriching learning experiences no matter where they live. States can expand access to diverse, high-quality career pathways in rural areas through formal collaboratives and partnerships and by leveraging technology to get more mileage out of existing equipment, instructional staff and other resources.

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[1] Workforce Innovation and Opportunity Act. (2014). Retrieved from https://www.congress.gov/113/bills/hr803/BILLS-113hr803enr.pdf
[2] Wilson, B., & DeRenzis, B. (2015). Realizing innovation and opportunity in WIOA: A playbook for creating effective state plans. Retrieved from http://www.nationalskillscoalition.org/resources/publications/file/2015-09-WIOA-playbook-for-creating-effective-state-plans.pdf
[3] U.S. Department of Education. Small, rural school achievement program. Updated Feb. 2017. Retrieved from https://www2.ed.gov/programs/reapsrsa/index.html
[4] U.S. Department of Education. Rural and low-income school program. Updated April 2017. Retrieved from https://www2.ed.gov/programs/reaprlisp/index.html
[5] Rhode Island Department of Education. (2016). Advanced coursework network catalog, school year 2016-17. Retrieved from http://www.ride.ri.gov/Portals/0/Uploads/Documents/Advanced%20Coursework/CourseCatalogs/--Masters/2016%20Course%20Catalog%20MASTER%20by%20CREDIT%20TYPE.pdf
[6] Sec. 131(c)(1); Sec. 132(c)(1)
[7] U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD). Local education agency universe survey (table A.1.a.-1). Retrieved from https://nces.ed.gov/surveys/ruraled/tables/A.1.a.-1_2.asp?refer=
[8] Nebraska Department of Education. (2017). Enrollment option program frequently asked questions. Retrieved from https://www.education.ne.gov/fos/OrgServices/EnrollmentOption/Downloads/FAQ_June2017.pdf
[9] U.S. Department of Education, National Center for Education Statistics. Search for public school districts. Retrieved from https://nces.ed.gov/ccd/districtsearch/
[10] Oklahoma Department of Career and Technology Education. Technology centers. Retrieved from https://www.okcareertech.org/technology-centers
[11] Advance CTE. (2017). Delivering career technical education. Retrieved from https://cte.careertech.org/sites/default/files/CTE-Delivery.pdf
[12] North Dakota Department of Career and Technical Education. (2017). Area and technology centers. Retrieved from https://www.nd.gov/cte/links/docs/Area_Center_Members.pdf
[13] North Dakota Department of Education. (2016). ND Department of Career and Technical Education cooperative arrangements ITV 2015-16. Retrieved from https://www.nd.gov/cte/programs/itvonlinecourses/docs/15-16ITV.pdf
[14] U.S. Department of Education, National Center for Education Statistics. (2015). Distance education in postsecondary institutions. Retrieved from https://nces.ed.gov/programs/coe/indicator_sta.asp
[15] https://legislature.idaho.gov/statutesrules/idstat/title33/t33ch55/sect33-5502/
[16] Idaho Department of Labor. Occupational & industry projections. Retrieved from http://lmi.idaho.gov/projections
[17] Idaho Digital Learning. Course sequence roadmaps. Retrieved from https://www.idahodigitallearning.org/courses/roadmaps/
[18] Advance CTE. (2017). Summit Technology Academy. Retrieved from https://cte.careertech.org/sites/default/files/2017ExcellenceActionSummitTechnologyAcademy_IT_FINAL_0.pdf
[19] Idaho Digital Learning. Advanced opportunities. Retrieved from https://www.idahodigitallearning.org/students-parents/advanced-opportunities/
[20] Education Commission of the States and College Board. (2017). Advanced Placement access and success: How do rural schools stack up? Retrieved from https://www.ecs.org/ec-content/uploads/Advanced-Placement-Access-and-Success-How-do-rural-schools-stack-up.pdf