

Capstone Report

How Strong Career and Technical Education Programs Help Build Rural Workforce

Anne Hosea

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Tennessee Certified Economic Developer (TCED)

1) Introduction:

For many years, the workforce in the United States has been seen as an issue. Employers have voiced concerns over a lack of soft skills in individuals new to the workforce. With the rise of advanced manufacturing, more and more “entry level” jobs require some type of technical training. In the 1990’s and early 2000’s, Career and Technical Education (CTE) was primarily ¹vocational, but with growing technology the manufacturing world is no longer considered dirty. Jobs that were once seen as undesirable are now being recognized as highly skilled positions that can provide a good income and opportunity for growth in the future. In the past five years the state of Tennessee has gone through a major transitional period to focus on ensuring that everyone has a sustainable career in every field imaginable. Where once students had the choice of college path or vocational path now students have 23 different pathways they choose from. Each pathway gives them very specific classes to prepare them for the next level, and every student picks a path from health science to advanced manufacturing.

Now, with the impact of COVID-19, there is the question that asks if special unemployment benefits have negatively impacted the workforce. In the last year and a half, Tennessee has gone from crucial opportunities where employers were always looking for the next good worker to be hired, to critical opportunities where employers need workers more than the employee needs the job. Companies are making drastic changes to policies in order to encourage their employees not only to stay but to bring in new employees. This is being

¹ <https://nces.ed.gov/pubs/web/95024-2.asp>

accomplished by offering current and future employees increased benefits, better schedules, and more time off than what has been typical in a manufacturing environment.

Starting in the 1960's, there was a focus on going to a traditional four-year university; however, in recent years that focus has lessened. Students are better educated on all their options and the different career pathways they can take. People are seeing that a traditional four-year college is not for everyone and that some students thrive in an 18-month program and can come out making good money with little to no debt. This is being accomplished through Career and Technological Education (CTE) Programs. CTE programs are designed to educate students on a variety of career options, give them clear pathway classes to earn certifications and degrees, and to partner with businesses for on-the-job training². Coffee County Central High School and other rural communities have created successful programs that further explore the workforce.

2) Overview of Education in Coffee County and Project Description

To set the stage for understanding Coffee County High School's successful work-based learning program, the following is a brief overview of the education system in Coffee County. There are three public school systems in the county: Tullahoma City Schools which is K-12 system, Manchester City Schools which serves grades K-8, and Coffee County Schools which is also a K-12 system and serves Manchester City Schools students beginning the ninth grade. CTE education begins in our elementary and middle schools through various avenues, with the main area of focus being science, technology, engineering, and math (STEM) education. Additionally,

² https://www.acteonline.org/wp-content/uploads/2021/02/CTE_Today-Feb2021.pdf

Coffee County Schools are reaching younger students with several different programs. Richard Skipper, the Coffee County Schools CTE Director, recently provided an overview of these efforts.

New for the 2021/2022 school year, the Major Clarity Career Platform will be implemented for fifth graders in the six elementary schools. The platform will introduce students to career terminology and career pathways through a game type atmosphere. Mr. Skipper intends to extend this program into even the younger classes in the future as budget allows.

Moreover, Coffee County Middle School will implement a six-week career exploration program for each student. The career exploration program will run through the Major Clarity Career platform and each grade level has a specific focus that builds on previous career education. The program will have sixth graders focus on learning style, seventh graders will take a career assessment, eighth graders will start to explore secondary education options and learn about which may be the best for their particular learning style and career aptitude. Another initiative is that Coffee County CTE hosts an annual career fair for seventh, eighth and ninth graders from both Manchester City Schools and Coffee County Schools featuring representatives for each of the 23 career pathways offered at Coffee County Central High School. Each student chooses three potential career areas to explore, and local professionals present on their careers. This event is held in October which gives the students time to process the event and do more research prior to creating a schedule for the next school year.

Career Pathways in the State of Tennessee begin in the ninth grade. These pathways are defined and funded by Perkins V.³ In July of 2018, President Donald Trump signed the Strengthening Career and Technical Education for the 21st Century Act known as Perkins V into law. This updated the previous Perkins V Act of 2006. Some of the changes in this updated law were changes in accountability, changes to terms such as CTE concentrators, professional development, CTE Participate, work-based learning, programs of study, and quality intermediary. Perkins V also calls for system alignment which asks for middle and high schools, employers, and higher education systems in a state work together to show a plan of how they will run a CTE program to provide students with expertise and understanding in all aspects of a career path. This law provides states and local communities with the opportunity to ensure that high quality CTE implementation is priority and aligns with the state's vision for the next generation of workers. Perkins V provides funding for the Coffee County CTE program and requires students to have a minimum of two courses of concentrated study in one area with a third concentrated course either in the same or any other pathway to graduate.

For students in the Coffee County School System, programs are introduced at the ninth-grade academy known as the Raider Academy. The Raider Academy has a physically separate campus and is home to all ninth graders from Manchester City and Coffee County Systems. The Raider Academy is only able to offer four of the twenty-three pathways that are offered at the high school. Students must begin with level one courses in their chosen pathway and then may progress up to level three courses. Level three courses may lead to the award of a certification.

³ <https://all4ed.org/reports-factsheets/perkins-career-and-technical-education-primer-special-populations/>

Career pathways continue in high school and starting junior year, students at Coffee County Central High School (CCCHS) have the opportunity to start participating in work-based learning programs. There are three options for work-based learning at CCCHS. The first, known as School Based Enterprise, gives junior students who are on track with their career pathways and credits the opportunity to work on the school campus. Students may work in the school bookstore, as an office or library assistant, or in the culinary department. The second work-based learning option is offered to only seniors. Senior students that have room in their schedule and meet all other requirements are permitted to leave campus to work at local businesses for either one or two credit hours per day. The final work-based learning program offered to students at CCCHS is the manufacturing work-based learning program. In 2018, Mr. Skipper saw an opportunity to build a better workforce for Coffee County's manufacturing community. He had visited a community in Georgia with a CTE program that allowed for students to work in local industries. With the knowledge that this could be done and a memory of a conversation he had with a local plant manager, Keith Hayes, Skipper scheduled a meeting, and the beginning of a successful program was underway. Mr. Hayes looking forward envisioned the time was coming that an older generation of workers would soon be retiring and was not impressed with the quality of younger workers being brought in via staffing agencies, leaving a void in his workforce. Mr. Skipper, armed with knowledge that there was a successful program to look towards for best practices, presented Mr. Hayes with the idea to put junior and seniors on the manufacturing pathway to work in an actual factory. Not only would this help students decide if manufacturing was the right career path, but it would also help the manufacturers willing to participate get a leg up on the competition for workforce. It also

allows them to train individuals new to the workforce the way that they want them to be trained reducing the likelihood of a new employee bringing bad habits with them. Both Mr. Hayes and Mr. Skipper dove into researching how to make this work in Coffee County and together they discovered that the requirements to put students to work were not so different than that of the fulltime adult employees.

In fact, they found out there were only three key differences.

1. The size of the machine's students could operate.
2. That students cannot operate a tow motor.
3. The students could only work twenty-seven hours per week.

With this new information, Mr. Hayes saw much value in what could result in training his own workforce before they even graduated high school. Implementing the program took some investment by the manufacturer, however the return on investment (ROI) has been better than either Mr. Skipper or Mr. Hayes predicted. The program begins in July each year with the seniors that have been accepted to the program starting work at VIAM approximately one month prior to school starting. Both the schools and the company have requirements that the students must meet. Qualifications include:

1. Students being on the manufacturing pathway
2. Students having completed the required concentrators
3. Attendance Requirements
4. Students must also be able to pass a drug test and have a complete physical prior to starting work.

During the weeks prior to school starting, many lessons and soft skills are learned. Students have the opportunity to prove they can and will show up on time every day. Students are also introduced to each type of job they will be learning throughout the coming year and are trained on safety precautions within the company. Once school starts, students begin taking classes on top of their work schedule at the company. Quarterly a project is to be completed by each student that helps to build their portfolio. This portfolio includes projects like building a resume, showing accountability by not being late or missing days, reports written about what they have learned, problem-solving abilities, and others. Students in the program leave school for either one or two credit hours of class work. These students work five days a week and typically leave the school at 1:17 pm and arrive at work by 2 pm with their shift ending at 9pm. The students are paid hourly and may earn bonuses for perfect attendance. Within the manufacturing facility, students have their own area on the floor and their own dedicated manager. There are five different jobs available to students and the students rotate through each job as their manager sees fit for them to move. The students that master a certain task quickly may move on or if they come across a job they do not pick up as fast they may spend more time trying to master this particular skill set. Each student also has regularly scheduled check-ins with their teachers, and the teachers help them to work through issues they may have by coming up with suggestions on how to tackle certain obstacles or when to ask for advancement. Some students stay right on track while others have at times moved onto even more in-depth study of a skill they have shown great strength. At the end of the year any student that has successfully completed the program is offered a permanent full-time position with the company. Now in their fifth year of the program, the industry has trained many of

their own employees and has helped many of them through their post-secondary education training at the Tennessee College of Applied Technology either at the satellite facility in Manchester or at the McMinnville campus.

3) CTE in Other Rural Communities

Coffee County is not the only community seeing major benefits from CTE programs similar to Mr. Skippers.⁴ In Iowa, Deere & Company are also growing local talent. They began an apprenticeship program in 2019 that has grown to currently have thirty-six participants from two school districts this year. The program starts with education of what the industry actually does, and they even host a parent night at the plant each year to help the parents envision what a career for their child might look like. Upon high school graduation these students can earn a welding certificate through this apprenticeship program that they can either apply to an associate degree or other certifications. Deere is currently adding apprenticeships for software engineers to grow their talent pool. The community and state are just as much a part of this program by investing in what is called Future Ready Iowa which supports multiple grants and scholarships.

⁵Another successful CTE program is at Desert View High School in Tucson Arizona, where they have developed a Precision Machining Program. Students in this program have the opportunity to earn nationally recognized certifications in NIMS, Solid Works 3-D Design and MasterCAM. This program offers academic support and paid internships. Local businesses and

⁴ https://www.industryweek.com/talent/article/21167804/john-deere-and-iowa-are-growing-local-talent?utm_source=dlvr.it&utm_medium=linkedin

⁵ <https://www.expectmorearizona.org/excellence-tour/stories/the-precision-machining-program-desert-view-hs/>

industries are committed to helping build soft skills in these students. In the last two years, advance level graduating seniors in the program have received scholarships and paid internship packages to Pima Community College where 53 have received some type of industry certification.

⁶Oak Ridge High School in Tennessee has an amazing Aviation and Aerospace Magnet Program that is getting quite a lot of attention. This program is teaching students to build the body of an airplane, rocket science, each student builds their own working drone. These students can earn a variety of industry certifications as they learn new technology on high end simulators. The program has more applicants than they can even accommodate. They have received several grants to help with their project and the community is super excited about the possibilities of this program.

4)Applicable TCED Coursework

There were many sessions throughout the TCED courses that emphasized the importance of our workforce, the training they receive and how important the upcoming generations will be. The discussions throughout these classes focused on the new ways of life and technologies. The classes especially fixate on how Gen Z has abilities that previous generations did not have thanks to an advanced culture. Technology and Gen Z's exposure to it have changed the ways of learning a skill in today's world. Mr. Skipper pointed this out about his CTE students as well stating that the employers were impressed with the energy, effort, and efficiency of the students walking into their industries. Some even stated that these students

⁶ https://oakridgehs.ocps.net/academics/magnet_programs/aviation_magnet

were completing more in their 27 hours of work than the full-time employees putting in a full 40 hours. Through the courses in this program, this had been reiterated over and over. In Workforce Development Sharon Younger spoke about bridging the gap between businesses and education. With a good CTE program and industries willing to let students of the programs, schools can bridge that gap faster and more efficiently. These programs also open a way for better training opportunities for the industries. Also, in the course Sheriff Paul Thomas of Gibson County spoke. It was inspiring to hear his story of how he created and implemented his program for his inmates and the positive effect it had on his community. If he can accomplish this success with incarcerated men and women, with the right CTE programs in schools, they are able to reach so many students before they choose the wrong path. CTE can provide a way for all students to know they have so many options in life. With the right training and knowledge, CTE directors have more motivation now than ever before to try to keep the students trained by programs in their local areas. In the past decade, Tennessee has seen the shift from finding the job and living there, to finding the place and then a job. Programs like the one in Coffee County schools have students training, being offered a job and secondary education paid for all in the same community. It is important that schools not only have impactful CTE programs but that they must market them sufficiently to reach all potential employees, and two that it is a great opportunity to help students that are in the on-the-job training see they have the ability to earn a skilled trade that enables them to make a decent living wage. In Basic, the Education and Workforce Development session, Sharon Younger showed us how to find labor shed and the inflow and outflow of the workforce through commuting patterns. Career Technical Paths help us in keeping locally trained workforce in

their own region. Hidden Labor Reserves were also discussed. With the Tennessee Promise and Tennessee Reconnect programs educational facilities can work with job centers and Career and Technical Colleges to reach these reserves with training opportunities like never before. These two programs have given the CTE Directors and counselors the ability to encourage student to follow through with post-secondary education that they would never have had the ability to attend before the previous 5 years.

5) Conclusion

Ultimately, it has been well proven from early childhood education to the top colleges and technical institutions across the United States that CTE programs of all kinds and nature are having huge impacts on the generations at hand. With great guidance and care from each state to all the directors, teachers, principals, economic development agencies, job centers and even sheriffs the days of an untrained workforce for this country are on the decline. With a community that cares and people willing to spend their time and efforts on CTE programs the students of today and the ones to follow can have hope for a better future.

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