

# Techniques

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## Engaging Students Through CTE

- CTSOs Engage Students
- Powerful Assignments Matter in CTE Classes
- Improve Student Attendance in 21 Days
- ACTE's CareerTech VISION 2018: Everything Was Bigger in Texas!

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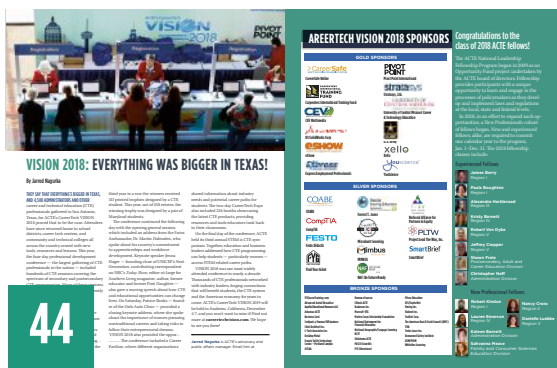
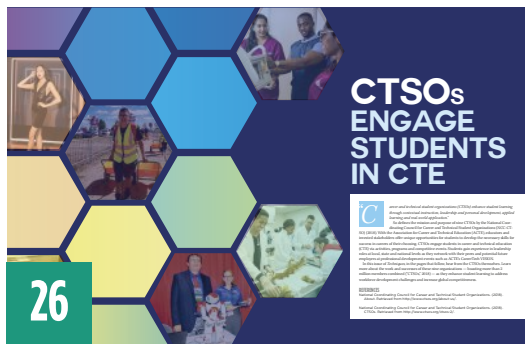


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## FIVE GREAT REASONS TO ATTEND ACTE'S CAREERTECH VISION

I have been an ACTE member for 15 years but, for the first six or seven years, I never considered going to the national gathering. As the convention became CareerTech VISION, I started attending when I could. And, now, every time I leave I say to myself, "I cannot wait until the next gathering." Here, in no particular order, are my top five reasons for attending ACTE's CareerTech VISION.

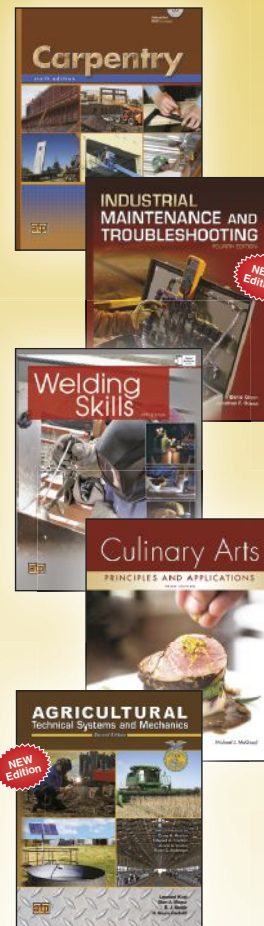
1. I was fortunate enough to be able to present with a colleague at VISION 2018. The call came out for submission of proposals. After a brief discussion with my fellow administrators, we struck on a topic that was near and dear to us and had been the subject of much professional development at our school. I wrote a proposal and was thrilled when we were chosen to present. **We are not experts in integrated academics, but as practitioners, our point of view is valid.** The upshot here is this: Don't be intimidated about presenting. If you are passionate about some aspect of career and technical education (CTE), write a proposal and submit.
2. Recharging your batteries is essential for all professionals. As a principal in a CTE Center, it is very easy to forget that **I am connected to a very wide world of CTE principals.** Meeting and interacting with them at VISION is a way for me to draw energy from their passions and maybe ignite some CTE passion in another administrator.
3. Even more than connecting with other administrators, **meeting professionals in other roles helps me broaden my own view of CTE.** As an administrator I am constantly conducting formal observations, running a school day-to-day and leading professional development events. It is very easy to slip into the role of "leader." Having honest interactions with people from other schools from across the country allows me to step out of the leader role and into the fellow practitioner role. It can be liberating, even if it only lasts a few days.
4. Certainly, the sessions we choose to attend can help us in our daily practice and to inspire us to do great things. However, the most meaningful inspirations I have attained came from conversations in the hallways, over shared meals, or in after-session social interactions. **This is, I believe, the secret sauce of CTE. We all come to the table with different experiences.**
5. The leadership at ACTE is inspiring. Getting to meet the professionals who live and breathe CTE on the national level provides a wonderful sense of connectedness. It is very easy, within the confines of district or state, to forget that we are part of a large family of educators who leverage CTE to encourage lifelong learning. **Understanding how the work of ACTE informs our work in the classroom is an essential part of improving what we do as CTE practitioners.** The hard work that takes place all year long, in policy meetings, in lobbying efforts, in capacity building, becomes manifest when you shake hands with the educators at ACTE who are leading these efforts.

I hope to see you next year, at ACTE's CareerTech VISION 2019, and you can write your own top five.

Sincerely,

Mitchell Shron  
Principal, Career and Technical Institute  
Dutchess BOCES

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# ENGAGING STUDENTS THROUGH CTE



## I AM SO EXCITED FOR THIS ISSUE OF *TECHNIQUES*. I HAVE SPENT 30 YEARS OF MY

life teaching students and advising a career and technical student organization (CTSO); this issue is full of success stories from nine amazing CTSOs and excellent articles to help me be a better instructor. I love learning, I love adapting, and I love getting new ideas to make me a better teacher and a better adviser for my students.

CTSOs enhance student learning while preparing students for bright futures. CTSOs connect career and technical education (CTE) classroom learning to higher level applications. I love watching my students engage in leadership activities, service, advocacy and personal development. I love watching them grow and move through postsecondary training to become strong community and business leaders. And I feel strongly that students' experiences in participation with a CTSO aid them along those paths, which, for many, lead back to the classroom. My niece chose to teach family and consumer sciences because of her experience in the Family, Career and Community Leaders of America CTSO.

This issue of *Techniques* presents an exciting opportunity to investigate each CTSO and learn more about what they are doing to make a difference in students' lives. Articles found within address

the importance of powerful, project-based learning assignments; highlight a new culinary pre-apprenticeship program; offer classroom management ideas; and look back on the success of ACTE's CareerTech VISION 2018.

What a great opportunity for each of us to reflect on what we do and how we do it. Are we as effective as we can be? Are we looking for new and innovative opportunities for our students? Are we helping them develop the critical thinking, creative and collaborative skills they need to be successful in their lives? I hope, as you read through this issue, you can find new ways to prepare your students and new ideas to enrich and enhance your teaching.

As CTE instructors we need to provide our students with the opportunities to lead, learn and grow. If you aren't actively involved in a CTSO as an adviser I would challenge you to start a chapter if there isn't one, to mentor students, help with competitions, sponsor travel for a student, or to be a helping hand. The rewards are amazing and the relationships you develop will be incomparable. Be bold; try something new!

Becky Cox

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## Indiana ACTE Unifies with National ACTE

ACTE congratulates Indiana on voting to formally unify with the national ACTE. Spearheaded by the leadership of Indiana ACTE President Shelley Rust, the Indiana ACTE Board of Directors, Indiana ACTE Executive Director Linda Baumgart, ACTE Administration Division VP Patrick Biggerstaff and ACTE Engineering & Technology Education Division VP Jay Davis, the state association is now officially unified with the national body. Following the unification, Indiana ACTE members will benefit from both their state-based association and their membership in a national professional association.



## Ohio Initiative Increases Internship Opportunities in Dietetics

As the result of a new partnership between the University of Dayton and Premier Health — which operates three hospitals and two major medical centers in the Dayton, Ohio, area — graduate students in dietetics will have three times as many opportunities for internships in the field.

"With our new master's in dietetics and nutrition and our partnership with Premier's dietetic internship program,

students can choose UD and Premier Health as a destination to complete all the requirements for the RDN credentialing exam," stated Jennifer Dalton, director of the didactic program in dietetics.

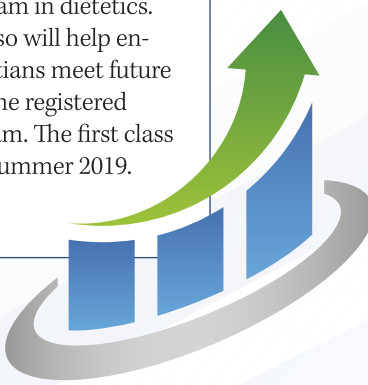
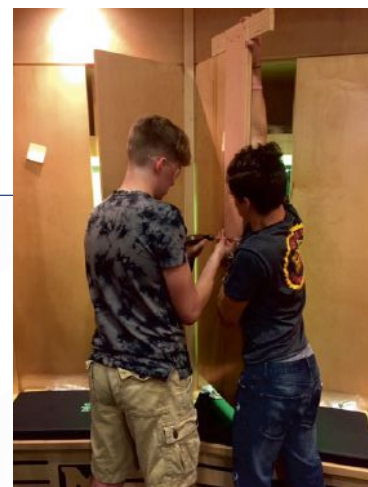
UD stated that this also will help entry-level registered dietitians meet future requirements to sit for the registered dietitian nutritionist exam. The first class is expected to begin in summer 2019.

## High School Students Renovate Men's Locker Room

In Huntington, West Virginia, the Marshall University men's basketball locker room recently underwent renovations. But what's more: this project — undertaken as a collaborative effort among electrical, carpentry and building technology programs at Cabell County Career Technology Center (CTC) — offered students a unique opportunity to gain real-world experience.

"Beyond the important lessons learned on such a high-profile job, students will forever be able to look at the Cam Henderson Center as something they helped create," said Charles Vaughn, electrical instructor.

"Not many [high school students] get to do this, especially us ninth-graders," said D.J. Walker, a student in the building technology program at Cabell County Career Technology Center. "To get to show real skill, I've never done anything this big."







## New Jersey Career Academies Graduates Live Their Dreams

From the Performing Arts Academy (PAA) of the Ocean County Vocational Technical School District (OCVTS), graduates like Connor Sheridan go on to live their dreams. With pride and gratitude, his mother Wendy Sheridan wrote, “[This winter]

my son, a 2011 graduate, hit the road with a national touring production of ‘Carol of the King, the Irish Dance Christmas Spectacular’. This is his third tour with this production company, but this time, he is playing the lead [role of King Solomon].

“The [Sheridan family] has always counted PAA as a big part of Connor’s Irish dance success. Because PAA provided an environment where a six-foot-tall, 15-year-old boy could decide to start learning Irish dance and be fully embraced, supported and encouraged as he took his first awkward steps and practiced at every opportunity in the hallway or the classroom.

“Because PAA provided an atmosphere in its education that encouraged him and all the students to strive to be the best ‘you’ you could be and to pursue your passion. So, again the Sheridans wish to say THANK YOU to PAA for this, and SO many other life experiences, for which we are forever enriched and grateful. OCVTS is a wonderful, unique educational experience.”



## Do you have news?

CTE in the News is a new monthly column in *Techniques* to highlight the buzz about career and technical education. If you have something exceptional (or exceptionally cool!) to share about your program, school, school district or organization, send it to [techniques@acteononline.org](mailto:techniques@acteononline.org).



# GOING “GRADELESS” IN A CTE CLASSROOM

By Marc W. Hunt

## ONE OF OUR GREATEST RESPONSIBILITIES AS TEACHERS IS TO MOTIVATE OUR STUDENTS AND, OVER TIME,

I have begun to notice that traditional grades are less and less important to them. Students do not seem to be as motivated by traditional grades and rubrics as many of us (not saying I was either) were when we were in school. The noticeable trend for many students is to review the rubric and guidelines, and then only complete what is needed to get a “passing” or “okay” grade. In other words, they might think, “What is the minimum I need to complete in order to not fail this assignment?” Traditional grading has become more of a frustration for the teacher than a measurement of growth for the student. A drastic change is needed.

## Breaking the Cycle

As I began to research new teaching styles, I came across two books: *Assessment 3.0* by Mark Barnes and *Hacking Assessment: 10 Ways to Go Gradeless in a Traditional Grades School* by Starr Sackstein. In these books, Barnes and Sackstein discussed and outlined the concept

of a gradeless classroom and illustrated ways to achieve this in practice. The idea of throwing out my gradebook and becoming gradeless was intriguing, exciting and also horrifying, all at the same time.

The gradeless classroom is based on an endless feedback loop between the teacher and student known as the Summarize, Explain, Redirect and Resubmit (SE2R) model. I knew the move to a gradeless classroom could not happen overnight, so I piloted the model with my video production & recording arts students in the fourth quarter of the 2017–18 school year, focusing on their final project only.

## Making Change

Students develop their final projects based on Google’s concept of the genius hour (**Editor’s note:** Learn more about the genius hour in “20% Time in the CTE Classroom” by Sean Crevier, which appeared in the September 2018 issue of *Techniques*.), where students have complete choice over their final project; they are also required to identify their learning outcomes, how they will

be challenged, and how their learning applies to standards set by the International Society for Technology in Education (ISTE). Students composed weekly learning reflections where they provided evidence of how they met ISTE standards and tracked the progress of their project. The students also participated in grading conferences during which we would review their work together and decide, together, what number(s) were appropriate for the progress report and report card.

The learning became relevant for the student. The student could discuss how they had grown and could honestly reflect on their effort by looking at the work they completed. Giving students the choice over their final product increased motivation. The students submitted their projects in progress periodically and, in turn, I would provide individual feedback with suggestions for revisions. The students would then make those revisions, or not, and be accountable for their own effort, which was shown in their projects. Students re-



“The learning became relevant for the student.”

sponded well to the change and seemed to be more motivated. The pilot was a success but it also needed to be polished and organized if I was going to go totally gradeless for the 2018–19 school year. My plans for the summer break entailed creating a better gradeless system.

### Going Gradeless

The classroom underwent physical changes during the summer as well, with new furniture and fresh paint. The walls were painted soft blue and green and new seating designs were implemented. The classroom had a more creative feel, more like a studio space, which we thought would help the introduction of a new gradeless system. The seating configuration now includes a standing desk area with stools, a soft seating area for mobile devices and student meetings, and seated areas for collaboration among students with iMac workstations. All surfaces are made of whiteboard so students can write their ideas down as they work. The walls are decorated with posters of all kinds: SE2R model, ISTE standards, mindsets, music (Ramones, The Clash), and one print by Banksy. With the classroom ready, the new gradeless system was, too.

All materials, resources and assignments related to the curriculum are contained within Schoology, a learning management system. The course now includes only four categories for assessment, which include:

- Projects (75 percent)
- Assessments (10 percent )
- Professionalism (10 percent)
- Career Communications (5 percent)

Student work is marked as submitted when they upload their materials to either Schoology or the class server. A discussion thread created for each student contains the yearlong SE2R Portfolio (narrative) between the two of us. I provide the student with individual feedback related to each assignment and include redirection (suggested revisions)

as needed. The student then completes the revisions and responds to me, in our discussion thread, when their materials are ready to be reviewed again. The revision process might go through multiple rounds before the student achieves mastery for the assignment. This process would be applied for each assignment within each category of the course.



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## Engaging Students Through Choice

Giving students project choices can help motivate them and individualize instruction according to their interests. Students were provided with four video-based and four audio-based projects at the beginning of the year and asked to complete three of each by the end of the first progress report period. Pedagogically I feel that the students should have a basic understanding of both video and audio production, but they will be given more choice as the year progresses to follow their individual interests.

For example, if the student is more passionate about video, they will spend more class time producing video while still having developed a basic understanding of a simple audio production application. At the end of the term's first five weeks,

each student and I then met individually to review all of their work (evidence) and dialog within the SE2R Portfolio (narrative). Together, as we assigned a number to each of the four categories, I could see how the student grew. The students felt empowered as they could also communicate their learning and areas of potential growth.

Though there are some growing pains associated with moving into a gradeless classroom, my students seem more motivated. Students arrive to class and begin working and discussing their projects with each other. My students are taking more chances and, many times, are teaching each other new skills they have acquired with the production equipment.



A gradeless classroom has the potential to motivate students and prepare them for careers. ■

**Marc Hunt** is in his 12th year teaching a CTE course focused on video production & recording arts at the Harkness Career Center (Erie 1 BOCES). Hunt is an adjunct professor at local colleges, a freelance engineer/producer, a certified Avid Pro Tools Instructor, and a member of the Buffalo Music Hall of Fame (2012). Email him at [mhunt@e1b.org](mailto:mhunt@e1b.org).

AN INITIATIVE OF ACTE



# CAREER AND TECHNICAL STUDENT ORGANIZATIONS

By Catherine Imperatore

## CAREER AND TECHNICAL STUDENT ORGANIZATIONS (CTSOs) ARE VITAL TO THE DELIVERY OF HIGH-QUALITY

CTE programs of study. For this reason, CTSOs are one of ACTE's 12 elements of high-quality CTE, within the *Quality CTE Program of Study Framework*.

The CTSO element of ACTE's quality framework includes eight criteria that describe the characteristics of student organizations for individuals enrolled in CTE programs, the activities in which these organizations engage as an integral part of the instructional program, and the delivery and availability of CTSO opportunities for student skill and leadership development. The criteria listed below are from the 2018 version of the *ACTE Quality CTE Program of Study Framework*.

## Criteria for Quality CTSOs

- a. The organization is an integral, intra-curricular part of the program of study, available to every student at some point during the program of study.

A high-quality program of study must provide students with access to a relevant student organization at some point during the program of study. The CTSO can be available during middle school, high school and/or postsecondary education: whenever participation in the organization would be most appropriate, based on student needs and program structure. No particular student

organizations are cited in Perkins V legislation, but the importance of intra-curricular CTSOs is highlighted by the inclusion of CTSOs as a permissible use of funds under state leadership activities and as an option within the local required uses of funds section.

Programs of study should work to ensure access and remove barriers to CTSO participation for all students, including students from special populations. Educators and administrators must consider how to overcome financial, transportation and logistical issues that impact the ability of individuals to engage in the organization. Criteria in the Access and Equity and the Student Career



Development elements of ACTE's quality framework also address student access to CTSOs.

**b.** The organization is aligned with relevant national, state and/or local standards.

**c.** Organization activities develop and reinforce relevant technical, academic and employability knowledge and skills.

Local CTSOs should align their structure and activities with relevant standards, including curriculum standards for the program of study. Other relevant standards include those developed by a national or state unit that pertain to how a local chapter is organized, its objectives and the opportunities provided to students. For instance, national organizations often have technical standards for their competitive events that describe the skills and knowledge students must develop to perform creditably in each contest area.

Through this alignment to standards and by judiciously choosing activities in which to participate, educators can ensure that their student organizations develop individuals' technical, academic and employability skills.

**d.** The organization provides opportunities for students to interact with business professionals.

**e.** The organization provides opportunities for students to participate in relevant competitive events.

**f.** The organization provides opportunities for students to participate in relevant community and school service activities.

**g.** The organization provides opportunities for students to participate in leadership development activities.

Criteria d.–g. list the types of opportunities that CTSOs provide to students, including competitive events, service activities, leadership development, and engagement with business and industry leaders. The goal of these activities is to develop technical,

academic and employability skills through interaction with each other, business professionals and members of the community. These activities do not have to be mutually exclusive; for instance, business mentors often help CTSO teams prepare for competition and judge competitive events.

In addition to these criteria, a criterion within the Business and Community Partnerships element describes how business and community representatives can support programs of study by participating in CTSOs.

**h.** The organization is supervised by CTE staff with clearly defined roles.

For a CTSO to provide high-quality opportunities, it must be led by a qualified, designated educator or another staff member. This individual should have a clear role for which they receive recognition and support from administrators, including professional development and program resources, in order to deliver a meaningful CTSO experience. Criteria within the Prepared and Effective Program Staff element are also relevant to assessing a program's level of support for CTSO advisers.

### Success Strategy: Incentivizing CTSO Engagement

The School District of Manatee County in Florida has embraced CTSOs as integral to its CTE programs, actively supporting advisers and incentivizing activities to the point that 100 percent of its programs have an active CTSO chapter. CTSO participation in the district begins early, in fifth grade, and these opportunities continue and multiply throughout middle and high school.

Advisers are encouraged to maximize their CTSO participation through the district's Implementation Portfolio. This rubric assigns points to each of a number of activities, including recruitment and advocacy efforts; participation in and awards won at competitive events; community service projects; and recognition of advisers by the state or national organization. The more points that advisers accrue, the more funding is awarded at the end of each school

year. Money is also available to start new chapters, compensate advisers for out-of-school activities, and assist students to cover the costs of participation, including scholarships sponsored by business and community partners.

These levers have contributed to Manatee's high levels of CTSO engagement, record-breaking success in competitive events and large number of state and national officers.

### Learn More and Assess Your Programs

To grow and maintain quality student organizations, practitioners can turn to ACTE's High-quality CTE Tools online library. Resources within the CTSO section address the various types of CTSO activities and their impact on students, member recruitment, and access and equity for students from underrepresented or special populations. The library also includes adviser guides and toolkits produced by a number of student organizations.

Practitioners can also use the *Quality CTE Program of Study Framework Self-evaluation Instrument* to assess a single program, or multiple programs across a district or institution, in relation to the 12 elements of high-quality CTE. The rubric can be completed on paper or online, where users can receive automatically calculated scores, save and print their results, and connect to the online library for areas identified as needing improvement. ■

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### EXPLORE MORE

High-quality CTE Tools Online Library: [www.acteonline.org/high-quality-CTE-tools](http://www.acteonline.org/high-quality-CTE-tools)

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# LEVERAGING CTE TO CREATE SAFE AND SUPPORTIVE SCHOOL ENVIRONMENTS

By Nicole Cobb & Chaney Mosley

## SUPPORTED BY THE FEDERAL GOVERNMENT, CAREER AND TECHNICAL EDUCATION (CTE) IS AN

essential element of college and career readiness. Across the country, CTE students are being prepared for a multitude of college and career possibilities. And while CTE teachers create authentic learning opportunities we hope will inspire the masses, what we know is that students won't engage or explore career interests if they don't feel comfortable. Though many indicate a school's top priority should be student learning, we argue that the top priority should be student safety. This isn't a novel idea — it's rooted in Maslow's Hierarchy of Needs, which depicts that needs lower on the hierarchy must be fulfilled before students can attend to those higher.

## HOW DO CTE STUDENTS ASSIST IN CREATING AN ENVIRONMENT CONDUCTIVE TO THEIR OWN LEARNING, AND WHY NOW? LET'S START WITH THE WHY.

In December 2015, the Every Student Succeeds Act (ESSA) was signed into law, representing an opportunity for CTE to demonstrate how career-related pro-

grams and activities contribute to overall student success and a chance to share the resources available to other secondary programs. Further, ESSA broadened accountability measures for schools, including the relationship between school climate and student learning.

As schools work to reach achievement targets they must also ensure students are safe and feel supported. When we worked at the central office of Metro Nashville Public Schools (Nicole as the district's executive director of school counseling and Chaney as the director of CTE), we reviewed our school and district school climate survey results and discovered that it was the adults who made decisions most frequently (a phenomenon not unique to our school system).

Rarely are students involved in the process of creating a plan for improving school climate — when they are, input is sought from groups such as the Student Government Association (SGA). However, the number of students involved in CTE in a school is higher, in total, than the number of those involved in SGA. Further, CTE programs elevate student leadership through career and technical student organizations (CTSOs). CTE stu-

dents are experienced and knowledgeable and can play a vital role in creating a safe and supportive school climate.

To enhance the CTE student perspective, we introduced a new way of thinking about local school and district leadership. By elevating student voice on the topics of school safety and student success, we empowered them to be a part of recommendation and decision-making processes. We utilized the Delphi approach to assist in identifying five strategies to improve each of the dimensions of school climate (National School Climate Center, 2017). The Delphi technique is a widely accepted method for collecting data from respondents and is appropriate for building consensus among individuals and across groups (Hsu & Sanford, 2007).

## Step 1 – Brainstorming Sessions

Two separate brainstorming sessions were held to identify an initial list of strategies. One session had an audience of school counselors and teachers and the other session had an audience of CTE students. In each session, participants were provided with information on each dimension of school climate, including the following:



“While CTE teachers create authentic learning opportunities we hope will inspire the masses, what we know is that students won’t engage or explore career interests if they don’t feel comfortable.”

- A description of the dimension
- The list of statements used to evaluate the dimension on the school climate survey
- The most recent average score for the dimension

### Step 2 – Compiling Strategies

The strategies gleaned from the two brainstorming sessions were then combined into one list, resulting in more than 150 strategies for improving each school climate dimension. These strategies were then edited to reduce redundancy, resulting in a list of strategies for each dimension.

### Step 3 – School Climate Task Force

One CTE student from each comprehensive high school in the district was randomly selected from brainstorming session participants to serve as the school climate ambassador for their school. Additionally, one teacher or counselor from each high school was invited to join the task force. Therefore, 12 students and 12 school officials were assembled to create the School Climate Task Force.

### Step 4 – Consensus Building

We used electronic communications to deliver the four iterations of a survey in an effort to reach consensus among the participants. Respondents were asked to rank each possible strategy as we narrowed the number of strategies for each dimension with each subsequent survey. After the first iteration, we had 20–25 strategies, 15 after the second, 10 after the third, and five after the fourth.

### Step 5 – Action Plans

Once the task force work was complete, a report was prepared and shared with district and school leadership. Each school was tasked with creating an action plan to improve school climate, demonstrating how plans aligned with strategies recommended by students and staff.

The result of this approach was a collaborative effort between teachers, counselors and students to help school leaders actualize what was missing in their schools through elevated student voice. Research tells us that the effect of positive school climate contributes to improved academic outcomes among diverse groups of students (Astor, Benbenishty, & Estrada, 2009). Similar to CTE, positive climate contributes to school connectedness, a powerful predictor of adolescent health and academic outcomes (Whitlock, 2006). ■

### EXPLORE MORE

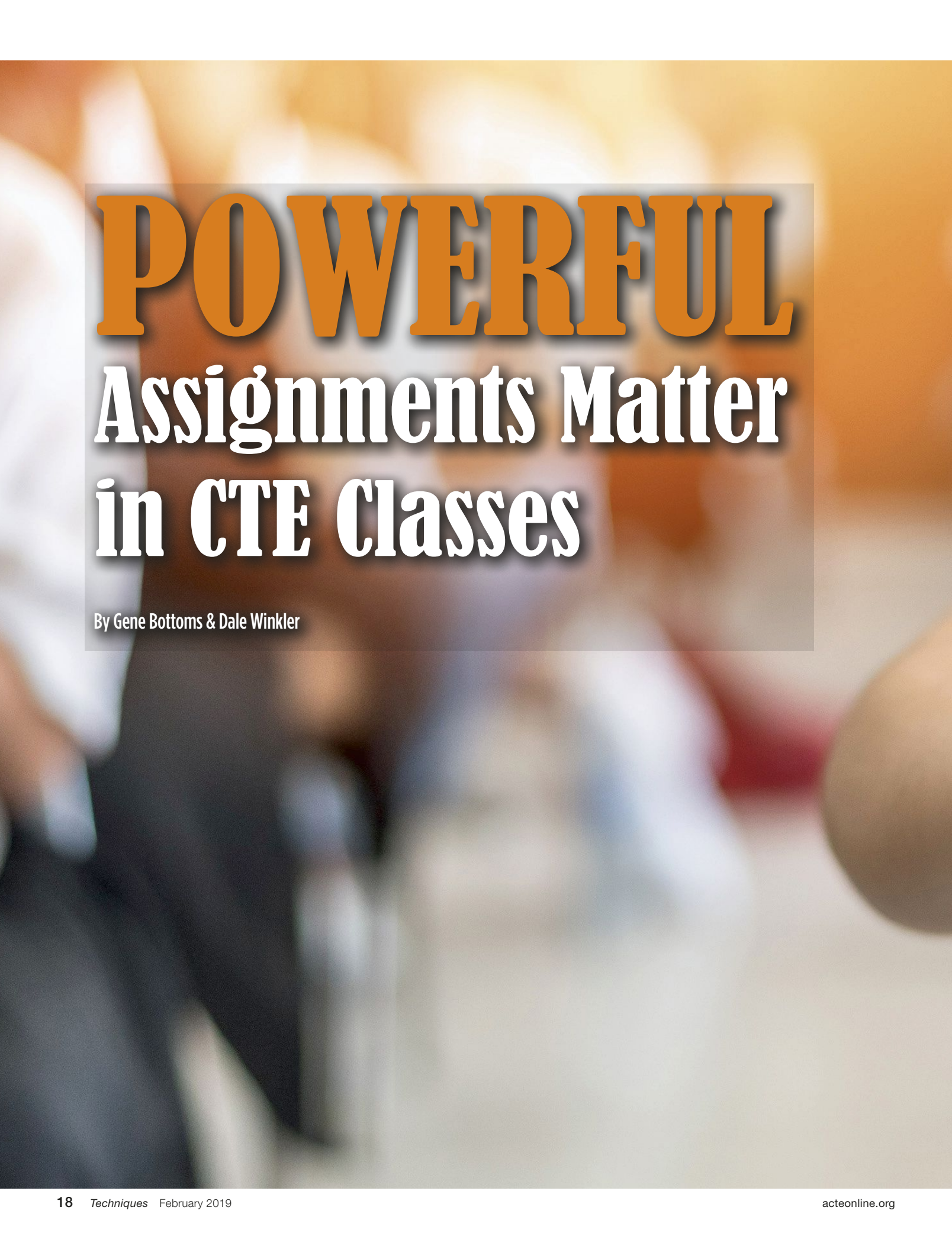
The National Center on Safe Supportive Learning Environments offers a suite of school climate surveys for middle and high school students, instructional staff, non-instructional staff, and parents/guardians that can be downloaded and utilized at no cost.

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## Maslow's hierarchy of needs



# **POWERFUL** Assignments Matter in CTE Classes

By Gene Bottoms & Dale Winkler





For more than 30 years, the Southern Regional Education Board (SREB) has tracked students' high school experiences and academic performance to glean insights into what works. Year after year, two trends have held steady for students taking career and technical education (CTE) courses:

1. Rigorous, powerful assignments make a substantial difference in students' readiness for college and careers.
2. Not enough CTE students have access to such assignments.

Powerful assignments are a game-changer. They engage students in learning experiences that advance their readiness for careers and postsecondary studies. At SREB, we've identified the characteristics of powerful assignments and worked with partner states to develop 36 CTE courses in nine advanced career (AC) programs of study that feature such assignments. AC had its genesis in a 2009 SREB commission report that encouraged states, districts and schools to set a goal for 90 percent of all students to graduate, with at least 80 percent graduating ready for college and careers. Career pathway programs of study built around powerful assignments are essential to achieving this bold goal.

### **What makes powerful assignments powerful?**

Powerful assignments are rigorous, meaningful learning experiences that engage students in a productive struggle and motivate them to persist and solve a problem. Powerful assignments help both students and teachers develop a different mindset about students' ability to learn. When teachers can show students solid evidence of their progress, students make the connection between effort and learning and are motivated to achieve at higher levels.



“Assignments in this class have motivated students to learn and apply mathematical skills and knowledge to solve multi-step, real-world problems in the aerospace field of study. As a result, it deepens their understanding of mathematics and increases their effort in their math class.”

–Advanced career aerospace engineering teacher

Powerful assignments help students see how academic knowledge and skills can help them continue their studies beyond high school and succeed in their career field of choice. Powerful assignments require the collaboration of teachers, school leaders and community partners. Powerful assignments are planned jointly by CTE and academic teachers and allow students to deepen their academic and technical knowledge and skills by applying them to authentic, real-world problems.

Powerful assignments help students acquire the foundational academic, technical, technological, problem-solving and teamwork skills demanded in a rapidly changing, increasingly technology-driven global economy.

### What do powerful assignments look like?

SREB has developed criteria for powerful assignments based on students' reported experiences and achievement in CTE classrooms. These criteria were further refined using data collected and analyzed from SREB's AC curricula showing that students who experienced these powerful assignments criteria in their AC classes performed better on end-of-course exams compared to AC students who did not report having such powerful experiences.

The criteria in Table 1 can help teachers, school leaders and parents determine whether assignments are rigorous enough to advance students' academic, technical and workplace knowledge and skills.

#### Advance Readiness for Researching, Analyzing, Planning and Evaluating

1. Students conduct background research and develop options for completing the assignment drawn from technical documents and highly skilled workers in the field.
2. Students follow a problem-solving process used by experts in the career field.
3. Students reflect, problem-solve, analyze, plan and experience a productive struggle.

#### Address Technical Readiness

4. Students learn new software or advance their skills with software to complete an assignment.
5. Students learn and use work-related technology and technical skills to complete assignments.
6. Students must learn to work as a team to successfully address the project or problem.
7. Students work both independently and as a team to contribute to the learning of others, to learn from other students and teachers, and to learn from adult mentors in the field.

#### Allow Students to Do Self-Reflection about Personal Goals

8. Students explore and reflect on their interests, aptitudes, and educational and career options based on new insights gained from the learning experience.
9. Students keep a journal that documents their work; contains their reflections about the new knowledge and skills they have developed; and identifies gaps to be addressed in their readiness for both career and postsecondary studies.

#### Address Academic and Career Readiness

10. Students apply grade-level literacy, mathematics, and science knowledge and skills to complete the work.
11. Each student prepares a written final report and each team develops a team report based on individual student reports.
12. Students present a final oral report to an authentic audience consisting of business, industry and postsecondary partners who review students' work.

**Table 1: Criteria for Powerful Assignments**



**Powerful assignments advance students' ability to research, analyze, plan and evaluate.**

Powerful assignments are comprehensive and complex and require students to conduct background research to develop the foundation of knowledge needed to complete the assignment. Students study, analyze and reflect on the information they acquire before developing a plan of action for completing the project. At each step of the assignment, students evaluate their progress and make needed adjustments.

Students learn how to conduct background research by reading technical materials and documents, interviewing highly skilled workers in the field and determining what information is most essential to development of a project plan and management processes. Planning and implementation of these assignments requires collaboration between CTE and general education teachers.

**Powerful assignments advance students' technical and technological skills.**

Powerful assignments not only enhance students' skills with familiar hardware,

software and technology tools, but also engage them in learning new skills to complete assignments, both individually and as members of a team. Project management plans require each student to master all the technical and technological standards needed to complete the project.

Powerful assignments require students to work on projects outside of normal school hours, and they often require students to learn how to use a piece of technology or software. The students are more inspired to become proficient with the technical standards.

**Powerful assignments encourage student self-reflection for personal goals.**

A challenging and authentic assignment will engage students in exploring and reflecting on how well their learning experiences fit their interests, aptitudes and career aspirations. Each powerful assignment enables students to gain insights regarding the different career and educational options available to them. Powerful assignments also require students to keep a journal in which they reflect on what they have learned, identify gaps

in their learning and take steps to close these gaps.

**Powerful assignments advance students' academic readiness for postsecondary studies and careers.**

SREB research shows that the most powerful factor in advancing students' readiness for postsecondary studies and careers is the completion of a college-preparatory core of English, math and science courses (Bottoms & Sundell, 2016). The second most powerful factor is rigorous, relevant, real-world assignments.

Powerful assignments require organizational structures and schedules that permit academic and CTE teachers to align their curricula, assessments and assignments.

The sample assignment (on the next page) comes from the first course of SREB's AC Integrated Production Technologies curriculum. Every project in SREB's nine AC pathways engages students in conducting research, designing and developing a project plan, and defending their plan orally and in writing using information derived from documents, expert opinions, textbooks and prior experience.





# Sample Project-Based Assignment

**COURSE 1:** Advanced Technology for Design and Production

**PROJECT TITLE:** Tank Volume Control – Automated Decision-Making

**ESSENTIAL QUESTION:** How can we design an automated system to maintain proper volumes of liquids in tanks prior to shipping and storage?

**PROJECT DESCRIPTION:** You are a *project engineer working for Liquilmax, Inc.* Your company packages liquids for a variety of commercial and industrial firms. Managing tanks in your facility is a precision process. Liquid products are stored in closed tanks prior to shipping to market, and it is critical to ensure that the liquid volumes in those tanks are maintained at specific amounts for safe storage. Currently, a technician is responsible for checking these tank volumes daily. This manual task is time-consuming and not always accurate; technicians sometimes miss a tank check, incorrectly read a tank level, or fail to correctly add/remove liquid to maintain a constant volume. Your supervisor has asked your team to develop a control system that will automatically check the volume level of a tank and add or remove liquid as needed to maintain a constant volume as the *temperature varies*.

After *reading informational texts on process control and thermodynamics* and participating in enabling learning activities to assist you in *designing and building an automated process for maintaining a constant volume of liquid* in an industrial tank, *write an engineering report* in which you describe your product development and analyze the effectiveness of your system.

Conduct needed research and then *develop a project management plan* that will guide your process. Your *team's design brief* must include a labeled sketch, a prototyping strategy, and a method for *collecting and analyzing data*.

*Construct a prototype of your design using sensors and software to control tank volume at various temperatures.* Your program must take into account the type of *liquid and its properties* such as temperature and viscosity. You will test your prototype system and *analyze your test data using statistical methods* to determine if your solution will meet the needs of Liquilmax, Inc.

Develop a *cost benefit analysis* detailing the annual cost of the current technician method versus your Automated Tank Volume Control system. Include a break-even analysis to find the time it will take to see a return on the investment. When you have determined that your design solution is a viable and cost-effective course of action, prepare an engineering report that includes recommendations for the new system, a cost-benefit analysis, and design documentation.

Demonstrate your prototype and present your *engineering report* to an authentic audience. As the audience will be comprised of STEM and non-STEM experts, you must design and explain your results in such a way that is understood by a diverse group. As a representative of Liquilmax, Inc., you are expected to give a professional, *polished presentation* that speaks well for your company.

DISCLAIMER: All AC curriculum and assessment materials are the property of SREB as established under U.S. Copyright Laws. SREB grants access to these materials to states, districts, and schools with active Memoranda of Understanding. Only teachers successfully completing SREB-sponsored training may use these materials in their classrooms. These materials CANNOT be duplicated, shared, or distributed without the express written permission of SREB.

For more information about the SREB Advanced Career (AC) Curriculum, please visit [www.sreb.org/publication/clone-college-or-career-0](http://www.sreb.org/publication/clone-college-or-career-0).



AC projects take several days to complete. Each assignment is a new experience that requires students to own their learning and transfer what they've learned to new contexts — thus deepening their understanding and retention. Each offers students an opportunity to test their interests, aptitudes and aspirations in the context of the field they are studying.

Note how this sample project uses words associated with higher-order thinking and employability skills: “project engineer;” “liquid volume, type of liquid, temperature varies;” “informational text;” “analyze statistical methods and collect data;” “management plan.”

### How do we know powerful assignments work?

SREB conducts biannual student assessments that combine a National Assessment of Educational Progress-like exam in reading, math and science with a student survey that attempts to match students' educational experiences with their academic performance outcomes. Using 2012 assessment data, SREB researchers found that CTE students who reported having frequently experienced rigorous assignments (meeting at least eight of the indicators described in Table 1) were more likely to meet college- and career-readiness benchmarks in reading, math and science (see Table 2). Similar

analyses were conducted on 2014 assessment data, with similar results.

Overall, SREB found that when schools provided powerful assignments in CTE classes, about 15 to 20 percent more CTE students met readiness benchmarks in reading, math and science.

However, SREB also found that too few students perceived that they were experiencing rigorous assignments. Only about 35 percent of the students participating in our 2012 and 2014 surveys and assessments reported frequently experiencing rigorous assignments.

### How can schools offer more powerful assignments?

We encourage school leaders to follow these nine practical steps to support academic and CTE teachers in designing powerful, project-based assignments. As a preliminary step, we recommend seeking district or school support from a project-based design specialist.

1. Develop a project-based learning team that includes employers and representatives from postsecondary institutions who will support academic and CTE teachers in creating assignments.
2. Ask teams to study exemplary project-based assignments using the indicators in Table 1. Charge teams with identifying the benefits of such assignments to employers and students.
3. Brainstorm project ideas for each course and select one that meets the criteria in Table 1 and will spark students' imaginations. Develop an engaging project title.
4. Identify the essential academic, technical, technological, cognitive and employability skills and standards students must master to complete the assignment.
5. Develop an essential question that the selected project will answer. Good questions require background research and engage students in examining new concepts, exploring alternatives and continuously reevaluating their strategies and solutions.
6. Determine the career roles that students must take on to complete the project.
7. Develop a project scenario that outlines actions students must take to master standards and complete the project. Determine the type of final presentation students will make.
8. Determine what evidence will be used to establish whether students have successfully completed the assignment. Focus on evidence of college and career readiness.
9. Identify what supports CTE teachers will need to shift their instructional practices to include project-based learning and enable students to take ownership of their assignments.

|                    | CTE Students with Rigorous Assignments (%)<br>(n= 7,890) | CTE Students without Rigorous Assignments (%)<br>(n= 7,890*) |
|--------------------|--|--|
| <b>Reading</b>     | <b>69</b>  | <b>49</b>  |
| <b>Mathematics</b> | <b>66</b>  | <b>50</b>  |
| <b>Science</b>     | <b>67</b>  | <b>48</b>  |

\* For the group of students who did not experience rigorous assignments, SREB researchers developed a demographic match to ensure that both groups had the same percentage of male students, female students, white students, nonwhite students, students from high socioeconomic status (SES) families, and students from low SES families, using parents' postsecondary education used as a proxy for SES. Source: Southern Regional Education Board, 2013.

**Table 2:** Percentage of Students Meeting College- and Career-readiness Benchmarks, By Their Experience of Rigorous CTE Assignments



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## Summary

Powerful assignments help students grow:

- Intellectually, as they understand and apply academic and technical knowledge to complete assignments and explain and defend their approaches
- Emotionally, as they connect schoolwork to their career interests, sparking their enthusiasm for learning as they recognize the connection between their studies and goals
- Behaviorally, as they model habits of success like better attendance, good study habits, staying on task and striving to do quality work
- Socially, as they work in teams and learn with and from peers

When assignments are authentic and engaging, students want to achieve — whether their goal is to attend a four-year college or university, pursue a two-year associate degree or certifi-

cate, or go right to work. Powerful CTE assignments give students a purpose for their studies. For the traditional college-bound students, powerful assignments allow them to see how their academic knowledge and skills are applied in the real world, and provide opportunities to explore their interests and aptitudes in STEM.

Powerful assignments are important for any student meandering through high school, for it enables them to find a purpose and see a connection between their studies and future career goals. Rigorous assignments like those described in this article empower students with a sense of accomplishment that they can achieve — and also demonstrate for teachers how students do higher-level work when it is expected and when it has meaning in their lives. ■

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 **ACTE STATE LEADERSHIP**

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# CTSOs ENGAGE STUDENTS IN CTE



“C

areer and technical student organizations (CTSOs) enhance student learning through contextual instruction, leadership and personal development, applied learning and real-world application.”

So defines the mission and purpose of nine CTSOs by the National Coordinating Council for Career and Technical Student Organizations (NCC-CTSO) (2018). With the Association for Career and Technical Education (ACTE), educators and invested stakeholders offer unique opportunities for students to develop the necessary skills for success in careers of their choosing. CTSOs engage students in career and technical education (CTE) via activities, programs and competitive events. Students gain experience in leadership roles at local, state and national levels as they network with their peers and potential future employers at professional development events such as ACTE’s CareerTech VISION.

In this issue of *Techniques*, in the pages that follow, hear from the CTSOs themselves. Learn more about the work and successes of these nine organizations — boasting more than 2 million members combined (“CTSOs,” 2018) — as they enhance student learning to address workforce development challenges and increase global competitiveness.

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# Business Professionals of America: Servant Leadership, Service Learning and Inspiring Agents of Change

Leadership is about service.

Robert Greenleaf taught us that good leaders must first become good servants. We are given opportunities every day to extend our hand and help people get and give better.

With more than 45,000 members across the country, Business Professionals of America (BPA) has been committed to developing and empowering rising student leaders to discover their passion and change the world. Service learning is a catalyst that nurtures lifelong civic engagement and development of ethical values, with the hopeful outcome of building stronger communities.

While many people know BPA as a CTSO focused on business, marketing, finance and IT, there is also a strong leadership development component that puts an emphasis on service to others. Some of BPA's greatest successes involve students who have learned skills like public speaking, professionalism and conflict resolution, and have made a great impact in their professional careers. Through servant leadership and service learning to youth philanthropy and community engagement, Business Professionals of America is continually inspired to provide real-world opportunities and experiences to our members.

We frequently ask how we can encourage our students to become leaders, examples for others, and better support and serve one another and our communities. How do we exemplify the human element, establish trust and build relationships? It is about a long-term transformational approach toward life, toward work, and creating positive change.

## Leadership is about making a difference.

BPA students are exposed to opportunities that offer real value to the community while simultaneously providing a vehicle to develop and improve their academic knowledge, 21st century skills, and a broader sense of social conscience and community awareness. Opportunities like the BPA Cares and BPA Torch

Awards programs introduce and offer our students positive ways to make an impact, to encourage interaction with civic organizations, local area business leaders and others in a way that is mutually beneficial.

Business Professionals of America's Torch Awards Program frames and guides an individual BPA member's leadership and service to their chapter and community. This program recognizes outstanding, actively involved members on the local, regional, state and national levels. With nine torches in seven activity divisions, the program promotes leadership; service; cooperation; knowledge; friendship; love, hope, faith; and patriotism.

BPA Cares is a program coordinated at the national level that recognizes local chapters and members who participate in community service through BPA. Chapters that excel in one or more of the BPA Cares programs are recognized nationally through marketing, communications and at the organization's National Leadership Conference.

To promote individual service learning within BPA Cares, the national organization recently established a BPA Cares Service Learning Executive Director Award that recognizes one outstanding BPA student from each division (middle level, secondary and postsecondary) who has gone above and beyond to give back to their community and developed a stronger sense of social responsibility and community awareness through their experience. These students are given a \$250 financial award for their outstanding service.

Through strong community partnerships, the experiences that BPA students have make a lasting impact, not only in and around their local community, but with them as well. Business Professionals of America is about creating leaders and serving as a catalyst for change. With BPA, members learn how to go from student to professional in knowledge, skill and ability. They learn how to become agents of change!



Today's students.

Tomorrow's business professionals.





# DECA Brings the Classroom to Life

DECA prepares emerging leaders and entrepreneurs in marketing, finance, hospitality and management in high schools and colleges. To achieve its mission, DECA's Comprehensive Learning Program integrates into classroom instruction, applies learning, connects to business and promotes competition. An estimated 150,000 members annually participate in DECA's competitive events program, which is aligned to industry-validated national curriculum standards and 21st century skills.

One of more than 60 competitive events, DECA's Learn and Earn Project provides an opportunity for chapter members to develop business, entrepreneurial and marketing knowledge and skills while running a real business venture. DECA chapter members develop a business plan; utilize project management skills; evaluate the planning, implementation and outcome of the project; and develop a written report and presentation.

Led by Diane Waite, DECA at Irondale Senior High School, in New Brighton, Minnesota, earned international champion honors in the Learn and Earn Project at the 2018 International Career Development Conference in Atlanta, Georgia. The DECA chapter's project, Knight Grounds: Coffee for Success, resulted in the development and implementation of a coffee shop within the school's newly redesigned media center. Not only did the coffee shop enhance the experience of students in the media center, but it also gave DECA members hands-on experience managing and marketing a real entrepreneurial enterprise.

In the written report, DECA members and project managers Sarah Chock, Zachary Ford and Grace Haglund, explain how the chapter analyzed the business situation, planned and implemented the project, and then reviewed both learning and earning outcomes to recommend improvements.

In the first semester of implementation, Knight Grounds grossed \$11,300 in sales, exceeding their \$6,200 goal. However, more importantly, this new learning laboratory provided an opportunity for learning 21st century skills in customer service roles.

"At first we thought it was going to be easy, but after we accidentally had one shift left with no people working the shop, we realized we had to buckle down," wrote Dan Foley, one of the student managers, in the report.



The DECA members also analyzed sales trends in relation to their key marketing strategies. "We were able to learn very quickly what worked, and what didn't work, because of the results we saw," said Addie Harsch, a DECA member on the marketing team.

Knight Grounds is one of many exemplars of how DECA chapters implement activities into classroom learning to promote positive student outcomes in preparation for college and careers. Through active engagement, DECA members become academically prepared, community oriented, professionally responsible, experienced leaders.

In a recent nationwide research survey conducted by DECA (2018), in partnership with myOptions, 88 percent of members reported that DECA connected school to the real world for them. Nearly all (97 percent) said that, through their participation in DECA, they gained skills to improve their personal and professional behavior. More than 88 percent of DECA members said that DECA helped prepare them academically for college and a career.

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# EDUCATORS RISING

## Educators Rising to the Challenge

The issue of teacher shortage and retention is one of the most urgent and pressing areas of concern in the education space today, with research showing that high turnover in classrooms has a negative impact on student achievement across the entire school, not just in the classroom experiencing teacher churn (Ronfeldt, Loeb, & Wyckoff, 2013). Here at Educators Rising, we are working to address this problem by creating a systems-level intervention, offering resources and opportunities that integrate directly into the academic programs of “teacher academy” career and technical education courses at the high school level.

Washington High School (WHS), located in Phoenix, Arizona, is seeing sustained success through the Educators Rising program. Daniel Darrow, the teacher leading the program, says his students have blossomed by participating in EdRising’s many opportunities for growth, and they graduate as “well-spoken young adults who are prepared to face the challenges of the teaching profession.”

Washington HS has offered the WHS Education Professionals program for 16 years, with support from Educators Rising, formerly Future Educators of America, over the past eight. The workshops, conference, competitions, and opportunities for networking and professional development provide a real-world experience for students exploring a career in education.

The WHS Education Professionals program, incorporating the Educators Rising curriculum, covers two years; the first year features an internship program, placing students in an elementary school classroom for 35 hours of training. In the second year, students spend the entire year with the same mentor teacher, for more than 90 hours of direct classroom experience. Meanwhile, students prepare for EdRising competitions in areas that range from children’s literature and lesson planning to public speaking and exploring an ethical dilemma, developing postsecondary-level professional teaching skills. WHS boasts 10 national competition champions over the past four years.

WHS students have also attended the Educators Rising conference for the past five years. Darrow described it as “one of the best opportunities that our students receive over the course of the year.” The conference provides networking opportunities for

both students and teacher leaders, in addition to inspirational keynote speakers, practical and informative sessions, and the national competition platform that gives students a chance to practice their skills and demonstrate expertise.

Additionally, the WHS program ensures that students give back to the community, particularly their elementary school partner, through volunteer and fundraising events throughout the school year. “H.E.R.O. (Help, Respect, Encourage Others) Night” at the elementary school sees students running a number of booths teaching students, in grades kindergarten through five, about the value of respecting their peers and the dangers of bullying.

To support athletics programs and health education at the elementary school, WHS Education Professionals students raise money throughout the year for sports equipment that is then donated during “Fitness Night,” an evening that provides another teaching opportunity in the form of fitness instruction. The Arizona state chapter of Educators Rising also hosts an annual “Literacy Lives” event, bringing 3,000 new and gently used books to elementary students across the state over the past three years.

The Educators Rising platform and resources are providing aspiring educators at Washington High School the chance to develop valuable professional and personal skills before ever graduating high school. These students are already active, contributing members of their community, and we look forward to seeing them back in their local schools teaching the next generation of students.

Darrow shared, “EdRising is dramatically accelerating students’ understanding of the teaching profession;” WHS is just one example of how a strong curriculum and support system in high school can lead to future success for aspiring educators as individuals and the teaching profession as a whole.

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## Competing Among the Best: FBLA-PBL Students Learn to Lead

Every summer the best and brightest FBLA-PBL members convene at the National Leadership Conference (NLC) to compete in business-related competitions and chart their future career paths.

In June 2017, Kearah Kraus, Alyssa Kreg and Christina Masny, a team of FBLA students representing Fife High School in Tacoma, Washington, took first place in the Introduction to Business Presentation competition. The 2017 competition encouraged entrants to create a presentation for professional members, local businesses and/or vendors that encouraged the participation in, and benefits of, judging opportunities at FBLA competitions. This competitive event recognizes FBLA members that demonstrate the ability to deliver an effective business presentation while using multimedia presentation technology.

The team's impressive presentation prompted one of the judges to approach the national staff and recommend they consider implementing the ideas outlined in the presentation. The students were invited to meet with members of the national staff, including the competitive events team, to discuss the potential implementation of their ideas. The outcome of this meeting was to offer the students an opportunity to pilot the FBLA competitive event internship program.

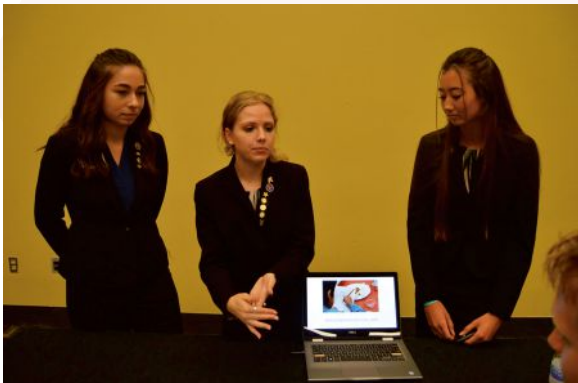
Using their original presentation as the foundation, the interns enhanced their ideas by creating scripts for

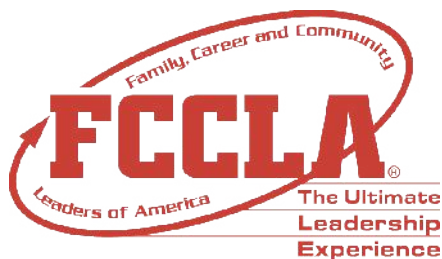
promotional videos, designing media outreach materials and building an information resource center for volunteer judges. Their efforts resulted in a practical application of the skills they were developing in the classroom. They began their work in late fall with a rollout date of late winter, an aggressive deadline that exposed them to the rigors of the workplace.

FBLA-PBL implemented the media outreach materials portion as well as a simplified version of the information resource center. The production of promotional videos and a fully developed resource center will be addressed in the future.

The 2018 FBLA-PBL NLC in Baltimore, Maryland, provided a perfect venue to celebrate the interns' success, nearly a nine percent overall increase in volunteer judge participation. Together, FBLA-PBL along with Kraus, Kreg and Masny discussed continuing their internship into the 2018–19 school year, and we are pleased to report that they agreed!

This student project has had a tremendous impact on our recruitment process. These students have helped propel our efforts forward in a truly impactful way. We learned that, not only do our students have interesting and impressive ideas but, given the opportunity, those ideas can have a meaningful impact on our organization, while providing the students with tangible career-related work experience.





# Featuring Stephanie Zhang



In high school, Stephanie Zhang found an outlet for her drive and creativity with FCCLA. She joined a welcoming community and learned to focus her passion for design and leadership skills to pursue a future in fashion arts. As both a state and national officer, she was able to guide her peers to help them find their own passion for success. Through her family and consumer sciences (FCS) courses and FCCLA, Zhang used the visual arts and design pathway to gain real-world skills and experience while still in high school.

Recently, Zhang earned an exclusive internship through Fashion Institute of Technology (FIT) with the Swedish Fashion Council, including two Swedish fashion brands, and a fashion technology company, Neue Technology. Her project's goal was to research and construct prototypes for wearable technology, integrating Neue's technology to investigate the reality and practicality of wearable tech for everyday use. The dress Zhang and her two teammates designed has multiple functions, keeping in mind the theme of "Self Expression, Self Love" for the Swedish fashion brand, Ann-Sofie Back.

The dress prototype features LED lights that can be controlled by the wearer through a mobile application Neue created, allowing them to change the color, saturation and brightness of the electroluminescent wire — and demonstrating how society can use clothing as a blank canvas to express their individual style through integrated technology.

In addition, the dress monitors how long the garment is worn, through the implanted chip's activity, and this information is shared with the fashion company to provide valuable information on sales. No other information is shared with the company to protect the consumers' privacy, but this prototype creates a new, win-win business model for the business and consumer; the longer the garment is worn, the more information is being shared with the company and the wearer reaps benefits, such as discounts on future purchases.

At the conclusion of the internship, Zhang and the design team presented to the fashion brands, Neue Technology, the board of FIT, press, and the Swedish Fashion Council at the Swedish Consulate in New York City, New York. Zhang noted, "Many of my team members were nervous about the presentation. Afterward, the president of FIT and other faculty members complimented my presentation skills and I told them I could only attribute my level of confidence and honing of my 21st century skills to my time in FCCLA as a member, state officer and national officer."

FCCLA offers the ability to combine real-world skills with focused career and technical education to produce individuals who are ready to take their first steps in their chosen careers or postsecondary education. Further building on her success, Zhang will be a panelist at the U.S. Department of Education to share her experiences intersecting CTE, workforce development, and global and cultural competencies in Washington, D.C.

## Career Pathways Through FCCLA

FCCLA connects the pathways FCS education focuses on with real-world skills and project-based learning opportunities. FCCLA is integrated as intracurricular support and enhancement for FCS courses, exposing students to work-based learning, business and industry networks, and industry-recognized certifications. FCCLA members explore career opportunities and build their real-world skills by developing projects, engaging and participating in events, and competing regionally and nationally for scholarships and awards.







# Ag Under Water

Large tanks bubble as koi do slow, meandering laps. Aquariums gurgle while lobsters peer through the glass. Vats of seaweed wait to be processed. Elsewhere, fiberglass bends over a wooden frame and a boat hull starts to take shape. Cabinets are filled with beakers for tomorrow's experiments. Several research vessels sit at a dock outside, ready for their next venture to the Long Island Sound.

For a high school student interested in aquaculture — that is, the farming of aquatic organisms such as fish, mollusks, crustaceans and aquatic plants — this setting might sound like a dream. After all, the facility houses an aquaculture lab, a computer-assisted design lab, a boat construction lab, a ship bridge simulator and more. It appears to be a lair used by professional scientists, but these tools and others are available to scientists in training: students of the Bridgeport Regional Aquaculture Center, or Aqua, for short, in Bridgeport, Connecticut.

## Specialized Science

At Aqua, students from school systems in the region can enhance the traditional high school curriculum with unique aquaculture classes. Students here get the opportunity to study marine ecology, seafood science, biology, chemistry, physics, marine design, coastal navigation/piloting and more. It's a combination of world-class facilities, diverse coursework and great teachers that cause many students and families to make every effort to participate.

"Students come from seven school districts for two-hour blocks," says Liz Kranyik, the ag biology and seafood science teacher, and FFA adviser, at Aqua. "Most students really want to be here. They want experiences they won't get elsewhere, so our emphasis is to try to get them to use all of our facilities in some way."

Students share the same impression.

"I initially went to a different school for science classes, but I transferred there based on the school's reputation," said Casey O'Connor, an Aqua graduate and former Bridgeport Aquaculture FFA chapter president who now studies biochemistry at New York University. "The environment was fast-paced and hands-on. The chemistry labs have instruments often only offered in college."



"One of my classes went out on the boat once a week to do hands-on lab work on the water," added Cassidy Fawcett, who graduated from Aqua in May 2018.

One of the school's most unique opportunities is a seafood science course that uses a 56-foot research vessel, the Catherine Moore, to harvest algae. Teachers and students take the boat to the school's seaweed farm on Long Island Sound where they pull long ribbons of kelp onboard. The product is then noodled, blanched, vacuum sealed and sold along with other seafood at the school's seafood market, Angie's at Aqua, which is open to the public each week. "We are the only high school that processes algae for public sale," Kranyik said. The sugar kelp sells for \$3.95/pound.

The educational value of the harvest and market spans science and community engagement. "We aim for a student-run market, so the students have a lot of input in what we have here," she said. "They are responsible for helping decide what we sell, and then pricing it. Students in other classes are responsible for working with the fishes to bring them to market size."

## Fans of FFA

What's more, 217 of the school's 410 students are currently members of the Bridgeport Aquaculture FFA. FFA allows students to explore career interests and the programs offered at Aqua enhance that. Kranyik continued, "In our seafood science class, we talk a lot about the allied industries that may never touch the food, but they are the support staff. They provide the plastic and paper goods that the industry relies on, so the students are really open to different types of careers."

"The students also grow personally here, and it's a way to bolster their self-confidence," she added. "They are responsible for dressing the fish however the customer wants. They apply all of the skills they've learned in our programs and they put their best faces forward with the customers. If they can interact with the community here, then they can go talk to other people and take what they've learned to their first job. Their education here becomes a real stepping stone for them."

# HOSA: Skilled, Competent, Qualified... Advocate



There will come a day when each of us will come face-to-face with a health professional. Whether it is an unexpected diagnosis, the everyday challenges of leading a healthy life in this busy world, or due to the realities of aging, health is relevant to all of us. In moments when we are faced with our limitations and vulnerabilities as human beings, who do we want providing us with health advice? Someone skilled, competent and qualified. But is that all?

Arguably, along with practical knowledge, patients want to be seen by someone who can communicate clearly, professionally and compassionately. Someone who sees themselves as part of a larger team, collaborative and passionate, and committed to our care. Someone who understands the sensitivities, complexities and nuances of health. Someone who “gets” and practices sacrificial service for the benefit of others. Someone trained by not only the largest organization for future health professionals in the world but, more significantly, by one which espouses, encourages and upholds the very qualities we want to see in those whom we entrust with our health.

HOSA – Future Health Professionals is not just a club or organization, rather a valuable instructional tool for empowering health science students to play an active role in their learning, on their journeys toward careers in health professions. HOSA emphasizes values essential for students to be successful in the real world, namely excellence, teamwork and care.

HOSA offers more than 60 competitive events across health science, health professions, emergency preparedness, leadership, teamwork and recognition disciplines, all of which encourage engagement with current and standard health practices. Competitions deepen opportunities for hands-on experience engaging members in the health community, as competitors are encouraged to connect with health professionals in preparation. Competitive events span an incredible array of choices, challenging students to pursue excellence in a variety of topics related to health over an even wider range of scale, from individual care to public health policy.

HOSA creates opportunities for members to engage with health professionals not only in competitive events, but through other programs as well. Through opportunities for students to serve in local, state or international leadership roles; to complete an internship where they can connect with health officials; or to attend leadership development confer-

ences, HOSA offers substantive leadership, networking and mentorship experiences through which students can explore their career options and passions in health.

As many recent amazing innovations in health as there are, there are still a hundred more yet to be discovered. Through the national service project, HOSA challenges students to recognize the macro-level issues confronting health by highlighting awareness and support of health research and funding; it also challenges local chapters to connect with, support and walk alongside health advocates in and around their communities to do what they can to help. All while gaining valuable insight into what it looks like to work with others in fulfilling their dreams.

This is just a glimpse of the incredible breadth and depth of programming HOSA offers to expand health science students’ opportunities for hands-on experience exploring careers in health. As career and technical educators and advocates, we know the value of knowledge and technical skills and the power they have to equip students for further education and careers. HOSA presents a valuable pipeline for professional development experiences in health sciences. Our future patients are counting on this.





# Career-ready Starts Here: SkillsUSA Students Practice Personal, Workplace and Technical Skills



SkillsUSA's bold mission is to empower its members to become world-class workers, leaders and responsible American citizens, while improving the quality of our nation's workforce. Members put the mission into action as they carry out chapter activities and practice personal, workplace and technical skills grounded in academics.

SkillsUSA's Chapter Excellence Program fosters the development of these skills by benchmarking chapter programming and providing recognition at the state and national levels. Chapters must document activities and meet sets of standards. Success is not measured by the quantity of activities, but on the learning that takes place as students develop and apply new skills (e.g., personal responsibility, integrity, work ethic and organization) to each project. Central to this process is the SkillsUSA Framework, a methodology to focus intentional learning and provide all students with opportunities for career success.

The framework defines excellence and gives students common language to articulate the skills they are mastering, explained SkillsUSA Executive Director Timothy Lawrence. "This programming is key to our goal of graduating 100,000 workforce-ready students a year."

SkillsUSA names 24 Models of Excellence each April and these schools are invited to a national conference, where students and advisers make presentations and are interviewed and recognized at an awards dinner. This year's top three Models of Excellence winners were Union Grove High School in Georgia, Catawba Valley Community College in North Carolina, and Willow Canyon High School in Arizona. Each school was recognized for innovative programming that resulted in individual student growth in essential skills.

## Building Skills and a Playground

Last year, SkillsUSA members at Union Grove High School in McDonough, Georgia, showcased personal skills by assisting a nearby elementary school with a holiday fundraiser to obtain playground equipment for students with disabilities.

The students demonstrated responsibility, adaptability and self-motivation as they helped organize the event, created activities and facilitated a sold-out "Jingle Jam." Students signed up for jobs and followed up on tasks before and after the event. The students helped each other keep the event on track while making it entertaining for attendees.

## Honoring a Dream and Community

The SkillsUSA chapter at Catawba Valley Community College in Hickory, North Carolina, demonstrated workplace skills by collaborating on a community gathering to honor the legacy

of Dr. Martin Luther King Jr. and local African-Americans. Students practiced teamwork and learned multicultural sensitivity by partnering with the campus multicultural affairs office to coordinate speakers, exhibits, volunteers and event logistics for a "The Dream is Still Alive" celebration. Students also honored 23 African-Americans from the 1964 Ridgeview football team, known as the "Untouchables," by machining medallions and presenting them to players.

The students honed communication skills as they met with participating groups and community leaders. Cultural awareness was gained as students learned more about civil rights history in their community and hosted 500 people at the event. Chapter adviser Tammy Muller said the students gained as much as they gave.

"Too often, our students think success is something that happens to other people, not them. When they engage in activities or competitions, it transforms their educational experience," Muller said. "It re-energizes their performance in the classroom and sometimes catapults their career trajectory. They see their peers, their classmates and even themselves, as able to succeed."



## Not Just Hirable but Promotable

These student stories provide a glimpse into SkillsUSA's talent pipeline of more than 360,000 members. Does SkillsUSA deliver? Just ask teacher Amanda McClure, who sees the power of the program. "SkillsUSA transforms timid students into leaders, disinterested students into competitors, and self-centered students into team players. I have seen the positive changes SkillsUSA makes in my students' lives and witnessed their success in college and careers as a result of involvement," she said. McClure's students are proof. SkillsUSA's vision to produce the most highly skilled workforce in the world can succeed.

# CTE: Moving Forward

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# Learning to Lead in a Technical World

The Technology Student Association (TSA) is one of the oldest membership organizations dedicated to science, technology, engineering and math (STEM) education in middle schools and high schools across the United States. Founded more than 40 years ago, TSA now is 250,000+ student members strong with 100 percent likely to graduate from high school. At the local, regional, state and national levels, TSA members, advisors and alumni share how this career and technical student organization is engaging student members around the country:

Member Cyra Gallano sees her term as a Colorado TSA officer as one of the most significant and meaningful experiences in high school. "I had the opportunity to share my TSA story and inspire others to become involved in one of the most supportive, encouraging and motivating communities," she said. "TSA is a community full of amazing people — not only advisers who believe in your capabilities, but peers who motivate and inspire you to develop as a student and a leader."

"TSA has given me the ability to show my passion for STEM and IT — and truly apply what I learn in the classroom through various events," said Daniel Rivkin, a Colorado TSA state officer. "Without my experience in TSA, I would not know who I am as a person and where I see myself in the future after high school and after college."

Jerianne Taylor, Ph.D., is the North Carolina TSA state adviser and a professor at Appalachian State University. She finds TSA turns timely topics into

projects and problems that students work to solve. "TSA is developing the problem solvers of tomorrow — today — through competitive events, leadership opportunities and fun!"

TSA alumni credit the organization with having an enduring influence on their lives. "I would not be the person I am today without my TSA experiences, the amazing friends I have met through this organization, the officer teams I have worked with, and the manner in which my chapter, state and national advisers pushed me to become a better person," insisted Cesia Flores, a former national TSA officer — now a sophomore at Harvard University.

"TSA helped me relish challenges and learn how to confidently step up and begin thinking through and researching possible solutions," said Rachel Newell, a TSA and University of California alumna now studying at Harvard Law School.

Sridutt Nimmagadda is a former national TSA officer and Princeton University alumnus who scored a key position in product management/strategy for the National Football League (NFL). "TSA provides members opportunities to network with other like-minded members across the country and to gain a more holistic view of what technology and engineering can mean to different people," he noted.

Since TSA was chartered in 1978, almost 4,000,000 members have participated in competitions, leadership opportunities, community service projects and much more — all while "learning to lead in a technical world."





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# TWENTY-ONE DAYS

By Steve Tracy

**T**hat's the foundation of a strategy to improve student attendance at Scarlet Oaks Career Campus in Cincinnati, Ohio. Twenty-one days.

At the beginning of the 2016–17 school year, details about Ohio's attendance-focused House Bill 410 were circulating. Specifically, the Scarlet Oaks team was drawn to one clause:

*"Districts and community schools must have local policies that outline their interventions and strategies that support students who miss too much school. Districts and community schools should review their policies and determine if they need to amend current policies or create a policy to satisfy HB 410" (H.B. 410 § 3313.668).*

With expectations that the bill would pass within the school year, Scarlet members knew they needed to take a closer look at attendance policies in order to align with the bill's requirements. The administration at Scarlet Oaks formed an attendance committee prior to the start of the year. The team discussed a variety of opportunities and options to improve school attendance; however, it was a casual conversation about habit building that led to the driving theme behind Scarlet's attendance initiatives.

## **Play 21 – Celebrating School Attendance**

In the 1950s, Maxwell Maltz, M.D., first developed the idea that it takes 21 days to form a habit. As a cosmetic surgeon, he encountered patients, on a consistent basis, who had to develop new habits or new ways to view themselves — whether adjusting to the construction of a new nose, or dealing with a “phantom limb” sensation after an amputation (Clear, 2018). As he observed each individual's experiences, he discovered that his patients began to recognize themselves in their new forms after a three-week period. He then applied this discovery

# TWENTY-ONE DAYS

to his own formulation of habits. In his post-observations, he found that “these, and many other commonly observed phenomena tend to show that it requires a minimum of about 21 days for an old mental image to dissolve and a new one to jell” (Clear, 2018).

With these ideas in mind, Scarlet Oaks launched Play 21 – Celebrating School Attendance in 2016, encouraging students to become more accountable for their attendance at school. The concept is simple: Students sign in on a chart in their first- and second-period classes and track the number of days that they have been present. Instead of a check mark, the students note the number of days they have attended in ascending order. When a student reaches the 21-day mark, they email a screenshot of their electronic attendance to a member of the Scarlet Oaks attendance committee. They are then provided with a raffle ticket, which they can place in the drawing hopper.

At the end of the quarter, names are taken from the hopper and prizes are awarded to 21 students. The prizes are relatively small: \$10 gift cards, special parking privileges or early release to lunch, for instance. Recognition, though, is a real motivator. The school posts the winners’ names and pictures on video monitors throughout the campus. They also receive a photo op with the deans, and their accomplishment is mentioned in the morning announcements.

Through Play 21 – Celebrating School Attendance:

- Students can see their progress each day and know when they’re reaching the 21-day goal
- Students who falter can start over and still succeed during any given academic quarter
- Students who win prizes get public recognition for their success
- Students develop new habits

Those students who earn a raffle ticket but were not chosen in the drawing earn a cookie coupon and notice of congratulations, and their tickets remain in the raffle so that they have an opportunity to be chosen on the next draw.

With its Play 21 initiative, Scarlet Oaks Career Campus wanted to change the culture from punitive to positive. That is, instead of focusing on punishing those who miss school, the staff celebrates those who attend regularly. Additionally, those who strive and fall short of reaching their attendance goal always have the opportunity to start over and try again, instead of feeling defeated and trapped in truancy.

## The Biggest Barrier

How do you change the culture of attendance in education, which has historically taken a hard line with truant students?

The members of the Scarlet Oaks attendance committee decided to begin to answer this question by focusing on two elements they felt were missing in the school’s attendance policy: acknowledgment and celebration. The first step in this dramatic restructuring would be to help students realize that it’s okay to stumble along the way; it’s human nature.

## How do we help them get back on their feet?

The Scarlet Oaks attendance committee, comprised of a group of core academic and career and technical education (CTE) instructors, administrators, a counselor, a custodian, and a librarian, wanted to eliminate the mindset that schools take for granted that students will attend.

“Some of our students have barriers they have to overcome just to get to school in the morning,” said Roger Osborne, an exercise science instructor. Osborne said Play 21 helps to provide an incentive for students to give extra effort. One student, for instance, missed the school bus but paid for an Uber ride to get to school on time.

And though the school attendance initiative resulted in 10 students having perfect attendance in 2017-2018, that’s not necessarily the only goal. “We’re recognizing good, improved AND perfect attendance to school,” said Assistant Dean Ramona Beck. Play 21 takes a holistic approach to attendance, combining student responsibility, teacher encouragement and administrative support. “The sign-in sheet is a daily check for both the teacher and the student,” Beck said.

Teacher involvement is crucial to students remaining steadfast in the program, as they look to their teachers to model professional behaviors and attitudes. Staff participation in Play 21 reinforces for students that the school takes its new approach to attendance seriously.

In order to minimize extra work for the staff, while also obtaining the maximum amount of support and visibility for the program, staff members are simply asked to do three things each day:

1. Monitor the daily sign-in sheet for first- and second-period classes.
2. Offer words of encouragement to students regarding attendance.
3. Display an “I Play 21” sign in a visible portion of their room where they denote which day they are currently on.

Staff members post their own number of days in a visible place to instill a sense of community with the students; we’re in this all together. With this mindset in place, Scarlet staff hopes that they can use this collaborative venture to leave a positive and meaningful impression on the students about the importance of showing up. The goal is that, in just 21 days, students begin to develop good habits for a lifetime.

“They’ll be going to work when they leave us,” said Osborne. “We’ve got to get them ready. This aligns with our mission of preparing students for real life.”



## Keeping People Motivated

As with all new initiatives, a big part of keeping the vision alive is keeping people invested. The attendance committee soon realized that, while the continuous counting and awareness helped students hold themselves accountable for their attendance, new incentives and ideas were necessary for continued interest. Thus, lab-driven attendance competitions were born.

The concept started out simple: Take the energy and friendly competitive nature and leverage it to get students to come to school. The Lab vs. Lab Competition created an opportunity for students not only to take charge of their own attendance, but also to hold their peers accountable.

## Lab vs. Lab Competition

- Students within each lab elect a leader to handle communications with the attendance committee
- Labs choose which other lab they want to challenge
- The lab challenge lasts one full school week
- The lab with the best attendance at the end of the week wins a small prize

These competitions seemed to spark interest among students, and the attendance committee raised the stakes. Students would now be encouraged to participate in an Attendance Matters Madness Bracket.

## Attendance Matters Madness Bracket

This is exactly what it sounds like: All labs are placed in a play-off bracket, either Eastside or Westside based on their location in the school, and then pitted against another lab in single elimination series. Lab sections that lose move into a consolation bracket designed to instill perseverance despite loss, while the winning labs inch closer and closer to the ultimate prize: a mystery field trip.

## Monthly Attendance Challenge

In an effort to offer additional incentives, and to look closer at month-to-month attendance, the Scarlet Oaks attendance committee also introduced a monthly attendance challenge. All lab attendance is tracked throughout the month, and the three lab sections with the best attendance earn a secret social event that takes place in the first week of the new month; typically, this involves a pizza party or ice cream.

## Overall Attendance Improved

While challenges and prizes are exciting, and witnessing how students value participation in events is a great reward, what is



equally exciting for the Scarlet attendance committee is watching overall attendance improve.

"In 2016–17, our first year with these programs, 49 percent of students missed nine days or fewer [equal to 95 percent attendance for the school year]," said Osborne. "In 2017–18 school year, 57 percent of students missed nine days or fewer."

As the program continues to develop and offer different initiatives to help improve student attendance, the community is taking notice. "We had a student show us a picture on their Twitter feed. It displayed students at their homeschool accepting awards and coupons for outstanding attendance under the name 'Play 21'. We had no idea that the students were spreading this concept to their schools," said Beck. "It's great to see it happen, and really shows how much of an impact we are having on the student body."

As the Scarlet Oaks Attendance Committee continues into its third year, the team remains energetic about what the future holds for improved student attendance, and more importantly, how they can continue to improve students' lives through something as simple as Play 21. In the end, it's about preparing students for the expectations and realities to come after high school. ■

**Steve Tracy** is an English instructor at Scarlet Oaks Career Campus, one of the four Great Oaks Campuses. Throughout his eight years in education, he has also been involved in a variety of committees and leadership teams. Email him at [tracys@greatoaks.com](mailto:tracys@greatoaks.com).

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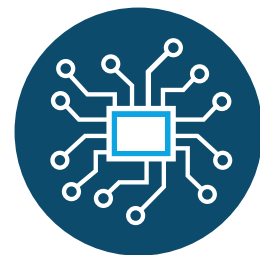
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CTE Instructor  
El Dorado High School  
El Paso, TX





# VISION 2018: EVERYTHING WAS BIGGER IN TEXAS!

By Jarrod Nagurka

## THEY SAY THAT EVERYTHING'S BIGGER IN TEXAS, AND 4,500 ADMINISTRATORS AND OTHER

career and technical education (CTE) professionals gathered in San Antonio, Texas, for ACTE's CareerTech VISION 2018 proved that to be the case. Attendees have since returned home to school districts, career tech centers, and community and technical colleges all across the country armed with new tools, resources and lessons. This year, the four-day professional development conference — the largest gathering of CTE professionals in the nation — included hundreds of CTE sessions covering the spectrum of secondary and postsecondary CTE programming. Many of these sessions focused on implementation of the recently passed Perkins V legislation.

This year, ACTE hosted a Workforce Development Through CTE Summit prior to VISION, where dozens of trade organizations and industry leaders came together to forge new relationships to address the demand for skilled workers. Workshops and local CTE tours kicked off the conference Wednesday morning, and that evening we honored ACTE's Excellence

Award winners. For the third year in a row the winners received 3D printed trophies designed by a CTE student. This year, out of 438 entries, the winning trophy was designed by a pair of Maryland students.

The conference continued the following day with the opening general session, which included an address from the Swiss Ambassador, Dr. Martin Dahinden, who spoke about his country's commitment to apprenticeships and workforce development. Keynote speaker Jenna Hager — founding chair of UNICEF's Next Generation, contributing correspondent on NBC's *Today Show*, editor-at-large for *Southern Living* magazine, author, former educator and former First Daughter — also gave a moving speech about how CTE and educational opportunities can change lives. On Saturday, Patrice Banks — founder of the Girls Auto Clinic — provided a closing keynote address, where she spoke about the importance of women pursuing nontraditional careers and taking risks to follow their entrepreneurial dreams.

VISION 2018 also provided the opportunity to connect industry with educators. The conference included a Career Pavil-

ion, where different organizations shared information about industry needs and potential career paths for students. The two-day CareerTech Expo also included 226 booths showcasing the latest CTE products, providing resources and tools educators took back to their classrooms.

On the final day of the conference, ACTE held its third annual STEM is CTE symposium. Together, education and business leaders addressed how CTE programming can help students — particularly women — access STEM-related career paths.

VISION 2018 was our most widely attended conference in nearly a decade. Thousands of CTE professionals networked with industry leaders, forging connections that will benefit students, the CTE system and the American economy for years to come. ACTE's CareerTech VISION 2019 will be held in Anaheim, California, December 4-7, and you won't want to miss it! Find out more at [careertechvision.com](http://careertechvision.com). We hope to see you there!

---

**Jarrod Nagurka** is ACTE's advocacy and public affairs manager. Email him at [jnagurka@acteonline.org](mailto:jnagurka@acteonline.org).



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## Congratulations to the class of 2018 ACTE fellows!

The ACTE National Leadership Fellowship Program began in 2009 as an Opportunity Fund project undertaken by the ACTE board of directors. Fellowship provides participants with a unique opportunity to learn and engage in the processes of policymakers as they develop and implement laws and regulations at the local, state and federal levels.

In 2018, in an effort to expand such opportunities, a New Professionals cohort of fellows began. New and experienced fellows, alike, are required to commit one calendar year to the program, Jan. 1–Dec. 31. The 2018 fellowship classes include:

### Experienced Fellows



**James Berry**  
Region I



**Paula Boughton**  
Region I



**Alexandra Harkleroad**  
Region III



**Kristy Barnett**  
Region IV



**Robert Van Dyke**  
Region V



**Jeffrey Crapper**  
Region V



**Shawn Freie**  
Postsecondary, Adult and Career Education Division



**Christopher Neff**  
Administration Division

### New Professional Fellows



**Robert Kindon**  
Region I



**Lauren Emerson**  
Region IV



**Kaleen Barnett**  
Administration Division



**Sahvanna Mease**  
Family and Consumer Sciences Education Division



**Nancy Cross**  
Region II



**Danielle Luebke**  
Region V

# ACTE AWARDS BANQUET



Liz Dinkins



Kim Holdbrooks Townsel



Katie Hatt



Meg Giancesello



Shelly Thome

## 2019 ACTE Member Award Winners

### Teacher of the Year

(sponsored by **Express**  
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Liz Dinkins



### Postsecondary Teacher of the Year

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Kim Holdbrooks Townsel



### New Teacher of the Year

(sponsored by  
**Goodheart-Wilcox**)  
Katie Hatt



### Administrator of the Year

(sponsored by  
**Goodheart-Wilcox**)  
Meg Giancesello



### Career Guidance Award

(sponsored by the  
**U.S. Army**)  
Shelly Thome



### Teacher Educator of the Year

Peder Gjovik

### Carl Perkins Community Service Award

Bart Taylor

### Lifetime Achievement Award

Jeanne Roberts

## 2019 ACTE Regional Award Winners

|            |              |                                      |                           |
|------------|--------------|--------------------------------------|---------------------------|
| REGION I   | New Jersey   | Teacher of the Year                  | Anne Marie McNamara       |
| REGION I   | New York     | Postsecondary Teacher of the Year    | Charles J. Ax, III        |
| REGION I   | New Jersey   | Administrator of the Year            | Leonard "Ted" Szczawinski |
| REGION I   | New Jersey   | New Teacher of the Year              | Deanna Miller             |
| REGION I   | New York     | Teacher Educator of the Year         | Joanne L. Ryan            |
| REGION I   | Michigan     | Career Guidance Award                | Tina Bacigalupo           |
| REGION I   | New York     | Lifetime Achievement Award           | Terry Hughes              |
| REGION I   | Ohio         | Carl Perkins Community Service Award | Jeffrey Bertke            |
| REGION II  | Alabama      | Teacher of the Year                  | Cindy Quisenberry         |
| REGION II  | Alabama      | Postsecondary Teacher of the Year    | Kim Holdbrooks Townsel    |
| REGION II  | Virginia     | Administrator of the Year            | Judith P. Sams            |
| REGION II  | Kentucky     | New Teacher of the Year              | Bethany Mattingly         |
| REGION II  | Alabama      | Career Guidance Award                | Lindsay Jordan            |
| REGION II  | Alabama      | Lifetime Achievement Award           | Rebecca W. Pierce         |
| REGION II  | Kentucky     | Carl Perkins Community Service Award | Rosemary Jones            |
| REGION III | Minnesota    | Teacher of the Year                  | Lori Brumbaugh            |
| REGION III | Indiana      | Postsecondary Teacher of the Year    | James P. Greenan          |
| REGION III | Indiana      | Administrator of the Year            | Patrick Biggerstaff       |
| REGION III | Minnesota    | New Teacher of the Year              | Katie Crowley             |
| REGION III | Illinois     | Career Guidance Award                | Krista Paul               |
| REGION III | Indiana      | Lifetime Achievement Award           | Joan R. McFadden          |
| REGION III | Minnesota    | Carl Perkins Community Service Award | Craig J. Spreiter         |
| REGION IV  | Oklahoma     | Teacher of the Year                  | Liz Dinkins               |
| REGION IV  | Arkansas     | Postsecondary Teacher of the Year    | Linda Bean                |
| REGION IV  | Arkansas     | Administrator of the Year            | Starlinda Sanders         |
| REGION IV  | Louisiana    | New Teacher of the Year              | Lauren Beard Emerson      |
| REGION IV  | Oklahoma     | Career Guidance Award                | Gay Pettit                |
| REGION IV  | Oklahoma     | Lifetime Achievement Award           | Teri L. Holle             |
| REGION IV  | Texas        | Carl Perkins Community Service Award | Bart Taylor               |
| REGION V   | Arizona      | Teacher of the Year                  | Bernadette Russoniello    |
| REGION V   | Nebraska     | Postsecondary Teacher of the Year    | Kathleen McCune           |
| REGION V   | Arizona      | Administrator of the Year            | Meg Giancesello           |
| REGION V   | North Dakota | New Teacher of the Year              | Katie Hatt                |
| REGION V   | North Dakota | Teacher Educator of the Year         | Peder "Pete" Gjovik       |
| REGION V   | Arizona      | Career Guidance Award                | Shelly Thome              |
| REGION V   | Arizona      | Lifetime Achievement Award           | Jeanne Roberts            |
| REGION V   | Arizona      | Carl Perkins Community Service Award | Amy Dillard               |







Peder Gjovik



Bart Taylor



Jeanne Roberts



## 2019 ACTE Impact Award Winners

### Business-Education Partnership Award

Ann Franz, Director of  
NEW Manufacturing Alliance

### Champion for CTE Award

Marc Schulman, President,  
Eli's Cheesecake Company



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# MILTON HERSHEY'S LEGACY: ENGAGING STUDENTS

By Dave Curry

## AS EDUCATORS ACROSS THE COUNTRY PREPARE 21ST CENTURY LEARNERS TO JOIN THE WORKFORCE

with the essential skills and knowledge to lead, we must continuously work to adapt our curricula with hands-on learning opportunities to complement workforce trends. This type of approach will position our students for success and increase their abilities to reach realistic long-term career goals.

Our method of providing experiential learning opportunities to all of our students at Milton Hershey School in Hershey, Pennsylvania, is what makes the school an effective model for engaging students through career and technical education (CTE). Enhancing student performance throughout high school, Milton Hershey School offers 11 different career pathways.

## Exploration & Discovery

Milton Hershey School has a deeply rooted history in offering students the opportunity to explore and discover which fields best fit their talents, skills and career interests through its CTE programs. Fifty-eight (58) percent of our alumni go on to earn a postsecondary degree matching their career pathway of study.



“Everything I learned in the health science pathway was spot-on with the basic knowledge I learned my first year in nursing school,” said Tieya Greene, a Milton Hershey graduate from the class of 2003. “It was a great steppingstone.”

“Everything I learned in the health science pathway was spot-on with the basic knowledge I learned my first year in nursing school,” said Tieya Greene, a Milton Hershey graduate from the class of 2003. “It was a great steppingstone.”

Greene attended Georgetown University where she completed the nurse anesthesia master’s program. She is currently a certified registered nurse anesthetist at the Northern Virginia Surgery Center. Because of Milton Hershey’s commitment to preparing students for meaningful careers and lifelong success, our various career pathways are introduced as early as third grade. Early exposure to career exploration helps students become knowledgeable as they prepare to narrow their interests in high school.

At Milton Hershey School, we focus on providing our students with authentic work experiences to help them solidify career goals, gain employability skills, enhance their technical skills, develop self-confidence and start to build a professional network. Through guest speakers, specialized classroom settings, job shadow days, co-ops and internships, our students are learning and gaining real-world opportunities directly from experts in their respective fields. Students also have the opportunity to achieve industry-recognized certifications within their pathway. In each of the last four years, 100 percent of MHS students earned at least two in-

dustry-recognized certifications; the number of students with certifications, overall, has tripled from five years ago.

Most recently, we have expanded to offer pre-apprenticeship programs for our students. Providing meaningful work experiences will enhance students’ technical skills and equip them to consider future careers prior to high school graduation.

### 21st Century Pre-apprenticeships Paving the Way

In February 2018, Milton Hershey School received approval from the Pennsylvania Department of Labor & Industry to implement the first state-registered pre-apprenticeship program — granting students the ability to work in their desired industry before graduation. In addition, the council also approved the state’s first “hybrid” apprenticeship affiliation through Milton Hershey School, connecting a student’s work-based learning experiences in high school to a potential career directly after graduation.

Establishing a pre-apprenticeship program that accelerates your students’ growth and provides them with lucrative work opportunities will help you to determine how to best approach implementing a program into your curriculum. There are several key steps that should be carefully considered as you develop your strategy and execute your plan.

### Milton Hershey School Career Pathways

- Agriculture & Natural Resources
- Automotive Technology
- Business/Financial Management & Accounting
- Computer Science & Innovation
- Construction/Carpentry
- Culinary Arts/Restaurant Management Services
- Electronic Media & Journalism
- Engineering & Design
- Graphic Communication Technologies
- Health Science
- Law, Public Safety & Security

“Effecting layers of communication will help reinforce your messages to target audiences. Share your program offerings through face-to-face meetings; bring in industry leaders and graduates of your CTE programs to offer guidance, support and success stories.”

### Standards Align with Industries

In order to ensure your pre-apprenticeship program is beneficial for your students to excel, assess your pathway standards when compared to industry standards. What lessons and experiences can your instructors offer that match the demands of a particular career field? Be intentional when making these assessments so your students are best equipped to transition into the workforce.

We found Milton Hershey’s culinary arts/restaurant management services pathway was very much aligned with its current industry standards. It was an easy choice when selecting our first pre-apprenticeship opportunity for students interested in pursuing a culinary career. A graduate from the class of 2016, Johsian Concepcion Connor, participated in an internship with Hershey Entertainment & Resorts (HE&R), where he gained professional experience in the workplace from experienced chefs at the Hershey Lodge and Conference Center.

“I think it really helped me prepare and taught me the basic skills I needed to work in a kitchen,” Johsian said. “Some of the stuff I’ve learned in college, I had already learned in high school.”

A strong partnership with HE&R enabled us to connect our culinary arts pre-apprenticeship with industry standards. In 2018, Milton Hershey School officially formalized an agreement with Hershey Entertainment & Resorts and, within our guidelines, any participating student may be eligible to hire by HE&R post-graduation, where they work in an adult apprenticeship program and undertake weekly educational training.

### Established Pathways and Partnerships

Look for pre-apprenticeship opportunities within the career programming you already offer, and with established industry partners. A strong curriculum and relationships with industry leaders can ease a smooth transition and will help ensure that the industry you are collaborating with has the capacity to fulfill and support opportunities for students.

For instance, our school’s carpentry and construction pathway had built a strong foundation of skill development and experiences that enabled them to collaborate easily with a local company looking to fill apprenticeships. In September 2018, MHS partnered with Pyramid Construction Services, a Harrisburg, Pennsylvania-based construction company, to provide a hybrid apprenticeship program — a program in which MHS high school senior Anthony Kaminski finds value.

“I am learning to use the skills I was taught in carpentry class at Milton Hershey School to do many different duties in my apprenticeship,” Kaminski said. “This experience is helping me learn the language of the trade so I am prepared in the career field, and I feel ahead of my peers because I’m gaining this experience before I graduate high school.”

Collaboration is key in order to create a robust pre-apprenticeship program in your school setting. For years, our CTE administrators and instructors have worked to create and maintain solid partnerships with business leaders within their respective fields so our students can learn directly from

the professionals. While we always have and continue to offer our students the ability to experience their chosen profession through internships, co-ops and job shadowing days, we know pre-apprenticeships will increase the value of our students’ livelihoods and make them viable candidates to fill jobs.

### Student and Parent Buy-in

It’s important that you plan how to communicate your pre-apprenticeship program effectively to the most important stakeholders: your students and parents. Ensuring your students and parents understand the breadth of opportunities available from the start will help to gain buy-in and alleviate any misunderstandings.

Effecting layers of communication will help reinforce your messages to target audiences. Share your program offerings through face-to-face meetings; bring in industry leaders and graduates of your CTE programs to offer guidance, support and success stories. Showcasing the success of your graduates will provide a model example for your students and parents to visualize.

Presentations, brochures, emails, videos, websites and field trips illustrate, for students, the setting in which they will receive hands-on training. These are all helpful strategies to gain more awareness of your program.

### Postgraduate Credits

Participation in a pre-apprenticeship program is not to supersede your students’ schooling. Instead, it provides the opportunity to help your students build their résumés,



gain college credit, broaden their skill set, and grow in their desired career field.

Once your pre-apprenticeship program is launched and you are collaborating with businesses to provide authentic work experiences, consider adding incentives for continuous improvement and lifelong success. Partner with area colleges, community colleges, and career and technical education centers to offer students the ability to earn credits toward a degree once they enter and/or complete an apprenticeship.

At Milton Hershey School, students can earn college credits through the construction and carpentry pre-apprenticeship program. Available to students who complete the program successfully:

- High school students will receive credit for in-class and on-the-job training that could qualify them for a state-registered, pre-apprenticeship certificate. Training includes construction and carpentry course-

work within the school's career and technical education program as well as paid internships or co-op experiences during their senior year.

- Students can earn credit for classroom training in their pre-apprenticeship program, which will exempt them from a year of related technical instruction.
- The pre-apprenticeship credit and certificate will count toward a student's apprenticeship if the student is selected to complete an apprenticeship with Pyramid Construction Services.
- Students can earn 32 credit hours toward an associate degree in a related field at Harrisburg Area Community College after completing their apprenticeship and related technical instruction.

### Forward Thinking

The goal of the pre-apprenticeship program at MHS is to provide opportunities

for students who want to enter the workforce directly after high school, to enhance their lifelong success. We provide programming in the career fields our students wish to pursue. As we look to the future, we will continue to develop pre-apprenticeship opportunities within existing CTE programs. We hope to add at least one pre-apprenticeship in each career pathway; we can provide our students with the best and most innovative experiences possible to achieve their goals, to lead fulfilling and productive lives. ■

**Dave Curry** is the director of career and technical education at Milton Hershey School in Hershey, Pennsylvania. In 2016, Curry was awarded a WGAL-TV News 8 (NBC) Teacher Impact Award. And, prior to MHS, he taught U.S. history in Columbia, Maryland, and government and economics in Boiling Springs, Pennsylvania. Email him at [curryd@mhs-pa.org](mailto:curryd@mhs-pa.org).

# NEW STUDENT VIDEO CHALLENGE

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- Feature a career, product or service that could be used on the International Space Station, an asteroid, the Moon, Mars, remote exploration and/or in other future space missions
  - Talk about essential skills the rising workforce will need to thrive in a space exploration project
  - Showcase a future scenario in outer space that incorporates CTE and/or project-based learning
- Deadline to submit a video, 2 minutes or less in length, is the first day of CTE Month®, **February 1**
- ACTE will award the school with the first place student or team \$500; second place student or team \$250; third place student or team \$125
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- Perkins V symposium offering practical guidance as we move from reauthorization to state and local implementation

Early bird rates end **Feb. 22** — register today at [www.acteonline.org/nps](http://www.acteonline.org/nps).



## Share Your Expertise at VISION 2019

ACTE welcomes your session proposals for CareerTech VISION, the premier gathering for career and technical education professionals, **Dec. 4–7** in sunny Anaheim, California. The most comprehensive professional development and networking event for career and technical educators,

industry representatives and business leaders, VISION presenters will have the opportunity to:

- Take advantage of more than 300 information-rich sessions, influential keynote speakers and the CareerTech Expo
- Contribute to the CTE field by sharing best practices, program innovations and successful collaborations
- Advocate for CTE to key stakeholders from across the nation
- Receive a speaker discount on the VISION early bird registration rate

We are seeking session proposals that address the full range of issues facing CTE professionals striving to prepare students for 21st century careers as well as the High-quality CTE Program of Study. Submit your proposals by **Feb. 28** at [www.careertechvision.com](http://www.careertechvision.com)



CELEBRATE TODAY,  
OWN TOMMORROW!

## Celebrate CTE Month!

Join us as we raise awareness on the crucial role career and technical education plays in ensuring all students are college and career ready. ACTE, host of CTE Month®, offers these ideas to help you celebrate the accomplishments and achievements of CTE programs across the country:

- Encourage your students to participate in the CTE Month and NASA HUNCH

Video Challenge: “Working Out of This World.” Submit your two-minute video submissions by **Feb. 1!**

- Host a school visit and invite members of your community to learn about your school’s strong CTE programs firsthand
- Reach out to the media to encourage them to attend events and advise them of the benefits of CTE, or use social media to do the same
- Work with business and industry leaders to ensure they understand the role CTE plays in readying their future workforce
- Purchase color-changing mood products, such as bracelets, pens and pencils, and other CTE Month merchandise at [www.shopacte.com](http://www.shopacte.com) to use at events or at your school
- Download the CTE Month logo for use with any print or digital outreach

For these and additional CTE Month resources, visit [www.acteonline.org/why-cte/cte-awareness/cte-month](http://www.acteonline.org/why-cte/cte-awareness/cte-month).

## CTE Develops the Aerospace and Defense Workforce

How does CTE prepare youth and adults for careers in aerospace and defense? ACTE’s updated Sector Sheet shares the latest information on occupational outlook and earnings potential in this high-tech sector, and describes CTE programs that are preparing secondary and postsecondary students for aerospace and defense careers. You can access this and other publications in the series at [www.acteonline.org/why-cte/economic-impacts/sector-sheets](http://www.acteonline.org/why-cte/economic-impacts/sector-sheets). ■

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***“We’re sending  
students to college  
or into the workforce  
with a leg-up.”***

Laura Henning, Media Specialist,  
Trumbull Career and Technical Center



Trumbull Career & Technical Center in Ohio and other educational facilities have integrated Roland Education Solutions into their schools and curriculums with huge success. See how student-friendly equipment, software and resources have transformed design and engineering programs.

# HUMAN SERVICES TECHNICIAN

By Susan Reese

## HUMAN SERVICES TECHNICIANS HELP PROVIDE SUPPORT AND SERVICES FOR FAMILIES AND

individuals in need of assistance, which includes those with physical or mental disabilities, those in need of rehabilitation, and those experiencing homelessness. Their duties may include working with licensed social workers as a case management aide to help plan and implement treatment for their clients. They may assist those clients with personal daily activities such as transportation and child care, and with coordinating services such as health care, housing and job training. Other duties might include preparing and maintaining statistical records, case records and related files. They provide valuable assistance to families with young children, youthful offenders and the elderly.

### The Workplace

Human services technicians work in offices, hospitals, clinics, rehabilitation centers, nursing and residential care facilities, and local or state government

agencies that provide individual and family services.

### Education

Human services technicians typically have some type of postsecondary education credentials, such as a certificate or an associate degree. Certificate and two-year programs are offered by a number of technical and community colleges around the country. These programs often include the study of social and behavioral sciences as well as hands-on training and opportunities for experience in real-world settings.

### Earnings

According to the U.S. Department of Labor's Bureau of Labor Statistics (2018), in May 2017 the median average wage for human services assistants was \$33,120, with the highest 10 percent earning more than \$53,380.

### Job Outlook

Employment of human services assistants is expected to increase approximately 16 percent from 2016 to 2026. More of these

social services professionals will be needed to assist our growing elderly population, to work with those seeking recovery from addiction issues, and to assist persons with disabilities.

## EXPLORE MORE

For more information about the career of human services technician and the education and training it requires, here are some places to turn.

American Public Human Services Association  
[www.aphsa.org](http://www.aphsa.org)

Council for Standards in Human Service Education  
[www.cshse.org](http://www.cshse.org)

Council on Social Work Education  
[www.cswe.org](http://www.cswe.org)

National Association of Social Workers  
<https://www.socialworkers.org>

National Organization for Human Services  
[www.nationalhumanservices.org](http://www.nationalhumanservices.org)





## SCHOOL SPOTLIGHT

## LAKE AREA TECHNICAL INSTITUTE

**LOCATED IN WATERTOWN, SOUTH DAKOTA, LAKE AREA TECHNICAL INSTITUTE (LATI) WAS**

founded in 1965 as the first technical school in the state. Since then, it has graduated more than 22,000 students and today offers 30 programs. Its vision statement proclaims, “Lake Area Technical Institute (2017) will be the leader in technical education, working in partnership with business and industry and all levels of education,” and addresses how “Lake Area Tech staff will integrate the latest technology and methods of delivering quality education to meet the emerging global workforce demands.”

Area businesses and industry benefit greatly from the education and training provided by LATI, and in return, the LATI Impact Partners contribute to the school by serving on advisory boards, and by providing internship opportunities, equipment donations and financial contributions.

High school juniors and seniors can earn college credit through LATI’s dual credit classes, and there are an impressive number of these classes available for high school students — with subjects ranging from accounting and business to computer technology to health care to welding.

The Human Services Technician program at LATI offers four different options from which students can choose: mental health/activity technician, developmental disabilities, child development and youth offender. Students can earn an associate of applied science in any of these options. The 18-month, four-semester degree programs require 68 credits for completion.

In the mental health/activity technician and developmental disabilities programs, students study topics such as medication administration, death and dying, basic life support for healthcare workers, group techniques, sexual

offending and people with disabilities, case-work skills and resources, and addictions.

The child development program includes courses on guiding children’s behavior, educate of infants and toddlers, child growth and development, children with special needs, and lesson planning and the early child curriculum. In the youth offender program, students take courses that include an introduction to criminal justice and juvenile delinquency.

For all of the program options, there are also courses in psychology, math, English, communications and sociology, in addition to a clinical experience and on-the-job training in the developmental disabilities and mental health settings. Electives include special topics in human services, police academy and beginning sign language.

According to data from a recent LATI (2017) placement report, six months after graduation, 99 percent of all graduates were either employed or continuing their education, and 100 percent of human services technician program graduates are either employed or continuing their education. Through articulation agreements, graduates of the program may go on to earn their bachelor of science degree(s) at the University of South Dakota or Mount Marty College.

In a blog article for the American Public Human Services Association, Tracy Wareing Evans (2018) notes, “Through in-

novations and a focus on prevention and key supports, health and human services associations organizations work together to build capacity in our communities and enhance well-being across the nation.”

Human services technicians in exceptional career and technical education programs such as the one at LATI play an important role in that noble mission.

*For more information about Lake Area Technical Institute and its human services technician program, visit [www.lakeareatech.edu](http://www.lakeareatech.edu).* ■

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Students enrolled in the Lake Area Technical Institute human services technician program complete some of their internship hours at the campus Educare Center.

# Making Education Meaningful

By Erin Smith



## RYAN ROLLED OVER AND HIT SNOOZE FOR THE SIXTH TIME THAT MORNING. THE HIGH SCHOOL JUNIOR

could count on one hand the times he'd made it to his first-period class this year. He thought about the day ahead and considered skipping it entirely. It wouldn't have been the first time. His mom's shift at work meant he was on his own in the mornings — entrusted to get himself to school. But on days like this one, with yesterday's homework unfinished, it took all of his energy to get moving.

His friends had started to talk about their plans after graduation: where they wanted to go to college, what they wanted to do for work, who they wanted to become. When the topic came up, Ryan shut down. He became conspicuously tight-lipped about his own plan; the truth was, he didn't have one. Unlike his friends, Ryan hadn't connected with a particular subject to pursue after high school. And the notion of more classes, textbooks and lectures made him queasy. But in a community where everyone went straight to college after high school, what other option did he have?

## Declining Student Engagement

Ryan's story is a true one. It's my brother's story. For him, high school was a struggle. He couldn't get passionate about Shakespeare or excited by American history. He didn't see the point in the lessons he was learning or how they might translate into anything useful. As he struggled to connect his classes to what he'd be doing in the real world, he began to check out.

He's not alone. In a 2015 Gallup student poll, fewer than 35 percent of high school students reported feeling engaged in school (Brenneman, 2016). In that same year, 20.3 percent of students who dropped out of high school indicated "lack of relevance" as the reason for leaving (Gould & Weller, 2015).

Today, among those who do graduate and continue on to college, 30 percent drop out before even reaching sophomore year (College Atlas, 2018). Finances, poor grades and stress are some of the most common reasons for leaving; but over-arching indecision about the importance of college is also often on the top 10 list (Classes & Careers, n.d.)

## No More Box-checking

The struggle to keep students engaged in school isn't new. Society has tried to find a solution for decades. The Xello team has studied this problem for over 20 years. During that time, we've developed a variety of applications to help students achieve academic and career success — including the Career Cruising program. But two years ago, we took a giant step back to re-evaluate our software and how it met the needs of 21st century students. Through extensive research, interviews with district leadership and testing among students, we realized we could do more.

College and career planning programs had become an exercise in box-checking. They were hard to navigate and frustrating. Poor user experience over-

shadowed insights and undermined the importance of the exercise. Students were going through the motions without internalizing what they had learned. It wasn't clear to them how their unique skills, interests and preferences linked to future academic and career options. How could we expect students to get excited about their futures when the tools were so uninspiring?

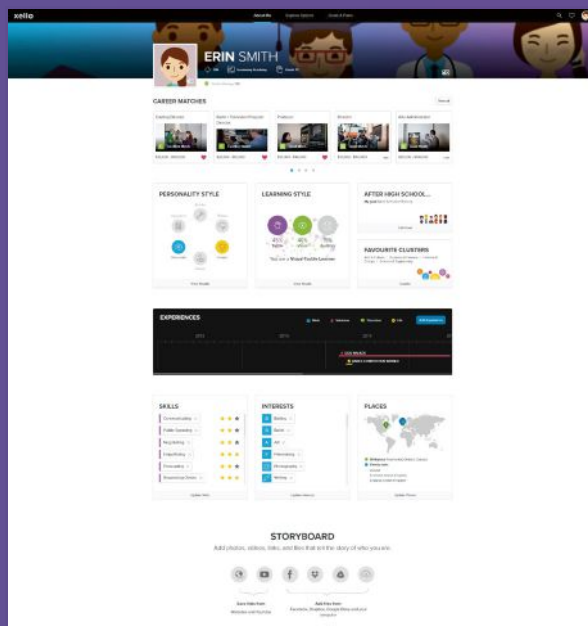
## Redefining What Matters

We believe that an engaged student is a successful student. It's as simple as that. And that belief is the foundation for Xello — student-centered K-12 software that helps today's students build a bridge between who they are and what they want to become.

Our software genuinely engages students in the planning process because it looks and feels like the apps they love and revolves around who they are as individuals. Through interactive career and personality assessments, students identify their skills, interests and passions; attributes are then linked to relevant career options. Depending on a student's aspirations, Xello presents careers that may require a two- or four-year college education, apprenticeship or military training. The results are tailored to the student's input — making the experience relevant and meaningful.

Context is also woven into each college and career profile. Students can view, at a glance, how well a career connects to their preferences, to which cluster it belongs, and what every job entails. Career profiles even outline postsecondary education and train-





ing, providing students with the complete picture of the steps they'll need to take after graduation to achieve their goals.

"Every student is exploring [career profiles] right until the end of the class — there's no need to remind them to focus or stay on task," said Mike Wilson, a career and technical education specialist in Wenatchee, Washington. "They're excited about their futures and we can help [them] prepare for the real world in a personalized, but still scalable, way."

Preparation at scale comes in the form of integrated planning tools and embedded course planning. Xello encourages students to channel their newfound excitement into actionable plans. They can save careers, colleges and postsecondary programs to create an individualized road map aligned to their aspirations. With integrated course planning, they can then easily build four-year plans to align with their goals and keep them on track to graduate.

Plans help make future goals more concrete, while Xello's integrated lessons facilitate ongoing reflection and reassessment. Lessons can serve as age-appropriate, ready-made curriculum to help guide your students through the college and career planning process. Each lesson integrates student-specific information to help contextualize learning. Activities teach students 21st century skills like problem solving, financial literacy and teamwork — ensuring students graduate with the ability to persevere, pivot and persist.

## Conclusion

Xello didn't exist when Ryan was a kid. After graduating high school, he found his future as an electrician. He now runs a successful electrical contracting company. Today, to help students like Ryan, schools turn to Xello. Because Ryan didn't come to the table with a plan. By engaging those students to define who they are and what they want to become, programs like Xello help unlock their academic potential.

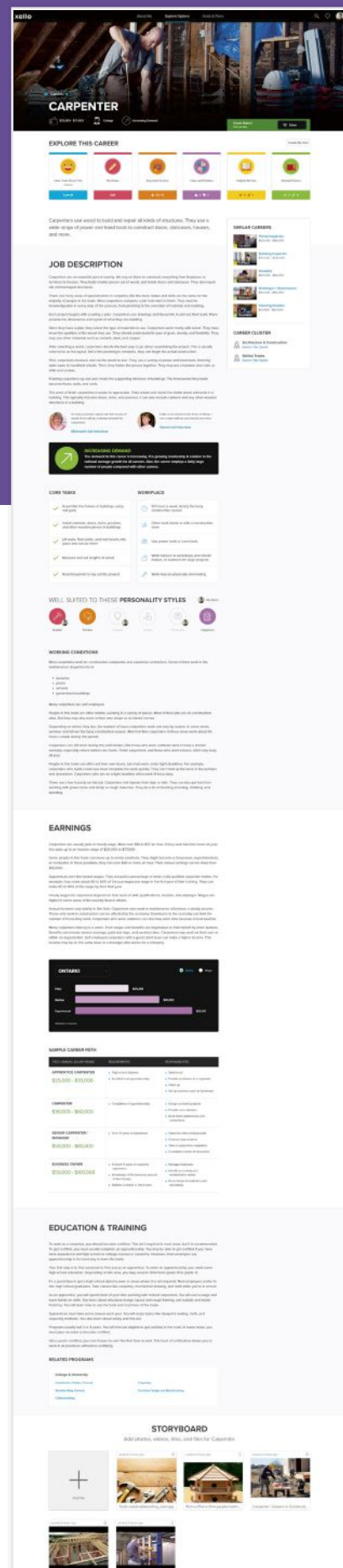
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## EXPLORE MORE

Want to make every student, future ready? Visit [go.xello.world/acte](https://go.xello.world/acte) to learn how you can get Xello and boost student engagement in your school.

## INDUSTRY CONNECT



# TALK TO YOUR STUDENTS ABOUT **HOW THE ARMY CAN HELP** ENHANCE THEIR MATH, ENGLISH AND SCIENCE SKILLS AND **LEARN VALUABLE TEST TAKING STRATEGIES**

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- Trade school entrance tests
- Military entrance test
- High school/college placement tests
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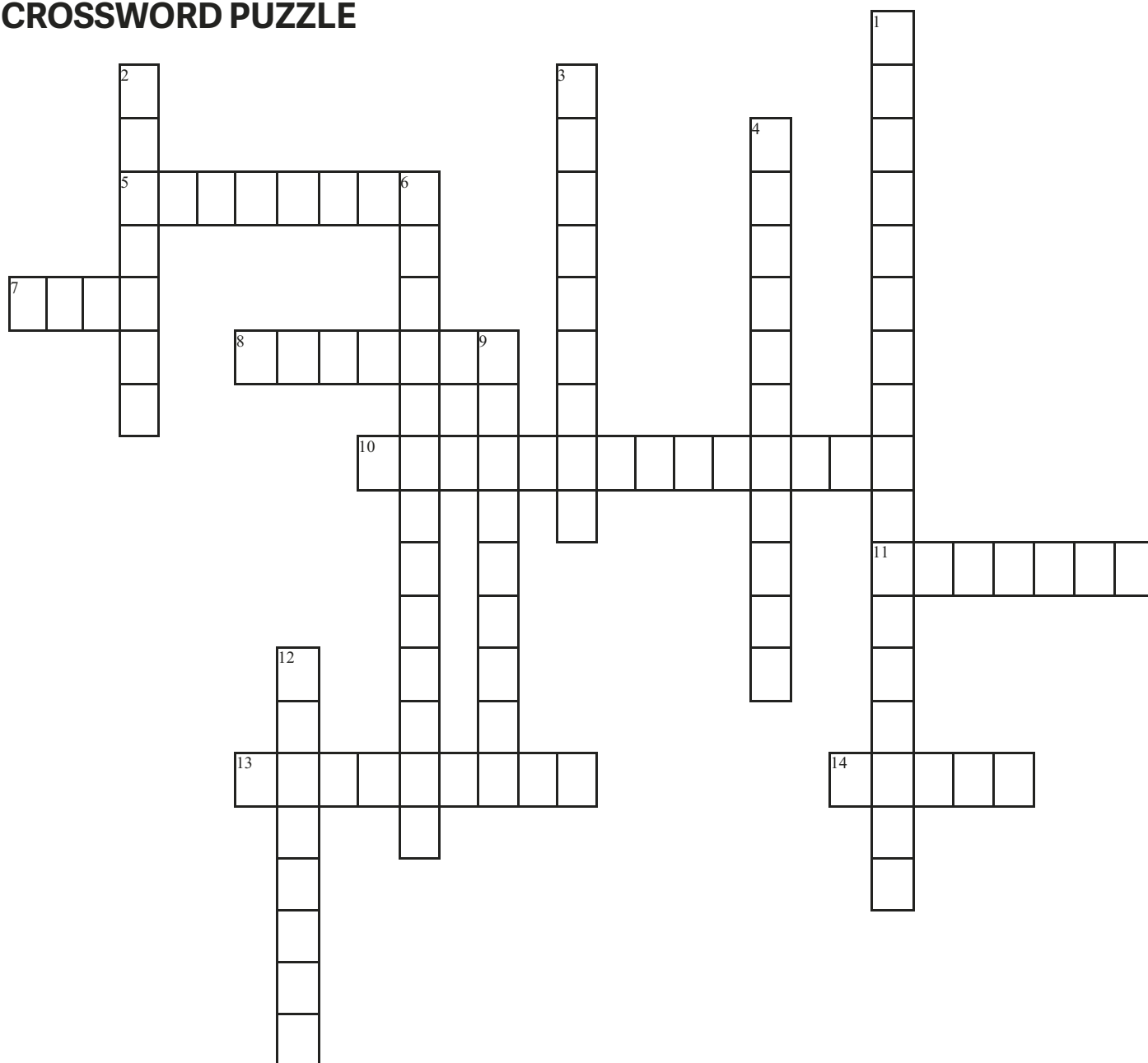
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# ENGAGING STUDENTS THROUGH CTE

## CROSSWORD PUZZLE



### Across

5. "Rigorous, \_\_\_\_\_ assignments make a substantial difference in students' readiness for college and careers."
7. CTSO that "prepares emerging leaders and entrepreneurs in marketing, finance, hospitality and management"
8. The S in CTSO
10. Event held at ACTE's CareerTech VISION designed to inspire students to follow CTE career paths
11. The state that voted most recently to unify with ACTE
13. Going "\_\_\_\_\_": an innovative strategy Marc Hunt has used to engage his students through CTE
14. Last name of FCCLA alumna who earned an exclusive fashion internship

### Down

1. A program designed to prepare an individual for success in a registered apprenticeship
2. The E in SE2R
3. Site of the 2018 FBLA-PBL National Leadership Conference
4. The rearing of aquatic animals or the cultivation of aquatic plants for food
6. Event held by the Arizona state chapter of Educators Rising to collect new and gently used books for elementary students
9. The number of days Maxwell Maltz, M.D., first claimed it takes to form a habit
12. University for which high school construction students performed locker room renovations

# Easier to Own. Easier to Learn.

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Plus, the PathPilot you learn with a Tormach mill is the same PathPilot you get on a lathe, which is great for cross-training in an educational setting.

