



BUILDING SKILLS AND FUTURES:

EnCorps' Role in Shaping Career Technical Education in California

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Summary

There is a long-recognized connection between what you learn in school and what your lifelong opportunities are in the workforce. Giving students the chance to build foundational technical skills in specific industries alongside their learning in core subjects like English and math has been a valuable educational option for millions of students spanning generations here in the United States. Whether focused on healthcare, technology, engineering, or other trades, “vocational” or “career technical” education has helped students build practical, hands-on skills and earn industry certifications that are immediately recognized and prized in the modern job market.

The Evolution and Impact of Career Technical Education

Career technical education (CTE) helps students learn concepts and skills using real-world industry scenarios where learning happens predominantly through projects, collaborative work, and various hands-on activities. Research on the benefits of CTE over the years shows that it positively impacts students’ rates of high school graduation, academic engagement, coursework selection, and future earnings potential. However, CTE has a bit of a nuanced history, as early efforts took a deeply flawed approach to an otherwise compelling idea.



Recognizing the public interest in boosting productivity and employment, the United States government first allocated federal funding for states’ vocational skills programs in 1917 through the Smith-Hughes Act. The funding focused on educational programs in agriculture, home economics, as well as trade and industries. But when first introduced, vocational education was structured as a distinct pathway separate from general education. As the programs grew and evolved over the century, the public began to sound the alarm on credible evidence of racism and class bias, seeing how students from particular socio-economic backgrounds and lower academic performance levels were pushed away from college and toward this differentiated track. Concerns emerged that vocational education was intentionally excluding certain groups of students from the benefits of the college-preparatory, general education track offering more defined pathways to innovative and higher-paying careers.

Thankfully, the public education system adjusted, and in 2006 the term “vocational education” was rebranded as “career and technical education” through the Carl D. Perkins Career and Technical Education Act. In the years since, modern CTE efforts have been deliberately focused on expanding future opportunities for all students, not narrowing them based on a student’s race, class, or presumed inability to meet high academic expectations.

Today, after many studies that prove its benefits, CTE is widely regarded as a necessary and promising option for everyone, not just those who historically would have been written off as kids who simply “wouldn’t cut it” in college. Students from all walks of life benefit from having a variety of pathway options, mentorships and apprenticeships, and workplace-transferable skills as parts of their toolkit for adulthood—in fact, studies have shown that students who participate in real-world connected CTE are more likely to graduate from high school and become college-ready than similarly situated peers who do not participate in CTE programming.

Here at EnCorps, where our mission is to advocate for STEM educational equity for students who are traditionally under-represented in the sector, we couldn’t be more excited by the changes we have observed in CTE and what this progress means for the future of our nation’s classrooms, industries, and goals to advance STEM equity for all.

California as a CTE Case Study

A national leader in education, the state of California—where EnCorps is headquartered—is investing in career technical education in a way that ensures students will leave high school with a plurality of options to pursue higher education or take early steps toward building a meaningful career.



Through the California Legislature’s Golden State Pathway initiative, the state has earmarked half a billion dollars for high schools to implement robust career and college preparation programs. The initiative is meant to align with and help advance the Governor’s new statewide Master Plan for Career Education, which aims to strengthen

the linkages between California’s high schools, colleges, and local employers.

In short, California is making huge investments that will ensure our K-12 education systems are better equipped to help students learn useful, on-the-job skills while simultaneously serving the needs of employers in the region by

creating a larger pool of prospective new hires who can hit the ground running once they graduate and enter the workforce.

An especially exciting component of the state's initiative is the prioritization of students' introduction to science, technology, engineering, and math careers through opportunities like job shadowing on employer campuses and dual enrollment programs at local colleges.

At EnCorps, we know that among STEM companies' employee ranks in particular, women, BIPOC individuals, and those who grew up in households experiencing poverty are woefully underrepresented or altogether absent. We are optimistic about California's initiative, confident that large and long-term investments in CTE will ultimately help curb this frustrating scarcity of diverse representation in STEM. CTE programs are not only proven to increase college enrollment and success outcomes for women and disadvantaged students, but a nine-year study from California's Linked Learning Alliance showed that CTE also increases students' likelihood of securing a job with health insurance, paid vacation time, and sick leave.

Coupled with higher initial and lifetime earnings after students participate in CTE, these attractive workplace benefits support the long-term retention of racial, gender, and income-diverse employees in STEM.

EnCorps, Poised and Positioned to Help California's Students and Educators



The success of the Golden State Pathways initiative and Governor’s Master Plan for Career Education heavily depends on strong collaboration between California’s K-12 schools, local colleges and universities, regional employers, nonprofit organizations, elected officials, students, and families. It will also only be successful if schools can employ well-trained teachers who bring deep professional knowledge and industry experiences into the classroom, even as they may need additional support along the way to develop and hone their pedagogical approach. This aligns directly with EnCorps’ *raison d’être*, as forging partnerships with industry professionals to offer students equitable access to real-world STEM applications is fundamental to our mission. EnCorps is ready and well-positioned to do our part to support these statewide goals, building on our decades-long experience in training STEM industry professionals to pursue second-act careers as teachers in our state’s Title I public school classrooms.

We’ve seen firsthand the crucial role CTE teachers play in our education system, especially in bringing real workforce readiness skills to students. EnCorps has recruited, trained, and ultimately prepared nearly 100 CTE teachers to enter California’s public education system over the last 10 years, supporting scientists and engineers in their transitions from renowned STEM companies into the classroom.

These are industry-experienced educators who can provide unique “insider” insights and real-world anecdotes to students who are eager to learn about what it’s like to work in architecture, manufacturing, engineering, aerospace, automotive, healthcare, and other STEM fields but who may not have encountered any such role models who could share their on-the-ground experience.

We want this to be the norm for more students in California and across the nation. Looking ahead, EnCorps is partnering with Los Angeles Unified School District (LAUSD) through its CTE-Linked Learning and Work-Based Learning Program to offer new CTE teachers support and mentorship during their first two years at the district. The “New CTE Teacher Training and Mentoring Program” has been made possible through a generous grant from The Eli & Edythe Broad Foundation. The program will match new CTE teachers with an experienced mentor teacher who will provide support and guidance that helps each new teacher build and refine their instructional practice.

New CTE teachers will participate in 4 in-person trainings, twice per month mentorship meetings, and 5 annual observation and follow-up coaching sessions. They will develop a teaching portfolio and pedagogy in alignment with research-based practices evaluated in their district’s Teaching and Learning Framework. The

artifacts new CTE teachers create, use, and refine through this program will ultimately help them apply for and obtain a Clear CTE designated subjects teaching credential the following year.

This training is filling a critical void for new CTE teachers. There are some districts in our state currently experiencing double-digit CTE teacher attrition rates year after year, as many new CTE teachers have the subject matter expertise to explain course content, but are not provided enough support to teach and manage a classroom effectively, leading to their attrition. EnCorps is determined to help these new teachers succeed for the sake of California's students, who deserve nothing short of the very best educational opportunities our state can collectively give them. Through participation in EnCorps' proprietary training uniquely focused on the needs of CTE educators, early and first-time CTE teachers will gain the skills they need to stay in the classroom longer—leaving our training with a sense of community and belonging, and feeling better able to perform in their new professional roles with confidence and initiative. Just like the CTE students, they will one day teach.

Real Student Impact in the Real World

EnCorps' commitment to empowering California's CTE teachers can be seen in the experiences of current CTE teacher and alumni EnCorps Fellow, Katherine Simon. Katherine is a former civil engineer who worked for URS Corporation, an AECOM Company. She now teaches dual enrollment courses focused on civil engineering and architecture at Da Vinci Design, a charter high school in El Segundo, California.

"Since I came from industry, the way I teach and approach things is quite different, I found, than most of my general education colleagues," Katherine shared.



“Most have never worked in different companies or industries and really have only ever been in the classroom. I’ve had industry experience with many different companies, and I run my classroom like I would an office, almost like I’m my students’ manager at work.

I found that my students appreciate that. It takes them a while to get used to it, but I see a lot of growth, and they really appreciate it in the end.”



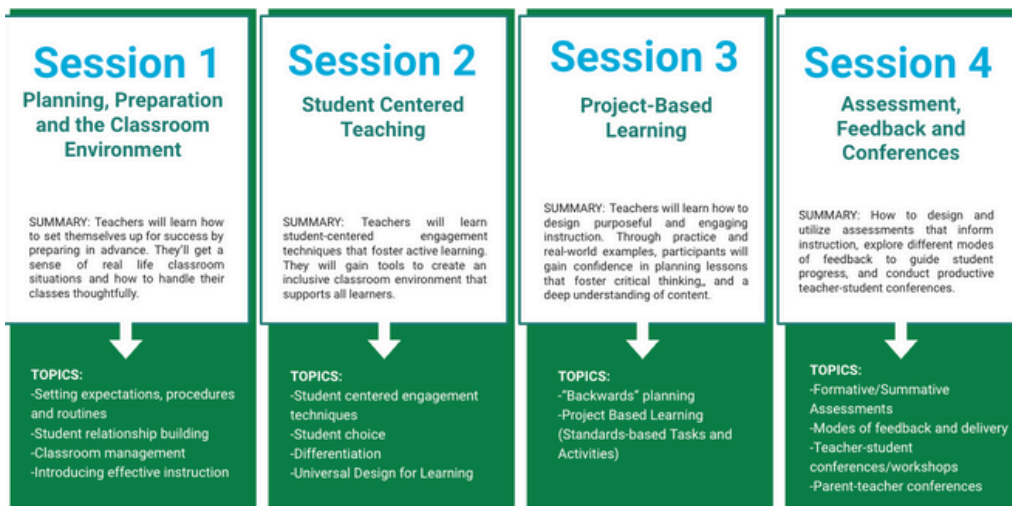
The class, and Katherine’s influence as the teacher leading it, is working.

Recently, Jade*—one of Katherine’s former students—emailed her after graduating to share that she secured a London-based internship with luxury carmaker, Aston Martin. She cited the skills she built and the specific software they used in Katherine’s class as the reason the car brand gave her the opportunity. Thanks to that high school CTE experience, Jade is not only pursuing steps toward her dream career, but she’s building independence, learning about other parts of the world, and shaping new perspectives by doing so on the other side of the globe.

Then there’s Ricardo,* a former senior taking Katherine’s class who was initially struggling with a large final project that didn’t resonate with him. Recognizing his brilliance and determined to help him succeed, Katherine pivoted his focus to helping set up new laser cutters and other architecture and engineering equipment in the school’s lab.

This new responsibility ignited a passion, and Ricardo even returned after school and over the summer to help others learn how to use the equipment, giving him a welcome distraction from some tough experiences at home. Now, Ricardo is able to take those skills he mastered and apply for a number of exciting professional opportunities, confident in his expert knowledge of this state-of-the art technology.

*** *Student names changed for privacy***



Partner with EnCorps

Jade and Ricardo’s achievements illustrate how impactful CTE programs can be in a young person’s life, and how important caring, confident, and effective teachers like Katherine can be to their success.

This has been the hallmark of EnCorps’ impact over the last 17 years. By inviting STEM professionals into our state’s public school classrooms through our STEMx Tutoring program and EnCorps STEM Teachers Fellowship programs—and by supporting these aspiring educators with professional development, credentialing resources, and the expert guidance of seasoned teacher mentors—EnCorps has nurtured hundreds of STEM educators who not only excel in their instructional practices, but who also remain in the classroom longer and who yield outstanding academic outcomes for our California’s most historically marginalized students.

Continuing toward that end, we are now eager to bring EnCorps’ New CTE Teacher Training and Mentoring Program to other schools and districts in need across the state. To speak with someone about how to make this training available to your staff, please contact our CTE Training Team at ctetraining@encorps.org.

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