

## *Why Career Technical Education Matters*

Career Technical Education (CTE) is the practice of teaching middle school, high school, and post-secondary students the skills required for them to have successful careers. This skills-based approach is different from the academics and theory-based approaches of traditional schooling.

Formerly referred to as vocational education, CTE programs often offer both academic and career-oriented courses, as well as work experience through internships and on-the-job training.

Hands-on experience is the focus of CTE, as most CTE careers require workers to have experience in a particular field before embarking upon a career. Due to this, CTE programs often focus more on practice instead of academic memorization.

CTE programs offer a wide range of learning experiences spanning many different career tracks: everything from automotive technology, agriculture, construction, and plumbing to architecture, culinary arts, engineering, fashion design, healthcare, and robotics.

But this doesn't mean that CTE tracks limit students to single careers. These courses often serve students as preparation before moving onto community college or university.

CTE helps students to be more than merely students. It provides technical and employability skills in addition to academic skills. Once more, students see how their learning directly applies to the real-world needs of employers.

According to the Association for Career and Technical Education, high school students involved in CTE are more engaged, perform better and graduate at higher rates: 93 percent, compared to an average national freshman graduation rate of 80 percent. And 91 percent of high school graduates who earned 2-3 CTE credits enrolled in college.

And there is a significant need for qualified workers with CTE-level skill-sets. Health care occupations, according to the Bureau of Labor Statistics, are projected to grow 18 percent by 2026, adding more than 2 million new jobs. Similarly, 3 million workers will be needed for the nation's infrastructure in the next decade, and half of the energy workforce may need to be replaced by 2024, with demand for solar and wind energy technicians likely doubling. Automotive programs, for instance, have progressed beyond training mechanics to training technicians, due to the increased complexity of automobiles.

CTE is a proven method of motivating students to attend school more frequently and be more engaged, and therefore improving core academic skills. This career-oriented approach teaches the skills essential to lifelong learning, and often does so better than traditional schooling, particularly for disadvantaged youth.



According to the Office of Career, Technical and Adult Education there were 7,502,727 secondary CTE participants and 3,948,554 postsecondary CTE participants, or students who took at least 1 credit of CTE, in the 2013-2014 school year. And from the U.S. Department of Education—A Look at Career and Technical Education Programs in Public School Districts: 2016–17 (2018)— 98 percent of public school districts offered CTE programs to students at the high school level during the 2016–17 school year.

A study by Daniel Kreisman and Kevin Stange (Vocational and Career Tech Education in American High Schools: The Value of Depth over Breadth *Andrew Young School of Policy Studies Research Paper Series No. 17-12* 62 Pages Posted: 13 Oct 2017) relies on data from the NLSY97, a nationally representative sample of 12- to 17- year-old youth in 1997 that tracks individuals over time.

This study found that CTE participation is associated with higher wages, with each additional year of upper-level vocational coursework associated with a nearly 2 percent wage increase.

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Many school-reform advocates deem CTE as an underutilized learning pathway. Its practical, real-world relevance appeals to many students, and a focus on 21st century skills such as critical thinking and experience with new technologies are relevant to most academic subject areas.

Industry 4.0 refers to the technological trends driving industry into the foreseeable future. These technologies are rapidly transforming how people work in manufacturing, engineering, and other industry sectors, helping them become more productive by connecting cloud-based and mobile data analytics software to smart devices.

Today's Career and Technical Education courses need to integrate Industry 4.0 concepts and technology into training programs and career paths if we want to lead in emerging industries critical to our nation's success.

