

Career Technical Education: A Definition

Career Technical Education (CTE) is the teaching of specific career skills to students in middle school, high school, and post-secondary institutions. CTE provides rigorous, career-focused learning opportunities in a variety of settings and levels to provide students with the technical skills and academic knowledge needed to either prepare for future employment or to have a more successful post-secondary experience.

CTE prepares students for the world of work—either known careers or those yet to be created—through introduction to workplace competencies. And—according to the Association for Career and Technical Education—the high school graduation rate for CTE concentrators is 93 percent, compared to an average national freshman graduation rate of 80 percent.

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In many high schools, you can still find the same voc-ed (vocational education) classes that existed half a century ago. They tend to prepare students for jobs that don't typically require college degrees, such as child care, cosmetology, plumbing, or welding.

But today's CTE is very different than your grandfather's voc-ed. Many programs now focus on areas generally associated with associate or bachelor's degrees, such as coding, digital media, engineering or business. Because career-tech-ed classes of all kinds are increasingly seen as roads to additional study after high school, they are meant to be more academically rigorous than those in the past.

According to the Carl D. Perkins Career and Technical Education Act (the main federal law that provides funding for CTE programs), roughly 8.3 million high school students—nearly half the U.S. high school population—were enrolled in one or more CTE courses in 2016-17.

New labor-market realities are one of the forces behind CTE's resurgence. The fact is that there are fewer jobs for those without some kind of postsecondary training or degree.

Another factor is the "college for all" movement of the last decade. Low college-completion rates have had education experts reconsidering the traditional four-year-college path and looking for ways to reinvigorate and incorporate some form of postsecondary training: especially those involving certification or credentials in fields such as robotics or engineering.



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This shift in focus has also affected high school CTE programs: the best of which require rigorous college-prep classes in addition to hands-on learning that lets students apply academics to career-relevant problems.

CTE is constantly evolving to meet the demands of Industry 4.0: a term that describes the fourth industrial revolution as one where automation and data exchange in manufacturing technologies. These demands will require a workforce trained in the latest modeling technologies, cyber-physical systems, the Internet of Things (IoT), cloud computing, virtual/augmented reality, and artificial intelligence innovations. CTE must be future-focused in order to provide the facilities and tools so that students can be prepared for these seismic shifts in the job market.

High quality, next generation CTE learning spaces are often a hybrid: blending the latest technology to support digital media creation and computational with more “traditional” offerings including machine shop, welding, sewing, etc. Though facilities are crucial for developing CTE skills, the most successful programs are those where schools partner with relevant industries. This allows students the chance to get first-hand experience with different tools, scenarios, or principles through internships: better preparing students for the world of work by providing academic content in a hands-on context.

