



CTE WORKS!



CTE Works for High School Students

- A ratio of one CTE class for every two academic classes minimizes the risk of students dropping out of high school. (Plank et al., *Dropping Out of High School and the Place of Career and Technical Education*, National Research Center for CTE, 2005)
- The more students participate in career and technical student organizations, the higher their academic motivation, academic engagement, grades, career self-efficacy, college aspirations and employability skills. (Alfeld et al., *Looking Inside the Black Box: The Value Added by Career and Technical Student Organizations to Students' High School Experience*, National Research Center for CTE, 2007)
- Students attending CTE high schools have demonstrated higher rates of on-time graduation and credit accumulation and a greater likelihood of successfully finishing a college preparatory mathematics sequence. (Neild et al., *The Academic Impacts of Career and Technical Schools: A Case Study of a Large Urban School District*, 2013)
- Eighty percent of students taking a college preparatory academic curriculum with rigorous CTE met college and career readiness goals, compared to only 63 percent of students taking the same academic core who did not experience rigorous CTE. (Southern Regional Education Board, *High Schools That Work 2012 Assessment*)
- CTE students were significantly more likely than their non-CTE counterparts to report developing problem-solving, project completion, research, math, college application, work-related, communication, time management and critical-thinking skills during

high school. The Society for Human Resource Management (SHRM) has identified employer demand for many of these skills. (Lekes et al., *CTE Pathway Programs, Academic Performance and the Transition to College and Career*, National Research Center for CTE, 2007; SHRM and WSJ.com/Careers, *Critical Skills Needs and Resources for the Changing Workforce*, 2008)

- The average high school graduation rate in 2012 for CTE concentrators was 93 percent, compared to the national adjusted cohort graduation rate of 80 percent. (Office of Career, Technical and Adult Education data; Civic Enterprises et al., *Building a Grad Nation: Progress and Challenge in Ending the High School Dropout Epidemic: Annual Update*, 2014)
- In a study of college freshmen, 60 percent who had participated in at least one high school work-based learning activity and 64 percent who had participated in two or more activities had a college GPA above 3.0, compared to 58 percent of the entire cohort. (Swail and Kampits, *Work-Based Learning and Higher Education: A Research Perspective*, Educational Policy Institute, 2004)

CTE Works for Postsecondary Students and Adults

- Students in programs that blend basic skills and occupational training are far more likely than similar adult students to improve basic skills and earn college-level credits. (Jenkins et al., *Educational Outcomes of I-BEST, Washington State Community and Technical College System's Integrated Basic Education and Skills Training Program: Findings from a Multivariate Analysis*, CCRC Working Paper No. 16, 2009)

- Participation in skills-training programs has increased wages and earnings, raised the probability and consistency of employment and led to work in higher-quality jobs. (Maguire et al., *Job Training That Works: Findings from the Sectoral Employment Impact Study*, Sectoral Employment Initiative: Public/Private Ventures (7), May 2009)
- Forty-three percent of young workers with licenses and certificates earn more than those with an associate degree; 27 percent of young workers with licenses and certificates earn more than those with a bachelor's degree; and 31 percent of young workers with associate degrees earn more than those with a bachelor's degree. (Georgetown University Center on Education and the Workforce, *Valuing Certificates*, Presentation, 2009)
- Business-education partnerships help adults build technical, academic and employability skills through education and on-the-job training. Examples include the Health Careers Collaborative in Cincinnati and the Georgia Power Electrical Lineworker Bootcamp, among many others. (Corporate Voices for Working Families, *A Talent Development Solution: Exploring Business Drivers and Returns in Learn and Earn Partnerships*, 2012)
- Postsecondary CTE concentrators achieve significantly higher earnings than those who majored in academic fields, particularly those employed in an industry related to their program of study. (Jacobson and Mokher, *Florida Study of Career and Technical Education*, 2014, as cited in the 2014 National Assessment of CTE Final Report)
- About 50 percent of all STEM jobs are open to workers with less than a bachelor's degree. (Rothwell, *The Hidden STEM Economy*, 2013)
- In Virginia, occupational/technical associate degree holders out-earn non-occupational associate degree holders by about \$6,000 and bachelor's degree holders by almost \$2,500 per year. This is a high return on a modest investment—average tuition and fees for U.S. public two-year institutions are less than half of tuition and fees for four-year colleges. (Schneider et al., *The Earning Power of Recent Graduates from Virginia's Colleges and Universities*, College Measures, 2012; College Board, *Average Published Undergraduate Charges by Sector*, 2012–13)

CTE Works for Businesses and the Economy

- Skilled trade workers, engineers, IT staff and nurses are some of the top jobs employers are having trouble filling in the U.S., and CTE plays a critical role in training workers in these areas. (Manpower Group, *Talent Shortage Survey Results*, 2014)
- Almost half of talent recruiters at Fortune 1000 companies report trouble finding qualified candidates with two-year STEM degrees. (Bayer Corporation, *Facts of Science Education XVI*, 2013)
- More than 75 percent of manufacturers report a moderate to severe skills shortage, resulting in an increase in overtime costs and an annual loss of 11 percent of earnings. CTE plays a vital role in helping American businesses close this gap by building a competitive workforce for the 21st century. (Accenture and The Manufacturing Institute, *Out of Inventory: Skills Shortage Threatens Growth for U.S. Manufacturing*, 2014)
- Middle-skill jobs, jobs that require education and training beyond high school but less than a bachelor's degree, are a significant part of the economy. Of the 55 million job openings created by 2020, 30 percent will require some college or a two-year associate degree. (Carnevale et al., *Recovery: Job Growth and Education Requirements Through 2020*, Georgetown University Center on Education and the Workforce, 2013)
- Communities across the nation benefit from CTE. In Washington, for every dollar spent on secondary CTE students, taxpayers will receive \$9 in revenues and benefits. In Connecticut, every public dollar invested in community colleges returns \$16.40 over the course of students' careers. Los Angeles County's economy receives roughly \$9.1 billion annually from the Los Angeles Community College District. (Washington State Workforce Training and Education Coordinating Board, *2014 Workforce Training Results*; Robison and Christophersen, *The Economic Contribution of Connecticut's Community Colleges and Economic Contribution of the Los Angeles Community College District*, 2008)