

Career and Technical Education in Washington State

Career and technical education (CTE) plays a key role in preparing students for postsecondary education and the workforce by blending academic and technical instruction with opportunities to earn college credit, gain work experience, and obtain industry-recognized credentials. Here, we share highlights from “Career and Technical Education in Washington State: A Longitudinal Study of Student Access, Participation, and Outcomes” and “Career and Technical Education in Washington State: Spotlight on Access to College Credit Opportunities through CTE.” These reports use Washington State Education Research and Data Center (ERDC) P20W integrated data to explore patterns in student access to and participation in CTE programming, as well as the high school graduation, postsecondary, and labor market outcomes they achieved from 2013–14 to 2023–24.

See the full report for more information on data sources, methods, findings, and recommendations.

KEY FINDINGS



At the state level, the provision of CTE has been steady since 2013–14.

Rural schools, low-income schools, and small schools offered fewer pathways, on average. The stability of CTE offerings across the state is somewhat surprising given changes in the state’s economy over this time.



Opportunities for students to earn college credit through CTE Dual Credit have become more equitable over the last 10 years.

Schools across income levels offer a similar percentage of CTE Dual Credit courses, a program that enables students to earn college credit through CTE.



Participation in CTE is high and has been growing over time.

Among students in the 2024 cohort, 94 percent earned at least one credit in CTE overall. The share of students earning four or more credits in CTE overall rose from 42 percent (2017) to 56 percent (2024).



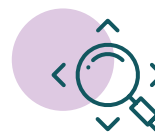
Students are more likely to explore CTE broadly than to pursue in-depth study in a single pathway.

Overall, 84 percent of students in the 2024 cohort earned at least two CTE credits across all pathways, while only 45 percent did so within a single pathway. Rates of earning at least two CTE credits in a single pathway were between 6 and 10 percentage points lower for several underserved groups, especially those who experienced homelessness, identified as American Indian/Alaska Native or Black, or were nonbinary.



Students who earned more credits in CTE were more likely to graduate from high school.

Compared to students who only took up to one credit in CTE, observationally similar students who earned more than one credit overall were 5.7 to 12.0 percentage points more likely to graduate from high school.



















Students who focused their CTE studies in a single pathway were generally more likely to experience stronger postsecondary or labor market outcomes six years following high school, with outcomes varying by cluster.

Students focusing their studies in a single pathway—especially in Agriculture, Finance, Manufacturing, and Transportation—were more likely to complete a credential and earn a living wage six years after high school.

See reverse side for an overview of the relationship between different CTE credit attainment levels in a cluster and six-year outcomes for students who graduated in 2016–17 (the 2017 cohort). These state-level data provide a useful starting point for examining local CTE offerings but reflect limited outcomes—postsecondary completion and earnings within six years. They don’t capture the full range of student experiences or long-term success, and outcomes likely vary by region based on how well CTE pathways align with local labor markets and postsecondary opportunities. *Deeper local analysis is needed to meaningfully inform any decision-making.*

How CTE credit attainment levels within a cluster relate to outcomes for the 2017 high school cohort

Cluster	<div>▲ Positive impact – Positive and statistically significant relationship with the outcome and none of the CTE credit attainment levels have a negative and significant relationship with the outcome.</div> <div>▼ Negative impact – Negative and statistically significant relationship with the outcome and none of the CTE credit attainment levels have a positive and significant relationship with the outcome.</div> <div>— Mixed impact – Both a positive and negative statistically significant relationship with the outcome or if exactly two CTE credit attainment levels are not statistically significant (and the other credit attainment level has either a positive or negative statistically significant relationship with the outcome).</div> <div>○ Null impact – All three CTE credit attainment levels have no relationship with the outcome.</div>															
	 Agriculture, Food & Natural Resources	 Architecture & Construction	 Arts, A/V Technology & Communications	 Business, Management & Administration	 Education & Training	 Finance	 Government & Public Administration	 Health Sciences	 Hospitality & Tourism	 Human Services	 Information Technology	 Law, Public Safety, Corrections & Security	 Manufacturing	 Marketing	 Science, Technology, Engineering, and Mathematics	 Transportation Distribution & Logistics
Completion of any degree or credential by 2022–23	—	○	○	—	—	▲	○	▼	○	○	○	○	—	○	○	▲
Completion of certificate by 2022–23	▲	○	—	○	○	○	○	○	○	—	—	○	▲	○	—	▲
Completion of associate degree by 2022–23	○	○	○	—	○	▲	○	—	—	○	—	—	○	○	○	○
Completion of bachelor's degree by 2022–23	○	○	○	—	▼	▲	○	▼	○	○	—	○	○	○	—	○
Annual earnings in 2022–23	▲	▲	▼	▲	○	▲	○	—	—	—	▲	—	▲	—	▲	▲
Cumulative earnings through 2022–23	▲	▲	▼	▲	○	▲	○	○	▼	▼	▲	○	▲	○	—	▲
Earned a living wage in 2022–23	▲	▲	▼	▲	○	▲	—	○	○	○	▲	○	▲	—	▲	▲

Note: Table summarizes the regression results presented in appendix C of the main report. For each cluster, the table consolidates the three regression coefficients—representing different CTE credit attainment levels of more than one and up to two, more than two and up to three, and more than three credits—into a single indicator representing the overall impact of credit attainment.

Source: Authors’ analysis of ERDC P20W Integrated Data System.

RECOMMENDATIONS

Promote deeper engagement within a single pathway.

Students who earned multiple credits in a single pathway achieved the strongest outcomes, yet not all students reach this level due to persistent disparities. While deeper engagement may improve outcomes, early specialization may not suit all students. Systemic barriers—not just individual choice—can limit participation. Addressing local barriers to participation and refining the CTE Graduation Pathway requirement could promote depth while allowing room for exploration.

Engage more male students.

The positive effects of CTE on high school graduation, completing a postsecondary certificate, annual earnings, and earning a living wage were even stronger for male students. Expanding access to and engagement in CTE could serve as a powerful strategy for addressing gender-based disparities in education and employment outcomes.

Strengthen alignment between CTE pathways and local needs and opportunities.

CTE pathways should reflect local economic needs, but offerings have remained largely unchanged despite major shifts in the job market. Some pathways show weak connections to postsecondary or labor market outcomes. To support student success and mobility, future research should assess alignment between CTE pathways and high-demand, high-wage careers and training opportunities—and identify ways to strengthen it. These insights can guide program improvements and help students make more informed choices.