CTE | Career & Technical Education RESEARCH NETWORK

What We Know About the Impact of Career and Technical Education: A Systematic Review of the Research

April 2024

AUTHORS

Jim Lindsay | Katherine Hughes | Shaun M. Dougherty | Kelly Reese | Megha Joshi

Career and technical education (CTE) is widespread and popular with students at both the secondary and post-secondary/tertiary levels. Yet, despite decades of research on the topic, until recently little has been known about the causal effects of CTE on student outcomes. The CTE Research Network was created in 2018 to help address this lack of evidence and encourage and train researchers to examine the impacts of CTE on student outcomes.

Does CTE benefit students? If so, which students does it benefit, and in which settings? These questions are at the heart of the Network's mission. To address them, the Network conducted a systematic review of the research literature spanning the past 20 years.

This evidence review was designed to address the following research questions:

1. Which types of CTE programs have been the focus of studies that make causal claims?
2. What is the impact of CTE program participation on student outcomes? Specifically, does CTE have impacts on students' secondary-level outcomes, their postsecondary education outcomes, and their employment outcomes?
3. When examining the combination of CTE program types and relevant outcomes, for which combinations are there gaps in the causal research?

The research team, including What Works Clearinghouse (WWC)–certified reviewers, followed a multistep process. The team initially identified 10,048 studies as potentially relevant; of these, 280 studies were deemed eligible for review. Our team then applied WWC standards (Version 4.1) for causal studies to the 280 studies and judged 38 to be relevant and likely to meet those standards.[1] Ultimately, we focused this review on the subset of 28 studies that examined the impact of secondary-level, CTE-related programs.

The 28 impact studies addressed three general types of CTE: CTE-focused small learning groups (e.g., career academies), whole-school models (CTE high schools), and exposure to CTE courses.

Meta-analytic findings indicate the following:

- **CTE has statistically significant positive impacts on several high school outcomes, such as students' academic achievement, high school completion, employability skills, and college readiness.** There is no impact on student discipline or attendance.
- **Compared to similar students who do not take CTE, those who do are more likely to enroll in 2-year colleges.** However, no differences were found for enrollment in 4-year college and progressing in college. Synthesizing across the studies, there is no impact on the likelihood of completing a college degree.

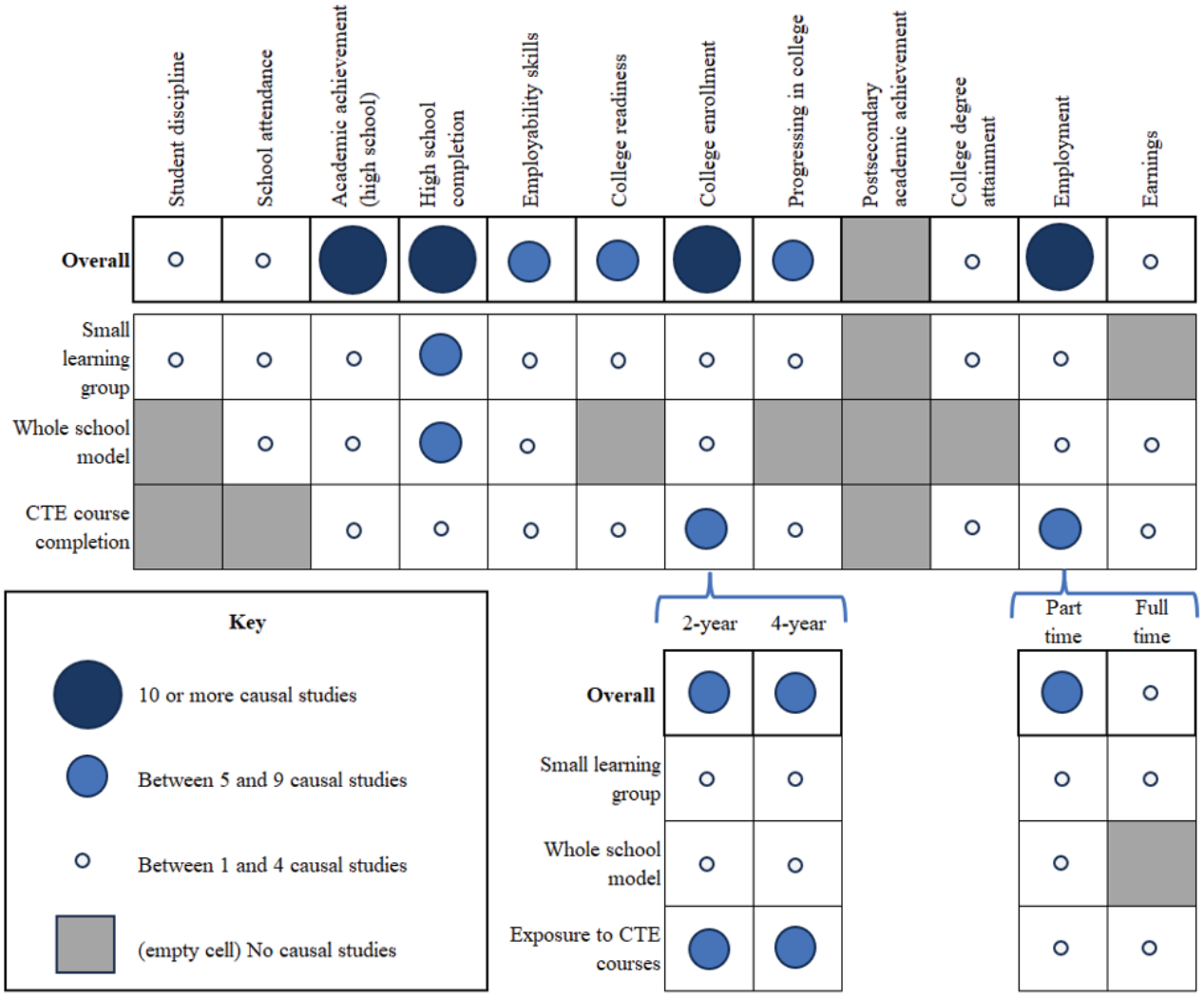
[1] Even though reviewers are certified as WWC reviewers and used the *WWC Standards and Procedures Handbook, Version 4.1* as the basis for determining if studies were capable of detecting causal relationships, this review was not part of a WWC contract and did not use the WWC's online study review guide to determine if studies met standards. For this reason, the review cannot be described as a WWC review. Our team's ratings may vary from those presented in official WWC reviews.

- **Those who take CTE courses in high school are more likely than those who did not take CTE courses to be employed after high school.** CTE course-takers had similar earnings to those who did not take CTE.
- **We found no statistically significant negative impacts of CTE participation.**

While our review examined small learning groups and whole-school CTE delivery models, there is currently insufficient evidence to determine if any particular model produces stronger impacts than others.

Regarding identifying gaps in the causal research, we mapped out the terrain of CTE causal studies by listing combinations of CTE program types and outcome domains and then tabulating the number of causal studies that addressed each combination. We found that no causal studies have examined CTE impacts on student academic achievement in college. Relatively few studies (fewer than five) have examined CTE's impacts on student discipline and attendance in high school, attainment of a postsecondary degree, or later earnings.

Gaps in Evidence on the Effects of Career and Technical Education



Read the full report at https://cteresearchnetwork.org/resources/2024-systematic-review.

The work of the CTE Research Network Lead is supported by the Institute of Education Sciences at the U.S. Department of Education with funds provided under the *Carl D. Perkins Career and Technical Education Act* through Grant R305N180005 to the American Institutes for Research (AIR). The work of the Network member projects is supported by the Institute. The opinions expressed are those of the authors and do not represent the views of the Institute or the U.S. Department of Education.

23836_03/24