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## **Research Brief**

### **CAREER ACADEMIES AND THE RESURGENCE OF CAREER AND TECHNICAL EDUCATION IN THE UNITED STATES**

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# **Career Academies and the Resurgence of Career and Technical Education in the United States**

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## **Highlights**

- Interest in career and technical education (CTE) has intensified in the past few years, as demand for “middle-skill” jobs has expanded alongside concerns about high school completion.
- Career academies serve an increasingly wide range of students, including high-achieving students.
- Current evidence suggests that concentrated CTE experiences, such as career academies, can increase high school attendance, completion, postsecondary enrollment, and earnings.
- Research has not kept pace with the expanding policy interest in CTE, and we know relatively little about how different forms and foci of contemporary CTE shape outcomes for different groups of students.

## **Executive Summary**

This brief discusses recent evidence on career academies and concentrated CTE experiences. Though interest in CTE has expanded over the past few years, the research base has not kept pace with such expansion. Thus, opportunities are ripe for researchers and educational leaders to partner in order to expand the knowledge base around CTE experiences. This brief describes the growing interest and participation in CTE, discusses current knowledge on the effects of participation in concentrated CTE experiences such as career academies on student outcomes, and closes with a discussion of remaining gaps in knowledge and considerations for policymakers interested in expanding CTE offerings.

## What Is the Issue?

Career and technical education (CTE) has long played a role in K–12 public education in the United States, having received federal support for more than a century (Imperatore & Hyslop, 2017). Most American high school students earn at least one CTE credit and a sizable proportion complete an occupational concentration (Levesque et al., 2008). Interest in CTE has seen a recent resurgence following decades of focus placed more squarely on expanding the number of courses in traditional academic areas required of students for high school graduation.<sup>1</sup> Heightened interest in CTE comes at a time of growth in “middle-skill” jobs<sup>2</sup> and concerns about high school completion.<sup>3</sup>

Career academies are one form of CTE, which broadly aims to simultaneously equip students with skills demanded by the labor market and prepare them for some form of postsecondary study. Such academies are within-school, multi-year programs that integrate CTE courses, project-based learning, internships, and other activities organized around specific career themes. Proponents of career academies argue that the “school-within-a-school” approach facilitates the exposure of students to CTE and traditional academic courses in a more integrated fashion and leverages school-wide infrastructure to bolster the kinds of interpersonal supports that are signature ingredients of a functional career academy (such as career counseling and supervision of work-based learning). Skeptics worry that academies might sacrifice postsecondary preparation for vocational skills or exacerbate the overrepresentation of minority students in non-college-bound curricular tracks.

Much of the research on CTE and career academies followed passage of the Carl D. Perkins Vocational Education Act of 1984 and tends to reflect educational and economic contexts that predate more contemporary, high-stakes accountability policies. We touch on this earlier evidence and discuss more recent work on career academies and concentrated CTE experiences below.

## What Is Known?

### *Who Enrolls in Career Academies and Other CTE-Based Programs?*

Contemporary versions of CTE must contend with stigma that stems partially from the vocational education training of the 1970s and 1980s. Students of color, low-income students, and chronically low performing students were more likely to enroll in such vocational courses, which often lacked integration with academic coursework.<sup>4</sup> More recent work suggests that the profile of students participating in CTE has widened. Indeed, the vast majority of high school students earn at least one CTE credit before graduating, and one-fifth complete a specialized occupational concentration (Levesque et al., 2008). Work from one large, diverse school district in the United States that has recently invested in the expansion of its system of career academies finds that students who enroll in career academies are generally higher performing than their non-academy peers (Hemelt, Lenard, & Paepflow, in press). One possible interpretation of these shifting enrollment trends is that the view held by parents, families, and schools concerning CTE—at least in the form of career academies—may be changing from one that sees such academies as targeting underperforming students to an initiative that has the potential to benefit a broad swath of high school students.

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<sup>1</sup> For more information on these prior trends, see <https://nces.ed.gov/pubs2014/2014901.pdf>.

<sup>2</sup> “Middle-skill” jobs are those that require some form of postsecondary training less than a 4-year degree (Holzer, 2010).

<sup>3</sup> In the United States, between 15% and 20% of adolescents fail to finish high school (Snyder, de Brey, & Dillow, 2016).

<sup>4</sup> For example, see Oakes and Guiton (1995) and Kreisman and Stange (2017).

## *How Does Participation in Career Academies and Other CTE-Based Programs Affect Student Outcomes?*

There is limited work on the causal effects of career academies on student outcomes. Social scientists at MDRC studied a group of academies during the 1990s that were oversubscribed and therefore allotted seats to students by lottery. All told, findings from this work paint a mixed picture of career academy effects on outcomes along the trajectory from adolescence to adulthood. On average, the academies had no effects on high school graduation or college enrolment (Kemple, 2001; Kemple & Snipes, 2000; Kemple & Willner, 2008). However, over the longer term, males in the academy group experienced sustained increases in real yearly earnings (i.e., an average increase of about \$3,700 per year, or 17%) as well as an increased propensity to form and sustain families. There were no detectable differences in earnings between females in the treatment (i.e., career academy) group and the control group (Page, 2012).

Since the MDRC work, there has been scant work focused on career academies or other forms of concentrated CTE capable of uncovering causal effects on student outcomes. Two recent studies begin to fill this gap. Work in North Carolina finds that participation in an academy focused on information technology improves attendance early in high school, increases the likelihood of high school graduation, and boosts college-going for males but not females (Hemelt et al., in press). Notably, applicants to this academy were relatively high performing students; thus, the results from this limited case suggest that career academies stand to benefit a broad range of students, including those typically deemed of lower risk for dropout but who may still disengage from high school in other ways. An important caveat to bear in mind is that this work focused on one academy that was adequately funded by the district and an associated nonprofit organization. Thus, these features of the wider context are important for policymakers to consider when attempting to apply these findings more broadly.

Recent work in Massachusetts explores student participation in specialized, regional high schools in which all students take some form of CTE. Indeed, students alternate on a weekly basis between academic coursework and CTE courses in a particular technical area such as business, health, or technology. Thus, though this form of CTE is not a career academy, it contains similar elements such as the cohort-based progression of students through a curriculum that deeply integrates academic and CTE coursework. Findings suggest that participating in this form of CTE increases the likelihood of high school graduation, with a relatively larger boost for low-income students (Dougherty, 2018).

### **What Is Not Known?**

The recent evidence presented in the prior section reflects one state and one school district. Going forward, informed policymaking around CTE will require evidence from a much broader array of settings and populations.

This brief has focused on a narrow set of CTE experiences; namely, those that require substantial concentration in a CTE area and that are embedded within traditional academic coursework in a sustained fashion. However, CTE takes myriad shapes. Career academies and specialized high schools like those in Massachusetts are not the only two ways schools and districts can organize CTE coursework. Further, an open question is the degree to which different forms of CTE training benefit (or not) different types of students.

Though much work on CTE, including recent research, finds some positive effects on short- or medium-run measures of employment and earnings, other work using European data (Hanushek, Schwerdt, Woessmann, & Zhang, 2017) finds evidence of an important tradeoff of such short-run effects; namely, students with focused vocational training struggle in the long run to adapt to changes in the economy

more than their counterparts with more general education that is arguably more transferrable across industries and jobs. Further, the degree to which certain forms or areas of CTE encourage students to delay or forgo reasonable postsecondary study in favor of such short-run employment paths is unclear.

What is the relationship between CTE programming and labor market demand? On one hand, state and local policymakers can design CTE programming that mirrors the 18 occupational areas identified in federal studies (Levesque et al., 2008). On the other, they can gauge local demand for specific occupational areas and correspondingly tailor programming to align with local labor market contexts. But we know very little about how—or whether—K–12, postsecondary, and business stakeholders coordinate in the development of CTE programs and policies.

Finally, we know very little about the costs of CTE and career academies. Recent work suggests that the per-pupil cost of enrolling in a regional vocational high school is roughly \$6,000, while career academy participation costs roughly \$1,100 to \$2,400, depending on the concentration area and sources of funds (e.g., local school funding, parent–teacher associations [PTAs], or supporting nonprofits) (Dougherty, 2018; Hemelt et al., in press; Parsi, Plank, & Stern, 2009). However, these estimates are drawn from only three states—hardly representative of the wealth of CTE and career academy programming occurring nationwide.

### **Policy Levers and Policymaking Challenges**

CTE appears to be experiencing a renewal in both perception and rigor in the era of recent Perkins Act reauthorizations. The same is true for one type of CTE programming: career academies. The role of CTE as a “holding tank” for underperforming students or those transitioning from high school directly to the workforce has waned. Instead, many states have updated college-ready graduation requirements to include CTE courses alongside, or in place of, occupational diplomas (Glancy et al., 2014).

Moving forward, policymakers should take steps to enhance our knowledge base of CTE effectiveness, coalesce around a common set of key ingredients for CTE concentrations or high-quality career academies, and take account of CTE costs.

To expand the CTE research base, policymakers at all levels can prioritize funding opportunities that would facilitate careful examinations of CTE programs and policies. At the national level, the Institute of Education Sciences (IES) as well as various foundations, for example, could expand competitive opportunities for researchers and practitioners to study CTE.<sup>5</sup> At the local level, district accountability offices could earmark a small percentage of overall program funding for separate evaluations of CTE-related initiatives.

To identify key CTE features, standards, and ingredients, policymakers can turn to groups like the Association for Career & Technical Education (ACTE) and NAF, which publish quality standards for CTE and career academy programming, respectively (ACTE, 2015; NAF, 2015). Notably, both organizations emphasize the inclusion of work-based experiences (e.g., internships or apprenticeships), enrollee access to integrated advanced coursework (e.g., Advanced Placement, dual enrollment, or International Baccalaureate), and strategic recruitment and retention of qualified staff. Future research that identifies mechanisms through which concentrated CTE experiences may bring about boosts in measures of educational attainment or labor market success can also help to shape key ingredients of such programming.

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<sup>5</sup> IES has solicited grant applications focused on CTE for the past 3 years. In 2017 and 2018, the topic was competed as one of the “special topics” areas. In 2019, it became a standing topic. For more information, see <https://ies.ed.gov/ncer/projects/program.asp?ProgID=100>.

To enhance funding opportunities for CTE, policymakers should look beyond the single largest source of CTE funds—the roughly \$1.2 billion distributed through Perkins Act authorizations. Nearly all of this funding is distributed to states by formula, and roughly two-thirds reaches local education agencies. Since this federal funding level has remained relatively constant over time, districts have likely acclimated to it and established CTE programming accordingly. The extent to which districts can innovate (e.g., develop regional vocational schools or expand career academy offerings) depends on making fiscal tradeoffs or seeking additional funding sources (e.g., private foundations, PTAs, businesses, nonprofits). This presents both a challenge and an opportunity for policymakers considering new or expanded CTE options.

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