

## Results in Brief:

# National Assessment of Career and Technical Education: Final Report

September 2014

The *Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV)* was intended to raise the academic and technical rigor of secondary and postsecondary CTE instruction in order to prepare students for entry into high-skill, high-wage, or high-demand occupations. Under *Perkins IV*, CTE generally means a sequence of courses that provides students with coherent and rigorous content aligned with challenging academic standards, as well as relevant technical knowledge and skills needed to prepare for further education and careers. *Perkins IV* introduced a requirement that all local subgrantees offer one or more programs of study (POS) — career pathways that help students make the transition from secondary to postsecondary education while pursuing an industry-recognized credential, postsecondary certificate, or degree. *Perkins IV* also introduced new accountability requirements, including adding new indicators and reporting requirements aligned with the *Elementary and Secondary Education Act of 1965, as amended (ESEA)* and extending accountability and performance reporting requirements to local subgrantees.

## STUDY QUESTIONS

The congressionally-mandated National Assessment of Career and Technical Education (NACTE) was designed to address the following questions:

1. Has student participation in CTE programs changed?
2. How were *Perkins IV* funds allocated and used?
3. How were states and local subgrantees developing and implementing programs of study?
4. How were states implementing accountability provisions, and what measurement issues affect the validity and reliability of the accountability data that were reported?
5. Are educational and employment outcomes showing positive results for CTE participants?

## STUDY DESIGN AND LIMITATIONS

This report summarizes data from a study of *Perkins IV* implementation, commissioned studies of CTE student outcomes, and analyses of NCES datasets. The *Perkins* implementation study included surveys of all states and a representative sample of 2,041 LEAs and 1,006 IHEs in fall 2009; response rates ranged from 77–100 percent.

It is important to note that much of the data in this report is for years when grantees were still in the early stages of implementing *Perkins IV* provisions, and CTE students had had limited exposure to changes enacted in *Perkins IV*. The NACTE was not able to examine the effects or effectiveness of *Perkins IV* and instead provides information on program implementation and on student participation and outcomes related to CTE in general.

## Highlights

- Secondary CTE coursetaking declined slightly from 1990 to 2009, while academic coursetaking increased. Some occupational areas saw large increases in CTE coursetaking, most notably health sciences and public services.
- Subgrantees most commonly used *Perkins* funds for equipment, career guidance, and academic counseling.
- Both state and local CTE directors reported incomplete compliance, as of 2008–09, with requirements that POS link secondary and postsecondary education by aligning course sequences.
- States and local subgrantees are not required to report on POS participation and outcomes, and there are no national data on the number of students participating in POS or the outcomes they achieve.
- States showed substantial variation in their definitions of CTE concentrators and in the specific measures they used for performance indicators.
- Studies that used quasi-experimental methods to control for student background found little or no relationship between CTE coursetaking and academic achievement.
- Education and employment outcomes varied considerably by CTE field. For example, completion of a postsecondary degree or certificate in the same field was most common among high school graduates who concentrated in health sciences.
- Postsecondary students who earned a CTE certificate or associate's degree had better employment outcomes than those who did not earn a subbaccalaureate credential, although students who earned a bachelor's degree had even better employment outcomes.

## CTE PROGRAMS AND PARTICIPATION

In 2009, 85 percent of public high school graduates completed one or more occupational CTE courses, 76 percent had earned at least one full CTE credit, and 19 percent were CTE concentrators who completed at least three credits in the same CTE field.

Secondary CTE coursetaking declined from 1990 to 2009, while academic coursetaking increased. However, some occupational areas saw large increases in CTE coursetaking, most notably health sciences (+222 percent) and public services (+153 percent).

At the postsecondary level, the number of students earning certificates or associate's degrees in CTE fields rose 71 percent from 2002 to 2012, compared with a 54 percent increase in all undergraduate awards. Some CTE fields showed higher rates of growth (e.g., health sciences, +137 percent) while other fields showed declines (e.g., marketing, -44 percent).

## FINANCE

Federal appropriations for *Perkins IV* have fallen since the 2006 reauthorization. Adjusting for inflation, total Perkins funding declined by 24 percent from FY 2007 to FY 2014. Declines in allocations for individual states ranged from 6 to 30 percent.

In FY 2010, states allocated 64 percent of their *Perkins* Title I subgrant funds to secondary school programs and 36 percent to postsecondary programs, on average, about the same proportions as in FY 2001.

High-poverty school districts received larger allocations per secondary student in 2009-10 than lower-poverty districts. However, they received smaller allocations per poor school-age child than lower-poverty school districts.

The uses of *Perkins* funds most frequently reported by subgrantees were purchasing equipment and providing career guidance and academic counseling to students.

## PROGRAMS OF STUDY

Reports from both state and local CTE directors indicated incomplete compliance, as of 2008-09, with statutory requirements that POS provide a coordinated, non-duplicative progression of courses that link secondary and postsecondary education. For example, less than two-thirds of local directors reported that at least one of their five highest-enrollment POS was non-duplicative across the two levels.

Nearly half of all states (23) reported in 2008-09 that CTE teachers or faculty did not have a good understanding of POS, suggesting that the POS concept was unclear to the instructors who were expected to deliver it.

States and local subgrantees are not required to report on POS participation and outcomes, and there are no national data on the number of students participating in POS or the outcomes they achieve.

## ACCOUNTABILITY

Flexibility in the *Perkins* accountability system precludes the ability to use the performance indicator data for valid comparisons between states or for aggregating data across states to examine national progress over time.

States showed substantial variation in their definitions of CTE concentrators, and local subgrantees used a variety of methods to identify CTE concentrators.

*ESEA* assessments are often administered before students reach concentrator status, so the academic attainment indicator often provides information on the academic abilities of students who subsequently became CTE concentrators.

Some states reported reading and math proficiency rates for CTE concentrators under *Perkins* that were unexpectedly higher than the proficiency rates they reported for all students under *ESEA* and that appear to be inconsistent with research findings. Similar patterns were found for reporting on graduation rates.

## STUDENT OUTCOMES

The percentage of high school graduates completing 4-year college preparatory coursework nearly doubled from 1990 to 2009, with larger increases for CTE students than for non-CTE students. However, the differences between CTE and non-CTE students may reflect changes in who participated in CTE rather than the impact of CTE.

NACTE-commissioned studies that used quasi-experimental methods to control for student background found little or no relationship between CTE coursetaking and academic achievement; differences in achievement between CTE concentrators and non-concentrators were almost entirely explained by differences in student characteristics.

College-going and completion rates varied considerably by CTE concentration field. For example, college-going rates for 2004 high school graduates, as of 2006, ranged from 84 percent for CTE students who had concentrated in computer and information sciences to 52 percent for concentrators in repair and transportation.

Eight years after graduating from high school in 2004, CTE concentrators had average hourly wages that were not statistically different — no better but no worse — than those for graduates who were non-concentrators and had the same level of postsecondary attainment.

CTE students in certificate programs were more likely to attain a credential than were CTE students in associate's degree programs. Within each of these two types of subbaccalaureate credentials, students in CTE and academic fields attained credentials at similar rates within six years.

Postsecondary students who earned a CTE certificate or associate's degree were more likely to be employed and to consider their job to be the start of a career than were those who did not earn a credential. However, students who earned a bachelor's degree had even better employment outcomes.