

The Impacts of Gender and Income on Career and Technical Education

By Mary Cashen, 2012 Visiting Graduate Scholar

For decades, high school students have taken technical training classes that prepare them for jobs, but little research has examined the impact these classes have on whether those students go to college.

In a new study, Center for Poverty Research 2012 Visiting Graduate scholar Mary Cashen finds that both family income and gender predict which students are more likely to complete high school Career and Technical Education (CTE) courses, as well as which will pursue a two- or four-year degree.

Key Findings

- Students from families with incomes below \$25,000 per year are likely to complete more CTE units and fewer other high school units than their higher-income peers.
- About 46% of low-income male students completed courses in computer science, agribusiness, construction trades, mechanics and repairs or precision production, compared to 16% of low-income females.
- To complete traditionally female-dominated vocational courses, such as family and consumer science, makes it less likely a student will enroll in a two- or four-year college.

President Barack Obama's Career and Technical Education Blueprint makes it imperative that "every student in our country graduates from high school prepared for college and a successful career."¹ However, by October of 2011, only 68 percent of 2011 high school graduates were enrolled in a college or university.²

Proponents of high school career and technical education (CTE) argue that its value should not be judged in terms of whether or not they increase the chances an academically weak student will attain a college degree.³ Career training in high school can prepare students for jobs in a range of fields, including business, computer and information sciences and construction.

Over 95 percent of high school students took at least one CTE course in 2000, and approximately one fourth took three or more courses in the same CTE concentration.⁴ American high schools students continue to complete CTE courses, which makes it imperative to understand the consequences they have on later education attainment and earnings.

¹ "Investing in America's Future: A Blueprint for Transforming Career and Technical Education," U.S. Department of Education, April 2012.

² "College Enrollment and Work Activity of 2011 High School Graduates," U.S. Bureau of Labor Statistics, April 2012. www.fns.usda.gov.

³ Arum, Richard, and Yossi Shavit. 1995. "Secondary Vocational Education and the Transition from School to Work." *Sociology of Education* 68:187-204.

⁴ "National Assessment of Vocational Education: Final Report to Congress," U.S. Department of Education, 2004.

About the Center

Over the past 50 years, the U.S. has experienced a rising standard of living without reducing the fraction of the population that live in poverty. In response to this, the Center for Poverty Research at UC Davis is one of three federally designated National Poverty Centers whose mission is to facilitate non-partisan academic research on poverty in the U.S., to disseminate this research, and to train the next generation of poverty scholars. Our research agenda spans four themed areas of focus:

- Labor Markets and Poverty
- Children and the Intergenerational Transmission of Poverty
- The Non-traditional Safety Net, focusing on health and education
- The Relationship Between Poverty and Immigration

The Center was founded in the fall of 2011 with core funding from the Office of the Assistant Secretary for Planning and Evaluation in the U.S. Department of Health and Human Services.

For more information, email us at povertycenter@ucdavis.edu or visit us online at: poverty.ucdavis.edu

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Understanding poverty, shaping the future of poverty research

The Data on Career and Technical Training

This study focuses on outlooks for career and technical education (CTE) in U.S. high schools in the 21st century. It analyzes CTE course-taking patterns for male and female students from different socioeconomic backgrounds, and strives to make conclusions about what policies would improve high school curriculum for those students who are least likely to complete college.

This study uses data from the Educational Longitudinal Study of 2002 (ELS: 2002), a nationally representative dataset of high school sophomores in 2002, as well as a second and third wave of data collection in 2004 and 2006. Analyses were conducted only for non-private school students for whom complete high school transcript data was available.

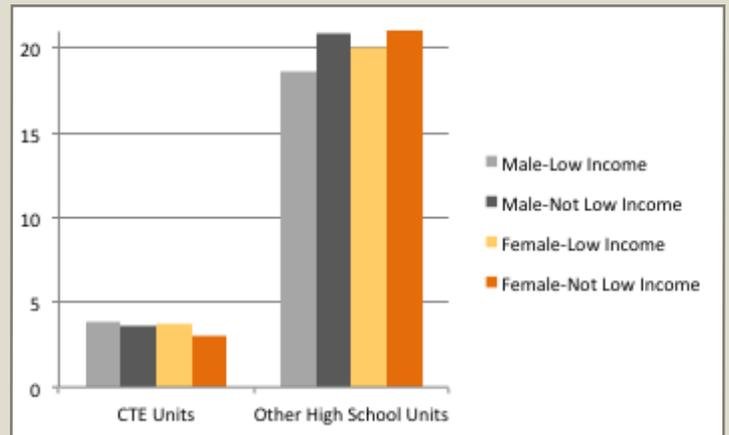
CTE courses are identified as male or female if they were found with a t-test to be dominated by one gender or another. Female-dominated courses were in family and consumer science or home economics, while male-dominated courses were in computer science, agribusiness, construction trades, mechanics and repairs or precision production.

Gendered Courses of Study

The results indicate that young women complete significantly more family and consumer science education, business and office, allied health and health sciences and vocational home economics units than their male counterparts. This is consistent with previous research. Males from low-income families, and those with parents without college degrees, are less likely to participate in female-dominated vocational courses. Males from families with higher income, and whose parents have a higher level of education, are not as deterred.

CTE and College Enrollment

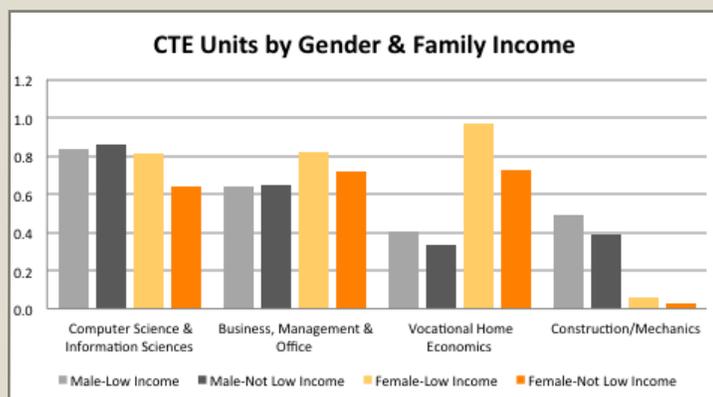
Gendered vocational education courses have different effects for males and females. To complete traditionally



This graph shows the significant differences in the number of CTE units and other high school units by gender and family income.

female-dominated vocational education courses reduced the likelihood that the participant would enroll in a two- or four-year college. Students who completed male-dominated vocational courses were no more or less likely to attend a two- or four-year college. However, those who concentrated in a specific vocation, like culinary school or construction, were less likely to enroll in a four-year college.

In the "College for All" era, where all students are expected to go to college, careful consideration needs to be taken when enrolling students in vocational coursework, particularly among women. Prior research has shown that, in fact, students trained in female-dominated vocational courses are at a large wage disadvantage compared to those who enroll in a male-dominated vocational education.⁵ This means that not only are women who pursue a female-dominated vocational education less likely to go to college, they are also less likely to earn a living wage.



Significant differences in vocational home economics courses and construction/mechanics course completion exist not only by gender but also by family income.

⁵ *Building New Possibilities: Promising Practices for Recruiting and Retaining Students in Career and Technical Education Programs That Are Nontraditional for Their Gender.* The Association for Career and Technical Education, 2009.

Meet the Researcher

Mary Ellen Cashen is a Ph.D. candidate in Educational Policy and Social Context at UC Irvine. She studies high schools, career and technical education, poverty, inequality and gender differences in labor-market outcomes for low-income students. Contact her at: mcashen@uci.edu.

About the Visiting Graduate Scholars Program

Each year, the Center hosts Ph.D. students from across the country as Visiting Graduate Scholars to conduct poverty research in a variety of disciplines, including economics, psychology, sociology, social work, public policy, law and education. Their coursework and research during their stay expands their understanding of the causes and consequences of poverty, and offers faculty mentorship and support in their continuing research.