

## CAN COMBINING ACADEMIC AND CAREER-TECHNICAL EDUCATION IMPROVE HIGH SCHOOL OUTCOMES IN CALIFORNIA?

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### Highlights:

- ▶ California has 286 state-funded "career academies" with a curriculum designed to prepare students for both college *and* careers.
- ▶ Innovative schools (like *High Tech High* in San Diego) are blending college-prep coursework with project-based learning strategies similar to career-technical education.
- ▶ In California high schools in 2005-06, one out of six career-technical classes had been approved by the University of California to meet admission requirements—up from less than one percent in 2001-2002.
- ▶ Some studies have found that students who combine a college-preparatory curriculum with a career-technical sequence show gains in test scores, are less likely to drop out of high school, do better in the labor market, and are more likely to enroll in postsecondary education.

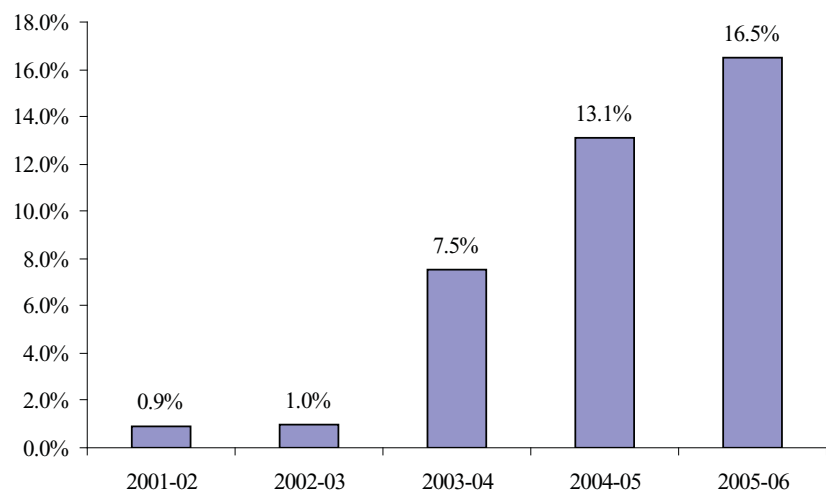
One strategy for improving high school outcomes involves combining college-preparatory coursework with career-technical education (CTE) in the high school curriculum. The aim is to make high school more meaningful and motivating for more students, to increase graduation rates, and to prepare graduates for a range of postsecondary options.

### ▶ History

Whether preparation for college and for work should be combined or separated has been debated in the United States for more than a century. The debate continues even now.

Throughout most of the the 20th century, vocational education was provided in separate courses, or tracks, within comprehensive high schools, or in specialized vocational high schools, with the aim of preparing students for occupations not requiring bachelor's degrees. Employer groups provided much of the political support for vocational education.

**California Career Technical Education Courses Meeting University of California Admission Requirements**



SOURCE: California Department of Education, *California High School Career Technical Education Courses Meeting University of California A-G Admission Requirements for 2006-07*. Retrieved November 10, 2007, from [http://www.ucop.edu/a-gGuide/ag/content/CDE-UCApprovedCTECourses2006-07\\_002.doc](http://www.ucop.edu/a-gGuide/ag/content/CDE-UCApprovedCTECourses2006-07_002.doc)

Read the full report at: [lmri.ucsb.edu/dropouts](http://lmri.ucsb.edu/dropouts)

However, in the 1980s, influential spokesmen for employers questioned the efficacy of traditional vocational education. Social scientists also criticized the “tracking” of low-income and minority students into vocational courses that did not challenge them academically. In 1990, Congress wrote new language requiring that federally-supported vocational instruction be integrated with academic education.

### ► Preparing Students for College and Careers

There is a strong rationale for trying to prepare high school students for both college *and* careers. Surveys find that the vast majority of students in secondary schools expect to obtain bachelor’s degrees or more; however, only about one-third of 25-34 year-olds currently accomplish that goal. Combining preparation for college and careers would respect and encourage high school students’ educational aspirations, while providing work-related instruction and experience that could help students work their way through college, or would help them compete for jobs if they leave school without a bachelor’s degree. Combining college-preparatory coursework with CTE also avoids having to track students into one curriculum or the other.

Preparation for college and career can be combined in various ways:

- Some high school students manage to complete the aca-

demical coursework required for college along with a career-technical sequence. This practice has been formalized and encouraged in some schools through *career pathways, majors, or clusters*.

- In some cases, high schools partner with community colleges to provide a program that integrates two years of high school with two years of postsecondary training, known as “2 + 2” or *Tech Prep*.
- Another approach is to enhance the academic content of CTE classes.
- “Career academies” within comprehensive high schools organize a multi-year curriculum around a career-related theme; students at each grade level take a set of core academic classes together, along with a technical class related to the career theme.
- There are also some entire high schools that specialize in preparation for one or more career fields, while also preparing students for college.

California has embraced each of these approaches. Most comprehensive high schools in the state offer either stand-alone or sequenced CTE courses, with 75 offering Tech Prep programs. In addition, the state has a system of 74 Regional Occupational Centers and Programs (ROCPs) that offer career and workforce preparation for high school students and adults.

A growing number of CTE courses in the state have been approved to meet admission requirements for the University of California and California State University (*see figure*). There are also 286 state-funded California Partnership Academies operating in California, and a similar number of other career academies that do not receive special state funding. Finally, a number of magnet and charter schools provide an integrated academic and CTE curriculum.

Research has found some positive evidence on effects of these approaches for students. Some studies have examined high school transcripts and found that students who combine a college-preparatory curriculum with a career-technical sequence in high school show relatively large gains in test scores, are less likely to drop out of high school, do better in the labor market after high school, and are more likely to enroll in postsecondary education. However, these positive outcomes may be attributable to positive qualities of the students—ambition, motivation, self-discipline—rather than to the combination of courses they take.

The Southern Regional Education Board, a nonprofit, non-partisan organization made up of 16 member states in the southern U.S., has created the *High Schools That Work* network which encourages schools to offer a combined college-and-career curriculum, and has reported favorable trends

in test scores over time. However, sampling limitations and lack of comparison schools make it difficult to draw clear conclusions about cause and effect.

Career academies have been the subject of several quasi-experimental studies that found positive effects on students' performance in high school and beyond, but a study where students were randomly assigned to career academies found positive impacts only on employment, not on educational outcomes.

A study of academically-enhanced CTE, in which CTE classrooms were randomly assigned to control groups, did find bigger academic gains in the enhanced classes, but the comparison was limited to other CTE classes.

In sum, the evidence of benefits for CTE students is not conclusive, but it is strong enough to justify continued development—and evaluation—of this approach.

### ► Challenges

The lack of decisive evidence that an integrated curriculum is more effective for students, along with the persistence of traditional beliefs that high schools should prepare some students for college and others for work, make it difficult to enact the idea that high school should prepare all students to graduate ready for college *and* careers.

Even if there were a strong consensus in favor of this idea, it would still not be easy to implement. At a minimum, it would mean ensuring that all students have the opportunity to complete academic course requirements for

admission to bachelor's degree programs, plus a sequence of career-technical classes that provide real preparation for work. This is no small challenge, especially given the large number of students who move from one high school to another, and the necessity of evaluating individual transcripts to determine whether incoming transfers are on pace to meet these requirements.

Beyond blending college-preparatory and career-technical course sequences, integrating the academic and career-technical curriculum would include the use of lessons, projects, or entire courses that actually bridge the academic and career-technical content. Building these bridges may involve partnerships among teachers, and scheduling students so that they take at least some of their classes together. If teachers are to work in teams, they have to be given time for collaborative planning.

All of this requires vision and support from school and district administrators, who are currently facing intense pressure to raise students' test scores. The challenges are formidable.

Notwithstanding these difficulties, some schools have succeeded in creating and sustaining programs that are committed to preparing students for both college and careers. The detailed descriptions provided in the full research report (on which this brief is based) illustrate that some schools are successfully integrating academic and career-technical education. Given that current state and federal policy interven-

tions in high schools are focusing almost entirely on academic achievement, it is noteworthy that these efforts have continued and even increased.

### ► Conclusion

High schools in California and the U.S. have long been, and continue to be, targets of criticism and reform. The dropout rate is still unacceptably high, especially among low-income and minority students. The search for solutions is ongoing. Increasingly, federal policy and powerful organizations representing CTE are supporting the use of high school CTE as part of an integrated curriculum that prepares students for postsecondary education, and for work, at the same time.

Some states, including California, are developing comprehensive plans to combine CTE with college preparation. Innovative high schools are demonstrating that work-based internships and project-based learning can be used to prepare students for college and careers.

Despite the challenges of implementation and the incompleteness of the evidence that this strategy produces the desired effects, the necessity of reconciling universal college aspirations with the realities of labor markets implies that programs combining academic and career-technical curriculum will—and should—continue to develop.

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