

## **Financing Adequate Career and Technical Education in Wisconsin**

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L. Allen Phelps

The Wisconsin School Finance Adequacy Initiative

UW-Madison

[http://www.wcer.wisc.edu/CPRE/finance/Phelps\\_Career\\_Technical\\_Ed\\_April\\_23\\_06final.pdf](http://www.wcer.wisc.edu/CPRE/finance/Phelps_Career_Technical_Ed_April_23_06final.pdf)

Minnesota Future Work staff note: In preparing the new Perkins plans, this type of information should provide a base of knowledge helpful to program and service validation. The recommendations also provide a catalyst to action to develop additional possible cooperative high school activities.

Forecasting future labor market trends and the implications for educational policy and practice in today's global, knowledge-based economy is, at best, a precarious endeavor. However, within the complex and changing milieu of economic, social, workforce, cultural and education forces, the policy context surrounding high school career and technical education is changing rapidly in many states, including California, Ohio, and South Carolina. Indicators confirm several major trends that will continue to influence and inform education policies:

- (1) the globalization of the science and engineering labor market is continuing at a rapid pace,
- (2) employment in engineering and science is becoming internationally diverse and those employed in engineering and related occupations are more internationally mobile, and
- (3) employers recruit and relocate employees internationally.

Moreover, the number of individuals in the U.S. with science and engineering degrees reaching retirement age will triple in the next decade.

A growing number of CTE courses are focused on (or have the potential to address) engineering, technology, and health service or health science workforce development needs. For policymakers, one of the major contemporary questions is: Which education and workforce investment strategies are optimally effective in addressing the following economic and workforce development trend indicators

In their analysis of the economic roots for reform in state level K-16 education systems, Carnevale and Desrochers (2003) argue for: (a) greater alignment between high school and postsecondary education institutions, (b) attention to changing skill as well as knowledge demands in high demand occupations, and © enhanced program options that ensure youth from poor families have access to 2-year college opportunities. The fastest-growing and best-paying jobs have been those that require at least some college. Currently, six in ten jobs are held by workers with at least some postsecondary education or training, compared with two in ten in 1959. The kind of education and skill demanded also has changed as a result of the shift to a service and information-based economy. Skill

requirements have expanded to include soft skills, such as problem-solving and interpersonal skills, that supplement the more narrow cognitive and occupational skills sought in the industrial economy. Attitudinal skills, such as a positive cognitive style, also are growing in importance because they allow workers to cope with the accelerating pace of change in the workplace.

Findings from a number of recent research syntheses and investigations offer some useful insights on innovative CTE programs and practices that appear to generate or be associated with the contemporary student learning and workforce development outcome expectations described earlier.

1. In a study of 19 industrialized countries (not including the U.S.), Bishop and Mane (2004) found that an increase in the share of secondary students enrolled in CTE programs is associated (positively and significantly) with an increase in high school graduation rates and in the percentage of 15-19 year olds enrolled in school.
2. A national longitudinal study of high school course taking revealed that a combination of four academic and three CTE courses had the greatest positive effect on high school graduation rates (Plank, 2001).
3. Compared to other college students, graduates of high school youth apprenticeship programs in Wisconsin (requiring completion of four courses and 1000 hours of work-based learning) were found to: enter college with comparable ACT scores, persist in college at the same rate with comparable grades, and are significantly more likely to complete an Associate's degree than their peers (Phelps, Knox, & Griggs, 1999).
4. Using data from the 1997 National Longitudinal Survey of Youth and controlling for a number of variables, including the non-random selection of school-to-career programs, Neumark and Rothstein (2003) found that youth participating in student-run, school based enterprises were more likely to enroll in college, while students completing cooperative education were more likely to be employed.
5. Many of the CTE reform initiatives advanced nationally in the past decade through the School-to-Work Act and the Perkins legislation have sought to link high school and community college programs more closely (e.g., Tech Prep). Using longitudinal data from Class of 1992, Marcotte, Bailey, Berkowski & Krenzl (2005) report finding consistent evidence that the average wages and salaries among young women and men who enroll in community colleges and those who earn associate degrees are substantially higher than the wages and salaries of their peers whose education does not extend beyond high school. On average, community college students earn 5-10% more for each year of community college coursework completed, including those who do not earn credentials or degrees.

If high school career and technical education programs are to prepare students for the economy, new fiscal policies that create incentives for educators, local partnerships, and

students are required. The following preliminary recommendations describe some of the foundational costs associated with providing students with access to high quality CTE.

1. Ensure that all high school students, along with their families, have access to and regularly use high quality career and college information and planning tools to make decisions about: course selection, planning high school majors, and post-high school career and college pathways. As suggested by the National High School Alliance's (2005) recommended school redesign strategies, it is imperative that high schools adopt systems which personalize the learning for all students and enhance their academic engagement by:
  - Developing a personal learning plan for each student.
  - Working across the school system to address student needs at critical transitions, in particular the transition from the middle grades to high school and from high school to college.
  - Providing individualized guidance, information, and resources on career pathways and opportunities for participating in workplace-based learning.
  
2. Ensure that during the last two years of high school all students: (a) enroll in a coherent set of 4-6 courses that represents a career-focused, postsecondary-linked major, (b) complete a college admission and financial aid application, and © graduate from high school with at least 3-9 credits on a college transcript. Several major studies have recommended initiatives that tightly align and bridge the high school senior year and the initial year in college (National Commission on the High School Senior Year, 2002; National Association of Secondary School Principals, 2004; Pathways to College, 2004). A related recommendation from the National High School Alliance suggest that high school redesign efforts must: Establish clear and rigorous standards aligned with curricula and entrance requirements for post-secondary education and career.
  
3. Encourage and sustain active instructional and career guidance roles for education-business-higher education partnerships that are focused on high wage careers. Preparing youth for science, technology and engineering related careers requires a web of collaboration among partners beyond high school, including academic mentors for students, technology coaches or mentors for teachers, work-based learning and internship opportunities and supervisors, speakers for college and career fairs, and the like from local business firms, non profit organizations, and higher education institutions.

Minnesota Future Work note: Recommendations four and five are not included as they are specific to Wisconsin policy.