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Phelps: Education with purpose

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Without question, Wisconsin's economic future increasingly depends on the quality and relevance of education.

In today's fast-growing knowledge-based global economy, Wisconsin faces some promising economic opportunities and some highly problematic trends.

Job openings in the state that require expertise in science, technology, engineering, and mathematics are projected to increase by 18.3 percent through 2014, compared to 11.5 percent for all other occupations. Of these 13,800 annual openings, more than two-thirds will require an associate's or bachelor's degree.

According to the Wisconsin Technology Council, "Wisconsin needs 150,000 more college graduates to meet the U.S. per capita income average . . . and another 150,000 workers with post-graduate degrees to exceed the U.S. per capita income average."

Yet, based on current trends, only 25 percent of Wisconsin's ninth graders will complete a two-year or four- year college degree within six years of high school graduation.

In 2004-05, just 21 percent of the degrees awarded by the UW System and the Wisconsin Technical Colleges System focused on the high-demand fields of science, technology, and engineering.

To ensure Wisconsin's future economic competitiveness, more of our high school graduates must excel in postsecondary education, especially in those two-year and four-year college majors that address the rising demand for skills in the science, engineering, health care, and technology sectors.

With support from the Department of Public Instruction and a group of science and engineering philanthropists, about 100 Wisconsin high schools next year will offer Project Lead the Way (PLTW), a new nationally prominent pre-engineering and technology curriculum.

By examining real-world engineering problems in a series of middle school and high school courses, PLTW students learn:

To understand the scientific process, engineering problem-solving, and the application of technology.

To use mathematics knowledge and skills to solve problems.

To read, write, listen, and speak effectively.

To work well with others.

Students who excel in PLTW courses can receive advanced standing in engineering technology associate- degree programs in nearly a third of Wisconsin's technical colleges and in some undergraduate engineering programs, including the Milwaukee School of Engineering and Purdue University.

In early studies conducted by UWMadison's Center on Education and Work, PLTW shows promise.

In four Wisconsin high schools, a recent survey found that PLTW students were 10-20 percent more likely than non-PLTW students in the same schools to agree that, in the past year, they:

Were encouraged to continue schooling beyond high school.

Had developed clear career goals.

Had solved real-world problems.

Were connecting ideas or concepts from one class or subject area to another.

Had worked on a project or paper that required research outside of assigned texts.

Were reading and understanding challenging learning material.

To ensure Wisconsin's capacity to compete in the New Economy, we need to pay greater attention to providing all young adults with better insights about the global economy, future career opportunities, and college majors.

State, regional, and local leaders should:

Create a common vision and agenda for all education and workforce development initiatives by integrating rather than separating college and career prep programs.

Offer standards-based programs of study rather than single courses to ensure that students acquire the in-depth competencies needed to pursue science, engineering and technology careers and majors in postsecondary education.

Develop guidance and mentoring programs that elevate expectations and support the learning and career development of all students, regardless of family income, race/ethnic background, and gender.

Get high schools, colleges, and regional business- education partnerships committed to measuring progress toward these goals annually.

<http://www.madison.com/wsj/home/column/other/index.php?ntid=130635&ntpid=1>

If you are interested in a copy of the full report, entitled Pre-Engineering Education in Wisconsin: Early Developments, Emerging Priorities, please contact Al Phelps at aphelps@education.wisc.edu