

STANDARDS, ASSESSMENT, AND INSTRUCTION

Alignment of STEM Education to Illinois' Economic Development

Chapter I pointed out some potential areas of concern for Illinois: the decline in the middle class, the need to create higher paying jobs, and a projected shortage of skilled workers in the future. If these predictions hold true, it will be important for the educational institutions to work closely with the business sector to create the skilled workforce needed for Illinois' economic vitality. Currently, according to Illinois Community College Board standards, all public community college career and technical programs are required to have advisory councils. Many other programs in community colleges and universities have such committees, but there is little evidence to show the extent to which advisors influence curriculum content. Influence seems most likely in professional training and programs such as business, technology, engineering, and health sciences.

There are many indications that the alignment of educational expectations and business needs could be stronger. In *Closing the Expectations Gap 2006*, Illinois was reported as one of fifteen states that has not aligned high school requirements to college and workforce standards and has no current plans in place to do so.¹⁷⁸ Only five states had completed the alignment process with the remaining states in progress.

Nearly one-third of the currently unemployed Illinois workers for whom their educational level is known, had some postsecondary education.¹⁷⁹ In addition, increasing numbers of college graduates are under employed. Earning a postsecondary degree or certificate does not automatically lead to employment. Increasing numbers of graduates are finding that there is an over supply of potential workers with credentials similar to theirs or that the certificates or degrees they completed do not align with what employers are seeking.

Illinois is actively pursuing ways to alleviate the shortages in the healthcare workforce; however, bolstering the middle class may need more alignment of education and industry, especially for the skilled trades, manufacturing, engineering, and emerging technologies.

The challenge for Illinois, as for every state, is to align programs of study to result in

- Students completing with the skills needed by current business and industry
- Sufficient numbers of graduates to fill critical shortages
- Skilled workers to support the economic development initiatives of the state

CHAPTER VI

Nationally, there has been a renewed interest in career and technical education programs and more internship and work-study programs:

The key to our nation's success won't come from channeling an indiscriminate mass of students along one track toward college, especially when we lose 30 percent of them along the way. It will come by combining demanding academics with other educational opportunities, and by creating a class of high school graduates who leave with skills to succeed both in a technical job and in the realm of higher education. It will come by graduating classes of students who have something invested in their own success, and who arrive in the world with a vision and the know-how to achieve it." ¹⁸⁰

State leaders in Kentucky believe that rigorous career/technical courses—ones that integrate academic skills and industry-developed end-of-program exams—have improved the academic achievement of students. Since the courses were redesigned, Kentucky's career and technical students have improved more than other students on the state accountability test.¹⁸¹ Some states, following the Kentucky pattern, maintain multiple tracks, some headed for the workplace, some headed toward high education, and some preparing for both. Other states are attempting to integrate more career and technical education into traditional academic coursework. Regardless of the instructional approach, all students must complete a rigorous curriculum.

Whether students enter the workplace from high school or from postsecondary education, their individual instructional programs should be closely tied to the theoretical and practical knowledge and skills needed to be successful in the workforce. Emphasis on real world applications of curriculum content does not diminish the critical importance of mastery of core academic subjects. This is not about "dumbing down" traditional curriculum, as has been charged by the critics of Physics First. It does suggest a need for reevaluating curriculum content and establishing a balance appropriate for our times.

Chapter Summary

Keeping Illinois competitive requires the learning standards and graduation requirements to be aligned with the needs of the economic infrastructure of the state. Even though the traditional aspects of the *Illinois Learning Standards* have received above average national ratings, the "Applications of Learning" sections of the standards, which reflect the additional 21st Century skills and knowledge, and the alignment of the standards to workplace expectations are not assessed at the state level. Little is known about the extent to which the Applications are implemented in the classrooms. In fact, assessment of the Applications at the local level may be more appropriate and more practical.