

Performance Standards
For Secondary School Vocational Education

SUMMARY

To assist Congress in preparing for the reauthorization of the Carl D. Perkins Vocational Education Act, OTA was asked to examine the technical feasibility and utility of instituting specific requirements for performance measurement of secondary school vocational programs. The Perkins Act currently specifies the composition of State advisory boards, which are charged with developing skills inventories, the establishment of evaluation criteria, and biennial program evaluation. The act also mandates that States assess the quality of vocational programs in terms of workplace requirements and occupational preparation of students. But these requirements are not rigorously enforced. The education and business communities now increasingly support the view that more exacting measurement of the quality of high school vocational programs may be needed. OTA examined two types of performance measures, but did not evaluate the overall strengths and weaknesses of a Federal decision to mandate these or other measures.

CONTEXT

The secondary school vocational system is complex. Recent data indicate that virtually all American high school students take at least one vocational course, one-half of all students take four or more vocational courses, and there is almost no difference in the number of vocational course credits taken by students in different racial and ethnic groups. In addition, almost one-half of all vocational credits are taken by college-bound students, and there is growing recognition that all students — vocational or not — need academic skills to function productively when they leave high school.

Interest in measurement of vocational program quality comes at a time of heightened concern for the relationship between the Nation's educational system and the future of the American economy. Growing evidence of a work force ill-equipped for many jobs that require higher skill levels, demand by industry for workers able to learn new skills and adapt to new technologies, concern for the economic well-being of approximately 20 million noncollege-bound youth, and the recognition that many vocational students who go on to college are well served by job skills has spurred education and business leaders to redefine the objectives of secondary school vocational programs and to demand improvements in their quality. There is now widespread consensus for including the vocational education system in the national debate over school reform and academic excellence.

OUTCOME MEASURES

One manifestation of the concern for quality of vocational programs has been the interest in using outcome measures as indicators of program effectiveness. The application of outcome-based performance standards in other Federal employment and training programs, such as the Job Training Partnership Act, has led many observers to call for a similar strategy in vocational education.

OTA looked closely at two outcome measures: 1) indicators of labor market performance of vocational graduates, including job placement, earnings, and duration of unemployment; and 2) competency in occupationally-relevant skills, as measured by scores on tests of vocational ability. These are the most frequently discussed measures, are currently the most quantifiable, and — most important — they reflect the broadly accepted definition of the principal objectives of secondary level vocational training: the preparation of high school students for productive and gainful employment.

There are a number of other outcomes that could be included in assessments of program quality. OTA discovered considerable interest in widening the scope of performance measurement to account for the multiple objectives of secondary vocational training. While OTA did not analyze these measures in detail, they do warrant continued attention. For example, many observers have suggested that vocational programs may reduce the high school dropout rate, and that keeping students in school who might otherwise quit could be counted as a positive outcome of vocational programs. Similarly, participation of vocational graduates in postsecondary education could be counted as a positive outcome. Other measures, such as the market value of goods produced by vocational students while still in school (e.g., in cooperative education programs) and the likelihood of vocational graduates being selected for employer-provided training, have also received attention.

OTA also learned that many States, in response to growing pressure for academic reform, have begun to introduce academic material into the vocational curriculum and to try to teach so-called “higher-order thinking skills” that will benefit students throughout their careers. Many people now wish to see academic achievement included in vocational performance measurement, and would like to see improvements in testing technology to provide better assessments of higher-order cognitive abilities.

Because measurement usually implies the development of standards that can become the basis for sanctions or incentives, selection of any outcome measures will have a strong impact on program management and curriculum design. Thus, as Congress debates the feasibility and utility of performance measurement, it will undoubtedly engage in a broader discussion of the objectives of the vocational education system.

PRINCIPAL FINDINGS

Labor Market Indication

Job placements, wage rates, earnings, and duration of employment and unemployment of students who complete defined courses of vocational study can provide important clues to program quality. If graduates of two programs with similar objectives and in the same or similar communities experience significantly different labor market outcomes, the relative quality of the two programs can be said to differ. Indeed, because a primary objective of vocational training is productive employment, how vocational program graduates fare in the labor market can be an important reflection of the programs from which they graduated.

But technical and methodological problems have always created barriers to effective use of labor market indicators for program evaluation. These problems include the questionable validity of information provided by program graduates about their current employment and prior coursework, the potential for bias in data provided by school personnel (especially if the performance standards become a basis for program funding), and the high costs of conducting followup surveys of a mobile labor force.

Recent improvements in the quality and cost of data collection and storage, made possible by mandated changes in employer reporting of wage and earnings data, provide partial relief for these concerns and increase the feasibility of designing cost-effective labor market outcome indicators. In particular, the use of wage records maintained by the States in compliance with recent amendments to the Social Security Act could be a first step toward improved labor market indicators of program performance. The wage records data are more accurate than self-reported survey information, allow for longer-term evaluations of employment, and can be merged with other data such as military records or computerized school transcripts.

There remain some important technical issues to be resolved before the wage records system could be implemented for secondary vocational program evaluation. First, school transcript information is not uniform, despite recent efforts to standardize vocational course definitions and curricular offerings. In addition, clarification of confidentiality restrictions pertaining to individual financial data, and the decision to maintain long-term archives of earnings and employment data, would be minimal prerequisites to implementation of the wage records system for performance evaluation.

Even with these technical improvements, however, labor market indicators alone are an insufficient basis for performance standards, for several reasons:

- [t will always be difficult to isolate the specific effects of school programs from the geographical, demographic, and other nonschool factors that determine individual success in the labor market, and it is prohibitively costly to collect and analyze the detailed student background data that would be necessary to overcome this problem. Alternative solutions, such as conducting controlled experiments or using sophisticated statistical correction methodologies, are not practical.
- The use of some labor market indicators could distort school behavior: placement rates, for example, especially if used as the basis for sanctions or rewards to schools, could induce schools to concentrate too heavily on coaching students in job search and interview skills at the expense of teaching vocational competencies that would benefit them in the workplace.

- Ideal labor market indicators would include information on items not currently part of the wage records system, such as participation in employer-sponsored training, measures of employee morale, job performance, and productivity. These types of information are difficult and costly to obtain.

For these reasons, OTA finds that labor market indicators are an important but insufficient measure of overall school or program performance.

Tests of Acquired Skills

Competency tests designed to assess mastery of skills can also be valuable as part of a comprehensive approach to program evaluation and can provide useful feedback to local program staff. When linked to data reflecting labor market needs, the tests are useful for evaluating the relevance of vocational curricula to current and anticipated conditions. In addition, tests that measure more broadly defined developed abilities can, when used properly, contribute relevant information about the types of courses offered by schools and about efforts to provide special guidance or coursework to students who need it most. For performance measurement, tests designed expressly for system-wide program evaluation are preferable to those meant for assessment of individual abilities.

The States have become very active in the development and use of occupational competency tests. Detailed paper-and-pencil tests, as well as hands-on tests of technical proficiency — which are often designed with the cooperation of experienced workers — can provide valuable information about the quality of vocational programs. State-of-the-art tests that rely on computer-based interactive systems, which are currently being designed, may provide important technological improvements over conventional testing modes.

Occupational competency tests, like labor market outcomes, provide important but insufficient indications of program effectiveness, and could not become the sole basis for performance standards, for several reasons:

- It is never possible to know exactly how much of an individual's developed abilities can be attributed to a school or program. Accurate interpretation of test results requires a high level of sophistication in accounting for socioeconomic and other correlates of test performance.
- Depending on the type of test used (e.g., multiple choice) there is a risk that schools will coach students on test-taking strategies and on specific test items at the expense of teaching the skills and concepts purportedly measured by the tests.
- Most tests are designed to measure the upper limit of what a person can do, and do not necessarily indicate how a person would typically perform at work.
- There are too many different occupations taught in American schools for there to be a viable national competency test. In addition, tests that accurately assess what is taught in specific courses could encourage excessive emphasis on highly specialized skills at the expense of more broadly applicable generic skills. There is a growing consensus that the pace of workplace innovations will require

flexibility: for example, many people have argued that vocational graduates need “learning-to-learn skills” and the ability to work effectively in teams, as well as job-specific proficiencies.

The Federal Role

Performance standards based on labor market indicators or test scores are useful, but neither approach can fully capture the complex goals of secondary vocational education. An important role for the Federal Government to play is to encourage a broad view toward performance measurement.

In addition, the design of standards depends on the definition of vocational program objectives. Because both the definition and attainment of program objectives are sensitive to local and regional differences, there is no single measure that can yield a national standard. The Federal Government could effectively encourage and support the States, individually or in consortia, in their current efforts to define outcomes and devise appropriate measures of performance. In particular, Congress could play a leadership role by helping States

- develop clear definitions of the objectives of their vocational programs;
- establish agreed-upon norms of measurement and guidelines for data collection and analysis;
- carry out research aimed at the development of improved technologies for testing;

- conduct pilot demonstrations of the effects of alternative performance standards on school and student behavior; and
- raise necessary funds for dissemination of innovations in performance assessment methodologies.