

All Aspects of the Industry

A Key Element of the Perkins Act and the School-to-Work Opportunities Act

Both the Perkins Vocational and Applied Technology Education Act and the School-to-Work Opportunities Act emphasize giving students a comprehensive perspective and range of skills across an industry. They require that programs "provide students with strong experience in and understanding of all aspects of the industry students are preparing to enter", and they identify eight aspects in particular (which can encompass the following types of knowledge and skills):

"planning" (e.g., examined both at the industry level and at the firm level; various forms of ownership, including cooperatives and worker ownership; relationship of the industry to economic, political, and social context).

"management" (e.g., methods typically used to manage enterprises over time within the industry; methods for expanding and diversifying workers' tasks and broadening worker involvement in decisions).

"finance" (e.g., ongoing accounting and financial decisions; different methods for raising capital to start or expand enterprises).

"technical and production skills" (e.g., specific production techniques; alternative methods for organizing the production work, including methods which diversify and rotate workers' jobs).

"underlying principles of technology" (e.g., integrated study across the curriculum of the mathematical, scientific, social, and economic principles that underlie the technology).

"labor issues" (e.g., worker rights and responsibilities; labor unions and labor history; methods for expanding workers' roles).

"community issues" (e.g., the impact of the enterprise and the industry on the community, and the community's impact on and involvement with the enterprise).

"Health, safety, and environmental issues" (e.g., in relation to both the workers and the larger community).

Legislative requirements

Both community colleges and secondary schools receiving Perkins funds are obligated to provide students with "strong experience in and understanding of all aspects of the

industry students are preparing to enter, including planning, management, finance, technical and production skills, underlying principles of technology, community issues, labor issues, and health, safety, and environmental issues."

First, the Perkins Ad defines "general occupational skills" as "experience in and understanding of all aspects of the industry the student is preparing to enter, including planning, management, finance, technical and production skills, underlying principles of technology, labor and community issues, and health, safety, and environmental issues." (Section 521(17).)

Second, both planning and accountability procedures focus on providing students with experience and understanding in all aspects of the industry:

- State plans, which guide all state and local Perkins Act expenditures, must be based on state assessment of "the capability of vocational education programs to provide vocational education students, to the extent practicable, with strong experience in and understanding of all aspects of the industry students are preparing to enter (including planning, management, finance, technical and production skills, underlying principles of technology, labor and community issues, and health, safety, and environmental issues)." (Section 1 13(a)(3)(B)(I))
- Local programs must evaluate annually program progress in providing students "with strong experience in and understanding of all aspects of the industry students are preparing to enter" (Section 1 17(a)(2).)

The School-to-Work Opportunities Act of 1994 provides assistance for states and localities to develop school-to-work systems meeting certain criteria, and teaching all aspects of the industry is at the core of those criteria. Programs must, to the extent practicable, provide all students with strong experience in and understanding of all aspects of the industry they are preparing to enter. Both the work-based and the school-based components of these are to provide instruction in all aspects of the industry in an integrated manner, so that students emerge with an industry-wide perspective and competencies. The U.S. Departments of Education and Labor have responsibility for developing program performance measures regarding student experience in and understanding of all aspects of the industry.

Why "all aspects" is vital to vocational education improvement and reform

The "all aspects" mandate arose from the same concerns as the requirement that programs integrate vocational and academic education. It reflects Congress's judgement that students need a broad range of transferrable skills in order to succeed in employment. The Senate Labor and Human Resources Committee reported on the Perkins Ad Amendments of 1990:

"The accelerated rates of change in industries and in the skills required by those industries demand that vocational education prepare students not only for a job but for a lifetime of work. . . . In fact, it is estimated that most workers will change jobs more than five times during their working years. Vocational education's mission, therefore, must be that of ensuring that students graduate with both the vocational and the academic skills upon which they can rely time and time again as they learn new skills, new trades, or wholly different vocations in adapting to these changes... (Page 5.)

"Skill requirements for jobs are becoming more generic and less job-specific. The need for all students to acquire generic work-related skills argues against secondary occupationally-specific programs unless these are well integrated with symbolically based-learning." (Page 9, quoting with approval Dr. Sue Berryman, Director of the Institute on Education and the Economy.)

Similarly, the House Report, page 6, declared: "The Committee heard witness after witness describe the problem of businesses that were forced to hire persons who were too narrowly trained in specific vocational skills....

Providing students with understanding and experience in all aspects of their chosen industry is essential to addressing:

- **Integrating Academic and Vocational Education.** If vocational skills are limited to a narrowly defined job task, it is almost impossible to integrate advanced academic skills. Successful integration depends on having a rich context for applying academic skills and knowledge. Covering all aspects of the industry provides that context. Analyzing and solving the problems facing an industry and the enterprises within it involves utilizing skills in reading, writing, mathematics, science, and social studies.
- **Empowering Students to Make Career and Life Choices.** If programs provide only the skills for one job, they force students in their early teens to choose what occupation they will have for the rest of their lives. They leave students unprepared to change their career goals or to cope with labor market changes. Teaching all aspects of an industry gives students transferable skills, such as planning and management, which expand their later opportunities.
- **Enabling Students to Adapt to Technological Change.** Asking schools to predict how technology will change and to constantly revamp equipment is no longer reasonable -- if it ever was. Providing students with broad skills in all aspects of an industry, together with academic skills, enables them to understand and adapt to changes when they leave school and throughout their careers.
- **Involving Students in Economic Development.** If programs prepare students only to fill the current job openings in low-income communities, students are left dependent upon too few jobs, which demand too few skills and provide too little income for a decent life. In contrast, students who understand and have experience with planning, management, community issues, etc., can survive, thrive, and help others in low-income communities.

Approaches to incorporating all aspects of the industry

There are many ways to incorporate all aspects of the industry. Agriculture programs have always taught all aspects of running a farm -- students have learned not just how to pick crops or use farm tools, but how manage and finance a farm, as well as soil chemistry, animal husbandry, plant botany, etc. This approach can be expanded to programs in all areas. For example, students in an automotive program, instead of only learning repair skills, can establish and run a repair shop and, in doing so, study the history of transportation and the automotive industry, the relationship of the shop to other parts of the industry, the physics behind alternative engine designs, pollution and proper automotive waste disposal, the role of auto workers and their organizations, etc.

"Academies," which are often school-within-a school programs focusing on a particular industry, can be designed to involve students in all aspects of the industry. They involve teachers from a variety of disciplines in joint planning and team teaching. Some academies have strong links with firms in their industry, which provide mentors, guest speakers, and even student internships. Cooperative placements with employers can be restructured so that the student's work experience fosters a critical understanding of all aspects of the industry and contributes to deeper academic skills.

A community development approach can also be very effective for teaching all aspects of the industry. School curriculum can focus on creation of student-run enterprises. After researching and assessing their community's resources and needs, students select, develop, and run an enterprise which serves an unmet community need, is economically viable, and is democratically managed in order to give each student experience in all aspects of the enterprise and industry. Examples of enterprises include child care centers and housing rehabilitation.

The ultimate question for any program is not whether it follows a particular model, but how well it fosters a) use of basic and advanced academic skills in all subject areas, and b) strong understanding of and experience in all aspects of the industry listed above. Not all academies, cooperative placements, or student enterprises do so. Whatever model is used, it is vital to incorporate a variety of perspectives on each aspect, so that students learn to understand how employers, employees/organized labor, and community members see planning, management, and other issues.

Finally, whose version of "all aspects of the industry" will be built into the curriculum must be addressed. For example, to allow corporations alone to define the meaning of "planning," "labor," "environment," etc. would not serve the public interests of education or students' needs for critical thinking skills. Schools should draw upon a full range of sources in the outside the school develop each of these aspects. Thus, there is a link between the Act's requirements of all aspects of the industry and those on participatory planning by teachers, parents, students and area residents.

The Center for Law and Education's VOCED Project provides technical assistance on implementing the "all aspects" approach. The VOCED Project works on local, state, and national levels to redirect vocational education and school-to-work programs to better meet the long-term educational, social and economic needs of students and communities. Funding for the VOCED Project has been provided by the DeWitt Wallace-Reader's Digest Fund, the Ford Foundation, the Joyce Foundation, and the Charles Stewart Mott Foundation.