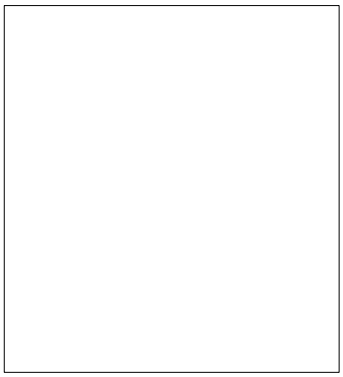
Employer Participation in Work-Based Learning

6

Because the eventual success of STWOA depends on recruiting large numbers of employers to provide work-based learning placements for students, Congress asked OTA to investigate how employers can be encouraged to provide those work-based learning experiences. This chapter reports on the current growth rates of their participation in work-based learning and on the factors affecting their willingness to participate.

Unlike school-to-work systems in several European countries, STWOA is notable for providing no financial incentives and few other direct inducements for employer participation. OTA investigated whether sufficient incentives already exist or whether policymakers need to alter the incentive structure.

The first section describes the data sources on which the chapter is based. The second section considers the rate at which employer participation in work-based learning is growing and analyzes the strategies being employed to recruit employers in two cities, Boston, Massachusetts, and Kalamazoo, Michigan. The third section focuses on one city, Cincinnati, Ohio, where work-based learning for postsecondary students has successfully gone "to scale," and asks whether this experience could be replicated elsewhere and at the high school level. The fourth section considers the benefits to employers of participating in work-based learning programs, and the fifth section considers disincentives to participation. A final section summarizes the main findings of the chapter.



BOX 6-1: OTA's Employer Survey

OTA's telephone survey of employer participation in high school work-based learning was conducted in March and April 1995 A sample of 15 work-based learning programs in 10 states was selected through a two-step process from all programs in the country known to conform generally with the definition of youth apprenticeship discussed in chapters 1 and 5. First, 21 work-based learning sites exhibiting diversity by the age of the work-based learning program, duration of students' work experience, type of entity coordinating the work-based learning, number of student participants, urbanicity, and type of industry predominating in the community were identified, From this group, 15 sites were chosen where the program coordinator reported in a telephone interview that the work-based learning program Involves a progression of work experiences spanning two or more grades, requires work plans that detail a student's planned work experience, provides at least 50 hours per year of work-based learning experiences, requires a designated school or workplace mentor or supervisor, and is sponsored at least in part by a school or school district, In line with these criteria and comments of the coordinators, 10 of the sites were classified as youth apprenticeships, 3 as career academies, and 2 as "other"

Stern estimated that no more than a few hundred such youth apprenticeships and career academies existed in 1992-93 (46), Therefore the OTA sample probably includes a significant proportion of all the STWOA prototypes in the country with two or more years of operating experience,

The programs that were selected and the total number of employers that were involved, as reported by the coordinators, are shown in table 6-1, The date shown is the date reported by the coordinators as "when the program began, " In some cases, the date is probably when the host institution was established

For each program, interviews were conducted with the coordinator and a minimum of five employers nominated by the coordinator, Information was obtained from both groups of respondents about the community context; the numbers of students and employers involved in different types of work-based learning activities today, three years ago, and planned for 1995-96; strategies for recruiting employers; and the factors affecting employers' decisions to participate, In addition, employers were asked about the characteristics of their company and the likely effectiveness of alternative policies of inducing employer participation with external incentives,

The survey was administered to 86 employers in the 15 school-to-work transition programs. Fifty-four of these employers were participating in one of the programs at the time of the interviews, 19 were former participants, and 13 were once invited but refused to participate, The sample includes a range of employers of different sizes in different industries.

SOURCE: Office of Technology Assessment, 1995, based on reference 23,

DATA SOURCES

The analyses of employer participation in the chapter are based on data from several different sources. One is an OTA telephone survey of employer participation in work-based learning in 15 communities, the second is OTA case studies in three cities, and the third is results from existing national and regional employer surveys, case studies, and focus-group research.

OTA's survey differs from most previous surveys in that it included both participating and nonparticipating employers and was designed to compare the relative importance of different factors influencing employers' decisions to participate in work-based learning. The telephone survey is described in box 6-1, and the work-based learning programs that were surveyed are listed in table 6-1. Because the sample of communities and

TABLE 6-1: School-to-Work Transition Programs in OTA's Survey

Program and community	Year "program" began	Number of employers participating in 1994-95
Pickens County Youth Apprenticeship (Easley, South Carolina)	1992-93	80
Fox Cities Education for Employment Council (Appleton, Wisconsin)	1992-93	30
Southern Maine Region Youth Apprenticeship Program (Cumberland County, Maine)	1992-93	24
York County Area Vo-Tech (York County, Pennsylvania)	1992-93	14
Industrial Modernization Center (Lycoming County, Pennsylvania)	1991-92	23
Pasadena Graphic Arts Academy (Pasadena, California)	1991-92	6
Oakland Health and Bioscience Academy (Oakland, California)	1990-91	150
Career Partners, Inc. (Tulsa, Oklahoma)	1989-90	14
Kent County Technical Center (Kent County, Michigan)	1989-90	2,070
Baltimore Academy of Finance (Baltimore, Maryland)	1988-89	35
Education for Employment Consortium (Kalamazoo, Michigan)	1986-87	792
Partnership Project (Portland, Oregon)	1984-85	30
Academy of Finance (New York, New York)	1982-83	50
Dauphin County Technical School (Harrisburg, Pennsylvania)	1970-71	43
Calhoun Area Technical Center (Battle Creek, Michigan)	1970-71	53

SOURCE Office of Technology Assessment, 1995, based on reference 23

employers is small, the results should be considered tentative.

OTA's case studies of work-based learning were conducted in Boston, Cincinnati, and Philadelphia. These were selected because of the substantial success that has apparently been achieved in each city in recruiting employers for work-based learning. Kalamazoo was studied using existing case study materials and a telephone interview with the director of the program (24,41).

The chapter also draws heavily on four other studies of employer involvement in school-to-work transition programs:

1. Lynn and Wills of the Institute for Educational Leadership surveyed 224 employers participating in cooperative education in 18 different high schools in six metropolitan areas across the country (34).
2 Decision Information Resources (DIR) surveyed 70 employers in Texas who are involved in workforce development programs involving high school youth (48,49).
3. Zemsky of the Center for the Educational Quality of the Workforce conducted eight focus groups of employers in a cross section of cities across the country; these employers were asked about their attitudes toward youth and youth apprenticeships (54).
4. The Manpower Research and Development Corporation (MRDC) interviewed the program staff of 15 school-to-work transition programs about their experience with employer recruitment and reported the results as part of a larger evaluation (40).

Each of the studies has important limitations. All of the survey samples are small, so that care must be taken not to ascribe importance to small differences among groups. None of the studies includes comparable samples of both participating and nonparticipating employers. Some studies focus on only one type of work-based learning, while others cover several types. One is limited to a single state, while the others are based on sites from across the country. None is based on strati-

fied, randomly selected samples of employers, so the results are not statistically representative. Nevertheless, many of the survey questions are similar among the studies, and where there is overlap, the results are very similar. This consistency allows for additional confidence in the chapter findings despite the limitations.

The study by Zemsky has shown that nonparticipating employers' attitudes toward work-based learning may be very different from those of participating employers (54). In that study, employers in a cross section of eight large and small communities across the country with little or no experience with work-based learning were brought together in focus groups to discuss their attitudes toward hiring youth and participating in youth apprenticeship programs. Their views about young people, the bureaucracy of school systems, and the potential value of participating in work-based learning were much more negative than those expressed by employers in OTA's survey and in the other studies, which primarily questioned participating employers. The employers who took part in Zemsky's study were openly angry about the lack of discipline and self-control among youth and essentially had no interest in participating in work-based learning programs.

How can this gulf in attitudes between participating and nonparticipating employers be explained? One possibility is that once employers become involved in work-based learning, their perceptions change. Another view is that the gulf in attitudes reflects real differences among employers that are essentially unchangeable (54). Neither case inspires much optimism that the future recruitment of employers will be very easy.

GROWTH OF EMPLOYER PARTICIPATION

STWOA aims to expand business participation in work-based learning to the point that all students choosing to participate in school-to-work programs would have work-based learning experiences. If a sizable proportion of the high school student population is to be served, hundreds of thousands of new employers must be recruited.

STWOA's principal strategy for employer recruitment is to encourage the formation of partnerships among schools, employers, community colleges, and other community institutions at the state and local levels (see box 6-2). These partnerships are intended to engage employers in collaborative efforts to initiate and develop school-to-work transition systems so that they feel they have an important stake in the outcomes. The connecting activities called for in the legislation are intended to provide employers with any assistance they may need to participate in the partnerships and to coordinate efforts between school systems and employers. The STWOA legislation specifically prohibits the use of federal funds for wage incentives or the employment of work-based learning students as substitutes for incumbent workers.

The rates at which student and employer participation have grown in communities where such partnerships have been formed were investigated in OTA's survey by asking the 15 program coordinators about changes in the number of employers and students participating in their prototype school-to-work transition systems over the past two school years.

The main finding is that the median growth rate of employer participation in the 15 programs in the past two years has been *six employers per year.* In 1992-93, the median number of employers involved in the 15 programs was 23 and in 1994-95 the median was 35 employers.

This increased employer participation translated into a median increase of *11 students per year* in the 15 programs, from a median of 80 students per program in 1992-93 to a median of 100 students per program in 1994-95.[1] This is a growth rate of about 14 percent per year. With these small starting sizes and rates of growth,

[1] While the median increasd by 10 students per year, the actual median increase per program was 11 students per year.

BOX 6-2: Employer Recruitment Strategy of STWOA

STWOA's main strategy for employer recruitment is encouraging the formation of partnerships among schools, employers, community colleges, and other community Institutions at the state and local levels, to initiate and develop school-to-work transition systems The employer-educator partnerships are intended to evolve into mutually rewarding relationships. Some hope that a long-term by-product of these relationships will be broadened mutual understanding on the part of the business and the education communities.

Techniques for building these partnerships and for recruiting employers used by school systems and connecting organizations include informing employers of the economic benefits of participation, exercising moral suasion, generating peer pressure among employers to become involved, and appealing to the collective interests of employers.

The connecting activities that are required by the legislation are intended to support the formation of these partnerships by providing employers with a number of services. These services include assistance to employers in planning a work-based learning program, in training mentors and supervisors to work with students, in matching students with the work-based learning opportunities of employers, and in helping students who have completed their program to find jobs or to continue their education

The only other provisions in the legislation that bear on employer participation in work-based learning are restrictions against using any STWOA funds for wage subsidies for students or mentors, against using trainees to displace permanent employees, and against providing work-based learning positions when any other employees are on layoff from the company.

SOURCES: School to Work Opportunities Act of 1994, May 4, 1994, Public Law 103-239, and reference 23

many years will be required for school-to-work transition systems to reach substantial proportions of all the students in the school districts in which those systems are located.

These growth rates may accelerate in the future because of the passage of STWOA and state system-building efforts encouraged by it. Seventy percent of the project coordinators in OTA's survey said that employers are "more willing to participate in work-based learning" today than they were three years ago. More than 90 percent of the program coordinators are planning to increase the number of student and employer participants in their programs. The projected increase for 1995-96 is 35 students per prototype, or about three times that prior to STWOA. However, even if this higher rate can be achieved, work-based learning will take many years to reach substantial scale in most communities.

Although the median number of employers per prototype is only 35, the range is broad. Three of the prototypes in OTA's sample reported 150 employers or more, and two had fewer than 20. The remaining 10 are clustered between 20 and 50 employers. Of the three larger sites, one had 150 employers, one had 792, and one claimed more than 2,000 (23).[2]

The program with 792 employers is the Kalamazoo Valley Education for Employment Consortium in Kalamazoo County, Michigan. This program is described in box 6-3. In this community of nine school districts and one community college, substantial progress has been made in developing a full-fledged school-to-work transition system. The system sequence includes the selection of a career major, preparation of a career plan, traditional vocational education, and several types of work-based learning opportunities.

[2]The 2,000 employers were reported for the Kent County Technical Center; this number includes employers who have agreed to provide work-based learning experiences but are not yet doing so.

BOX 6-3: Kalamazoo Valley Education for Employment Consortium

In 1985, nine school districts in Kalamazoo County, Michigan, the local community college, and the intermediate school district formed the Kalamazoo Valley Education for Employment Consortium (EFE) to help students maximize their employment potential and to increase the contribution of education to the economic development of the county. The EFE Consortium was initially created to coordinate vocational-technical education, but has expanded into a school-to-work transition system of integrated academic and career preparation activities extending from elementary school through 12th grade. The system is organized into 15 "career clusters, " each with its own business and industry advisory committee,

EFE allows any student in any school the option of attending any career preparation programs in any of the other schools. In 1994-95 there were 3,965 students in grades 11 and 12 in the nine school districts. Over 2,241 of these students participated in EFE activities in 1994-95, which is an increase of 303 since 1992-93 and 452 since 1990-91.

EFE provides students with a progression of career development and program choices within the overall system. The system components include:

- Career guidance—Major emphasis is placed on career guidance, which starts with career awareness activities in elementary school. In the 8th grade, guidance counselors meet with students to help them develop a four-year Educational Development Plan (EDP), which the students update annually until they graduate. Every 8th grader is also given the opportunity to visit the local community college (Kalamazoo Valley Community College), where they learn about broad career alternatives from faculty and business and industry representatives. The counselors receive extensive training in career counseling and meet together monthly as a single group across the nine school districts to discuss problems and issues,
- "Mentorship''---In the 10th grade, students have the opportunity to job-shadow for a half day with a volunteer from a local company. By the end of the 10th grade, students choose a career cluster as part of their EDP. Growth in this component of the EFE program has reached the point where 757 students, or about 45 percent of all 10th grade students in the county, had mentorships in 1994-95.
- Worksite-based education—Over 216 students participated in worksite-based education programs in 1994-95. These programs, which start in the 11th grade, are conducted at the site of a local employer. Programs were offered in health, law enforcement, hospitality, and plastics during 1994-95, In 1995-96, a new program will be added in paper technology. The model for these worksite-based programs is provided by the Health Occupations. In the Health Occupations, classroom space and supporting instructors are provided by the Borgess and Bronson Hospitals, but the lead instructors are selected and trained by EFE. The first year combines two hours per day of intensive academic study and core skills learning with ten job-shadowing experiences. The academic subject matter is taught to emphasize health applications—for example, each physiological system studied (the circulatory system) is accompanied by training in a diagnostic procedure (taking blood pressure). In the second year, students choose a more specific occupational area within the health field. They spend three days a week working for an employer in an unpaid, year-long externship and two days a week in classes at the offsite facility. Students may then chose to continue on for a third year at the postsecondary level.
- Cooperative education—Approximately 160 of the 1,887 students enrolled in school-based, career-technical education programs participate in paid, cooperative education with 102 different employers in 1994-95 in grades 11 and 12. Most of these are technical programs, including tech-prep options that allow students to continue with their career preparation at the postsecondary level.

(continued)

BOX 6-4: Cooperative Education in Two-Year Colleges in Cincinnati

Cooperative education in Cincinnati was begun in 1906 by the dean of engineering at the University of Cincinnati. It spread to the Ohio College of Applied Science (OCAS) in 1937 and to Cincinnati State and Community College in the late 1960s. For students in the associate degree programs of these two institutions, participation in co-op is required. There are two patterns: the "alternating model, " in which a student goes to school for a 10- to 13-week term and then works for an employer for the same length of time, repeating the cycle two to six times, and the "parallel model, " in which the student splits the day between school and work.

Co-op is ingrained in the culture of the colleges, employers, and community. "They have had close to 100 years to practice, " says one college coordinator, "and consequently the community is used to the Idea. " The Cincinnati economy is robust and diversified, but retains a strong engineering and manufacturing base.

Many employers in Cincinnati view co-op as a major way of "growing their own new people. " In the words of one manager, co-op helps companies avoid "hiring mistakes" and teaches students the technical knowledge and work skills specific to a business. Co-op placements improve students' resumes and enable students see first hand whether they like the companies. Many companies in Cincinnati are so eager to get co-op students that they aggressively recruit them on the college campuses.

Employers know that if they do not provide good-quality jobs with good learning opportunities, they will not be able to compete for the best students. The students learn where the best placements are by talking among themselves. The community college coordinators know that if they do not provide students who are well prepared, the employers will rapidly lose interest.

Employers tend to hire their co-op students as permanent workers when they graduate. More than 93 percent of OCAS students have found employment within 10 weeks of graduation, most of them with their co-op employer. Based on the size of graduating **classes** and the labor market, a plausible estimate is that co-op students account for about one-third of all new hires at the subbaccalaureate level in the Cincinnati area. In many companies, a substantial proportion of all employees are former co-op students. As a result, most people understand and are familiar with co-op—and this familiarity helps to perpetuate the demand for co-op students.

Co-op is sustained by an informal culture of close working relationships between the employers and college coordinators. They stay in constant touch with each other over issues of screening and matching students for placements, the changing needs of employers, the progress of individual students, and the need for changes in the college curriculum.

This whole system is maintained without wage subsidies or any other inducements for employers, and without any formal or regulatory apparatus, such as formal contracts, skill standards, or a local regulatory organization. The only external incentive that is operating benefits the colleges rather than the employers; state policies allow colleges to continue receiving state formula aid while students are at the worksite. That is the greatest lesson of the Cincinnati case: that work-based learning can be accomplished at the post-secondary level, under the right conditions, without external incentives for employer participation. These conditions are a strong commitment to high-quality occupational preparation by the educational institutions; a stable funding source for the activities of the co-op coordinators; a parallel commitment by employers, particularly when they are committed to "grow your own" programs; and a consistency between the work-based and school-based components created by ongoing interaction between educators and employers.

SOURCE Off Ice of Technology Assessment, 1995, based on reference 21

Although 1,271 students and 792 employers in the Kalamazoo area were involved in some form of work-based learning in 1994-95, only about 312 of these students and 180 of the employers were participating in cooperative education or what are called externships, where an appreciable amount of time is spent in workplaces. These 312 students constitute only 7 percent of all 11th- and 12th-graders in the county. Most of the other students and employers were involved in job-shadowing experiences that occur in the 10th grade and last for only a few hours (see box 6-3).

Much of the numerical growth in employer involvement in work-based learning in Kalamazoo over the past two years—from a total of 403 employers in 1992-93 to 792 in 1994-95—has been in these job-shadowing experiences. The number of outside employers involved in the externships and cooperative education has remained about the same or increased slightly.

A total of four full-time-equivalent staff members are employed to recruit employers for both the job shadowing and externship activities. All of the student placements in these externships are unpaid (27).

Another example of a school-to-work transition program that has achieved substantial success in recruiting employers for work-based learning is the well-known ProTech Youth Apprenticeship program in Boston, Massachusetts. Since the 1970s, the Boston Private Industry Council (PIC) has created the Boston Jobs Collaborative and the Boston Compact, served as the governing board for the administration of Job Training Partnership Act programs in the city, and launched a number of citywide human resources development strategies. The PIC launched ProTech in 1991 and has worked aggressively ever since to expand it (23). ProTech started with five employers in one sector (all hospitals) and 75 students. By 1992, the program had gained only one employer, but the number of students had increased to 108. By the 1994-95 school year, ProTech had 21 employers in three industry sectors (health, finance, and utilities and communications) employing 375 students. The overall average growth rates for participation between 1992 and 1994 were therefore 7.5 employers per year and about 135 students per year. ProTech's goal is to increase the number of participating employers to 100 within three or four years (23).

Most of the employers involved in ProTech are large, so the number of students placed with each additional employer has been considerably greater than average. Progress in increasing student involvement for a new ProTech program in environmental services has been slower because the companies are small and each takes only one student. Despite ProTech's fast growth, the 375 students currently receiving work-based learning represent only 6 percent of the 6,600 juniors and seniors in the Boston public high school system (8).

The recruitment of employers for ProTech has required considerable effort. Employers rarely volunteer to participate; they have to be persuaded to do so. The PIC's industry coordinator, who is primarily responsible for employer recruitment, is a retired banker, whose private-sector background gives him influence with employers. Fourteen "career specialists" spend part of their time assisting the industry coordinator with employer recruitment. The career specialists also coordinate student placements with participating ProTech employers, visit each student regularly, and provide troubleshooting and technical assistance.

Recruitment initially involves meeting with the chief executive officers of a selected group of companies in an industry sector and familiarizing them with the ProTech program. These meetings are typically followed by meetings with individual companies to answer questions, persuade, obtain commitments to participate, and agree on the number of slots to be provided. In recruiting employers, the PIC draws on the relationships that it has built with employers through the Boston Compact and other initiatives. Despite these contacts, ProTech has needed at least the equivalent of one full-time employee—if not more—to recruit the 7.5 new employers per year.

To determine the level of effort devoted to employer recruitment in the 15 programs surveyed by OTA, the coordinators were asked to report the total amount of staff time spent on employer recruitment in full-time-equivalent (FTE) staff

years. Not including the Kalamazoo response, the coordinators reported using a mean of 0.47 FTE year of staff time per annum to recruit employers (23). Including the 4 FTEs spent on recruiting in Kalamazoo would increase this average to 1.15 FTEs. Eleven of the program coordinators reported spending between 0.2 and 0.8 FTE year of staff time per year on the task.

In summary, an average of at least *one-half FTE year of staff time* has been required in school-to-work programs to recruit half a dozen employers per year and to provide about a dozen additional students with work-based learning experiences. Some programs have done considerably better than this, but some have found it even harder to recruit.

Ultimately, the goal must be to increase student participation in work-based learning. Strategically, there are at least three possible ways to do this: to increase the number of student placements per employer, to increase the number of employers per industry area, and to increase the number of industry areas per school-to-work transition system. Growth may be easier to achieve in some of these ways than in others.

According to OTA's survey, the median number of students per employer in work-based learning programs is two, and this number is apparently difficult to increase even marginally. An average of about two was found by Lynn and Wills for cooperative education (34). MDRC said that most employers take "less than three" placements (40). Attracting larger employers would increase this rate, but the number of larger employers in a community is typically limited. In the OTA survey, employers with more than 300 employees provided placements for an average of 20 students each, whereas employers with fewer than 40 employees placed, on average, only 1.7 students each. But nationwide, fewer than 1 percent of firms employ more than 250 people, and about 50 percent employ between 20 and 250 employees.[3]

"HIGH-QUALITY EQUILIBRIUM" IN CINCINNATI

One city where work-based learning has succeeded, at least at the postsecondary level, is Cincinnati, Ohio. Work-based learning operates extensively and with little government involvement, as described in box 6-4. Both two-year colleges in the area and the University of Cincinnati offer co-op. A large number of employers provide co-op placements. This situation has created a "high-quality equilibrium" in which there is competition among colleges for good work placements and between employers for good students. This competition serves to maintain high standards: The colleges make a great effort to prepare students for the work-based assignments and match them well with employers' needs, and employers strive to provide good learning opportunities.

The Cincinnati experience shows that once cooperative education is up and running, incentives can exist for employers to continue participating, but it does not show how such incentives can be created in areas where work-based learning is currently rare. Once cooperative education becomes a mainstream recruitment method, companies have incentives to continue participating because it provides them with access to a good source of the best students. The fact that cooperative education has continued at a high level for a long time in Cincinnati indicates that these incentives are self-sustaining. The only external support for employer participation is provided by state policies that allow the colleges to receive the same formula aid per student whether a student is enrolled or at the worksite. In effect, this provides state support for the connecting activities of the co-op coordinators in the colleges.

[3] Unpublished data from the Covered Employment and Wages Program of the U.S. Department of Labor, Bureau of Labor Statistics. *Firm* is defined in these data as a set of one or more business establishments sharing a single federal Employer Identification Number.

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SOURCE Off Ice of Technology Assessment, 1995, based on reference 21

MAJOR BENEFITS INFLUENCING EMPLOYERS' DECISIONS TO PARTICIPATE

While cases such as Boston, Cincinnati, and Kalamazoo indicate that success can be achieved, they do not provide much systematic knowledge of the underlying reasons for employers' decisions to participate in work-based learning. Knowledge of these reasons is needed to develop more effective strategies for expanding employer involvement that can be reliably employed in different community contexts. If strategies cannot be found that are significantly more effective than those currently being employed in most communities, the extent of work-based learning in school-to-work transition systems will remain extremely limited. An important policy issue is whether external inducements beyond persuasion and coordinating assistance will be needed.

A general framework for understanding employers' reasons for participating in work-based learning can be constructed by identifying the benefits of and barriers to participation. Presumably, employers will participate only up to the point at which the costs of overcoming the associated barriers are perceived to be less than the value of the benefits received. In this section, the benefits perceived by employers are analyzed; in the next section, the barriers are considered.

Broadly speaking, work-based learning provides participating employers with two main benefits: to contribute to the improvement of education and the community and to recruit new personnel. Employers' specific reasons for contributing to the improvement of education and the community can range from altruism and philanthropy to public relations or other self-interested goals. In recruiting new personnel, companies may similarly be motivated primarily by their own needs for new workers, or by goals of working collectively with other companies to expand the pool of workers available to their whole industry.

It is important to distinguish among these altruistic, self-interested, and collective motivations for employer involvement in work-based learning because of their implications for the extent to which the government may need to be involved in the development of work-based learning and to provide external inducements to recruit employers on the scale envisaged in STWOA (2). If most employers participate in work-based learning primarily for philanthropic reasons of improving education and the community, the prospects for the future expansion of work-based learning are much dimmer than if they are motivated primarily by collective or self-interested needs for recruiting new personnel.

To gauge the relative importance of these different benefits and motivations, the OTA survey asked current and former employers to respond to a single, randomly ordered list of possible reasons for their participation in work-based learning. (Paraphrased versions of the actual statements are shown in table 6-2.) Employers were asked to respond in two different ways: to select the "strongest benefit" (most important) of work-based learning among all of the factors listed, and to rate each factor as either a "primary benefit," "strong benefit," "minor benefit," or "not a benefit" of work-based learning. The first response method provides the clearest estimate of the relative importance of the factors, whereas the second provides information about secondary choices.

Improvement of Education and the Community

It is often suggested that most employers who work with educators and students do so primarily out of a sense of civic duty (2). Lynn and Wills show that, among employers who are currently participating in cooperative education, more than 70 percent "strongly agree" or "somewhat agree" that they participate in order to perform a community service (34). Pauly and associates reached similar conclusions in MDRC's study of 15 school-to-work transition programs (40). Neither of these studies assessed the relative importance

TABLE 6-2: Benefits of Employer Participation in Work-Based Learning

Benefit	Percent of employers selecting: as a strong or primary benefit	as the strongest benefit
Employee recruitment	**60**	**66**
Concern about current or future skill shortages in industry	85	15
Opportunity to train future employees (for the company)	77	15
Need for higher-skilled entry-level workers	81	12
Current labor shortage	51	10
Opportunity to attract minorities to the company	47	6
Reduced costs from screening of potential employees	39	4
Opportunity to attract young workers for aging workforce	58	3
Opportunity to observe or try out potential employees	60	1
Opportunity to attract women to the organization	42	0
Desire to contribute to effort supported by other employers	62	0
Education and community improvement	**76**	**25**
Concern about the quality of education	77	7
Desire to become involved in school improvement	86	7
Creation of goodwill in the community toward the company	64	4
Opportunity to "network" with schools	73	3
Opportunity to invest in the community	82	3
Contribution to company's positive image in the community	74	1
Other[c]	—	**10**

NOTE: There were a total of 54 usable responses from current employers and 19 from former employers (Percentages may not sum to 100 due to rounding)

[a] The figures shown are the percentages of employers' ratings in which the benefit was selected as being of "strong" or "primary" rather than of "no" or "little" importance to their participation.

[b] The figures shown are the percentages of current and former employers who selected the benefit as the most important to their participation in work-based learning.

[c] Employers could select "Other" rather than a specific item from the list read to them.

SOURCE: Office of Technology Assessment, 1995, based on reference 23

that participating employers place on the community service in comparison with recruitment goals, or explored the underlying motivations of employers for participating.

In OTA's survey, nearly two-thirds chose recruitment goals as their most important reason for participating, while only one-quarter chose educational and community improvement goals. At the same time, about three-fourths said that educational and improvement goals were a "strong" or "primary" benefit of work-based learning, and somewhat fewer said that recruitment goals are a "strong" or "primary" benefit.[4] OTA interprets these two sets of responses to mean that *recruitment is the most important benefit of employers who are currently involved in work-based learning* or have been involved in the past, but that improvement of education and the community also are quite important.

[4] The percentage of $_{\text{employers}}$ rating each of these goals as a strong or primary benefit was measured by computing an index consisting of the total number of factors rated by employers as a strong or primary benefit divided by the total number of ratings.

Employers also report that doing their civic duty redounds to their own interests to a certain extent. Current and former employers believe that their public image and community relations are improved by participating in work-based learning, but they attach much less importance to such benefits than to the more altruistic reasons for participating. This is indicated by the results in table 6-2 showing that 17 percent of companies cited altruistic reasons related to education and the community improvement as the most important benefit of participation while only 5 percent cited "creation of goodwill in the community" and "contribution to the company's positive image in the community."[5] Employers also rated these latter two factors as "primary" or "strong" benefits about half as often as they did the more altruistic reasons for participation.

It is possible, of course, that employers tend to underrepresent their interest in public relations and to overrepresent their altruism when answering a survey questionnaire.

It can be argued that employers' concern about the quality of education and desire to become involved in school improvement are also self-interested. This would be so if they see their involvement as a good way of eventually improving the quality of entry-level workers available to them in the labor market. However, the link between improving schools and actually being able to hire better-qualified workers is long and indirect, and the success would benefit many employers in a community and not just those who participate.

OTA's survey also allows some comparison of the extent to which current and former employers differ in their views of the importance of contributing to the improvement of education and the community. Although the number of former employers in OTA's sample is not large, the data show that former employers consider recruitment goals to be significantly more important than current employers do, and that they rate improvement of education and the community as far less important. Whereas 30 percent of current employers consider philanthropic goals as the most important benefit of work-based learning, only 10 percent of former employers do. This suggests that employers who drop out of work-based learning programs after once participating place somewhat higher priority on the economic benefits of work-based learning for their own company than do employers who continue to provide placements.

There are at least three implications of the finding that self-interested goals of recruitment are more important to employers—but not greatly so—than philanthropic goals of improving education and the community:

1. The finding offers more hope for the future expansion of employer participation than would be the case if goals of improving education and the community predominated. The number of yet unapproached employers who would be willing to participate in work-based learning for philanthropic reasons only is likely to be small, at least relative to the number of employers that will be needed to provide work-based learning to substantial numbers of students. The number who will be willing to participate if work-based learning provides both philanthropic and practical business benefits should be larger.
2. Whether employers view the benefits of personnel recruitment alone as greater than their perceived costs of participation cannot be determined from the OTA survey. If they do not, the only employers who might participate are those who also value the civic improvement benefits of work-based learning.
3. The finding suggests that, initially at least, strategies of employer recruitment should be directed at convincing employers of both the opportunity for personnel recruitment and for contributing to community improvement that work-based learning offers. This dual appeal

[5] An additional 3 percent cited "opportunity to 'network' with schools."

could be one important aspect of "building a partnership" for work-based learning between educators and employers.

Recruitment Needs

Just as employers may have philanthropic or self-interested motives for wanting to improve education and the community, their reasons for recruitment can be either self-interested or collectively oriented, toward expanding the pool of qualified workers available to their industry. The distinction is important because if employers are interested only in recruiting personnel for their own companies, they may be less willing to participate in work-based learning where they are engaged in a cooperative effort.

An example of collective support is the Wisconsin youth apprenticeship in printing. Printing is a large and growing industry in Wisconsin; this growth has created a need for more printing assistants and other technical personnel who can install, operate, and maintain the increasingly sophisticated equipment coming into the industry. In response, leaders in the printing industry formed a consortium involving several companies, local school systems, and community colleges. The companies first established skill standards, identifying the capabilities required to enter the industry. Then the responsibility for providing the training necessary to develop these capabilities was divided up among the companies, school systems, and community colleges involved, so that the supply of trained people and the costs are proportionately shared. The students get to see several companies and colleges in the course of their apprenticeships and the companies get to see many different students. Large companies no longer have to be concerned about lost training costs due to turnover because a sufficient worker supply is maintained within the industry. The collective benefits are clear in this situation, where each company, especially smaller ones, could not support such comprehensive training on its own (53).

Recruiting High-Skilled Workers

Of all the different recruitment factors listed in table 6-2, those concerning current or future skill needs are rated as most important. The four most frequently cited motives were: "concern about future skill shortages in the industry," an "opportunity to train future employees (for the company)," a "need for higher-skilled entry-level workers," and a need to meet "current labor shortage." Three of those factors refer to companies' individual needs for personnel, and the fourth refers to the needs of the industry as a whole. In addition, employers' "desire to contribute to effort supported by other employers" ranked last (it was not selected by any employers). In general, employers apparently see less value in joining with other companies to recruit new personnel for their industry than they do in proceeding on their own.

Some indication of the reason for this finding is also evident in the results in table 6-2. Few employers see the opportunities to screen potential employees or to try them out before hiring them to be important benefits of participation, despite the associated reduction in training costs. More see the opportunities for training future employees and meeting skill needs as the most important benefit. This suggests that reduced training costs, one of the main potential advantages of collective approaches to training, apparently do not figure very prominently in employers' analyses of the benefits of work-based learning. Research might be done on what employers' collection efforts might achieve.

Recruiting Minorities and Women

Only 6 percent of employers cited the recruitment of minorities as being their chief reason for involvement in work-based learning, but more than 40 percent rated such recruitment as a strong or primary benefit of work-based learning. Although no employer rated the recruitment of women as the most important reason for participating in work-based learning, it was rated as a strong or primary benefit by about the same percentage.

Several of the Cincinnati employers interviewed by OTA said that they rely solely on cooperative education for college recruitment of permanent hires, and clearly stated that they use cooperative education for diversifying their work forces. As one Cincinnati employer said, "Co-op gives us the competitive edge in recruiting in that we identify people early on, especially minorities and females: We're going to identify them in their freshmen or sophomore year and not wait. They're not going to be there as seniors to recruit (if we wait)."

Recruiting Low-Cost Labor

Most studies indicate that some employers are motivated primarily by the desire to fill part-time positions at low wages. Lynn and Wills found that more than 25 percent of employers interviewed were "quite forthright" in saying that cooperative education was a way to fill part-time positions with good, low-paid workers (34).

It can also be the case that components of both high and lower quality work-based learning exist side-by-side within the same program. In the lower quality component, students' learning experiences are oriented more to production, while in the higher quality component they are oriented more to student learning and development. Cincinnati provides an example of this. There is some evidence from the OTA case study that the quality of the work-based learning in the "alternating" mode of cooperative education in Cincinnati, where students alternate between school and work from one quarter to the next, is higher than in the "parallel" mode, where students spend half a day in school and half in the workplace. Employers in the parallel mode are more likely to view placements as a source of efficient labor for production, and to provide fewer structured learning experiences. Employers in the alternating mode are more likely to view the cooperative education students as future workers for the company, and to provide them with supporting educational activities and job rotation. In effect, there may be two equilibria alongside each other in Cincinnati, one of higher quality than the other (21).

MAJOR BARRIERS INFLUENCING EMPLOYERS' DECISIONS TO PARTICIPATE

In deciding whether to participate in work-based learning, employers weigh the benefits of participation against the costs of overcoming the associated barriers. These barriers can be clustered into the following categories:

- *economic uncertainty*, attributable to slowdowns in the local economy or changes in a company's business fortunes that limit the availability of jobs;
- *training costs*, which include any student wages paid and the valuation of the time spent by supervisors and mentors planning work-based learning activities and working with the students;
- *organizational resistance* to work-based learning within the company from management or other employees;
- *regulatory restrictions and extra insurance costs*, which include child labor and safety laws and general liability and worker's compensation insurance;
- *lack of support from the work-based learning program* and difficulties in working with the programs and school systems; and
- *inadequate preparation of students* for work-based learning placements.

The main finding from OTA's survey is that all of these barriers are of roughly equal importance to employers. As shown in the right-hand column of table 6-3, none of the six barriers appears to predominate or to be clearly less important than the others. The only possible exception is regulatory restrictions and insurance costs, which were reported as least important by employers.

This finding implies that no policy narrowly targeted at one of these barriers would substantially affect the growth of employer participation in work-based learning. This finding is consistent with the STWOA strategy of expanding employer participation by building partnerships, which in-

TABLE 6-3: Barriers to Employer Participation in Work-Based Learning

Barrier	Percent of employers selecting: as a strong or primary barrier[a]	as the strongest barrier[b]
Economic uncertainty	**23**	**9**
Slowdown in local economy		
Downsizing or restructuring within the company		
Training costs	12	17
Wages of supervisors or mentors to operate a program		
Employee staff time required to plan and start the program		
Loss of newly trained employees		
Student wages paid		
Resistance from within the company	12	14
Lack of top management support		
Opposition of employees		
Opposition of union		
Regulatory restrictions and insurance costs	9	6
Worker's compensation insurance		
Child labor law regulations		
Safety regulations		
General liability insurance		
Lack of support from the work-based learning program	13	23
Lack of technical assistance and troubleshooting support		
Unreliable scheduling of student placements		
Inflexibility of work-based learning program model		
Bureaucracy of school system or work-based learning program		
Poor quality of young workers	9	**16**
Unreliability		
Low skills or productivity		
Other[c]	—	14

NOTE: There were a total of 54 usable responses from current employers and 19 from former employers. (Percentages may not sum to 100 due to rounding.)

[a]The figures shown are the percentages of employers' ratings in which the barrier was selected as being of "strong" or "primary" rather than of "no" or "little" importance to their participation.

[b]The figures shown are the percentages of current and former employers who selected the barrier as the most important to their participation in work-based learning.

[c]Employers could select "Other" rather than a specific item from the list read to them.

SOURCE: Office of Technology Assessment, 1995; based on reference 23..

volves developing several aspects of the relationship between employers and schools over a period of time. States, employers, and school-to-work transition programs in local communities could each take steps to lower some or all of these barriers.

Economic Uncertainty

Economic uncertainty is a barrier to work-based learning when either general economic hard times, falling product demand, or internal changes

(such as restructuring) reduce the possibilities of companies offering work-based learning opportunities to students. Although economic uncertainty is rated in the OTA survey as the chief barrier to work-based learning by only 9 percent of employers, it is rated as a strong or primary factor by more than 23 percent of them (see table 6-3). This is a higher proportion than was reported for any of the five other groups of factors. This implies that economic uncertainty may be a more important secondary barrier to employer participation in work-based learning than all others, in the same way that improving education and the community was found to be nearly as important a benefit of employer participation as recruitment. Employers' ratings of the importance of this factor are likely to vary greatly over time as business conditions change.

The National Center on the Educational Quality of the Workforce found that companies, particularly older and larger ones experiencing the most downsizing, were uninterested in any youth apprenticeship initiative that might divert attention from the immediate task of making their enterprises leaner and more concentrated on their market strengths (54). In the DIR survey, "job availability" was ranked as the most important of the financial barriers (49). In the federal Youth Entitlement Demonstration Program, which guaranteed disadvantaged young people a job if they stayed in school and offered wage subsidies to employers to provide jobs, more than 40 percent of the employers who refused to participate reported that they did so because they lacked jobs (3).

In European countries where large school-to-work systems are part of the "social partnerships" that exist, governments increase subsidies to employers in times of economic downturn, and employers tacitly agree to maintain or even to increase the number of work-based learning placements available at such times (19). In Germany, apprenticeship slots in the *Handwerk* sector are increased when employers in the commercial sector are unable to take as many apprentices (44).

The partnerships between schools and employers encouraged in STWOA could serve similar purposes. Indeed, they have done so in the case of ProTech. When student placements were threatened by hospital restructuring, most of the slots were restored following conversations between ProTech and hospital administrators.

Training Costs

Training costs include the direct costs of wages paid to students during training and the costs of providing them with the training they receive. In the case of work-based learning, these latter costs include the wages paid to supervisors, mentors, and any other employees who spend time planning and managing the work-based learning program or providing instruction.

Supervision Costs

Supervision costs include time spent by supervisors guiding the work of students and time spent by mentors in counseling and assisting the students. The main distinction between supervisors and mentors is that supervisors have responsibility for managing and assessing students' performance as part of the work-based learning program, whereas mentors advise students on personal and job-related matters (27). Often these tasks overlap.

Finding or developing worksite personnel who have the necessary management, teaching, and counseling skills presents a challenge for work-based learning programs (27). Performing these tasks for high school students is very different from working with older entry-level workers, because often the students are being introduced to the adult world and the work of the company at the same time. Conflicts between the production responsibilities of the worksite personnel and the need to train or mentor the students are inevitable (40). Some of these supervision costs may be borne by individual employees. One worksite supervisor interviewed by Policy Studies Associates said that "my boss doesn't pat me on the back," adding that her work with ProTech did not come up in her performance review (23).

Program Start-up and Management Cost

A related category of costs is the time spent by employer staff in planning a work-based learning

program, getting it organized and started, and managing it on a continuing basis. Many decisions have to be made about how students will be selected and matched with positions, what the content of their learning experiences will be, who will be responsible for any instruction that is provided, and how mentors and supervisors will be selected and trained.

Another time-consuming task is developing individual student learning plans, which are used in some programs to structure each student's work-based learning experience and its relationship with school-based activities. The plans typically specify the student's learning objectives and the methods used to assess achievement (27). Each plan has to be tailored to the individual student and the individual employer.

Six participating employers in the Craftsmanship 2000 youth apprenticeship program in Tulsa, Oklahoma, spent more than a year planning and deciding on the core curriculum for a four-year program in machining (40). Early on, the six companies discovered that they had six very different definitions of what they wanted.

ProTech gives potential employers an "employee involvement sheet" that outlines the "baseline" commitment required to implement the program. This minimum, not accounting for any student supervision or mentoring, is estimated to be 65 hours per year of employer staff time.

Student Wages

Student wages are one component of training costs, especially the portion paid during time devoted to learning rather than productive activity. One source reports that the students who are paid receive $5 to $8 per hour (27). Thirty-seven percent of the students served in the 15 programs surveyed by OTA are unpaid (23).

Work-based learning practitioners generally estimate supervision and management cost to be much greater than the cost of student wages. The first indication of this view came from discussions in a focus group of employers involved in several well-known youth apprenticeship projects, which was conducted by the National Alliance of Business (38). The participants reported that the most expensive element of youth apprenticeship was the time supervisors spend planning and the time "front-line workers" spend as mentors for students. OTA was unable to locate analyses based on actual accounting to verify these costs.

Employers in the OTA survey ranked supervisor and staff time as having essentially the same cost as loss of newly trained workers. The employers surveyed by DIR rated student wages as the least important of eight financial costs considered, including supervision and program planning (49). Eighty-six percent of employers in the DIR survey said that student wages were of "little or no" importance to their decisions to participate in work-based learning. In comparison, 60 percent said that supervision costs and time were of "little or no importance." Evaluators of the Department of Labor's In-School Youth Apprenticeship Program concluded that the subsidy of $2,100 per student offered to employers had little effect on their willingness to participate (18). On the whole, employers were more attracted by the program's emphasis on screening and training of entry-level workers than by the subsidies offered.

Effectiveness of Training Cost Subsidies

There is a widely held opinion among experts in the United States that financial incentives intended to reduce training costs would have little effect on employers' participation in work-based learning. To support this conclusion, some observers cite the negative experience with using wage incentives in federal programs to encourage employers to hire out-of-school youths or economically disadvantaged workers (1). As discussed below, however, there are some reasons to be skeptical about this inference concerning work-based learning, and some evidence directly from work-based learning programs suggests that financial incentives may be effective.

Evaluation results generally show that federal tax incentives have not significantly affected the hiring or training decisions of employers (4). Several studies of the Targeted Jobs Tax Credit program show that employers use most of the credits

to pay the salaries of people who would have been hired anyway. According to one of these evaluations, 70 percent of workers for whom credits are claimed would have been hired even without the subsidy (7). In the Youth Entitlement Demonstration mentioned earlier, the proportion of employers willing to provide jobs for disadvantaged youth increased from only 5 percent to 18 percent when the wage subsidy was doubled from 50 percent to 100 percent (3). However, these young people were identified as being disadvantaged by the fact that they were eligible for the subsidies, and may have been stigmatized as a result. The unfavorable response of employers to job applicants who are eligible for government programs serving disadvantaged people has been shown in a controlled experiment in Dayton, Ohio, where employers proved to be significantly less likely to hire disadvantaged workers when they knew that the workers were eligible for a generous wage subsidy (11).

The implications of these evaluation results for work-based learning are unclear. It is dangerous to generalize from employers' responses to wage incentives for one population group and purpose to other populations and purposes. For example, the evaluation evidence suggests that employers' response to wage incentives targeted on disadvantaged groups is related to their unfavorable perceptions of that population. Work-based learning under STWOA is not targeted at disadvantaged students.

The lack of employers' enthusiasm for wage incentives in federal programs may also partly reflect their fears of becoming embroiled in red tape. Once the government grants tax privileges, it insists on inspections and imposes rules that can be cumbersome to deal with. There is some evidence that employers may feel that the complications involved in wage incentive programs make them not worth the effort (4).

There is also some contradictory evidence showing that financial incentives can affect the training behavior of employers. A new evaluation of a state-financed program in Michigan shows that one-time grants to employers for the training of incumbent workers have significantly increased the amount of training provided (26).

The evidence available from research on work-based learning programs is piecemeal but suggests that financial incentives of different kinds may be effective. One source of evidence is the surveys of work-based learning on which this chapter is based. The responses of employers to some questions on these surveys indicate that they might respond to financial incentives for work-based learning. For example, in the DIR survey of employers in Texas, over 89 percent said that "tax credits for training initiatives" would be "likely" or "very likely" to increase youth employment opportunities, and more than 90 percent said that wage subsidies would increase youth employment opportunities. Yet, this was the same group of employers who overwhelmingly responded that student wages were of "little or no importance" to their participation in work-based learning.

In the OTA survey, over 55 percent of employers similarly said that tax incentives for work-based learning would be a "very important or primary" incentive affecting their decisions to become involved in work-based learning, but less than 20 percent rated supervision and mentoring time and student wage costs as having a "strong or major" influence on their decisions to participate (23).

There is also some anecdotal evidence from the policies of school-to-work programs suggesting that financial incentives may have a role to play. Wage subsidies have been used in the Oakland Career Academies program to provide short-term work experiences for students (40). Students are paid with special city funds or, in some cases, funds from the Job Training Partnership Act, so that employers have no wage costs. Employers' responses to the summer jobs component of the Oakland program has been very positive. Most of the employers interviewed by Mathematica Policy Research staff in their current study of youth apprenticeship programs said that they would have offered many fewer or no summer jobs to the students, if they had had to pay wages

TABLE 6-4: Employer Incentives That States Have Implemented or Intend to Implement in Their STWOA Strategies (as of July 1995)

Incentive	Number of states
Training costs	
Provide or support mentor/supervisor training	28
Subsidize incumbent worker training for companies that train youth	9
Provide grants/vouchers for vendor-provided training of youth	5
Support development of facilities to be used by multiple firms	5
Wage incentives	
Allow state tax credit for student wages	5
Establish a training wage	4
Subsidize student wages	4
Allow state tax credit for costs of training students	3
Regulatory relief or insurance	
Grant child labor law exemptions	7
Grant worker's compensation relief	3
Administrative corporation	
Create administrative corporation to pool insurance and worker's compensation, and administer wages	8

NOTE Fifty states plus D C responded

SOURCE Office of Technology Assessment, 1995, based on reference 10

(43). In the Wisconsin youth apprenticeship program in printing mentioned earlier, employers receive a 50 percent wage subsidy, which they may keep or give to the consortium office (53). The Siemens Corporation reduced the number of hours that students in its youth apprenticeship program spend at the worksite when the company learned that an expected grant from the Department of Labor could not be used to defray the cost of student stipends (14). In OTA's survey, nine of the 54 current employers are receiving a student wage subsidy, a subsidy for worker's compensation, or a reimbursement for staff time spent planning or mentoring. And as noted earlier, 37 percent of the students in OTA's sample are unpaid, which is a clear wage incentive for employers (23).

Twelve states are also in the process of implementing wage incentives of different kinds as part of their STWOA strategies. As shown in table 6-4, five states are implementing policies allowing tax credits for student wages. Three states are implementing policies that allow states tax credits for training costs other than student wages—for example, supervisor wages or mentoring time. Four states are directly subsidizing student wages, and four are establishing a training wage (1 O). (Several states are implementing more than one of these wage incentives.)

The fact that 12 states are planning to implement wage incentives indicates that they have concluded that wage costs are significant enough to employers to influence their decisions. Appropriations will be required from state legislatures to implement these financial incentives.

In addition, 28 states are implementing some form of support for supervisor and mentor training, and five states are in the process of establishing grant or voucher programs to enable employers to purchase training for students. Some of these policies may involve financial support, while others may be primarily concerned with technical or other forms of direct assistance. Five other states are planning to support central facilities for training mentors and supervisors (10).

Several states also plan to create shell corporations for the administration of wage payments to students and the pooling of insurance, which could reduce the administrative burdens on employers. These corporations will act like temporary agencies, paying students out of funds received from employers. Any financial incentives would then be deducted from the amounts that employers are billed. Schools are to certify that students are receiving the agreed-upon work-based learning opportunities.

Not counting support for mentor training, a total of 19 states intend to implement at least one of the training cost or wage incentives shown in table 6-4, or to create an administrative corporation.

These new state policies provide an opportunity to obtain reliable information about the effectiveness of incentives for work-based learning. The best way of obtaining this information would be to conduct an evaluation within a common framework, allowing comparisons to be made across the states to the extent possible. Of particular interest are the relative effectiveness and the administrative feasibility of financial incentives directed at supervision costs in comparison to those directed at student wages. Experimental evaluation designs might be difficult to introduce because they would require random assignment of incentives, but the collection of longitudinal information within a common framework of analysis should prove valuable.

Regulation and Insurance Costs

Some employers perceive federal and state child labor and occupational safety laws as barriers to work-based learning. Insurance costs also deter some employers, who expect them to be higher when young people are employed. OTA's survey shows that although these barriers are of great importance to some employers (6 percent selected one of them as being the most important barrier affecting their decision), most employers view them as less significant than training costs and other types of barriers. More than 75 percent of the employers surveyed by OTA said that child labor laws, safety regulations, and insurance costs had no effect on their decisions to participate in work-based learning.

DIR found that employers in Texas are divided over the importance of the regulatory and insurance cost barriers. Approximately half of the employers in the DIR survey rated child labor laws, safety laws, worker's compensation, and general liability restrictions as being "highly" or "moderately important," while the other half said they were of "little or no importance." This is a surprising finding in light of the fact that Texas has been severely criticized in the past for its weak child labor law and enforcement (48).

Child Labor and Safety Laws

Child labor laws aim to eliminate the exploitation of young people and to reduce their risk of injury and death in the workplace. The laws typically restrict the age at which a young person may be employed (generally not under 14 years of age), the hours per week of employment, and the types of work that may be performed. For example, employment in manufacturing may be precluded for persons who are under the age of 15 or up to age 18 where there is dangerous machinery. Child labor laws pose barriers to work-based learning when placements are restricted without good reason or when employers have a mistaken impression that jobs are precluded for people under a certain age when in fact they are not (31). The U.S. Department of Labor and the states are gradually changing child labor and safety regulations to allow more "student learning" and to facilitate reasonable exceptions (49).

The evidence on the importance of child labor laws is very mixed, which is not altogether surprising considering the variety of legislation (9). Some states' rules are stricter than federal laws, while others are more permissive. Enforcement of the law also varies widely between states. Perceptions of these laws may vary between participating and nonparticipating employers; nonparticipating employers in Zemsky's focus groups often commented on the need to change child labor laws, usually to enable young people to work longer hours (54).

Some employers in Zemsky's focus groups also said that the Occupational Safety and Health Act acts as a deterrent to involvement. Companies with more than 11 employees are required to maintain accident records, and those with many accidents may be inspected and fined. From discussions in focus groups of employers, DIR concluded that many respondents who perceived OSHA regulations to be a barrier thought that there were specific provisions for youth under 18 years of age. In fact, neither OSHA nor the Work-

er's Compensation Act contains any specific provisions pertaining to youth (49). In the focus groups, other employers who were more knowledgeable about the law suggested that hiring immature and inexperienced young people would jeopardize the safety of their workplaces and thus increase the employers' risk of being penalized by OSHA. This view reflects a subjective aspect of the regulatory process that may be troublesome for work-based learning: Accidents are deemed to be serious violations of the law when there is "a substantial probability that a death or serious physical harm could result and that the employer knew, or should have known, of the hazard" (49). For example, a co-op supervisor in one program does not refer students under age 18 to an employer who uses any hoisting equipment, because of uncertainty regarding the employer's liability if the student were involved in an accident with such equipment (40).

Worker's Compensation

Some employers worry that their insurance costs will increase if a student is injured on the job. Under the Worker's Compensation Act, insurance premiums are not directly affected by the number of minors employed in the workplace, but there is an "experience modifier" that is heavily affected by frequency of injuries. Rates are computed according to a classification of the work environments and this experience rating. Employers fear that youth are more likely to injure themselves on the job and thus negatively affect the ratings. Small employers are the most concerned because one accident affects their experience rating much more than it does that of a large employer. In these circumstances, the real barrier to work-based learning may not be worker's compensation insurance but employers' lack of knowledge of the actual injury rates for young workers in their industry and state.

General Liability Insurance

General liability insurance covers third parties who are injured on a business' premises or become ill as the result of using that business' product. Of those employers surveyed by DIR, virtually the same number thought that this matter was of no importance as thought that it was extremely important, with little opinion in between. Whether the costs of general liability insurance actually rise when employers participate in work-based learning, or whether some employers simply believe this, is unclear. In the same way that inexperienced workers in an occupation are much more at risk of injuring themselves or others, no matter what their age, it may be that young people are more likely to be responsible for third-party accidents than other workers. The real questions are how insurance companies take the presence of work-based-learning students into account in setting rates, and whether employers know (or are able to find out) what the effects of work-based learning will be on their rates. DIR interviewed a number of insurers in some depth and came to the conclusion that it is difficult to say what their policies are with respect to the presence of youth in the workplace.

The administrative corporations being set up in some states to pool insurance and administer student wages may provide a good solution to these problems. Under an administrative corporation, students are not legally employees of their firms and thus the insurance rates of the firms cannot go up. For any insurance that is needed, the corporation would have the bargaining power to command good rates from insurance companies and the resources to understand the basis for rates. The administrative corporation could also assemble reliable information for employers about child labor law and safety regulations and make it available to employers. Critics of these administrative corporations are concerned that they could, in effect, become suppliers of low-cost temporary help in competition with other temporary help agencies in the community, and other workers in general.

Organizational Resistance Within the Company

The decisions employers make about participation in work-based learning may also be affected by forces internal to companies. Permanent em-

ployees sometimes resent work-based learning students, feeling that they are being undercut by low student wages or that the students are receiving better training opportunities (40). Lack of support from top management can also deter employees from committing themselves to work-based learning.

What stands out in OTA's survey results is that these organizational barriers are much more important to former participants and nonparticipants than to current participants. Only 8 percent of the latter reported them as their chief barrier, compared with 33 percent of former participants and 42 percent of nonparticipating employers. Because of the way the questionnaire was worded, the results are ambiguous with respect to whether employers were citing their reasons for dropping out of work-based learning or for deciding whether to participate in the first place.

The obvious implication is that employer recruitment strategies should cultivate support for work-based learning among both top management and other workers within the company. Some states are offering subsidies for incumbent worker training as one means to avoid employee concerns about work-based learning (see table 6-4).

Support from the Work-Based Learning Program

The characteristics of students participating in work-based learning and the nature of coordinating support provided to employers also are major influences on employers' decisions. These two factors will be discussed together because they both can be affected by the school side of the work-based learning programs. Lack of support from the school-based side of the work-based learning program was ranked by 23 percent of employers as the most important barrier, while 16 percent said that student characteristics were the major deterrent (table 6-3).

The support required by employers can be provided in many different ways. In many school-to-work transition programs, much of it is provided by a so-called connecting organization. Connecting organizations are introduced to bridge what can be a very wide gap between the schools and the employers. The connecting organization may be the local private industry council, the local chamber of commerce, a nonprofit educational assistance organization, the regional unit of a state school system, or a community-based organization.

This support takes several forms. Providing initial assistance to the employer in planning and setting up a work-based learning program at the worksite has already been discussed. A second form is making sure that students are well prepared for their work experiences and screening them for placements with different kinds of employers. Some employers only require students to have general work skills, while others expect certain levels of academic and relevant technical skills. All agree that general work preparation is important. One program director said that when he asked a student to confirm his appointment to job-shadow the president of Marriott Hotels, the student called the president, said, "Confirming my job shadowing," and hung up the phone. The program director commented, "We knew then that we had some work to do" (27).

A third activity is matching students who are ready for work experience with employers and job placements. If the students are a good match for the company, employer willingness to provide placements improves. Students are usually asked for their preferences, but the final selections are made by the employer, the school, or the connecting organization. ProTech students have two-week rotational assignments for one semester before they enter their placement. This system allows students to gain an overview of the whole enterprise and to make informed choices of the kind of placement they want, thus improving their commitment to their eventual placement. It also allows supervisors to size up the candidates.

A fourth means of support is providing technical and troubleshooting assistance to workplace supervisors, who may need advice on working

TABLE 6-5: Forms of Coordinating Support Provided to Employers

Form of coordinating support	Percent of programs providing this support	Percent of employers rating support as "very" or "critically important"
Prescreen students for reliability	93	91
Troubleshoot for and offer technical assistance	93	68
Provide scheduling coordinator	80	59
Prescreen students for technical knowledge	80	46
Prescreen students for commitment to further work	80	25

NOTE: The number of employers responding was 86 and the number of programs was 15

SOURCE: Office of Technology Assessment, 1995, based on reference 23.

with students or assistance if problems arise with particular students. Two important additional activities involve scheduling student placements. One is coordinating the students' and employers' schedules so that students are in school when they are required and in the workplace when supervisors are available to work with them and can observe important work activities when they occur (40). Another is coordinating the timing of student placements so that employers have just the number of students they need when they need them.

On the basis of OTA's survey, employers are generally pleased with the support they are currently receiving from work-based learning programs but there are some problems. Although 23 percent of employers surveyed reported that lack of coordinating support is the most important barrier to work-based learning, more than 70 percent of current and former employers ranked "lack of technical assistance and troubleshooting support" and "inflexibility of the program model" as not an issue. More than 60 percent of employers surveyed said that "school system bureaucracy" is not an issue. Nearly all of the dissatisfaction that was reported lies in the "unreliability of scheduling student placements." Employers are clearly looking for smooth coordination of student availability for placements and dependable coordination of students' schedules with the schedules of supervisors and other employer personnel. More currently participating employers think that school system bureaucracy is a problem than do former participants and nonparticipating employers.

Employers in the OTA survey were also specifically asked to rank the relative value of five different kinds of support from the work-based learning program. As shown in table 6-5, employers place the greatest value on the screening of students for "reliability." By reliable, employers mean students who are prompt and dependable, work hard, take initiative, and take responsibility for their efforts (12,54). Technical assistance and troubleshooting support from the program are nearly as important as student reliability. The screening of students for post-training commitment to working for the company is not given much weight.

On the whole, employers also appear to be pleased with the quality of students they are receiving from work-based learning programs. More than 75 percent of the employers in OTA's survey reported no problems with the quality of the preparation that students received prior to their work experiences—which is consistent with other research findings.[6] For example, Lynn and 'ills

[6] In OTA's survey more than 75 percent of current and former employers reported that lack of student productivity (meaning not having the skills necessary to be productive in the workplace) and "prior, unsuccessful experiences with students" had no effect on their decision to participate in work-based learning.

have found that more than 90 percent of employers participating in high school cooperative education either "agree" or "strongly agree" (the top two of five categories) with the statement that they are "satisfied with the quality of the students (34)." But 16 percent of the employers surveyed by OTA said that lack of student reliability is the most important disincentive to participating in work-based learning. None rated "lack of student productivity or skills," which was the other aspect of student preparation considered, as the most important factor (see table 6-3).

Among Texas employers, DIR found that the "quality of students' work skills preparation" and "educational preparation" were more important than the "characteristics of young workers." About 40 percent of employers said that work skills and general education preparation were of "high importance," and about 20 percent said that "student characteristics" were of "high importance" to their participation in work-based learning (48). However, because of the way the questions were worded, it is not possible to tell whether these results indicate that employers view a lack of these skills as a barrier to employer participation in work-based learning or that employers were indicating their criteria for selecting students.

CONCLUSIONS AND REMAINING QUESTIONS

The expansion of employer participation in work-based learning presents a major challenge for the implementation of STWOA. Building the school-to-work transition systems envisaged by the legislation will require substantial growth in the number of employers who are willing to devote substantial staff time and other resources to develop high-quality work-based learning opportunities for students. In the absence of such growth, the work-based learning component of STWOA will not be realized unless school-based enterprises, community service learning, computer technology, or other forms of work experience are substituted for employer-provided work experience and are shown to effectively replicate the critical learning experiences of actual workplaces.

Summary of Findings

So far, the growth of employer participation in prototypes of STWOA work-based learning program has been modest in most communities and considerably less than what will be required to reach substantial numbers of students in most communities in the near future. OTA's survey of 15 high school programs that have been operating since 1992 or longer indicates that the median growth rates are about six employers and about a dozen students per year per program.

Achieving these growth rates has required considerable amounts of time and effort from school staff or a connecting organization, to contact employers and build partnerships between education and the business community. In OTA's survey an average of approximately one-half of a full-time-equivalent staff person's time has been required to recruit these six new employers each year. This level of staff effort represents a sizable marginal cost relative to the number of additional students served.

Employers' decisions to become involved in work-based learning are influenced by a wide range of potential benefits and barriers, as they have been called in this report. Employers report participating in work-based learning for two main reasons: to recruit and train new employees for their company or the industry and to contribute to the improvement of education and the community. The main potential disincentives to participation are lack of coordinating support from the work-based learning program, training costs, inadequate preparation of students for work placements, organizational resistance to work-based learning from management or other employees, economic uncertainty, and regulatory restrictions and extra insurance costs.

According to the results of OTA's survey, employers perceive the recruitment of new personnel to be a somewhat more important benefit of work-based learning than the betterment of education

and the community. This finding offers more promise for expanding employer involvement in work-based learning in the future than would be the case if civic contributions were the predominant reason for employers' participation; the direct economic benefit of personnel recruitment is likely to entice many more nonparticipating employers than are the altruistic benefits.

OTA's survey also shows that none of the disincentives to participation in work-based learning predominates or appears to be significantly less important than the others. This implies that inducements narrowly focused on overcoming one of these disincentives are not likely to be very effective; hence, strategies focused on overcoming multiple barriers should be pursued. The STWOA strategy of encouraging partnerships between school systems and employers is consistent with this finding.

Limitations

It is important to recognize the limitations of this chapter. One weakness is that the number of nonparticipating employers included in the OTA survey was very small (only 13). As a result, the findings of the survey concerning the benefits and barriers of work-based learning to currently and formerly participating employers cannot be generalized to all employers. The perceived benefits presumably exceed the costs to employers who are currently participating. Any nonparticipating employers who are contacted in the future may not have the same perceptions. As was discussed earlier, Zemsky's focus group results were that nonparticipating employers hold very negative attitudes toward young people (54). This would clearly make them very unwilling to participate.

In OTA's survey, formerly participating employers proved to be similar to currently participating ones except in the instances that have been noted. Generally the formerly participating employers appear to be even more economically oriented than the currently participating ones.

A second limitation is the chapter's concentration on employer recruitment at the secondary level. Many employers may be more willing to become involved in work-based learning at the postsecondary level. As discussed in chapter 4, postsecondary students are more employable, and it may be easier for employers to recoup the cost of training them.

A third limitation is that the analysis in this chapter has not taken into account variations in the mix of work-based learning. Under STWOA, communities are encouraged to develop "systems" of work-based learning involving a progression of training and work-experiences, as illustrated in figure 4-1. It is much easier for employers to provide students with cursory work experiences, such as job shadowing, which typically lasts for only a half a day, than it is to provide the much more extensive forms of work-based learning, such as youth apprenticeships. Consequently, the growth of employer involvement in work-based learning is likely to depend on the mix of different types of work-based learning in a community's school-to-work transition system, as the Kalamazoo example illustrates.

A fourth limitation is that variations in responses among employers of different size, industry sector, and other characteristics are not reported. The OTA survey was administered to a cross section of employers of different sizes and industries, but the small sample size precludes reporting results for different subcategories. Employers' perceptions of the benefits and liabilities of work-based learning appear to vary considerably with such characteristics (34).

The fifth limitation is that the chapter focuses mainly on the growth rate of employer participation in work-based learning rather than on the quality of worksite learning experienced by students. Quality is harder to measure but certainly critical to the effects of work-based learning on students' long-term employment prospects. The kinds of training received in the workplace and the kinds of jobs performed by students are two indicators of quality. Because approximately one-half of all high school students work in some capacity already, simply gaining some low-quality work experience will not have the positive impact intended by STWOA.

Needed Research on Strategy for Building Partnerships

The critical question raised by the findings in this chapter is whether strategies can be identified or developed for greatly increasing the rate of growth of employer participation in high-quality programs of work-based learning. Three apparent examples in Boston, Cincinnati, and Kalamazoo have been described in this chapter, but there is no conclusive evidence about the program quality in any of these cities. Other examples need to be identified and carefully studied to provide guidelines for building successful partnerships between business and education. Intensive case studies will probably be needed to identify these strategies. Strategies for increasing typical growth rates by an order of magnitude or more are needed to achieve significant progress in the near future. States with strong employer recruitment strategies under STWOA may provide important cases to study.

The success of work-based learning may largely depend on the level of leadership forthcoming from the business community. Work-based learning was included in STWOA to help bridge the gap between employers and schools. If enough business leaders step forward to encourage industry participation, significant progress may be made. If not, the growth of employer participation may continue to be slow, and the bridges intended between schools and business may not be built.

The introduction of external inducements for employer participation also could turn out to be critical for the successful growth of worksite learning. Perhaps an American style of work-based learning requiring no external business incentives can emerge, but perhaps it cannot. Cincinnati provides an example of a place where no external business incentives exist, but the colleges receive funding from the state for the coordinating support they provide to employers—which amounts to an incentive for employer participation. Any future case studies of strategies should be carefully chosen to allow comparative judgments to be made about varying inducement structures.

Implications from Foreign Countries

It may be instructive to look at the inducements in foreign countries where work-based learning for young entrants into the labor market is extensive. In Japan, young people are prepared for careers through processes of work-based learning that are largely internal to firms and not influenced by government interventions. This work-based learning occurs through job rotation, participation in problem-solving teams, and successive episodes of formal, on- and off-the-job training. Through these processes, young workers develop both the technical and "white-collar" skills they need to progress within a "family" of occupations in their company (28). Companies make these training investments in young workers because of the institutions of lifetime employment that have been adopted by industry over the years (33). Companies have also established contractlike relationships with schools to gain ready access to well-prepared students, thereby creating strong incentives for high standards of academic achievement within the school system, not unlike the incentives for quality apparently operating in Cincinnati (42).

In Germany, the incentives for the apprenticeship system are embedded in the society's system of industrial democracy that has evolved over the years. This system is oriented to the high-value-added production of diverse, customized goods and services, requiring high skill levels to succeed. It is based on a "social partnership" among business, unions, and government that controls many aspects of the economy and society, including relations between management and labor at the national, state, and local levels, as well as within companies. The web of relationships that has been created bears on the apprenticeship system. It includes the long-term financing of industry, nationally determined wages for most occupations and industries, a chartered structure of industry associations and works councils, legal requirements on all companies with five or more employers to hire professional trainers (*Meister*), union involvement in setting aside certain jobs for apprenticeship training, low training wages and

several other policies. These institutional relationships create a system of incentives in which large and medium-size companies must train apprentices because that is the least costly way of gaining access to the best-qualified workers, whereas smaller companies train because the training wage and other incentives make it profitable for them to do so (44). Even so, only one small company in five in Germany participates in the apprenticeship system, whereas nearly all large companies and most medium-size firms do. Still, more than one half of apprentices are trained in small companies (44,45).

In the absence of incentives such as those in Japan or Germany, it remains an open question whether large-scale systems of work-based learning can exist in the United States. The issue is not whether the United States should adopt the Japanese or German systems because manifestly it cannot. Rather, the question is whether an American-style apprenticeship system with very few external incentives, such as the one that apparently exists in Cincinnati or that may eventually be fully implemented in Boston and Kalamazoo, can be replicated on a national scale or whether a system of incentives will be needed.

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