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ABSTRACT

Real, quantifiable evidence shows that school-to-work (STW) programs yield two important benefits: positive academic results for students and positive business results for employers. Preliminary research indicates that workplace learning leads to higher academic achievement; reduced dropout rates; better attendance; better college preparation; and better results for African Americans. STW programs produce high-achieving, well-educated, dependable, motivated students who are more likely to become professionals that employers need to meet business challenges. The National Employer Leadership Council has worked with a voluntary group of eight companies to develop a way to define the aspects of return on investment and measure success. The companies have participated in STW programs that focused on contextual learning designed to raise academic achievement. Each company has created and implemented a formal STW program collected data on costs and benefits and gathered experiences and outcomes to share with the public. The companies have achieved these quantifiable benefits: higher productivity of STW program graduates; reduced recruitment costs; reduced training and supervision costs; and productivity of students. Other benefits that did not show up in hard numbers are as follows: improved employee productivity and morale; favorable publicity; increased diversity; clearer focus; and stronger system for developing skilled workers. (An appendix provides information on how the study quantified benefits.) (YLB)

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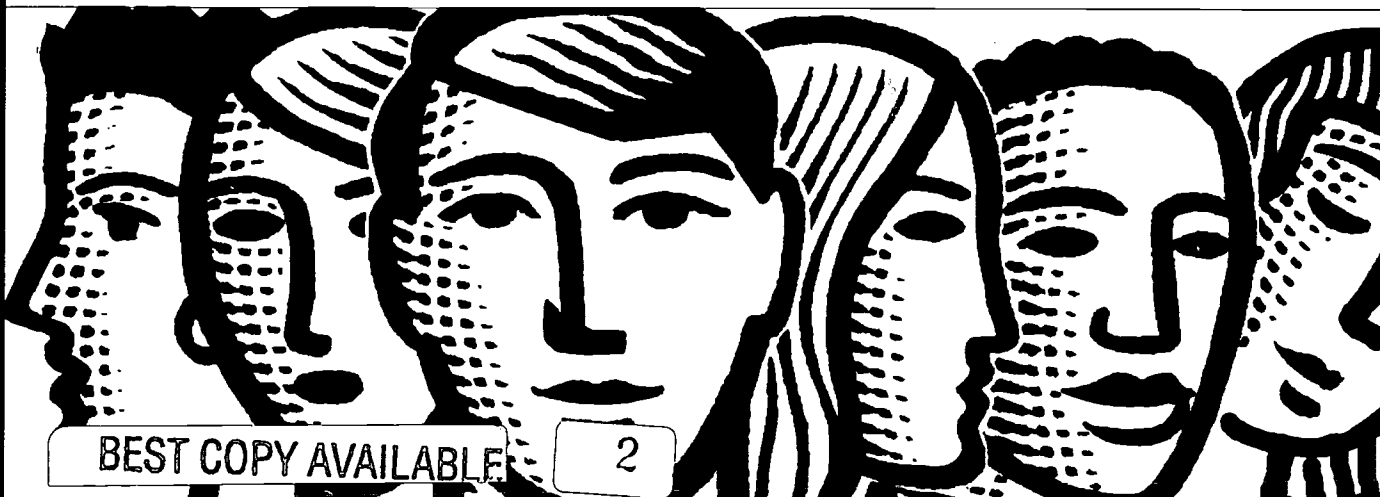
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The  
bottom-line return  
on school-to-work  
investment for  
students and employers

# Intuitions confirmed



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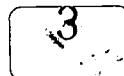
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## The National Employer Leadership Council

is a diverse, nonpartisan coalition of business executives

committed to improving the nation's workforce and,

ultimately, the competitiveness of American business



by providing work-based learning opportunities for students.

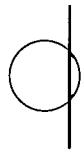


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*Introduction*

# The Bottom Line for Students

## Positive Academic Results



Employers support school-to-work initiatives because they motivate students to excel academically and equip them to succeed in their personal and professional lives.



For more than a decade, some employers and educators have worked together in their communities to provide work-based learning opportunities to students. The School to Work Opportunities Act of 1994 helped increase interest and participation in these programs. Until now, employers and educators have acted largely on instinct in supporting school-to-work programs for students. Now, though, there is real, quantifiable evidence that these programs yield two important benefits:

- positive academic results for students and
- positive business results for employers.

Together, these two sets of results are significant enough for employers and educators to increase support for and participation in school-to-work programs.

This report focuses on the business results for employers. First, though, it is important to put these results in context: The primary purpose of school-to-work has been and will continue to be improving academic results for students.

### Measuring Student Results

School-to-work (also known as school-to-career) programs provide structured opportunities for students to learn in business environments. With help from teachers and businesspeople, students apply their academic learning to real-world tasks and tackle workplace challenges that build on classroom assignments and tests.

Employers who provide students with work-based learning opportunities know instinctively that these experiences are valuable. For motivated students, contextual learning adds another layer of understanding to “book learning.” For other students, workplace learning awakens a dormant interest in academics.

Recent studies of students who have participated in rigorous school-to-work programs in Boston, New York, Philadelphia and other communities confirm these business instincts. Preliminary research indicates that workplace learning enhances student achievement, preparation for college, attendance and attitude. Students who participate in school-to-work programs are more likely to get better grades, stay in school, go directly to college, and approach life and work with a positive attitude.

Studies in Boston by Jobs for the Future and in Philadelphia by the School District of Philadelphia, for example, reveal this solid evidence of



bottom-line results for high school students involved in school-to-career programs:

- **Higher academic achievement.** In Philadelphia, 29.2 percent of students in school-to-career programs had a grade point average of 3.0 and above, compared with 19.8 percent of the general student population.
- **Reduced dropout rate.** Just 3.4 percent of Philadelphia students in school-to-career programs dropped out, compared with 11.5 percent of the general population of Philadelphia students.

☺☺

More high school seniors in school-to-work programs had taken advanced mathematics and science courses than seniors who did not participate in school-to-work.

☺☺

- **Better attendance.** The attendance rate for Philadelphia students in school-to-career programs was 87.5 percent, compared with the district-wide average of 78.8 percent.

- **Better college preparation.** In Boston, 78 percent of students in the ProTech school-to-work program went directly to college, compared with the national average of 62 percent.
- **Better results for African Americans.** In Boston, 79 percent of African-American students in the ProTech school-to-work program went directly to college, compared with the national average for African Americans of 51 percent.

A statewide study of school-to-work in New York by the Westchester Institute for Human Services Research Inc. mirrors these findings. More high school seniors in school-to-work programs had taken advanced mathematics and science courses than seniors who did not participate in school-to-work. For example, 58 percent of seniors in school-to-work programs had taken algebra, a gateway course to college, compared with 43 percent of other seniors. A year after they graduated, 85 percent of students who had participated in school-to-work programs in New York were enrolled in college, either full time or part time.

### **For Academic Reasons, Employers Support School-to-Work Programs**

These are the results that matter most to business. High-achieving, well-educated, dependable, motivated students are more likely to become the professionals that

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employers need to meet business challenges. In an economic environment in which human talent rapidly is becoming the single most important competitive advantage, school-to-work programs clearly improve students' personal and professional prospects.



High-achieving, well-educated, dependable, motivated students are more likely to become the professionals that employers need to meet business challenges.



Business leadership organizations including the National Employer Leadership Council (NELC), the National Alliance of Business, the American Business Conference, the Committee for Economic Development, the Council of Growing Companies, the National Association of Manufacturers and the U.S. Chamber of Commerce strongly endorse school-to-work initiatives. Linked to high academic standards, these initiatives can provide students with a better education and better workforce preparation. School-to-work initiatives can increase their ability to learn, whether in K-12 schools, colleges or other postsecondary institutions, or workplaces.

There is widespread business consensus that the modern economy provides the greatest opportunities to individuals with strong academic skills. Successful school-to-work programs combine a demanding core academic curriculum

with practical, work-based applications. Employers support school-to-work initiatives because they motivate students to excel academically and equip them to succeed in their personal and professional lives.

### **Student, Business Results Make the Case for Increased Employer Participation**

The student results derived from school-to-work programs provide powerful incentives for more businesses to open their workplaces to students. As the next section shows, employers who elect to participate now can do so with confidence that they are making a sound business decision. Their intuitions about the benefits of school-to-work programs are confirmed by real-world data.

The results presented in this report are but the first attempt to measure the quantifiable benefits of school-to-work programs. Greater business participation will lead to more refined measurements. And as with any sound investment, the earnings on school-to-work investments for students and employers are likely to compound over time.

## The Bottom Line for Employers

### Positive Business Results

No employer who participates in school-to-work programs does so for immediate business gain. What matters most to business is improving student achievement. Recent studies indicate that school-to-work programs *do* produce measurable improvements in academic performance — and other benefits for students as well.

Now, a new study by NELC makes the case for more employers to participate in school-to-work programs and, thus, contribute to improved academic results for more students. The study shows that employers, too, reap measurable business benefits from school-to-work, quantified in terms of:

- reduced recruitment costs;
- reduced training and supervision costs;
- reduced turnover;
- increased retention rates;
- higher productivity of students; and
- higher productivity and promotion rates of school-to-work program graduates who eventually are hired compared with those of other newly hired workers.

These benefits are unintended and, indeed, surprising. But they are important. School-to-work is not risky business, this study shows, but an intelligent investment of resources to produce academic results for students. Dollar for dollar, school-to-work *works* for business.

This study is the first to examine what member companies and other key stakeholders wanted to know: Is there a measurable return on investment from school-to-work programs? In other words, for every dollar spent, does business lose money, break even or come out ahead? Do the benefits of school-to-work outweigh the costs?

### Eight Companies Accept the Challenge

NELC worked with a voluntary group of companies to develop a way to define the aspects of return on investment and measure success.

The selected companies participated in school-to-work programs that focused on contextual learning designed to raise academic achievement. That learning came in the form of student internships; apprenticeships; or paid, part-time employment. Each company had:

- created and implemented a formal school-to-work program;
- collected data on costs and benefits; and
- gathered experiences and outcomes to share with the public.

The eight companies that came forward represent a broad cross-section of industries, including financial services, food services, manufacturing, software development and telecommunications. Six companies are large national corporations; one is a mid-sized regional healthcare provider; and another is a small, local automotive repair shop. (For profiles of the companies and their programs, see page 8.)



# Benefit-Cost Ratios for Participating Companies

These ratios represent the dollar value of the program benefits divided by the dollar value of the program costs.\* For example, a ratio of 1.15 means that for every dollar spent or contributed to a school-to-work program, a company earned its dollar back — *plus an additional 15 cents in benefits* ( $\$1.15 \div \$1.00 = 1.15$ ). Any ratio above 1, then, represents a positive return on investment.

The ratios vary in most of these participating companies because multiple sites or departments participated.

(For more details on the benefits and costs represented in these ratios, see page 13.)

- **Autodesk.** Ranging from 1.15 to 2.99 across departments, with a median of 2.32.
- **Charles Schwab.** Ranging from 0.40 to 5.64, depending on whether the company's forecasts of long-term benefits from higher employee retention rates are realized.
- **Crown Auto World.** Ranging from 1.39 to 3.21, depending on employee retention rates and additional profits from technicians hired from the program.
- **Eastman Kodak.** Ranging from 0.87 to 1.05, depending on the productivity of student apprentices.
- **McDonald's.** Ranging from 0.97 in Lady Smith, Wis., to 0.88 to 1.02 in New Albany, Ind., depending on cost savings from higher retention rates among apprentices.
- **Siemens.** Ranging from 1.07 to 1.79 in Lake Mary, Fla., depending on training and supervision cost savings from apprentices later hired as full-time employees. Ranging from 0.54 to 0.59 in Wendell, N.C., depending on how many hours per year students work.
- **Sutter Health.** 1.39, if students perform work similar to that done by employees.
- **BellSouth.** BellSouth accepted our challenge to participate in the study; however, its job shadowing program did not lend itself to calculating precise benefit-cost ratios. The benefits of one-day job shadowing for students are substantial, but the financial returns to BellSouth for this short-term program are negligible. Programs with student involvement sustained over time are more apt to yield bottom-line returns than single-day programs.

\*This ratio takes into account that costs and benefits do not occur simultaneously; costs typically precede benefits. Therefore, an appropriate discount rate was applied to costs and benefits.



## Hard Numbers Confirm the Benefits of School-to-Work

The benefits of school-to-work programs exceed the costs in nearly three out of four companies studied. *All* of the companies enjoyed some return on their investment.

Moreover, these results include *all* costs incurred by employers — even if some of the costs were shouldered by private foundations or public agencies, which often is the case. Had the study taken into account outside funding assistance, some of the returns would have been even higher.

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For companies, the returns on investment represent solutions to real business challenges, including productivity and recruiting, training and supervising costs.”

Finally, these results reflect startup costs spread over a short period and a small number of students. As the programs continue and serve more students, the startup costs will be spread over more years and more students, which will lead to more favorable results.

### Behind the Numbers: A Closer Look at the Benefits

The chief benefits of school-to-work programs are the solid gains in student motivation and academic achievement.

These are the benefits business is after — students who are more engaged in project-based learning; more apt to enroll and succeed in advanced math, science, technology and other rigorous courses; and better prepared to go on to college and the workplace.

Moreover, research is unequivocal on the point that students who stay in school go on to earn considerably more than students who drop out. The more education people have, the less likely they are to face unemployment. And these trends will escalate in the future, as the rate of job growth for highly educated, skilled people is increasing much faster than that of job growth for unskilled workers, according to projections from the U.S. Bureau of Labor Statistics.

The benefit-cost ratios of the companies participating in the NELC study are impressive; to be sure, and allow a broad understanding of the potential bottom-line benefits business can realize from school-to-work programs. For companies, the returns on investment represent solutions to real business challenges, including productivity and recruiting, training and supervising costs. The companies in the NELC study achieved these quantifiable benefits:

Higher productivity of school-to-work program graduates. Several companies report higher productivity among former apprentices compared with other new hires; students from school-to-work programs have mastered more rigorous academic work than others. Siemens reports that other workers hired out of public high schools “will take years to catch up” to graduates of Siemens’ apprenticeship program.



While this benefit can be difficult to quantify, Crown Auto World reports impressive results. The market for skilled auto technicians in Tulsa, Okla., as in many areas, is very tight. For each former apprentice hired at the prevailing market wage, Crown enjoys profit increases of \$40,000 to \$50,000 (increased billings minus costs).

**Reduced recruitment costs.** Eastman Kodak, McDonald's and Siemens report significant success in hiring graduates of their apprenticeship programs as full-time employees. Their cost savings on recruitment range from a few hundred dollars to tens of thousands of dollars.

McDonald's, a company that represents an industry with high employee turnover, reports higher retention rates among former apprentices compared with those of other workers. School-to-work programs build loyalty, another manager explains: "The more you do for your employees, the more they'll help you out. It's not an exact science, but we realize that you have to get involved with the kids and give them something for them to give you something."

**Reduced training and supervision costs.** Companies report that former apprentices are less costly to train than other new hires. They "hit the ground running," thus enabling supervisors and other workers to spend more time producing and less time training.

**Productivity of students.** Companies put students to work on tasks ranging from "routine" to fairly sophisticated. Even jobs that seasoned employees may consider routine can be valuable learning opportunities from a student's perspective. These jobs, coupled with more complex tasks, enable students to increase

their academic achievement and make noticeable contributions in workplaces.

Says a manager at Charles Schwab, "High school students were able to take a very small piece of the work and do it very quickly and well."

Students, however, typically do not view these jobs as routine. As one student at Crown Auto World reports, "They give us a lot of responsibility."

““

High school students were able to take a very small piece of the work and do it very quickly and well.

””

— A manager at Charles Schwab

## Benefits That Don't Show Up in Hard Numbers

This study measured specific business benefits of school-to-work programs. In the course of the research, however, companies revealed a number of other benefits that are important enough to keep them engaged. Eventually, companies will attach a value to these benefits and recognize a fuller return on their investment in school-to-work programs:

**Improved employee productivity and morale.** Employers report that employees enjoy having students in their workplaces — and employees pick up the pace of work when someone is watching them. Says one Eastman Kodak employee, "When a person is interested in learning what you do, when you're passing on what you know, that elevates

Continued on page 10

## Company Profiles

- **Autodesk.** A high-tech software company in San Rafael, Calif.  
**Program highlights.** High school students intern at Autodesk to learn computer and other professional skills through project-based learning.  
**Partners.** Marin County, Calif., public schools, community organizations and other businesses.
- **BellSouth.** A regional telecommunications company based in Atlanta.  
**Program highlights.** More than 5,000 middle school students spend Groundhog Day shadowing BellSouth employees to learn more about the work environment and develop career interests.  
**Partners.** Other businesses, business organizations and Junior Achievement.
- **Charles Schwab.** A national financial services company based in San Francisco, Calif.  
**Program highlights.** Students participate in career awareness and exploration programs, including employee visits to classrooms and job shadowing and mentoring at the company's regional offices. Beginning in their junior year of high school, students participate in work-based learning and paid employment programs that may culminate in full-time employment.
- **Partners.** Local public high schools, such as those that sponsor the Academy of Business and Finance programs in San Francisco.
- **Crown Auto World.** An independent car dealer and automotive repair business in Tulsa, Okla.  
**Program highlights.** Students in high school and college participate in an apprentice-training program, which may include instruction in junior college academic programs sponsored by General Motors and Chrysler. Many students stay on with the company as automotive technicians.  
**Partners.** General Motors, Chrysler and Oklahoma State University.
- **Eastman Kodak.** A manufacturer based in Rochester, N.Y.  
**Program highlights.** Beginning in their junior year of high school, students work part time under the supervision of coaches and mentors, rotating through several different skilled trades during their on-the-job training. The program culminates with a project that showcases skills that students have learned. Many students go on to take full-time positions with the company.

**Partners.** Rochester Business Education Association, Rochester City School District and the National Center on Education and the Economy.

- **McDonald's.** A food services corporation headquartered in Oak Park, Ill.

**Program highlights.** High school students work as apprentices in local franchises, taking courses in consumer services management developed especially for this program at a local university. The apprenticeship positions and coursework help prepare students for management positions.

**Partners.** Walgreen Company, Northern Illinois University and local school districts.

- **Siemens.** An international electrical and electronics company headquartered in Germany.

**Program highlights.** Student apprentices learn electronics in classroom instruction, which is provided in partnership with local high schools and community colleges, and in work-based training. High school students work part time while taking courses. Junior college students rotate between paid employment and coursework. Many graduates of the program stay on as full-time employees.

**Partners.** All Siemens operating companies partner with each other through the Presidents' Council, which is made up of operating company presidents. Other partners include the Seminole County, Fla., Public Schools and East Wake High School in North Carolina.

- **Sutter Health.**

A regional healthcare provider based in Sacramento, Calif.

**Program highlights.** Students take career-oriented courses and participate in job shadowing at Sutter. High school juniors participate in two-year apprenticeships; several former apprentices continue to work part time for Sutter as they pursue their education.

**Partners.** Encina High School's Health Careers Academy in Sacramento.



*Continued from page 7*

your self-esteem.” Young people also introduce energy and fresh perspectives into the workplace. “The kids have brought a spark,” says the owner of Crown Auto World.

All of the companies in the NELC study — and others that participate in school-to-work programs — report positive experiences and favorable reactions among employees.

**Favorable publicity.** Several companies have attracted local, regional and national media attention from their school-to-work programs. For example, Autodesk’s Mustang Project, in which students create computer models of Ford Mustang auto parts and brainstorm

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School-to-work programs build the infrastructure and the capacity of communities and industries to develop qualified workers.

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the design of the next-generation Mustang, has been featured on the Discovery Channel, in newspapers and in magazines. The favorable publicity spills over to Autodesk’s business partners on the Mustang Project, Compaq Computer

Corporation and Ford Motor Company. Autodesk’s intern program, meanwhile, was touted on MSNBC. These programs also contributed to a special recognition of Autodesk CEO Carol Bartz for her leadership: The National Alliance of Business honored her with a 1998 Henry Ford II Business Leadership Award.

Good publicity takes many forms. A public television documentary reviewed Eastman Kodak’s school-to-work program. A former apprentice at Crown Auto filmed a television commercial promoting school-to-work with entertainer Bill Cosby. Even local publicity for a multinational company enhances its image and reputation. As the McDonald’s manager in Lady Smith, Wis., notes, “In smaller towns, you have to be more involved in what’s going on. It’s their McDonald’s, and they want to see you.”

**Increased diversity.** Several companies draw student apprentices from schools with student populations that are racially, socially and economically diverse. This enables companies to diversify their workplaces, an increasingly important strategy to expand the pool of qualified workers. Most companies in our study increased minority representation through their school-to-work programs. Crown Auto introduced the world of auto repair to young women, opening up a nontraditional career to them.





More clear focus. School-to-work programs can help employers clarify the benefits they expect and the strategies they use to reach them.



Several companies draw student apprentices from schools with student populations that are racially, socially and economically diverse. This enables companies to diversify their workplaces, an increasingly important strategy to expand the pool of qualified workers.



BellSouth, for example, learned that student internships are not the best way to develop its future workforce. So BellSouth changed its strategy to emphasize professional development for teachers, siding with growing corporate sentiment that investing in teachers is an effective way to improve student learning and achievement. BellSouth Foundation funded teaching programs in eight communities to help develop “best practices” that improve teachers’ understanding of the changing nature of work and the workplace.

Siemens, too, learned from its apprenticeship program to form partnerships

with other employers in the electronics industry. The Siemens program is so effective that its graduates are very attractive to other employers; Siemens wants to expand the program to further increase the pool of qualified workers.

A stronger system for developing skilled workers. Companies report benefits that extend beyond their workplaces. Other employers within a city, region or industry share the benefits of a pool of better qualified workers. So do local school systems, including K–12 public schools, community colleges and other postsecondary schools that benefit from improved, more relevant curricula and from interactions with the business community.

School-to-work programs build the infrastructure and the capacity of communities and industries to develop qualified workers.



## Two Bottom Lines Lead to One Conclusion

### A Commitment to Expand School-to-Work to More Students and Companies

The results of the NELC study stopped people in their tracks. Employers, educators and policymakers now know for certain what they had suspected all along: School-to-work programs are worth the investment. They lead employers on a straight, sure path to their main goal of improved student achievement. Students in school-to-work programs spend more time studying, earn higher grades and have higher academic aspirations. These are precisely the results employers care about as they consider the global economic opportunities and challenges of the future.

The unexpected and unplanned bottom-line benefits to business are like icing on the cake. NELC and the participating companies declared success, however, when the returns came in higher academic results instead of higher dropout rates for students — not when the returns came in dollars instead of pennies for business.

Still, the school-to-work system is young, and the processes are immature. Presented here is a good “first crack” at measuring the benefits and costs of school-to-work programs. The measurements need to be refined and, in the case of unmeasured benefits, defined so more

companies can look seriously at results. The employers who were risk takers now have enough experience to share their lessons learned with other companies. NELC will take the school-to-work success story around the country and encourage more employers to participate.

#### To Learn More

NELC welcomes your questions, comments and participation in this important work. Contact us at 800-360-NELC to learn more about how you can get involved or to find out about resources for employers.

Or visit these Web sites for more information:

- NELC — [www.nelc.org](http://www.nelc.org)
- National Alliance of Business — [www.nab.com](http://www.nab.com)
- Business Coalition for Education Reform — [www.bcer.org](http://www.bcer.org)





## Appendix

# How We Quantified Benefits and Costs

To measure the return on investment, we used a simple metric that any company can use — a ratio of benefits to costs. This ratio takes into account that costs and benefits do not occur simultaneously; costs typically precede benefits.

## Benefits

- **Productivity of students.** We calculated this benefit as the hourly wage that would have been paid to any employee or contractor who would have completed this work. We used the full wage (rather than the difference between a student's wage and an employee's wage) because student wages are counted as costs. While students do contribute to business productivity, students do not replace full-time employees.
- **Reduced recruitment costs.** We calculated this benefit as the difference in recruiting costs between hiring graduates of a school-to-work programs and hiring employees for the same position from other sources.
- **Reduced training and supervision costs.** We calculated this benefit as the total training and supervision costs associated with newly hired employees, less these same costs for new employees who had participated in a school-to-work program.
- **Higher productivity of school-to-work program graduates.** We calculated this benefit in several ways to measure the productivity of school-to-work program graduates compared to other employees:
  - *Retention rates.* We multiplied the difference in retention rates by the average cost of turnover.
  - *Promotion rates.* We compared promotion track records.
  - *Qualitative data.* We interviewed managers who compared the productivity of school-to-work graduates and other employees.

## Costs

- **Startup program development.**  
We calculated fixed costs for developing a curriculum and physical infrastructure as well as employee time for planning and organizing the school-to-work program.
- **Ongoing program administration.**  
We calculated this as a fixed cost mostly allocated to employee time.
- **Recruitment of students.**  
We calculated this as the direct costs of school visits or publicity and indirect costs of expenses associated with job shadowing, for example. We measured this cost as:
  - number of employees
  - x
  - number of hours spent with students
  - x
  - employees' hourly compensation (wages and benefits)
- **Student wages.** We calculated this cost as:
  - number of hours employees spent working with students
  - x
  - employees' hourly compensation (wages and benefits)
  - +
  - costs of materials and instruction for classroom training
- **Training and supervision.**  
We calculated this cost as:
  - number of hours students worked
  - x
  - students' hourly compensation (wages and benefits, if any)
- **Materials.** We calculated this cost for the materials used expressly for student training by students or employees.



# Resources

If you want to learn more about helping students meet rigorous academic standards, consider these resources:

## ***A New Twist: How Employers and Educators Can Work Together to Improve Student Achievement***

This portfolio contains information and tools that employers, educators and business-education organizations can use to improve professional development for teachers. Includes specific strategies and resources for bringing teachers into workplaces to learn the value and application of academics in workplaces.

## ***The Formula for Success: A Business Leader's Guide to Supporting Math and Science Achievement***

Find out how employers can support higher math and science achievement in their own communities.

## ***Joining the Partnership: Recruiting Employers for School-to-Work***

This brochure and handouts help market school-to-work programs to employers in local communities.

## ***Hiring Smart: An Employer's Guide to Using School Records***

This guide provides three specific strategies and numerous tips for employers to use school records in the hiring process — and send a message to students that school counts.

## ***The Successful Strategies series***

These booklets provide business leaders and business-education coalitions with information and resources they can use to support academic achievement at the local level:

- *Charter Schools to Improve Student Achievement: Leveraging Business Expertise*
- *Improving the Quality of Teaching: The Business Role*
- *From the Boardroom to the Blackboard: The Business Role in Improving Education in Delaware*
- *Using Quality to Achieve Standards: How Educators and Business Can Take Action Together*
- *Partnerships for High Standards: Putting Knowledge to Work*

These resources are among the most popular publications of the National Alliance of Business, the Business Coalition for Education Reform and other business leadership organizations. For ordering information, call 800/787-7788.



**National Employer Leadership Council**

1201 New York Avenue, NW

Suite 700

Washington, DC 20005

800-360-NELC

Web site: [www.nelc.org](http://www.nelc.org)

E-mail: [nelc@nelc.org](mailto:nelc@nelc.org)

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