

Program. A diverse collection of public and private enterprises have participated, including those involved with manufacturing, engineering, and research, as well as the broad areas of health care, from hospitals to public and private medical laboratories.¹

Participants have expressed both altruistic and self-serving reasons for their involvement. Concerned about the quality of education offered in the public schools, business and community leaders see the program as a tangible way to make a difference. Professionals in certain occupations, such as medical technology and engineering, want to interest able students in their particular fields. Others want to recruit future employees. Participation also allows businesses to obtain more minority inclusion and to remind current employees of their community interests.

The pairing of a student with a mentor frequently leads to further involvement after the mentoring experience has ended. Students feel free to contact their mentors with problems or questions about future science fair projects, college choices, or coursework selections. Relationships have also continued through paid summer jobs or college internships.

Evaluation and Recognition

The Science Mentor Program is evaluated in several ways. The mentors complete an evaluation form, describing the good and bad aspects of the experience with suggestions for improvement. For their information, they also receive a copy of the student's written report. In addition, the students complete an evaluation form, and their written reports usually contain a tacit evaluation of the experience.

The classroom teachers of participating students are involved in an ongoing, although informal, manner. Students miss three or four classes every three weeks, and work assigned during the mentoring experiences must be made up. Also, their teachers encourage them to share with class members the new information gained at each mentoring session.

In 1984, the IPS Science Mentor Program received a presidential citation for exemplary efforts in career awareness in the Search for Excellence in Science Education, and it was

one of five programs selected for national recognition. In 1990, a study conducted by the Urban Institute and the National Association of Partners in Education cited the program as 1 of 24 exemplary school-business partnerships in science and mathematics (Blair et al. 1990).

Starting Your Own Partnership

Setting up a successful school-business partnership requires several ingredients. The first is a committed school-based person who will make contacts with people in business and

A Day at the Box Factory

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As general manager of a corrugated packaging plant in Miamisburg, Ohio, I was glad to participate in the Partners in Education program formed by the local school system. Our company adopted an elementary school near our plant. In addition to helping the school purchase some needed equipment, we gave the classes tours of our facility.

I was a bit taken aback, however, when the teacher of the learning disabled class invited me to talk to the children about our company. How would I communicate the workings of a corrugated container manufacturing facility to children? And even if I could, would they really be interested? The most dedicated Rotarians have been known to nod through such presentations!

I hated to refuse the request, but I was stumped. I talked to my wife

about the predicament. Rosalie, an applied communications teacher at a vocational school, has orchestrated many projects that link education with business and industry. Her solution was simple: "Don't tell them; show them."

It would be difficult to take the class through our plant's entire manufacturing process; but if I scaled it down, the students could not only see how it all worked, but they could participate. Rosalie and I came up with a project we hoped would work.

I arrived at the school loaded down with pre-cut corrugated sheets, tape, labels, production forms, and time cards. After a brief explanation of what a corrugated packaging company does, we set up an assembly line. Each student was given a job, a responsibility. They were eager to begin! The first group of students received the pre-cut cartons and delivered them to a second group for folding. Next the

industry to solicit mentors, select and place students, and coordinate arrangements, transportation, and evaluation. A contact person is also needed at each business site, either a mentor or a supervisor, to help coordinate activities with the school-based coordinator. In addition, a written plan is needed for each student's intended activities at the work site to inform the student, his parent, and the mentor.

Another ingredient is a financial commitment to the partnership by both parties for pre-planning, monitoring,

and evaluation. Although the costs are minimal, there are some necessary expenses. For example, the district should provide a coordinator, at least half-time, and the businesses must allow personnel release time in which to participate. Funds available through the magnet school federal grant help defray the costs of taxis for students to the worksites in the IPS program. To hold down costs, mentors are encouraged to accept two students, each. At especially large institutions, such as Saint Vincent Hospital, where yearly 11 to 14 professionals work with

students, a minibus transports students.

In addition to the mentoring relationship, business people are encouraged to speak at the schools about careers and occupations. In this way, they reach students who don't meet the requirements for the worksite mentoring experience but who are interested in practical uses of science, mathematics, and/or technology. The opportunity to establish a personal relationship with a science professional can lead to summer employment and college scholarships.

cartons went to a group of students responsible for labeling them. After the cartons were folded and labeled, the next group of students bundled and taped them. Finally, the "truck driver" loaded the cartons and left for a company delivery. All went well for a while, and the students were having a great time on their production line. Then I directed the first student to step out of line.

"This worker is late for work today," I said.

"How will we get the cardboard?" the rest of the students asked indignantly, scowling at him.

"We'll either have to shut down production, or one of you will have to do two jobs," I answered.

They all looked at their teacher, but she said they were on their own. Time for a group conference. After some discussion, they agreed that one of the labelers would deliver the sheets.

Other problems arose from time to time. We ran out of labels. The truck driver "called in" to report that he had mechanical problems and would not be able to make a customer delivery promised for that day. By

conducting the assembly line simulation, I was able to observe a great deal of cooperative learning and group problem solving among the children.

The children handled each situation first by identifying the problem and then brainstorming to arrive at the best solution. When solutions didn't work, they had to re-group for new ideas. Each problem encountered illustrated the importance of being on the job, on time. The children began to realize and talk about how absenteeism has an effect on everyone and makes the job more difficult to accomplish.

At the end of our production "day," students filled out time cards (another learning experience). Then we discussed how the employees should be paid. Should the person who was late for work receive the same pay as the others? Should the person who had to do the extra work receive more pay than the others? Should the truck driver receive less pay because the truck had mechanical problems? The students discussed all of these issues and came up with answers.

When I left the school, I felt that I had offered the students a firsthand view of a day on the job. They had had fun and, at the same time, gained valuable insights about what the world of work requires in the form of good attendance and old-fashioned job ethics.

I hear many business people today complain about the lack of motivated and dependable entry-level employees. I am convinced that by becoming involved with education, the business sector will benefit. We can offer not only material assistance, but also our time and attention. We can take the world of work into the classroom and stress the qualities that we see as essential in tomorrow's workers. This may be the best and most effective gift we have to offer. □

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