Dialogues between leaders in education and industry have yielded useful results for the benefit of school children . . .

Industry's Role in Cooperative Education Programs

RICHARD B. SCHEETZ
Coordinator, School-Industry Cooperation
Division of Curriculum and Instruction
State Department of Education, Trenton, New Jersey

IN PAST years, school administrators have established, with increasing frequency, a variety of cooperative relations with industry. Today, new alignments, new structures of management and organization, and new procedures are sought by many of society's institutions in an effort to come to grips with urgent problems of our urban society. Of all the institutions, the public school can become "peculiarly that institution in which the community becomes conscious of itself." Educational leadership is uniquely fitted to call for and conduct a dialogue among the leaders of the major institutions.

Institutional conscience is in a state of readiness to reexamine areas of responsibility and to plan courses of action. Within the framework of education and within the setting of the public school, a totality of resources could be brought to bear on the problems of crime, equal employment opportunity, segregated and inadequate housing, rat control, transportation, and air and water pollution.

With mutually reenforced determination, the urgent problems can be resolved only through joint action and through the use of business expertise in the areas of management, research, and technology.

Most leaders in business and industry are more than willing to do what they can to help schools improve their programs. All too frequently, however, industrialists and businessmen feel that except for their tax support of education their ideas are neither needed nor wanted.

Dialogues between leaders in education and industry have yielded useful results especially for the benefit of school children. School administrators who are successful in obtaining industrial cooperation report that the first requirement for success is clarity in making the educational objectives of the program known to industrial representatives.

Innovative educators have not been reluctant to request aid from industry to help them realize their objectives

with and for students. Substantial aid in the form of equipment, facilities, materials, and personnel provided by industry has been made available for many years.[1]

The utilization of industrial resources has enabled educators to provide students with knowledge, skills, and feelings not normally available in the classroom. Students have had a wider variety of learning experiences than would have been possible without the aid. Teachers have been supplied with supplementary materials, media, and methods. Both teachers and students have been helped in keeping up-to-date in a time of a rapidly expanding body of knowledge.

Types of cooperative programs have varied widely. Some have been of the "one-shot" approach while others have been on a day-to-day continuing basis for a number of years. Imaginative educators have found a variety of ways to use industrial resources. Some of these ways are listed below under the headings: personnel, materials, facilities, and equipment. These headings do not necessarily characterize programs. In Cooperative Industrial Training Programs, all the listed factors are involved.

Personnel

Leaders in commerce, business, and industry have served and continue to serve on *advisory councils* at national, state, and local levels. At the national level, more than 30 top corporation executives advise the Office of Economic Opportunity through the Business Leadership Advisory Committee.[2] In New Jersey, Governor Hughes has top-level panels advising him on such problems as higher education, air and water pollution. In 1958, the Office of School-Industry Cooperation was created in the New Jersey State Department of Education, for the public and private schools, following the recommendation and support of an advisory committee to the Commissioner of Education.

Visiting experts from business and industry are invited into schools to present lectures and demonstrations on topics relating to economics, history, mathematics, and science.

The use of resource persons from business and industry as *career day consultants* is an accepted practice in the public and private schools.

Materials

The number and variety of industrial materials available free or at small cost is truly amazing. A list by categories would include bibliographies, books, brochures, catalogs, charts, comics, displays, exhibits, films, filmstrips, folders, journals, kinescopes, kits, maps, magazines, models, periodicals, phonograph records, and reprints.

Within the last few years, the following printed materials have been made available to the public and private schools in New Jersey: The "Tercentenary Issue 1964" of *New Jersey Business* by the New Jersey Manufacturers Association; *New Jersey: Land of Amazing Industrial Advantages* by the Public Service Electric and Gas Company; and *Tales of New Jersey* by the

[1] Albert L. Ayars. "The New Look in School Help." *The Clearing House* 29 (3): 135-38; November 1954.

[2] Wally Baer. "The View From Within." *Bell Telephone Magazine* 46 (4): 307; July/August 1967.

New Jersey Bell Telephone Company.

Facilities

Educators have found that industrialists will permit use of their laboratories, libraries, and production plants by students, by teachers, and by classes of students. One important prerequisite is that the use follows from well-defined educational objectives.

A recent unpublished survey revealed that of New Jersey's public and private secondary schools reporting, five percent "shared facilities with industry for instructional purposes." Approximately 40 percent of the school reported "Cooperative Work Experience Programs." In these programs, the student's work is related to and complements his school studies.

Fair Lawn High School's Science Work Experience Program [3] has completed its tenth year of continuous operation. During 1967, some 26 students put in a full day's work at one of the 12 cooperating companies or hospitals for a period of at least two weeks. Some of the outcomes reported for students were:

1. The development of positive attitudes toward a specific field of endeavor
2. A more realistic approach to the qualifications and demands of engineering and scientific research
3. The utilization of scientific equipment beyond the scope of high school science
4. The opportunity to work on special projects under the supervision of experts.

Fair Lawn, during 1966-67, involved an additional 195 students in one of six other cooperative programs: Business Education, Distributive Education, Future Nurses of America, Future Teachers of America, Trade and Industrial Education, and Social Work. The programs involve close cooperation of school, industry, professional organizations, community, and students.

[3] Reported in: *Star '60, Selected Papers on Science Teaching.* Washington, D.C.: National Science Teachers Association. 1960.

Equipment

Some educational leaders are particularly talented in obtaining industrial equipment. A school superintendent in New Jersey has obtained for the use of his school district: laboratory cabinets, desks, and equipment; lockers; a relatively new bus with a capacity of 40 passengers; and a spectrophotometer valued at $28,000.

It is difficult to select only a few examples from the many kinds of equipment which have been developed by large organizations and which have been made available at modest cost to all schools. The two examples which follow have great potential, in the hands of capable teachers, for affecting the educational process in significant and positive ways.

The "Wave Machine" was developed by John N. Shive of the Bell Telephone Laboratories. This device is extremely useful in teaching-learning the principles of similarities of wave behavior.

Students in one New Jersey high school, using the know-how acquired in "The Man-Made World" Program, solved the problem of traffic congestion growing from the use of the school's sanitation facilities. The school principal, in reporting the project, expressed the wish for a climate in which the students could work in a similar way on the problem of segregated housing.

Most industrial aid to schools during

the decade 1954-1963 may be characterized as available, indirect, and supplemental. Available—if defined needs were communicated and if help was requested. Indirect—in consideration of industry's priorities of responsibilities: for profit production to its owners; for "good" corporate citizenship to its community. Supplemental—to fulfill the school's perception of providing a finishing touch for what was viewed as an almost complete "process" of education.

In recent years, those programs in which the partners more nearly share equally the responsibility for instruction have increased rather dramatically. In New Jersey, Cooperative Industrial Education Programs, in which the student's time is divided between classroom work and outside occupational training, have increased from five programs for 108 students in 1963 to 150 programs with about 1,900 students in 1966.[4] However, these programs ordinarily involve only students who have completed at least the tenth grade level of schooling.

Constructive dissatisfaction with the quality of education's products and the effectiveness of the education process has been expressed in many ways by several of society's larger institutions.

Private foundations have provided "seed money" to correct defects in a fairly sizeable segment of the school's population through remediation. A public foundation (NSF) has underwritten an alphabet spectrum of curricular reforms to reclaim, from obsolescent methodology, critical content areas of the school's program. The Federal Government in the interest of meeting national needs, has intervened directly and given education massive injections of new monies. Large corporations are reconditioning some 40,000 school rejects in over 100 Jobs Corps Centers under federal contract. Supra corporations, formed by the merger of companies specializing in communications, computers, electronics, and publishing, have tooled up in anticipation of expanding markets for educational systems and hardware.

These indications of dissatisfaction call for a reexamination of the role of industry and other institutions in education programs.

The social responsibility of corporations is the subject of much talk these days. Several forums to explore the subject were held by large organizations in early 1967. Leaders from business, finance, government, industry, labor, and religion are concerned about the survival of their institutions and of society in the social revolution at the "urban frontier." Enlightened industrialists perceive the school as the major vehicle of economic, political, and social change.

Educational leadership is concerned with the school's role in social reconstruction.

The time is overripe for a dialogue called by educational leaders to provide the foundation on which to build the *courses of action* necessary to prepare adequately individual children and adults as workers, parents, citizens, and self-developers to shape society through the resolution of current problems.

[4] "Developing Human Resources," Trenton, N.J.: New Jersey Department of Education, Division of Vocational Education. January 1967.