A panel session—Computers and the underprivileged

A group from the Delaware Valley Chapter of ACM have joined together to form the Urban Education Committee. Members of the committee believe that, in these days of urban crisis, the data processing industry offers a unique opportunity to the disadvantaged to become involved in the mainstream of the American way of life.

After several abortive attempts to determine where to employ its professionalism, the Committee has decided upon several projects recommended to it by different groups within the city of Philadelphia. These projects include providing counseling on data processing to the Pennsylvania Employment Service and Philadelphia high school counselors; providing advice and counsel to the Board of Education on the data processing curriculum taught in high schools; providing data processing consulting to the Philadelphia Urban Coalition; and, most important, running a computer operator training course in a Philadelphia high school.

The computer operator training course is being given to 20 high school seniors from Thomas Edison High School. The Philadelphia Board of Education was asked to provide the students. We requested that the students not be college bound, but be of such caliber that would probably insure the success of the training program. The Board of Education, in turn, asked the Principal of Thomas Edison to select the students whom he believed showed leadership qualities and the intelligence necessary to successfully complete the program. The 20 students finally decided upon were selected from a group of 48 recommended by the Thomas Edison faculty.

The training program meets Wednesdays and Saturdays. The curriculum is aimed at IBM 360/30 operator training and extensive hands-on training will be provided. The curriculum is divided into two parts. The first sessions deal primarily with training on punched card equipment to provide the students with a background in data processing and operations done on computers. The 360/30 training will concern itself primarily with IBM's Disc Operating System.

The curriculum for the course was developed by a sub-committee composed of three members. We attempted to obtain curricula from other ACM chapters who had gone down this road; but the other chapters had not, when we were beginning the program, formalized their curriculum to the point where we could use it. It became necessary, therefore, for the sub-committee to collect operator training manuals from various computer manufacturing organizations and from private sources.

Developing the curriculum was only one of several problems that were encountered when the program was started. Other problems were finding instructors (paid instructors, not volunteers), obtaining funds for paying for instructors and field trips, etc., finding machine time (both punched card and computer), and, finally, placing the students in jobs after graduation (we were advised that if students were trained and were not placed in jobs, the training would be at best worthless.
or even worse than no training at all). I can report, at this juncture, money has been donated, that instructors have been hired, machine time has been donated, and 12 of the 20 students have been placed in various companies throughout Philadelphia and the Delaware Valley.

In summary, the technique used by the Delaware Valley Chapter in becoming involved in urban affairs was by becoming involved—headfirst. We collectively made up our minds to do "our thing" and, with a little urging from the Board of Education, we did it. We had a few anxious moments in getting started without having all of our problems resolved, but the fact that we had to resolve them in a short period of time made us devote that extra amount of effort necessary. If we had held off our program until all problems had solutions, our course probably would not have started in 1968, but rather in 1969 or perhaps never.

Our plans for the future include a similar program in a Camden High School (we do have a number of interested members from RCA at Cherry Hill, New Jersey) and expansion of our Philadelphia program to another high school.

A program for the underprivileged and overprivileged in the Boston Community

by JOHN J. DONOVAN

Massachusetts Institute of Technology
Cambridge, Massachusetts

In response to the needs of the Boston Community, a new direction has been taken in the Lowell School, a school under the auspices of the Massachusetts Institute of Technology, which will offer education to the community for no more than the cost of two bushels of wheat. The program focuses mainly on the needs of two sectors of our community.

One sector is those individuals who are undereducated and underemployed, many of whom are the "underclass" of the ghetto, suffering from the crippling syndrome of education-motivation-employment deprivation. The other sector is those senior men of industry who are very well educated but need retraining in some aspect of recent technology, e.g., lasers, computer systems.

A basic program for the first sector in computer programming was established. The tuition to the school was set at five dollars, a figure low enough to exclude an absolute minimum and yet still be a commitment on the part of the student. The response to our notice in local newspapers, radio and through public relations channels at M.I.T. was overwhelming. For lack of staff to screen applicants, the first five hundred were accepted. Although our largest interest was in providing access to education for ghetto dwellers of limited resources, our inability to screen applications resulted in a net of about 140 hardcore "deprived" out of the total of five hundred. Of these 140, about 70 percent were black.

Five graduate students at M.I.T. provided the instruction and were assisted by ten M.I.T. undergraduate teaching assistants. The plan is to initiate a chain of lectures by asking successful teaching assistants each year to lecture the following year. We focused on the 140 hardcore "deprived" assigning seven of the M.I.T. teaching assistants, most of whom were black, to those students. These students were divided into smaller tutorial sections of ten to fifteen students headed by one of the teaching assistants. Teaching assistants were also available for consultation in the keypunch rooms.

An M.I.T. student-run computer company has offered to assist in a placement service for these students. We feel that follow up to the program is very important and is presently very weak.

An advanced systems programming course was offered to the second sector of the community, the highly educated sector. We accepted 80 into that program. We feel that these programs will tend to complement each other in that the advanced program will be taught to people who may later assist or influence the hiring of those in the other program.

The basic program will be expanded to include courses in computer maintenance, Boolean algebra, basic business algebra and other practical courses. As technology changes business trends change; the program will be modified to fit the needs for training in the changed environment. It is our overall purpose to offer courses broad enough to establish a basis for training in a particular area. We do not pretend to offer a substitute for the broad knowledge acquired from a college education. We do try to offer a program in a specialized area which has two undeniable attractions: job opportunities and subject excitement. Computer programming is such an area.
What the JOBS program is all about

by WILLIAM B. LEWIS
U.S. Department of Labor
Boston, Massachusetts

One of the thorniest problems in America today is that of the habitually unemployed people living within the inner core of our 50 largest cities. For a long time employers and organized labor have written them off as unemployables. The U.S. Department of Labor has, over the years, tried various approaches to these hard-core jobless, with uncertain success.

In January 1968, President Johnson announced a program of Job Opportunities in the Business Sector (JOBS). The new program looked to industry to apply its full resources and "know-how" in cooperation with the Government, to help break the cycle of unemployment of the hard-core by making them permanent productive members of the labor force.

In announcing the JOBS program, the President said he was calling on American industry to establish a National Alliance of Businessmen (NAB) to launch it, help achieve its goals, and advise the Government. Under the leadership of Henry Ford II, NAB was created early in 1968 with leading local businessmen volunteering to spearhead the effort in the 50 largest cities of the country.

The NAB goal for JOBS is to put 500,000 disadvantaged persons in jobs by June 1971, with an interim goal of 100,000 to be placed by June 1969.

The JOBS program involves a commitment by employers to hire workers first and train them afterward—building on the accumulated evidence that initial placement in jobs at regular wages does much more to motivate a disadvantaged individual than a training period before employment with only a promise of a future job. The program puts at the disposal of industry the services and financial support of Government, which experience has shown are essential if the disadvantaged unemployed are to receive the range and depth of services required to help them become productive workers.

The cooperating companies provide jobs and training for hard-core unemployed workers and bear as much of the cost as would be involved in their normal recruitment and training operations. The extra cost of added training, counseling, remedial education, prevocational training, health services, and other specialized support needed to bring disadvantaged individuals to a satisfactory level of productivity and keep them on the job may be offset by funds provided through a Department Labor contract. In order to encourage smaller companies to participate, an optional standardized program approach has been developed. Intensive efforts have also been made to give cooperating employers all possible technical assistance in developing plans and formal proposals.

The first-year NAB goal of 100,000 hard-core persons on the job has been reached by the JOBS program ahead of schedule.

A full assessment of the JOBS program results is not possible at this early stage, but it is apparent that the start made is highly promising. The attitude of participating companies is generally either optimistic or enthusiastic, and they concur regarding the validity of the JOBS idea and intent.

The immediate effect of the JOBS program has been to employ those formerly thought to be unemployable. However, the benefits of JOBS are more far reaching. The skills gained through the JOBS program open the doors to advancement to those formerly without hope. Moreover, what the private employer's experience in the JOBS program has taught him about the problems of the hard-core and the possible solutions to their special problems will, in a large number of cases, have a spillover effect on the company's regular training and employment practices.

Computers and the underprivileged

by ALLEN L. MORTON, JR.
Computer Personnel Development Association, Inc.
New York, New York

Statement of objectives

The Computer Personnel Development Association, Inc. (CPDA) is an organization that has been set up to secure openings in the computer field for individuals from ghetto areas. To prepare these people for work in a business environment, CPDA will provide orientation and training courses in data processing. The program is organized by professionals within the computer industry in collaboration with local community development groups who will help select participants for the program, and with industrial leaders who will locate and provide job opportunities for the participants.

The long term objective of CPDA is to establish career paths in the computer industry for our students.
This will be accomplished by providing continuous job training and career guidance in all areas of data processing.

The following points define the broad areas of CPDA's capabilities.

1. **Computer Operations Training Program**—Training ghetto personnel judged capable of completing a training program in computer operations and functioning in this capacity within the data processing area.

2. **Computer Programmer Training Program**—Training similar personnel who are in a position to complete a training course in computer programming and to function as programmers.

3. **Job Placement and Development**—Moving graduates of the above programs from the training phase into jobs which will be identified prior to and concurrent with training.

4. **Career Guidance**—Providing follow up procedures to smooth the students’ transition from the training to the business environment.

5. **Related Personnel Services**—Making available to management on a consultant basis more precise selection and training procedures for minority group personnel.

Implementation of the above program will provide an opportunity for untried minority group persons who show a potential for achievement. This program will serve as a source for desperately needed technicians in the data processing field as well as provide a program which realistically meets the job-related directive of the President's Bipartisan National Commission on Civil Disorders.

Our first project is a pilot program to train and place computer operators. This program is limited in scope but can succeed only with the active support of industry.

---

**Experimental and demonstration manpower projects**

by JOSEPH SEILER

U.S. Department of Labor
Washington, D.C.

The U.S. Department of Labor’s experimental and demonstration (E and D) program seeks to develop and test through actual project operation, new ideas and techniques to meet manpower problems more effectively. Projects focus on the particular problems which impede employment of the unemployed and underemployed and which are not being met effectively by established manpower program methods. They seek, through innovative techniques and new types of organizational arrangements, to determine how the programs might better “reach” and help prepare such workers for jobs, place them, and retain and upgrade them in gainful employment.

Because each project is specially designed, experimental and demonstration projects are not readily categorized. They differ widely, not alone by group or problem focused upon, but by technique or combination of techniques tried and, of great importance, by type of institution or combination of institutions enlisted to conduct the effort.

The groups concentrated on have been primarily unemployed ghetto area youth, minorities with cultural, emotional and other handicaps to employment, low-income rural residents, and older workers with limited education.

Although the E and D program's key objective is to stimulate and guide innovation rather than to provide services directly, it does provide significant assistance to the thousands of participants in its projects.

Many of the techniques for delivery of manpower services have been developed or refined in E and D-sponsored projects. Briefly, important concepts which E and D efforts have helped pioneer and introduce widely into manpower programming include:

(a) outreach to identify, attract and retain participation of the disadvantaged who do not come forward on their own for needed manpower services; (b) multi-service programs and centers to provide comprehensive service on a coordinated readily-accessible basis; (c) work sampling to evaluate the potential of those with limited education and to build the confidence of those with limited communication skills; (d) prevocational training, work orientation and related preparation as an aid to effective skill training and employment; (e) use of nonprofessional and indigenous staff as a vital aid in manpower development for the disadvantaged; (f) new occupations, particularly as subprofessional aides in human service activities, to broaden opportunity for the undereducated; (g) use of community and minority organization capabilities to complement government agency manpower development efforts; (h) inducements for employer initiative and action to hire, orient, train, and retain workers customarily regarded as “unacceptable”; (i) post-placement coaching and “high support” to enable employers and disadvantaged
workers to overcome difficulties jeopardizing job retention in the initial months after hiring.

More specifically, the following are major examples of types of E and D accomplishments:

The major new Concentrated Employment Program (CEP) and Job Opportunities in the Business Sector (JOBS) manpower programs, initiated in part on the basis of E and D findings, were given significant start-up assistance by the E and D program:

1. Many features of the CEP have been designed from examples developed by E and D projects. The orientation, coaching, and employer involvement components particularly are based on E and D-developed models. Several E and D projects, most notably the JOBS NOW program in Chicago, provided the initial staff training and technical guidance for CEP personnel. And key staff needs in several of the initial CEPs were filled by personnel drawn from E and D projects. The E and D program also developed specific guide materials on job development methods, orientation and coaching to assist the new CEPs in such activities.

2. The new JOBS program initiated with the National Alliance for Businessmen was similarly influenced by E and D pilot experience. The findings of several E and D projects shaped the guidelines for JOBS efforts, and materials developed in the E and D program have served as basic resources for JOBS employer-contractors.

New ways have been developed by E and D projects to open and improve employment opportunities for the disadvantaged in major occupations:

1. E and D projects in Cincinnati and Washington have with union cooperation been exploring how to provide work preparation and experience for disadvantaged, particularly minority, youth to enable them to enter building trades apprenticeships and employment in housing renovation and construction. These projects have been looked to as practical examples to aid development of Model City program guidelines for employment of neighborhood residents in ghetto rebuilding.

2. A demonstration project with the Post Office Department has developed a technique which other Federal agencies are considering to help overcome test barriers to employment of the disadvantaged. Workers unable to pass civil service tests were recruited and hired on a temporary basis and, after special instruction while employed, a high proportion were enabled to meet the test requirement for permanent employment—and have performed effectively on the job.

Techniques are being developed to help employers upgrade their unskilled workers. A pilot E and D effort provided brief but intensive in-plant training to workers in traditionally dead-end jobs to qualify them for upgrading to newly designed higher-level jobs which the employer might not otherwise fill from his own employees. The employer response to this project has led to its extension for further development in new projects in three major cities, preparatory to likely largescale application in the near future.

Techniques are being developed to help identify the "real" job potentials of disadvantaged persons. The disadvantaged person's lack of skills and insufficient knowledge of his own capabilities combined with his usual very poor performance on paper-and-pencil tests all conspire to qualify him in the eyes of the counselor or personnel man for only the most menial dead-end jobs.

Work sample tests, originally developed by sheltered workshops for physically and mentally disabled, have been shown by E and D to be useful with the disadvantaged as a substitute for the unworkable written tests. The work-sample technique has been refined by the Philadelphia Jewish Employment and Vocational Service in an E and D project that has led to a ten-city pilot operation that will further extend our knowledge of its utility as an approach to appraising the job potentials of the unemployed.

Other interesting E and D efforts in their early stages are:

1. Crime problems. E and D efforts on several projects are designing systems with courts and police to develop training and employment as an alternative to criminal prosecution and imprisonment.

2. Job language facility. Projects are focusing, not on basic literacy as such, but on "job English" for Spanish speaking workers and on "occupational language" for workers with limited literacy backgrounds.

3. Employer Based Day Care. One project is exploring the feasibility and value of an employer sponsored day care center as an aid in recruiting the inner-city unemployed for existing job vacancies, and as a means of enhancing employee job stability and performance.
The E and D program's emphases will steadily shift as earlier findings are absorbed by established programs and attention is required by emerging new manpower problems and by a growing need for measurement and analysis of relative effectiveness of alternative approaches.
A panel session—Computers in service to libraries of the future

CALVIN N. MOOERS, Chairman of Session
Rockford Research Institute Incorporated
Cambridge, Massachusetts

Computers in service to libraries of the future: Library requirements
by W. N. LOCKE
Massachusetts Institute of Technology
Cambridge, Massachusetts

An outstanding computer engineer recently compared libraries to the whaling industry, a relic of the romantic past. As whales disappeared, so will books, he said. We should stop building libraries, store all information on tape and retrieve it through consoles.

This may be acceptable as a piece of blue sky ing but hardly comes to grips with the problems of information handling today and tomorrow. At a time when the world outpouring of written words is going up ten percent a year (an estimated 300,000 books and 100,000 serial titles in 1968), it doesn't make much sense for librarians or anybody else to plan in terms of a replacement of print by any other form in the near future.

So let's come down out of orbit and talk about mundane facts. Libraries cost dollars and serve people. For dollars they compete with other goods and services. The people they serve are as diverse as the population. Some just want a quiet, comfortable place to read or think; others want a particular book or journal; still others want all the information you have on some special topic; some need items that have to be located and brought from some other library. Then there are those who want to check a fact, a name, and so on. The library has to be all things to all people. And this requires complex organization, specialized staff, and constantly expanding space: it requires a lot better inventory control techniques than we now have. This is the challenge to computerniks. If they want to take over and operate the information handling business, they must do so in a real world of program budgets and cost benefit analysis. They must also work closely with librarians to provide a transition from the present to the future.

It might be well to look at today's information retrieval in the library context, see how much of it goes on, and calculate the cost. This amount is in the budget and presumably available for a computerized service. The total is not encouraging. Additional services that can be provided by the computer will have to be costed out and budgeted for next year or some future year.

At present, it is the customer who does most of the information retrieval; only he, and frequently not even he, knows what he wants. The library staff spends most of its time on document handling, acquiring, cataloging, and retrieving, not information, but books and book-like materials in dozens of forms, full size and mini, plus maps, music scores, manuscripts, sound and video recordings. The library is the memory of the race. It is different from the memory of the individual in that the individual's memory is associative while the library deals with discrete packages. Cataloging is a poor but expensive substitute for what goes on automatically and subconsciously in our minds as we record our experience.

About 33 percent of the average library personnel budget goes into the preparation and filing of information about the many kinds of items that come into the library. This input can as well go into a computerized as