"Computer Jobs, through Training" truck operating

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Since early spring a giant trailer truck has rumbled the streets of San Diego with a most unusual cargo. Inside the old trailer, which for over fifteen years hauled produce to California food stores, is a modern well-equipped classroom and a general purpose IBM computer. On the outside foot-high letters spell out "Computer Jobs Through Training."

Operating from the San Diego campus of the University of California, Computer Jobs Through Training is a project designed to train disadvantaged young people in semi-technical and business computer programming. The mobile classroom makes it possible to take the training facilities directly into the student's own community. This means that students do not have to travel long distances to get to class. It also means that the computer equipment can be used efficiently to serve, many students throughout the city.

During the past two years, while the project has been under development, more than five introductory programming classes have been run for disadvantaged San Diego area junior and senior high school age students. A night class for young adults in San Ysidro and National City, which has been underway since February, will soon begin placing graduates in programming and other computer-related jobs, or sending them on to local colleges and junior colleges for further training.

Computer Jobs Through Training (CJTT), is directed by Dr. M. Granger Morgan, who began the project in the summer of 1968 when he was a graduate student in Applied Physics. Morgan has been assisted by a small full-time staff and a collection of undergraduate and Neighborhood Youth Corps students. Together they have compensated for the project's funding problems with long hours of hard work.

Original support from within the University came from the UCSD Computer Center, the Department of Applied Physics and Information Science, and the Scripps Institution of Oceanography. A grant from the Rosenberg Foundation of San Francisco and the gift of the used forty-foot trailer by Safeway Foodstores has since been received.

"We've put this project together the hard way," explains Morgan. "In our first year and a half of development we raised only about half the amount of support we needed to get the project started. So we've done the only thing that was possible...we've substituted labor for capital."

With help from dedicated students, the staff has completely reconditioned the old trailer and a military surplus tractor to pull it.

"When we needed power entry poles for our first hook-up locations, Morgan said, "we found some old abandoned poles on the University's Matthews Campus. We sawed them down, dug the holes ourselves, wired up the poles and set them. It's been like that on everything." he said.

With this kind of can-do attitude, the project has been able to persuade a number of industries to provide support. Assistance has been organized through Xerox Data Systems (a $5,468 hardware gift), Gulf General Atomic (over $8,000 in instructor's salary and other support), Montgomery Ward, Bekins Van Lines, San Diego Gas and Electric, Pacific Telephone, Aero Marine, Southern California Plating and others. Additional support has

been organized within the University. This has included University-administered Ford Foundation funds and funds from the Office of University Extension.

According to Morgan, computer programming appears to be a natural direction for improving the career choices of low-income and minority youth. It has an aura of excitement associated with it, which is very important in student recruitment and motivation. More importantly, unlike other high entry level jobs, it requires few cultural prerequisites.

"What is required is basic math skills and an ability to think in a logical way. In this area of training, the disadvantaged youth is a little less disadvantaged than in other fields.

"Finally, there is a large and growing job market in the computer field which despite the current business decline shows good prospects for the future," Morgan said.

UCSD undergraduate instructor Bradley Rogers explained how the CJTT classes work. "Standing in front of the class, delivering long, dry lectures accomplishes very little in motivating our students," he said. "Getting them involved with the computer, working with it is what wakes the student's long ignored potentials. The right atmosphere is what it's all about," he said.

According to Morgan, turning students on is the whole point of CJTT. Our biggest problem is not teaching the subject matter but getting the students excited and helping them develop the necessary motivation and persistence," he said. "That is why the classroom van is so important. You don't motivate people by making them ride a bus to class several hours each day," he said.

On the first day of the CJTT class the instructor writes a program which takes a set of numbers, adds them together, and writes out the answer. The students copy the program, punch it on cards, and run it on the computer themselves. Of course there are errors. The students fix their mistakes and try again. Sooner or later the program runs and the first flickerings of understanding appear.

During the following weeks the programs gradually become more complex, until the students have essentially learned all of the fundamental aspects of programming. By the end of the formal course it is apparent which students are suited for the various available jobs. The students then enter a Terminal Workshop of intensive full-time training for a period of several weeks which readies them for their job.

The curriculum includes instruction in FORTRAN and COBOL, two widely used computer languages, and an introduction to computer hardware, tab equipment, and other aspects of the data processing field.

An automatic overhead projector system allows the instructor to draw upon a large set of specially developed 35mm slides at any time throughout the course.

Graduates from the program will be placed in many kinds of entry level semi-technical and business programming jobs. They will also enter trainee jobs in machine operations and maintenance. "There is a lot of semi-technical programming these days, even in the scientific language FORTRAN, that our students will be able to do," explained staff instructor Robert Sadler. "Take a company that's writing a program to let an engineer design electronic circuits with a video display terminal. Somebody has to write subprograms to draw all the transistors, diodes, and things on the screen... that's the sort of thing our students will start out on," he said.

In addition to Director Morgan, the full-time project staff includes Mary Mirabito, who works in curriculum development; Robert Sadler, who is a full-time instructor with his salary supported by Gulf General Atomic, and Norman Down, who is an instructor and also directs facility development. Student and other staff include Curtis Bagby, Bradley Rogers, Mike Meza, Delwin Holt, Oneeta Alexander, Boyd Pearson, Calvin Manson, David McQuoid, and Carl Flarity. Previous student staff have included Belton Flournoy, Susan Halfon, and many others.

While the CJTT staff is now expecting major funding support from the State, fund raising for this project has been a very difficult effort, Morgan explained.

"The students who are working so hard for us are just as upset about America's social problems as their more noisy colleagues," he said. "But," he explained, "these students have gone to work and are trying to make a constructive contribution." "It's pretty hard to convince them that the system works when more than a half dozen of our proposals for major support have been turned down by agencies who say they have no money," he said. "Our country is going to have to do more than tell students to play a constructive role," he continued, "it's going to have to begin to support them actively when they do begin to do constructive things."