WESTWOOD
PUBLIC
SCHOOLS
J.F. Tobin, Superintendent

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PROJECT LOCAL
LABORATORY PROGRAM FOR COMPUTER-ASSISTED LEARNING
44 School Street
Westwood Massachusetts 02090 Telephone 617-326-3050

July 15, 1969

Mr. Rick Merrill
Digital Equipment Corp.
Maynard, Massachusetts

Dear Rick:

I thought you might appreciate reading this excerpt from our latest application for federal funds. It deals with FOCAL, especially Multi-user FOCAL, which we have currently loaded in our Needham High School TSS-8 system.

The lack of entries in Needham's logbook reflects a very reliable Multi-user FOCAL. In fact, it has been running smoothly without a crash since it was loaded June 6th. This is the kind of performance we users like!

We will be looking forward to more high quality innovations in FOCAL sometime in the future.

Thank you again for your fine work.

Sincerely,

Robert D. Slagle

Robert D. Slagle

File 001
Enc.

Another very important advantage is the outstanding adaptability of Digital Equipment's software to use in teaching via computerized problem-solving. Frankly this was somewhat unexpected, as the project staff was considering, as one of the necessary trade-offs to get lower costs, a diminished capability in the area of available program writing facilities, i.e., the programming language and its implementation.

Much to our surprise, however, we have found the company's FOCAL programming system to be unusually well adapted to meet the needs of algorithmic instruction. In addition to the standard features offered by most time-sharing languages, it offers to LOCAL schools these advantages:

1. similarity to language used previously, thus facilitating retraining of teachers and students;

2. ease of learning making it applicable to a wide range of grade levels (at least 4-12); and

3. interpretive compiler and plentiful debugging aids optimize the efficiency of all student time spent at a terminal.

As indicated in item (1), retraining of teachers and students to use FOCAL was very easy. So similar were the old and new languages that the majority of this transition was accomplished on an individual basis through reading a handout which described the differences between the old and new languages. A copy of this handout accompanies the original copy of this report.

The project staff had anticipated that it would be occasionally necessary to purchase time from a commercial time-sharing service to run the very long and complex programs which students sometimes write for special projects. However, the newly implemented 7-user FOCAL system incorporates library and subprogram chaining facilities that obviate this requirement in all but extreme cases. As a matter of fact, a student connected to a 7-user system could write a program over 1000 lines long. This capacity will be strained very seldom indeed!

The library capability of the new 7-user FOCAL system also has the advantage of allowing a "building block" approach to the teaching of programming and mathematics concepts. This approach consists of having a student work with a concept until he understands it well and then entering this concept into his repertoire of tools to be used in working on more complex problems. For example, students may work on the theoretical basis of logarithms until they understand them. Part of this work would include the writing of computer programs to find the logarithms of numbers. However, once the theory is well understood, it is no longer necessary for the student to program all the steps required to find a logarithm each time he needs to use one. Instead, one of the student programs written at the earlier stage can be placed in a common library available to all students and used as necessary as a "tool of the trade". This building-block approach is very effective and is facilitated by the library capability of the new FOCAL system.