A MODEL FOR COMPUTER ASSISTED
CAREER EDUCATION

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Career education at the secondary school level (ages 13 to 18) means developing skills which will sustain a student throughout his vocational life. Since 1968 the staff of the Electronic Data Processing (EDP) center of San Francisco's Woodrow Wilson High School has been developing a vocational education model with a digital computer at its core. Since 1970, the EDP Resource Center has had a Hewlett-Packard 2000 Series Time-Shared Basic System on site and has built an extensive system to support the educational effort at the high school in a variety of ways.

Many of the applications developed at Woodrow Wilson High School were conceived and accomplished by teachers, by teachers working with students or by students alone. The applications divide into three broad areas:

1. Applications in direct support of classroom education.
2. Applications in indirect support of classroom education.
3. Applications in support of administrative services.
   I. Applications in direct support of classroom education.

Woodrow Wilson High School has many problems common to inner city high schools. As related to vocational education these
1. Students with basic skills far below the standards set by employment testing.
2. Limited career awareness and lack of vocational choice early enough to complete a two year vocational sequence.
3. Low motivation, especially toward remediation in basic employment skill areas.
4. Low self esteem.
5. A decline in student enrollment in vocational business education classes because of the low peer group opinion of such course work.
6. A sexual imbalance that often finds business classes over 65-70% female.

As part of a model and unique solution to these problems, Woodrow Wilson was initially funded to provide Computer Assisted Vocational Education in the basic skills of English and Mathematics.

During the initial funding phase a commercially available math drill and practice program and English skills curriculum package were used. The teachers soon found this too confining and proceeded, with help of a student programmer and several student typists, to develop their own curriculum material.

The material developed has been used for two years and has improved the quality of the education in basic skills at Woodrow Wilson for two reasons:
1. The modular construction of the curriculum makes it easy to tailor lessons to the remediation needs of each student and
2. because it was teacher developed, the teacher's using the curriculum know it, monitor it and continually improve it.

The motivation behind teaching these basic language and computational skills to the Woodrow Wilson students was the fact that some graduates, with the necessary technical skills for a particular job, were failing on employment screening tests in basic language and
computational skills. Efforts to remedy this through computer assisted instruction have lead to the development of the concept of employability as the main criterion for much of the computer centered work in direct support of instruction.

In addition to the CAI curriculum developed, several games and simulations have been developed or modified to help promote employability. Some of these include:

**MCST:** A program which simulates the functions and operation of a sophisticated office letter typing machine, including the ability to reproduce the same letter for many addresses.

**CASH:** Simulates the operations involved in making change at a cash register in a grocery store.

**TAX:** Practice in which retail items are taxable.

**TYPE:** Practice in typing skills.

**FILE:** Practice in filing using "the 20 rules of filing"

Each of these programs, and many more like them, have been developed to respond to a felt educational need. Individually, the students enjoy using them and the teachers feel that they are extremely useful educational tools.

The motivational effect is evident by the fact that the students seek to run and interact with the programs. The enthusiasm student's feel for "playing" is harnessed to assist them in their learning.

II. Applications in indirect support of classroom education

Employability is only partly achieved through instructional efforts. Counseling and guidance also play an important role, helping students and counselors evaluate aptitudes and formulate vocational plans. Some of the programs developed for these purposes include:

**CAREER** A program for an on-line vocational interest evaluation. Recommends various vocational areas for further exploration.

**MONEY** Helps students explore possible sources of scholarship
money and financial aid for further education.

PERSON Helps students evaluate themselves in relation to their personality.

SELF Online evaluation of such factors as self-confidence, achievement-motivation, etc.

Each of these programs helps the counselor communicate information to the student. They are used upon the recommendation of the counselor and the results are discussed with him.

An additional indirect support function is test scoring. Using a mark-sense card reader teacher made tests can be scored and analyzed quickly — saving the teacher valuable time and providing the student with rapid feedback. This application is closely related to the third area.

III Applications in support of administrative services.

Briefly, these programs perform valuable administrative functions which support the employability idea. The best example is CINCH, the attendance program. The primary purpose of this program is to provide information to parents and counselors on students with attendance problems. After all, none of the other programs can have any impact if the student does not come to school.

The three areas of computer applications described above have been integrated into a model operation for computer utilization in career education. At Woodrow Wilson High School the problem, for which this model was a solution, was that students were not being effectively reached by the educational opportunities at the school. This was especially true among the students for whom Woodrow Wilson was the last site of formal education. How to find and reach these students was the initial focus of the staff of the EDP Resource Center.

A major difficulty with vocational programs is that they typically don't have the student long enough to develop vocational competency. There are numerous reasons for this:
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teacher is to be used, the teacher must feel free to modify that program to suit his own style, even if this option is not exercised. Finally, the program should be modular so that elements can be easily rearranged to suit the needs of each student and the requirements of each teacher or counselor.

The Woodrow Wilson High School model for computer assisted career education has proved an effective and indispensable addition to the educational program at the secondary school level. It is cost effective and it is transportable. With the computer as the central focus and a wide variety of programs available to all elements of the school community, this project has demonstrated one effective method of utilizing the computer in the secondary school.
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