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On And Off The Small College Campus



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Going Computer Is Easier and Cheaper Than You Think

An Arizona administrator tells how the local college convinced him that his school didn't need an expensive computer system

By RAYMOND J. PROVOST

Mr. Provost, the "spoiled administrator" referred to in the article, is Assistant Principal for Educational Services, Prescott (Ariz.) High School.

Small-to-medium size districts face serious financial considerations as they contemplate converting to computer use. Prescott (Ariz.) High School is a case in point.

After spending close to \$15,000 annually on an inefficient data processing system of limited capability, the high school, a self-contained district of 1,400 students, settled for the easiest solution of all: get rid of the system. In its place, we leased a terminal on the local community college's time-shared system, a DEC-10.

Our involvement began when officials from Yavapai Community College, looking for institutions to share their computer costs, came to Prescott High, bringing with them a portable teletype machine that could be connected to their central computer over standard telephone lines. In the mathematics and science classes they demonstrated how easy it was for someone with an elementary knowledge of the computer language BASIC to solve intricate computations of mathematical problems or genetic probabilities in a matter of seconds.

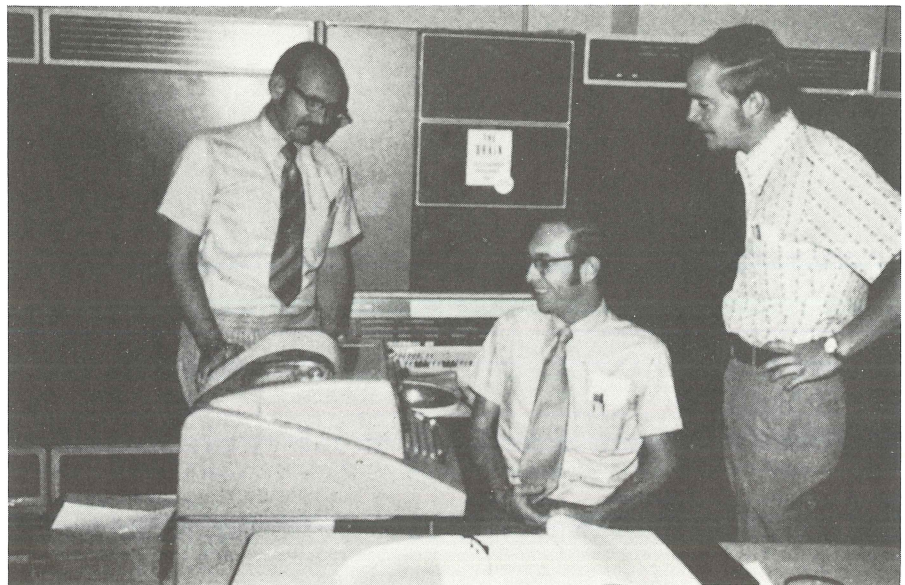
All those demonstrations had a number of faculty members and students salivating for the chance to enroll in the college's survey course in data processing. At the same time, the college representatives

loaned the school a terminal to keep on the school premises for a few months so that we could try it out for ourselves.

The college's soft sell was deadly. Enrolled for the spring, 1972 semester course at Yavapai College were all the faculty members of Prescott's science department, two math teachers, two business teachers, an assistant principal (myself) and three students from the high school. The students and the administrator really structured the operation of the course, setting the pace and (for once) forcing the faculty members to keep abreast. The students quickly exhausted the computer's library of simple games and were developing their own by using the computer's random response capabilities.

It should be added that during the initial exposure to the college's system, the Prescott administration had priority of use. Consequently, use of the computer by faculty and students was limited to the fun-and-games, experimental stage. We have recently solved the problem of limited time by granting priority to instructional purposes during school hours and performing administrative functions during the evening. If you expect to limit computer costs as much as Prescott has—a grand total of \$15,000 for terminal, pro-

Yavapai College data processing staff member and survey course instructor (left) helps high school faculty members in special course for them.



graming and processing—be prepared to use some scheduling and management ingenuity.

Advantages

From an administrative standpoint, access to our friendly neighborhood computer affords Prescott several major improvements over the past. Under the old system, information was limited to 80 characters or bytes per card. The variety of forms in which information could be printed was limited by the versatility of the operator, because of the delicate temperament of the electrical boards controlling data entry. In addition, the former processing system was located three miles from the district office. What slowed us down more seriously, however, was that anytime we wanted information processed, we had to convert it to a form that the operator could code onto the punch cards, a process that required endless sorting by hand.

The local college's assuming responsibility for the district's data processing operation resulted immediately in an increase in the amount of information that the district could include in student schedules and other vital records. No longer do we need to use bulky punch cards and constant tedious sorting. The actual scheduling of students is still performed manually, by assembling pre-punched data processing cards into decks for each student. But the advantage of the current system is that once the decks are read into the computer, they are discarded. The information contained on them can now be stored on magnetic disks in the computer and is readily available for class lists and schedules.

The conversion procedure was simple. At the beginning of the 1971-72 school year, when we converted to Yavapai's system, Prescott officials advised the college-employed programmer of the various types of information that the high school would need for its administrative purposes. The programmer prepared the application packages on the central computer, from which the school administration can now conveniently retrieve information by calling on either the college-based printer

or on the teletype terminal located in the high school.

The computer's versatility affords speed and convenience, and cuts our headaches in half in situations that used to compound them. For example, during registration last September, many new students arrived in addition to the returning students, who had been scheduled during the summer. In the past, the arrival of new students had caused a clerical nightmare; last year, for the first time, we simply entered the new students' schedules in the same way that we had entered the returning students'. By the end of fall registration day we had an up-to-the-minute count for every class offered in the high school.

Class lists are called for as needed and can be printed on either the college's high-speed printer for pickup the following morning or on the school's terminal for immediate response.

Grade reporting has also been made much simpler. At term's end, teachers may either turn in grade books to the office to have grades copied directly from the grade book to the central computer via the terminal, or they may record the grades on class lists for computer entry. In either case, a recorded copy of the grades is immediately available to the teachers for verification. Within minutes after the last grade is recorded, report cards can be printed on the highspeed printer at the college and picked up within the hour. This is especially convenient in Prescott, where we allow teachers to turn in final grades until 4:00 P.M. of the last day of the marking period.

Problems

Are there any flaws in the system we now use? One might as well ask if men or machines are perfect. Half way through recording grades for the third quarter last year, the operator hit the wrong combination of keys and wiped out grades he had inserted for a number of classes. The gaffe would not have been nearly as embarrassing if the Prescott High administration had not issued a bulletin the same morning asserting that all the "bugs" in the computer system had finally been

eliminated. Another problem that took us by surprise was that created by the fact that Prescott is located in an area subject to violent lightning storms during the summer months. Consequently, it was impossible for us to control the power surges that frequently occurred and the college had to institute a regular program of backing up all the information stored on drums with tape storage.

What of the original champions of the computer terminal? The high school students and faculty who enrolled in the survey course are impatiently agitating for another terminal, which they want located in the science area of the school for full-time use by the science and mathematics departments. And the administrator, who had exclusive use of the terminal during the summer months and has been spoiled rotten by the experience, just might see to it that they get their own terminal. ■

Reprinted from the October issue of *School Management* magazine with permission of the publisher.

A Community College That Is Computerizing the Community

By RON LENHART

Yavapai College, a member of the Arizona Community College System, is located in mile-high Prescott. The 3 R's in this area are Ranching, Retirement and Recreation. Living this easygoing life are many far-sighted people. Fortunately, many of them are educators.

The computer program at Yavapai College started in 1969 under the dedicated leadership of William Rinaldi. Without a campus or a computer, he and his classes in programing made the 200-mile round trip to Phoenix each Sunday to use the batch-oriented machine at another college.

Yavapai moved to its new campus during the 1970 fall semester and had an IBM 360/25 batch system installed at this time. Mr. Rinaldi left for work in industry with a program firmly established and Charles Baldwin left industry to return to education as our new director.

Mr. Baldwin, an engineer, and myself—a self-confessed dreamer of great things in education—had many long talks about the directions of technology and education. We quickly realized the limitations of a small batch-oriented system, and in the summer of 1971 we sent out specifications for bids.

To make a long dream short, we accepted the Digital Equipment Corp. DEC System 10 in January, 1972, with one data phone, three local teletypes, one CRT, one card reader and printer, one disk, two tape drives and about ten times more core than the 360/25. Now we could handle local batch mode at the same time we ran time-sharing. Our staff consisted of five very excited people.

We found out quickly what a juggling act in the circus is like. We were developing business and administrative systems

for the college, conducting classes in business data processing, and training any hapless teaching colleagues who wandered close to our doors.

At present, we have on our Yavapai College computer network seven local terminals on campus, two in local high schools, one at Prescott College, a private four-year institution, one portable that we move around the public school system, one teletype in the science lab and four in the computer lab, where we also have two Hazeltine 2000 CRT's and one DEC VTO 5 CRT. We added another disk file to the system, giving us storage and swapping capacity of 52 million characters.

The math department at Arizona State University is using the system to develop some graphics with Tectronics 4010 scopes. We are processing many requests at this time from other educational users, and will be phasing in the other six high schools in the county this year.

We are developing the system with one purpose in mind: to bring the computer to education at the best price possible for the tax payers. We feel the community college can best fulfill this function in providing the system and the education to use it.

In the last ten months we have trained about 35 percent of our teaching staff at the college, over half of our classified staff in the business and registrar's office, and 12 teachers and administrators from the Prescott High School. These people will be training their colleagues and students this fall; in fact, they're our best sales force. Our fall survey class is almost filled with teachers and administrators. It's going to be a very exciting year in the mountains of North Central Arizona. ■

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issue of College Management
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