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ABSTRACT

Rensselaer Polytechnic Institute of Connecticut offered a part-time training program "Computer-Assisted-College-Administration" during the academic year 1969-70. Participants were trained in the utilization of computer-assisted methods in dealing with the common tasks of college administration, the problems of college development and promotion, and the capabilities of computers in the decisionmaking process. The data processing equipment regularly available to the participants was the IBM-1130 System, as well as teletypewriter consoles for access to a time-shared computer system. The main programming language used was FORTRAN. Thirty participants entered the program, of whom 21 continued for 2 semesters and obtained a certificate. This report briefly discusses the methods of instruction, the difficulties encountered and some ideas that will be implemented in the 1970-71 CACA course. The appendices include a list of the students who completed the course, a sample copy of the certificate, and a newspaper article about the course. (AF)

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COMPUTER-ASSISTED COLLEGE ADMINISTRATION

FINAL REPORT

Grant No. (14) NIH 47-7271
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Institute of Conn.

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COMPUTER-ASSISTED COLLEGE ADMINISTRATION PROGRAM REPORT

GENERAL DESCRIPTION

Rensselaer Polytechnic Institute of Connecticut, under a support grant by the U. S. Office of Education, offered a part-time training program "Computer-Assisted-College-Administration" during the academic year 1969/70.

Participants were trained in the utilization of computer-assisted methods in dealing with the common tasks of college administration, the problems of college development and promotion, and the capabilities of computers in the decision-making process.

The course followed the Rensselaer-Hartford Graduate Center class schedule with all appropriate breaks and holidays. The first semester ran from Sept. 15, 1969 to January, 1970 on Mondays and Wednesdays: $1\frac{1}{2}$ hour lecture and $2\frac{1}{2}$ hours computer workshop. The second semester ran from February, 1970 to the end of May, 1970 following the same schedule.

The program was designed for local college administrators who were able to commute to Rensselaer-Hartford Graduate Center twice per week.

The data processing equipment regularly available to participants was the IBM-1130 System (central processor with disk drive, card-read punch, printer and key-punches). Also regularly available were teletypewriter consoles for access to a time-shared computer system. Leased time on the IBM/360 Mod 65 at the University of Connecticut was also used for some special applications which involved the use of the GPSS and FORMAC languages.

The main programming language used was FORTRAN: however, interested participants were trained also in GPSS, FORMAC AND RPG.

Thirty (30) participants entered the program; 21 continued for 2 semesters and obtained certificates, 6 continued only for one semester and 3 dropped at the beginning.

METHOD OF INSTRUCTION

During the earliest phase of the course, we discovered that because of the different interests and backgrounds of participants, we just could not give the same lecture to all, but would have to divide participants into smaller groups and devise a very flexible curriculum, responding to their interests.

We found also that the most interest was generated when computer techniques were applied directly to the work being done by participants; i.e., if a participant worked with student loans, he would be interested in writing a computer program on student loans; if he worked with scholarships, he would be interested in developing a multi-year scholarship plan, etc.

We checked with everybody to find out what kind of work they do and then workshop supervisors worked individually with each participant. Such an arrangement was possible because at Hartford Graduate Center we have about 200 graduate students working toward their Master's degrees in Computer Science, so it was not difficult to find experts in any particular area of interest.

Six workshop supervisors were specially trained to supervise CACA student work. In addition, we employed consultant-lecturers from other universities, IBM and other computer manufacturers, and our own graduate students in Computer Science. We found, however, that lecturers provided by IBM and other computer manufacturers were ineffective, as they were not trained to teach college people.

DIFFICULTIES

Let us mention some difficulties we experienced with the CACA course. The main difficulty was that our CACA group was extremely heterogeneous. Our participants were in the following occupations: directors of research, long-range planning specialists, directors of admissions, deans of engineering, business, graduate studies, administration, registrars, treasurers, faculty professors, chairmen of departments, directors of data processing, guidance counselors, financial officers, and business managers. Thus, due to the various occupations, there was a wide variation in the interests of the participants; some were interested in methods of operations research, some were only interested in computer hardware characteristics, etc.

The participants' backgrounds in data processing were also very different. We had computer experts, such as a director of data processing, versus a few who knew absolutely nothing about computers and their uses.

The program was too long and too strenuous for participants (two semesters twice a week, each with $1\frac{1}{2}$ hour lecture and $2\frac{1}{2}$ hours of workshop, totaling eight hours per week).

All participants were employed full time at their colleges and all commuted to the Hartford Graduate Center twice a week. (A few commuted more than 100 miles round trip).

CONCLUSIONS

Based on our experience with the 1969/1970 CACA course, the following major ideas came forth. These will be implemented in the 1970/71 CACA course:

1. "Hands-on" experience in computer education is essential for anyone who would like to learn how to use the computer as a tool in his profession. In this field, learning is best accomplished by doing; much of what is learned is quickly forgotten unless new knowledge is put to work soon and often.

2. A good understanding of computer methodology as applied to college administration is acquired by learning computer programming; the most important idea to convey to the students is how to translate from a physical context into the computer; the administrator must be able to program his own problems.

3. The course should be taught by illustrative, practical examples; working out a large number of good, solid problems in workshops is at least as important as the lecture material.

4. It is easier to teach a college administrator the necessary computer techniques than it is to teach a computer expert about college administration; for the college administrator who is hoping to use the computer in his work, the route of learning by direct, "hands-on" exposure to computer operations will help him appreciate the potential of the computer for his own applications.

5. Small colleges should obtain a small computer system rather than a pooling (time-sharing) of a large system. By utilizing the small computer for small colleges as an independent unit completely dedicated to college services, colleges will benefit in many ways: Because of the basic simplicity of the small, stand-alone computer, each college can develop a well trained

data processing staff. Work with a small computer, using RPG for administrative data processing and FORTRAN for student work and research, and a relatively small budget for electronic data processing equipment of less than $25,000 per year (a small computer system can be rented for about $2,000 per month) opens new and exciting possibilities for the utilization of computers in small colleges. The large computer might offer economies of scale, but small computers are easier to install and easier to use.

6. When a college is buying or renting a computer it is not just buying or renting a machine, it is buying an improved way of doing things. The computing system's impact on the operations and organization of small colleges will be profound. Almost everyone in the administration will have to modify their way of doing things once a new data processing system arrives. Certain work habits must be broken and new ones formed. The computer has given entirely new scope to the idea of college administration - so much so that administrators who work with computers have found new ways of thinking, even in areas to which the computer, as such, may never be applied. One should view the computer as an intelligence amplifier and not solely as a large calculating machine or labor-saving device.

7. In the beginning, college administrators should learn how to use the computer to do the job that was formerly done by clerks; documents, such as grade reports, class lists, advisor lists, pay checks, etc., should be printed by the computer instead of being typed by clerks. At the more advanced level of computer applications, the administrator can then begin to use the computer for administrative control, planning, decision-making, and for operations that are impossible for a person to do.

8. All in all, we consider the whole program most successful. Many of the participants installed computers on their campuses as a direct result of this course.

APPENDICES

We are enclosing all evaluation sheets.* We are quite satisfied with the participants' general evaluation. It seems to us that the overwhelming majority of participants were very favorably impressed with our program.

You will also find enclosed:

1. A list of students who completed CACA, as well as the names of the six students who only finished the first term and did not receive certificates.

2. A sample copy of the certificate.

3. A newspaper article about the course.

*Four participants did not return their evaluation sheets.

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May 25, 1970

(V. Punga)
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Computers Can Save Small Colleges

By EDWIN MATESKY
Times Staff Writer

Computers represent the key to saving the small colleges of today, according to a computer science professor at Rensselaer Polytechnic Institute's Hartford Graduate Center in East Windsor Hill.

"Small schools are engaged in a fight for their financial lives," says Dr. Valdemars Punga, in charge of computer science at the Center.

"Complex, ineffective and expensive administrations are slowly strangling them fiscally," he adds.

"The diagnosis is inefficiency and the prognosis is not good. The only cure is computerization," he maintains.

If the smaller colleges and universities do not turn to the electronic marvel, they will perish, Dr. Punga predicts.

Some 30 top-level university administrators who agree with Dr. Punga are currently attending RPI's course on "Computer-Assisted College Administration" at the Graduate Center.

They include admissions officers, business managers, department chairmen, deans, fund raisers and state administrators of education.

Some travel as far as 120 miles, twice a week, for classes in the art of effective computer use.

According to Dr. Punga, the small college must introduce the computer on campus for such things as student instruction, research and — most important — business administration.

"Two data processing systems are customarily used in a large university situation," Punga points out, "one for administration and one for scientific work.

"We're showing our students how to utilize one system for both types of computation.

"The financial ramifications of this approach are clear — and institution's data processing budget can be cut by one-half.

"Here at Rensselaer-Hartford," says Dr. Punga, "the effectiveness of data processing has manifested itself in time-saving. Before the advent of our own system, a registration breakdown would require an entire month.

"Today, it is accomplished in a matter of hours."

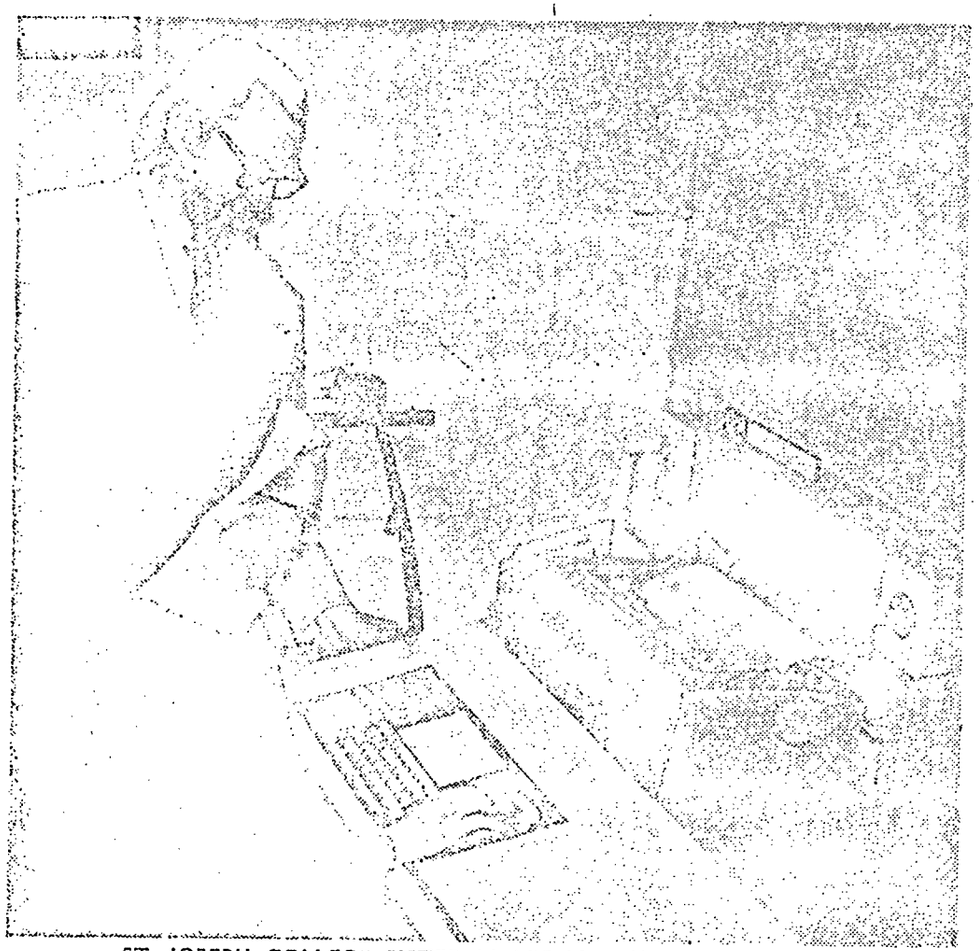
Dr. Punga forecasts computers being used on small college campuses for a wide range of functions, such as high school evaluation, study of drop outs, long-range planning, class scheduling, transportation problems and allocating room space.

"Data processing can do away with a huge business staff and mean a saving of thousands of dollars annually," Dr. Punga says.

"It can," he adds, "mean the difference between financial life or death for the small college."

The RPI computer course is supported by the federal government through a $45,000 grant for the U.S. Office of Education.

Data processing facilities being used include the Graduate Center's own IBM-1130 System, a time-shared computer system in Boston, and leased time on an IBM S/360.



ST. JOSEPH COLLEGE SISTER M. LEO JOSEPH AT CONSOLE
. . . with Business Manager Carl Glans of RPI Graduate Center

DR. VALDEMARS PUNGA
. . . computer expert