Alberta Society for Computers in Education
Report of the Annual Conference, October 20-24, 1981

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The second annual meeting of the Alberta Society for Computers in Education was held on October 20-24 at the Westin Hotel in Edmonton. (For a report on the first meeting see *delta-k*, Volume XX, No. 3, April 1981, pages 5-6.)

The first half of the conference consisted of an exposition by administrators for administrators in post-secondary institutions. Your editor did not attend this portion of the exposition.

Sessions during the second half of the exposition were aimed at educators and instructors in public and secondary schools. During the first general session, Dr. Michael Szabo, Manager of the Instructional Systems Group at the University of Alberta, delineated five pitfalls to the successful implementation of computer-based instruction (CBI) systems. These pitfalls, he said, are symptomatic of the broader problem of poor problem-solving skills. Dr. Szabo correlated characteristics of successful problem solving with potential pitfalls when poor problem-solving skills are applied. Some of the correlations he described are:

1. Problem-solving characteristic: Review what is known about the problem of implementing CBI.

   Pitfall: Failure to understand why CBI is the technology most appropriate to the manner in which people learn. (Dr. Szabo said that the effectiveness of CBI has been clearly documented. See Kulik, J.A.; Kulik, C.C.; and Cohen, P.A., "Effectiveness of Computer-Based College Teaching: A Meta-Analysis of Findings." *Review of Educational Research* 50:4 (1980), pp. 525-544.)

2. Problem-solving characteristic: Adequate definition of the problem.

   Pitfall: Failure to understand your instructional needs and the change process.

3. Problem-solving characteristic: Adequate data gathering and testing related to the components of a system. (The components required for a CBI system in order of importance are people, courseware, software, hardware, and telecommunications.)

   Pitfall: Failure to understand how components of a CBI system can hinder or support your instructional needs.

4. Problem-solving characteristic: Develop a broad range of hypotheses and add or change hypotheses as new data is gathered.

   Pitfall: Failure to examine how computer-based instruction can both extend and enhance the tutorial interaction between teacher and learner.

5. Problem-solving characteristic: Determines a reasoned solution to the identified problem within constraints imposed by a system.

   Pitfall: Failure to implement a comprehensive, modest-scale evaluation project which is a) designed to meet specific needs, with b) appropriate components, using a c) reasoned-change strategy.

Dr. Szabo proposed the following four-point solution to the problem of effective implementation of computer-based instruction:

1. Develop local leadership teams to implement CBI.

2. Have these leadership teams train their colleagues.

3. Ensure that CBI is evaluated as it is being implemented.

4. Plan to implement CBI over a period of several years.

A more complete text of Dr. Szabo's talk will be printed in *Alberta Printout*.

Minister Announces Support for Microcomputers in Schools

The Honorable Dave King, Minister of Education, spoke at the noon luncheon on Friday. Mr. King was both skeptical and enthusiastic about the implementation of computers in schools. He agreed that there was a real need to get computers into schools because children need to become computer-literate in order to function in our society. At the same time, he warned that computers are not a panacea for all the ills of education. He said that while technology gives us the tools to fashion a better world, this does not necessarily mean that we will use them in that way. In other words, technology does not solve human problems; only humans can solve human problems using the best tools available.

Mr. King then announced a government policy to encourage systematic use of computers in schools. This policy includes the following components:

1. Establishment of an Office of Instructional Technology under the direction of Dr. Jim Thiessen.

2. Development of a computer literacy program at all three levels (elementary, junior high, senior high) for piloting in the fall of 1982.

3. Development of basic hardware standards. A contract has been signed with Bell and Howell for the purchase of a minimum (no maximum) of 1000 Bell and Howell Apple Microcomputers (48K) with dual disk drives, Panasonic monitors, Centronics printers, and a software package. This total package

will be made available to schools through the School Book Branch on the same basis as are other materials. This arrangement is not intended to restrict schools from purchasing other equipment if they so wish, and it is to be reviewed periodically. Similar contracts may be negotiated with other hardware distributors later. The aim, according to Mr. King, is to triple the number of computers in schools in the next 18 months and to reach 20,000 by 1984.

4. Orientation and in-service. Mr. King announced a three-stage in-service program:
   a. regular orientation supplied by the vendor
   b. program for coordinating teachers, principals, and other administrators
   c. orientation for other teachers.

5. Establishment of a computer learning materials clearing house, primarily to serve an evaluative function.

6. Collaboration with other departments of education on cataloguing and indexing of courseware nationally.

7. Provision of research funds in the spring of 1982 for computer-related projects.

8. The establishment of a 12-member ministerial task force to investigate implications of computer use and to make recommendations to the Minister.

Out-of-Province Experts Tell Us How to Do It

Denise Forman from JEM (Joint Educational Management) Research in British Columbia talked about courseware development and evaluation. She maintained that it is essential for teachers to be able to evaluate courseware. Furthermore, she argued that in order to do this effectively, teachers must have some theoretical background which can be obtained through reading relevant literature and viewing a wide variety of courseware.

In designing courseware, she suggested that these steps be taken:

1. Decide who will do the designing, a teacher or a design team.
2. Choose the topic. The rationale for doing the topic on the computer should be made clear.
3. Begin by defining your goals in broad terms and then specify instructional objectives.
4. Do a task analysis by determining the steps the learner must take to reach the objective.
5. Decide on a strategy such as drill and practice, tutorial, simulation, or other. The cognitive styles of the learners should be considered in making this decision.
6. Prepare the story board. This will include the display plus notes for the programmer.

7. Have the programmer judge the feasibility of the program.
8. Code the program.
9. Test the program.
10. Document the program.
11. Field-test the program.
12. Prepare an instructor's guide for the courseware.

Bill Goddard from the University of British Columbia outlined a four-fold focus for computing in British Columbia schools:

1. Computer orientation or literacy. This was initially aimed at all Grade 8 students.
2. Service packages to various subject areas.
3. Computing studies.
4. Administrative packages.

Denis Simair, a third B.C. speaker, reviewed a pilot project using computers in school administration. The project took place in two pilot schools in the Greater Victoria School District. There were three main components to the administrative package:

1. The Administrators' Apple Package. This package contained three subsystems:
   a. An attendance program which provided the following printouts: absentee lists, bi-monthly attendance totals, letters to parents, and reports to students.
   b. A demographic program which can accommodate data and provide a variety of printouts for 1200 students.
   c. A textbook program which provided a variety of data on textbooks used in the school.

2. The Classroom Attendance Program. This package was similar to 1a (above) but provided more detail. For example, a student's absence from specific blocks during the day could be documented.

3. The Scheduling Program. Several steps are required but a master timetable and conflict-free timetables for students can be generated. Class lists, student timetables, and other information can then be printed.

Teachers, administrators, and secretaries all reacted positively to this pilot project. The teachers and secretaries were especially appreciative of the time saved by the system but the administrators didn't report any time saving.

Ruth McLean from Humber College in Ontario discussed her experiences in the area of staff development. She stressed the fact that adults learn but that they learn at a different rate and in a different way than children because they have a wider background of experiences and responsibilities. Since teachers have different needs, goals, learning styles, priorities, and schedules, any staff development program needs to be multifaceted.

The following are some of the activities Ruth McLean has found successful in working with teachers:

1. Awareness seminars. These could include demonstrations of different machines, films, speakers, courseware, and so on.
2. Visits to companies using computers.
3. Visits to trade fairs.
4. Information dissemination. Provide relevant articles, notices of conferences, and so on to teachers.
5. Designation of at least one computer for use by teachers only, not students.
6. Attempts to support and encourage individual initiatives.
7. Offering mini-courses of about six weeks for about two hours a week. These courses could be in basic BASIC or advanced BASIC, they could centre on a project, or they could examine existing software.
8. Ensure that there is a role model available in schools for teachers.

Computers Are Artists!

Gerald Hushlak demonstrated the potential of the computer as an electronic paint brush. He said that technology needs to be added to earth, air, fire, and water as a fifth basic element. Several reasons for this addition were given but Mr. Hushlak emphasized the time saved as a major reason. He pointed out, for example, how in generating a landscape scene, he can start the process, go off and do other things, and then come back hours later to find the computer and plotter still painting. Unlike people, computers work like slaves for 12 or more hours a day without coffee or lunch breaks. Furthermore, they do not spill ink or paint the way human artists do. The result is perfect. In designing a scene, the computer artist, by using a plotter, has access to about 15,000 colors in 64 layers.

Mr. Hushlak also told how computers are used to provide a communications link between seven major museums in London, Paris, New York, and elsewhere. His overall conclusion was that traditional art cannot compete with technology.

Other Sessions

Other sessions at the second annual ASCE conference dealt with such topics as selecting hardware, micro-to-host communications, the computer-managed learning system at SAIT, and the Natal/Telidon connection.

A group of interested individuals met to organize a computer contest. Details of this will be published in the *Alberta Printout*, the journal of the ASCE.

The annual business meeting of the ASCE was conducted Friday, October 23, 1981. Reports from the different departments were given. The new executive for 1981-82 elected at the meeting is as follows:

President: Gene Romaniuk
Vice-President: Harry Babchuk
Treasurer: Steve Hunka

Board of Directors: Hans G. Kratz
Trevor W. Turnbull
Edward Wiecek