Microcomputers in British Columbia Schools

by
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JEM Projects

In the spring of 1979, under the direction of the Ministry of Education, Science and Technology's JEM (Joint Educational Management) Projects group, an analysis of the trends in computer-aided learning was commissioned. This investigatory work was conducted by Dr. Mary Westrom at the University of British Columbia and Mr. Bill Goddard. Since that time, extensive dialogue and accelerated analysis have taken place related specifically to the use of the microcomputer as an instructional aid. This work is still going on, while at the same time activity in individual schools is increasing rapidly. There are now several schools with microcomputers installed and being used either actively or experimentally in a classroom setting and more than a dozen machines on order. This will escalate rapidly as experience is gained.

In order for the decisions regarding purchase of such equipment to be made in a knowledgeable manner, the following material is presented as an aid to decision making. It is based largely on the experience of the State of Minnesota which has been exploring this subject for some time and is quite advanced compared to British Columbia in the coordinated use of microcomputers. It is based also upon the recommendations of British Columbia teachers active in microcomputer use in the classroom and upon the ideas of members of the British Columbia Computers in Education Committee (BCCEC) who are active in this field.

The Current Situation

Our present situation in British Columbia is similar to that in other provinces and states. That is,

1) Educator interest in microcomputers is very high;
2) Educator expectations of the role and potential of the microcomputer probably exceed the current capability of the machines;
3) The costs of equipment varies greatly;
4) Both the quantity and quality of educational courseware remains low at present;
5) Audiovisually enhanced (sound and color-graphics) equipment is providing the most innovative thrust;

6) Lower hardware costs have been eroded by a tendency to purchase more peripheral devices;
7) While initial sales and installations are impressive when contrasted with the past four to five years, educational use will follow industry leading to greatly accelerated use in the next two years;
8) Software (courseware) development will not keep pace with the use of the hardware for some time. Much current innovative work will be isolated, not of commercial value, and not readily transferable between machines; and
9) Of the currently available courseware, some is outstanding as a tool to augment instruction.

Uses

The uses which currently look the most promising are the following:

1) The computer can be used as an audiovisual device. In this mode, the teacher uses the device much as an overhead projector; one device is used for a class, perhaps driving several color TV monitors. The teacher uses a black and white monitor and guides the courseware via console as the session progresses. The courseware may be for direct teaching (for example, algebra or music), for a drill and practice style, or for a simulation.
2) The computer will be used on an individually paced basis, usually by one student at a time, for remedial drill or practice while the rest of the class is participating in traditional instruction.
3) The computer will be used on an individually paced basis, usually by one student at a time, for enriched study while the rest of the class is participating in traditional instruction.
4) The computer is used as a terminal to access other centrally located programs such as student career guidance information on an individual basis.
5) The computer is used for school administrative processes such as student records or miscellaneous non-direct-instructional (administrative) applications.
6) The computer is used to teach computer literacy and computer science.

Of these, the first approach currently shows by far the greatest return in terms of value to the learning process in the short term.

Support

At present in British Columbia, there is no formal field support for microcomputers. There is a need for: instructional coordination and training; curriculum integration; courseware development, testing, and purchasing; user workshops; courseware exchange services; hardware purchase and service; central question-answering; and advanced applications research. These areas are under investigation, but it is recognized that it will not be practical to provide this support for several varieties of equipment.

In selecting high-quality software, you should examine: if courseware packages include teacher/learner support materials (for example, guides, resource books, and worksheets); if software uses the full capabilities of your computer;

if courseware units stand alone as comprehensive lessons or units which can meet differing needs of teachers and students; if presentation is attractive and professional; and what number of applications can be expected to be developed for your hardware.

This is expected to improve rapidly with the volume of use over the next two years. The sophistication of the courseware will increase rapidly, as well. Some current models (for example, MECC's music software) are close to spectacular, and still improving. The value of some of this courseware in the inductive process has not yet been comprehensively assessed, but early informal reviews are extremely encouraging.

New advances in hardware and software are expected to provide voice input and output, and integration with video cassette or video disk material.